ARCHAEOLOGICAL HISTORICAL SYMPOSIUM

RIDEAU FERRY, ONTARIO
1982

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OCTOBER 2·3, 1982
RIDEAU FERRY, ONTARIO

Presented By

THE CENTRAL REGION

and

The Ministry of Citizenship and Culture, Ontario

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ACKNOWLEDGEMENTS

The staging and presentation of such an event as this presented very definite financial problems and with our current economic climate the problem became even more acute. There can be no doubt but that this Symposium would have progressed no further than the planning stage without the most generous financial support of the Ministry of Citizenship and Culture, Ontario; here particular reference must be made to Mr. John White, Chairman, Ontario Heritage Foundation and Mr. Carl Thorpe, Manager Historical Resources, Heritage Administration Branch, who consistantly offered moral support and friendly guidance.

The seven directors, all of whom find their days well occupied in their highly professional fields, gave far more than the compilation of the papers carried here but freely of that most precious commodity - time itself. Associated with this selfless group was Professor S.F. Wise, past Chairman of the Ontario Heritage Foundation and currently Dean of Graduate Studies, Carleton University, whose support was constant from inception.

The Field Trip presented obstacles which were greatly eased by Mrs. Margaret Roberts of Westport as well as the co-operation of the Rideau Valley Conservation Authority, Foley Mountain. In the same Parks Canada lent invaluable support to Dr. Legget's presentation at Jones Falls as well as inclement weather protection at the Wyght site. Merrickville Historical Society re-opened the Blockhouse for a conducted tour during the Field Trip while the Ontario Historical Society did much for the dissemination of information concerning our activities.

Contributing to the permanent record were Mr. Ralph Willsey, Executive Producer of Ghost Lake Videography and the Smiths Falls Record News for sound tapes. Subsidized student accommodation was shared by the Central Committee with the accommodating Mariners Inn, Smiths Falls.

And finally the work of the most able Mrs. C. H. Wright of Ottawa who made this final copy available for reproduction and publication.

To all - the most grateful appreciation of the Central Committee, RC 150.

INTRODUCTION

Unlike Topsy this major event, planned and presented by the Central Region's Committee for the celebration of the 150th Anniversary of the opening of the Rideau Canal did not 'just happen or grow';it had a certain lead-in background and more than a little planning.

The archaeological investigations carried out at the Wyght Site in 1978-79 by Gordon Watson drew the attention of area schools who requested if arrangements might be made for a student tour of the work while in progress. Conducted tours with suitable level of talks were arranged in the two years; through our own resources and connections we followed these up with essay contests based on the students' experience at the 'dig'. Winners one year were awarded with copies of Dr. J.V. Wright's 'Ontario Prehistory' and another year with local histories. And so you have Archaeology and History.

As Chairman for the Central Region's Committee for the Rideau Canal's 150th Anniversary, it was my intent that some of these events would not be of a transitory nature but rather - hopefully - offer a foundation for continuing events of the same nature in the future. Late in that year I approached an acquaintance, Professor S.F. Wise of Carleton University and then Chairman of the Ontario Heritage Foundation, with a rough outline for the Symposium and was met with immediate enthusiasm and agreement but more importantly, a high degree of moral support which never varied.

Further work with Gordon Watson and Jim Pendergast outlined a slate of speaker-directors who presented a truly unique Canadian gathering. Privately I held no hope that such a group - all professional, all greatly occupied - could be assembled for such a seemingly minor event; fortunately my assessment of the event and their interest was completely in error. In retrospect and not then appreciated;all were well aware of the others' work and reputation, appreciative of the unique opportunity to present such an event and in association with such an auspicious occasion as the 150th Anniversary of Upper Canada's old heartland route. And so the whole came together.

From there it was merely a matter of providing Adjutant, Administrator, Logistics and Secretarial support to the event while the richness of the association far outdistanced whatever work was entailed.

And one remaining facet - the comments of a very active body of participants, who contributed such an outgoing degree of interest provided additional icing on the Rideau's birthday cake.

F. C. L. Wyght
Chairman

THE ONTARIO ARCHAEOLOGICAL SOCIETY

The Ontario Archaeological Society has its headquarters in Toronto and seven Chapters at Grand River/Waterloo, London, Ottawa, Simcoe County, Thunder Bay, Toronto and Windsor.

The Society, in bringing together those interested in archaeology, assists both individual and collective efforts to advance the science of archaeology and to sustain progress whenever and wherever possible. Most importantly, through education and seeking supporting legislation indiscriminate investigation or digging by untrained or unqualified persons is curtailed while the ethics of archaeology are advanced. Further, by facilitating the exchange of ideas and co-operation between those interested in archaeology a better understanding of the Society's objectives is achieved.

The Ontario Archaeological Society publishes the scientific journal, ONTARIO ARCHAEOLOGY and a newsletter, ARCH NOTES and its address is The Ontario Archaeological Society (Inc.), Box 241, Postal Station P, Toronto, Ontario, M5S 2S8.

THE ONTARIO HISTORICAL SOCIETY

The Ontario Historical Society, one of the sponsors of the symposium at which these papers were presented, traces its origins to the Pioneer Association of Ontario, founded by Canon Henry Scadding of Toronto in 1888. Its object was then, and is now, to co-ordinate the efforts of heritage groups in the province. Reorganized and incorporated as The Ontario Historical Society in 1898, it played a key part in saving historic sites from destruction by railway and other commercial developers before the First World War, both at Toronto and on the Niagara peninsula.

Still active in the preservation field, the Society publishes the journal 'Ontario History' and a quarterly bulletin, sponsors meetings in all parts of the province, organizes and runs workshops in various aspects of local history, and issues a series of awards to recognize outstanding achievement in the heritage field.

For membership information, write 78 Dunloe Road, Toronto, Ontario, M5P 2T6, or telephone (416) 486-1232.

JAMES V. WRIGHT

Born January 22, 1932, Toronto, Ontario. Graduated Runnymede Collegiate, Toronto, Graduated with First Class standing B.A. (1956) Anthropology, University of Toronto. M.A. (1957) Anthropology, Univeristy of Toronto, (Graduate Assistant). Doctorate of Philosophy (1964) Anthropology, University of Wisconsin, (Research Assistant).

Publications: Of over 146 books and papers from 1955 to 1982 some of the better known are: 'The Ontario Iroquois Tradition', 'The Laurel Tradition and the Middle Woodland Period' and with J. E. Anderson, 'The Bennett Site' all National Museums Bulletins Nos. 210, 217 and 229 respectively. Then 'Ontario Prehistory: an 11,000 Year Archaeological Outline' a well established standard, National Museum, Ottawa. 'The Prehistory of Lake Athabaska, an Initial Statement' and 'The Grant Lake Site' Museum of Man Papers 29 and 47. 'Quebec Prehistory' is available from Van Nostrand Reinhold Press, Toronto, Ontario. Currently Acting Chief, Archaeological Survey of Canada and has been a Visiting Associate Professor to the Departments of Anthropology at the Universities of Toronto and Montreal.

Affiliations: Canadian Archaeological Association (President 1968-69): Council for Canadian Archaeology (Chairman 1967; Federal Rep. 1967-70; Director 1980-83). Society for American Archaeology: Ontario Archaeological Association (President 1950 & 1971): American Association for the Advancement of Science: Royal Society of Canada: Canadian Association of Physical Anthropology.

Other associations include: Elected Fellow of the Royal Society of Canada: Member of the sub-Artic Volume Planning Committee, Handbook of the North American Indian, Smithsonian Institute: Member of the Editorial Board of the Historical Atlas of Canada, Vol. 1.

ONTARIO PREHISTORY

J. V. Wright

The purpose of this essay is to provide an outline of the prehistoric events that have taken place in the province of Ontario over the last 11,000 years. Technical terms and concepts have been avoided but in attempting to present a general picture of Ontario's prehistory, it has been necessary to make the complex appear simple, the poorly known appear well known, and to favour one interpretation when, in fact, several conflicting interpretations exist. Most archaeologists, however, will be in essential agreement with the major themes as presented here.

Archaeology is a discipline that attempts to reconstruct human events and developments that took place prior to written records. Samuel de Champlain was able to make many important observations concerning the Hurons with whom he wintered in A.D. 1615-1616, but he was unable to comment on where the Hurons originally came from, how they learned to plant corn, beans, and squash, and when they first began smoking tobacco. The how, why, when and where of the past are the questions that must, for the most part, be answered by archaeology. To achieve these ends, archaeologists have developed a wide range of field and laboratory techniques which assist in the reconstruction of past cultures. Admittedly, most of these reconstructions of what was are only rough approximations but they are continuously being built upon, modified, and in general, refined.

The vast bulk of material studied by archaeology consists of such things as broken tools and discarded food bones and, in a very real sense, archaeologists are glorified collectors and analyzers of prehistoric garbage. Unfortunately, most of the cultures that archaeologists attempt to reconstruct disappeared a long time ago. If you look around the room in which you are now reading and exclude everything except glass, china, brick, and a few other imperishable objects, you will have some idea of how little future archaeologists will have to work with in terms of our own culture. Despite these limitations, sufficient information survives the ravages of time and nature to permit the archaeologist to at least partially decipher the past. Different prehistoric cultures made different stone and bone tools, built their houses, and buried their dead in different ways. Some were hunters and others

were farmers, some made pottery vessels and others did not. These similarities and differences allow the archaeologist to recognize various prehistoric cultural groups and to trace their development through time.

In writing about prehistoric cultures, archaeologists usually begin with the earliest known groups and advance towards the late or historic period when European explorers recorded their observations. The reason for going from early to late is probably related to the fact that in so doing we progress from the simple (more ignorance) to the complex (less ignorance). During the actual process of establishing sequences, however, the archaeologist often begins with the historic period and works successively further back into prehistoric times. In other words, one works from the known to the unknown.

Historic native villages, recorded by early explorers and missionaries, are located and their identification is supported by the presence of European trade goods and other evidence. The native artifacts of pottery, stone and bone associated with the European metal tools and glass beads are then compared with those of a nearby site not containing European artifacts. If the comparisons are close then it is assumed that the latter site was occupied by the ancestors of the people who lived in the historic site. The artifacts and other evidence from the prehistoric village are then compared with other prehistoric villages and, on the assumption that the degree of similarity reflects a relationship in time, it is possible to extend a series of site relationships down through time with the identified historic sites as a starting point. This sequence of sites is taken to represent the prehistoric development of the native people identified by the historic sources. The great value of this approach is that it allows the archaeologist to make more meaningful cultural reconstructions through the use of historic and present-day studies of native peoples. Such cultural information could not possibly be provided by the limited remains recovered from prehistoric sites.

In order to re-create history from the fragmented and vague evidence left by prehistoric man, the archaeologist must be a jack-of-all trades. One must know sufficient geology to be able to distinguish man's work from that of nature, to identify varieties of stone, and to interpret the manner of soil deposition and modification. An adequate knowledge of biology permits the accurate identification and interpretation of the animal and plant remains recovered from sites. The archaeologist must also know some chemistry, physics, mathematics and a range of other disciplines that will assist in archaeological research.

Above everything else, however, the archaeologist must attempt to know and understand man. The broken tools and other items found around an ancient camp fire are only garbage. The vague outlines of ancient houses and other features are only ghostly reflections of what has been. But, all of these things are the products of man - man with his infinite variety and complexity.

The Northern and Southern Regions of Ontario and the Archaeological Periods

The prehistory of the Indians who occupied Ontario can best be understood by dividing the province into two major regions - a Northern region and a Southern region. Most of the Northern region is within the Canadian Shield and has predominantly coniferous forest, whereas the Southern region has predominantly hardwood forest.

The more kindly endowed Southern region always supported a far greater prehistoric population than the harsh Northern region; the same situation persists today, as is demonstrated by modern population densities. The richer archaeology of the south, however, has been complicated by the development of local cultural groups which interacted with each other and outside areas in a highly complex fashion. On the other hand, the Northern region is characterized by a high degree of cultural similarity which allows certain general interpretations to be drawn from relatively limited archaeological data. The available evidence suggests that the prehistory of these two regions has been distinct and different from the earliest times to the historic period. Certainly cultural interactions and contacts took place along a broad span of the somewhat ill-defined boundary between the two areas but such events appear to have had relatively little impact on the respective populations.

The prehistory of Ontario will be considered under four periods: the Palaeo-Indian period (9000 B.C. - 5000 B.C.); the Archaic period (5000 B.C. - 1000 B.C.); the Initial Woodland period (1000 B.C. - A.D. 1000) and the Terminal Woodland period (A.D. 1000 to this historic period). This last period ended shortly after the appearance of Europeans who introduced the historic period and provided written records on the indigenous people.

The aforementioned four periods are articial devices created by the archaeologist to assist the study of the

approximately 11,000 years of Ontario prehistory. It is very convenient to be able to slice up the time column into four layers which can then be described as separate entities but, in truth, matters are not that simple and there are very fuzzy areas between and within these major periods. Each period, however, does possess certain characteristics which differentiate it from the other periods.

The Palaeo-Indian Period
(9000 B.C. - 5000 B.C.)

The earliest inhabitants of Ontario have been given the archaeological name Clovis. Clovis culture spread across North America east of the Rocky Mountains and extended as far south as Central America. It is believed that these people crossed from Asia into North America at a time when the two continents were joined by a broad land bridge in the area which is now the Bering Strait. The similarity of their archaeological remains over an enormous area suggests that they must have spread quite rapidly throughout North America. In Ontario these people were probably caribou hunters, although it is possible that they occasionally stalked the now extinct mammoth and mastadon. Their distinctive dart heads have been found only in Southern Ontario since Northern Ontario was still covered by the continental glacier. Recently, campsites of these early hunters have been found along the old beachlines of Lake Algonkian - an ancient glacial lake that covered a large area of Southern Ontario which is now dry land.

The Plano culture followed Clovis culture and appears to have developed mainly on the Plains, penetrating Northern Ontario from the west and, to some extent, from the southwest. These people, too, were hunters of big game. A number of Plano culture quarry sites have been found along the coasts of Lake Superior and Lake Huron where suitable stone such as taconite and quartzite were fashioned into tools. Some of these sites, which were originally on an ancient shoreline, are now as much as six miles inland and nearly 200 feet above the level of Lake Superior. It can be readily seen that an archaeologist must know something about the local geological events that altered lake levels and land surfaces if he hopes to discover Palaeo-Indian sites.

Typical tools of both Clovis and Plano culture are distinctive dart heads used for killing game, knives for

butchering and other tasks, scrapers for shaping tools of wood and bone and for preparing hides, and small gravers for delicate carving work.

Reconstructing the way of life of these early hunters from the few stone tools that have survived the passage of time is a difficult task. From our knowledge of the climate at this early period we can assume that the Palaeo-Indians wore tailored skin clothing and had some form of shelter from the rigorous elements. Their religous beliefs were probably closely tied to the successful hunt upon which their survival depended. For much of the year they hunted in small family groups which would periodically gather into a larger grouping or band during a favourable period in their hunting cycle, such as the annual caribou migration.

Palaeo-Indian cultures did not cease to exist; they simply changed and, thus, have been given new names by the archaeologists. Various Archaic groups developed out of Clovis culture in eastern North America. In the west, Plano culture evolved out of the early Clovis base and, in its turn, developed into a number of cultures which archaeologists have assigned to the Archaic period.

The Archaic Period
(5000 B.C. - 1000 B.C.)

Two quite different Archaic cultures occupied Ontario. In Northern Ontario the Shield Archaic culture appears to have developed out of the preceding Plano culture and to have followed a very similar way of life. This culture was so named since sites have been found throughout much of the Canadian Shield from Labrador to northern Manitoba and into the central Keewatin District of the Northwest Territories. Dietary staples were probably caribou and fish, supplemented by bear, beaver, hare and waterfowl. This statement, however, is largely conjectural since little bone has survived the acid soils of the north. To judge from the location of sites along waterways and on islands, the Shield people must have possessed some form of watercraft, probably the birch bark canoe. For mobility in deep snow they probably produced snowshoes. In short, their way of life appears to have been quite similar to that recorded for the northern Algonkian-speaking peoples of the early historic period. Indeed, it has been proposed that the Shield people were the ancestors of the historic Ojibwa, Cree, Algonkin and Montagnais.

The hardwood forests of Southern Ontario were occupied by a people who possessed a distinctively different culture from their Shield Archaic neighbours to the north and have been termed Laurentian Archaic. They hunted deer, elk, bear and beaver with the aid of dogs and also supplemented their diet with smaller game, fish, shell fish, berries and other wild plant foods. In addition to chipped stone dart heads, knives, and scrapers, they manufactured polished stone axes and adzes for wood working, ground slate darts, lances and knives and had a wide variety of bone items such as barbed fish harpoons, chisels, fish hooks, awls, needles, beads, and combs. Through trade with the Shield Archaic people they obtained native copper from Lake Superior which they fashioned into dart heads, awls, needles, bracelets, beads, adzes and many other necessary or ornamental objects.

From the evidence of excavated Laurentian Archaic cemeteries in adjacent Quebec and New York, we know that the people were of robust build and suffered, to a minor degree, accidental bone fractures, arthritis, and some tooth loss through gum disease. Death by violence is occasionally noted in the form of skull fractures, projectile points lodged in bones or the chest cavity, and evidence of beheading. There is even one recorded instance from New York of unsuccessful surgery to remove the tip of a dart head lodged in a human forehead.

The Laurentian Archaic people participated in a wide ranging trade network. Conch shells made into ornaments were obtained from the Gulf of Mexico, shell beads from the Atlantic coast, copper from Lake Superior, and exotic flints from widely dispersed locales. These items almost certainly arrived in Southern Ontario as a result of many individual, hand-to-hand transactions rather than by actual trading parties traversing enormous areas of North America.

Nothing is known of the kinds of houses that the Laurentian Archaic peoples of Ontario lived in. This is perhaps not too surprising when it is realized that the sites dug by archaeologists are summer camps and that flimsy structures must have been used, leaving no trace. There is also evidence that 5,000 years ago the warmer climate that then prevailed would have resulted in an extra month of summer, thereby even further reducing the need for substantial houses. In the late fall, when the individual families dispersed to their winter hunting grounds, it is very likely that more solid structures were built. Such winter sites, however, would be very small and extremely difficult for the archaeologist to find many thousand years after they had been abandoned.

Plate 1. Laurentian culture artifacts.

Fig. a. Polished stone

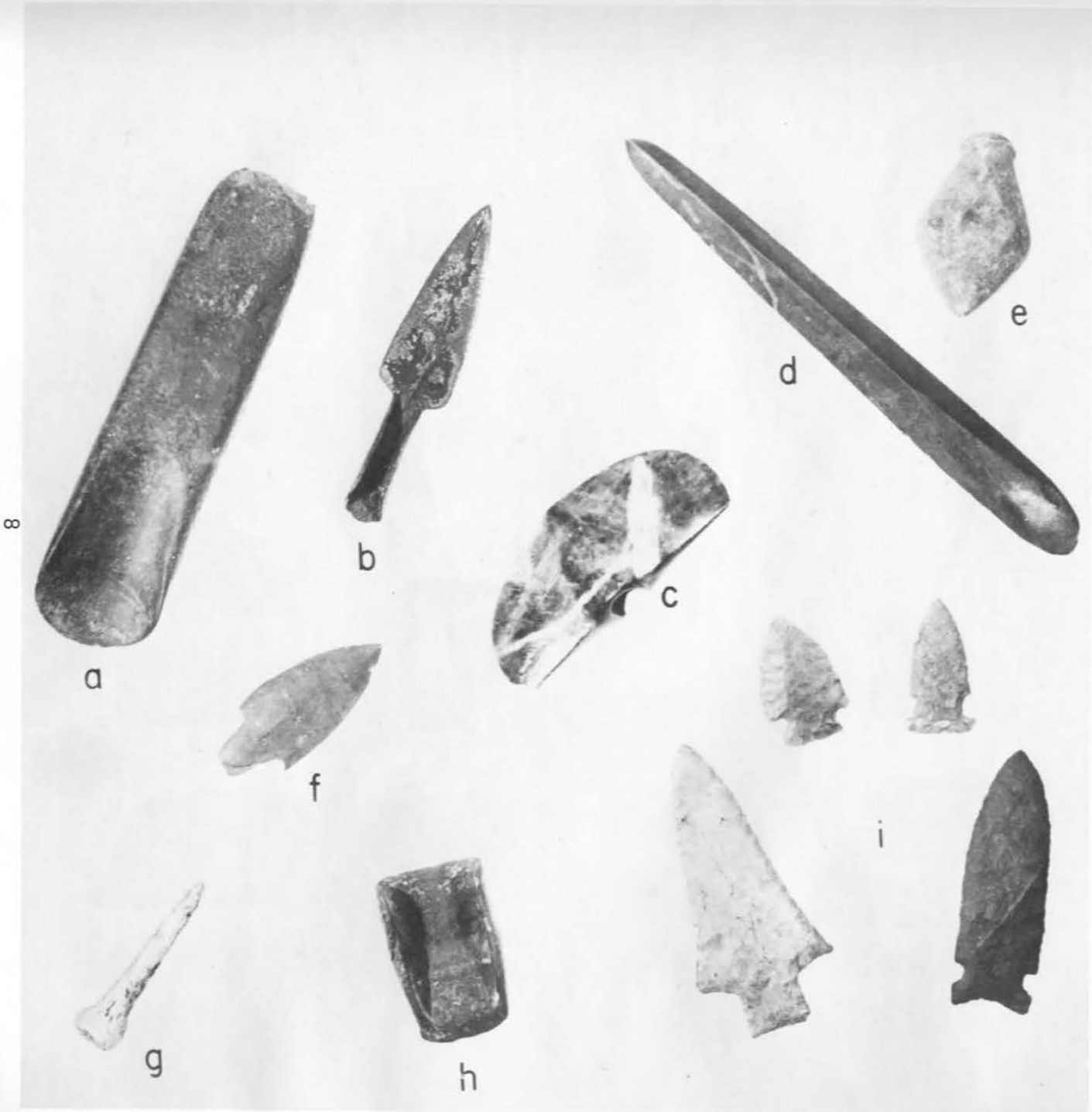

Plate 1. Laurentian culture artifacts.

Fig. a. Polished stone gouge. These specialized adzes are characteristic of Laurentian Archaic sites.

Fig. b. Open-socketed native copper dart head.

Fig. c. Polished slate spear-thrower weight. Such counter-weights were attached to the spear thrower to increase the velocity with which the spear could be propelled. The drilled hole necessary for attachment to the spear-thrower was drilled with a hollow reed used in a bow drill plus a water and sand abrasive.

Fig. d. Ground slate bayonet. Such objects were probably used as the tips of lances.

Fig. e. Stone plummet. Often regarded as sinkers or bola stones, these objects may actually represent specialized pendants.

Fig. f. Ground slate dart head.

Fig. g. Chipped stone drill.

Fig. h. Native copper adze with an open socket for hafting purposes.

Fig. i. Typical dart heads.

Plate 2. Point Peninsula culture artifacts

Fig. a. Fragments from the rims of typical pottery vessels.

Fig. b. Ground slate pendant.

Fig. c. The notched soapstone pottery decorator to the right was used to produce the designs in the plasticene to the left.

Fig. d. Antler flaker painted with red ochre that would have been used for fashioning stone implements.

Fig. e. Bone awl.

Fig. f. Stone darts or arrowheads.

Fig. g. Two styles of soapstone pipes: the one on the left is the earliest.

Fig. h. Knife made from Pennsylvania jasper.

Fig. i. Polished stone adze.

The Woodland Period
(1000 B.C. - Historic Period)

The Woodland period begins with the first appearance of pottery vessels in Ontario sites. No major cultural changes taken place other than the introduction of this single item - pottery. Pottery, which is durable and frequently abundant (one pottery vessel will break into many pieces), provides the archaeologist with a convenient means of separating Woodland sites which yield ceramics from Archaic and earlier sites where no ceramics are found. Considerable evidence now exists that the preceding Laurentian and Shield Archaic peoples adopted pottery and were thereby transformed, for the archaeologists' convenience, into Woodland peoples. The cultural developments that began with Palaeo-Indian through Archaic, however, are unbroken. Pottery vessels were made in the southeastern United States as early as 2000 B. C. By 1000 B.C. the knowledge of how to manufacture pottery had spread north into portions of Southern Ontario.

Far more is known about the prehistory of the Woodland period than the preceding Archaic and Palaeo-Indian periods. Not only does there appear to be an increse in population and, therefore, more sites, but the passage of time has had less effect upon the archaeological remains. In order to handle the much increased body of information, the Woodland period has been divided into an Initial Woodland period and a Terminal Woodland period. The Initial Woodland period includes those Archaic peoples who first adopted pottery between 700 B.C. and 1000 B.C. and their descendants up to approximately A.D. 1000. The Terminal Woodland period refers to prehistoric cultures that can be traced to historic native peoples such as the Cree and Huron. As archaeological research progresses the Terminal Woodland period will certainly be pushed further back in time and the artificial separating point of A.D. 1000 between the Initial and Terminal Woodland periods will have to be adjusted accordingly.

The Initial Woodland Period
(1000 B.C. - A. D. 1000)

Five major Initial Woodland cultures have been identified in Ontario: the Meadowood, Point Peninsula, Saugeen, and Princess Point cultures of Southern Ontario and adjacent Quebec and New York State and the Laurel culture of Northern Ontario and neighbouring provinces and states.

From their main homeland in Quebec and New York, Meadowood people appear to have occupied only the margins of Southern Ontario. Their distinctive pottery vessels are found throughout much of Southern Ontario but generally in association with the Point Peninsula and Saugeen cultures. What little is known of the Meadowood people comes from sites in Quebec and New York, particularly from accidentally discovered cemeteries. The burial ceremonialism of the late Archaic period is continued and elaborated upon with cremation of the dead becoming quite common. Graves are often richly provided with grave goods manufactured from stone and copper and particularly large numbers of carefully flaked triangular flint blades that appear to have been manufactured with the single purpose of placing them with the dead. Natural minerals such as hematite, limonite and graphite, presumably used for painting the body and other objects, are a common occurrence in the graves. Meadowood culture flourished between 1000 B.C. and 500 B.C. and then eventually changed or was absorbed into Point Peninsula culture.

Point Peninsula culture occupied Southern Ontario from Toronto eastward into Quebec and New York for a period of roughly 1,000 years, from 700 B.C. to A.D. 700. A number of village sites as well as cemeteries of the Point Peninsula people have been investigated by archaeologists. Most are small camp sites but a few cover many acres and must have been used seasonally for many years by successive generations of Point Peninsula peoples, as well as by earlier and later populations. Such sites usually have some rich seasonal food resource, such as spring sturgeon runs, that attracted people to the same spot for many thousands of years.

In their seasonal cycle of activities the Point Peninsula people continued to occupy the same sites as their Archaic ancestors. Internal change, of course, did occur in the manner in which tools were made, certain practices were discontinued, and some new ideas were adopted. On the whole, however, there are no major changes and one has the impression of small groups of hunters following the interminable rounds necessary for survival and not being overly interested in events outside their immediate territory. At about the time of the birth of Christ, however, outside ideas about burial practices begin to penetrate Point Peninsula culture. These ideas, associated with religion, came from the Hopewell culture of the Ohio area via New York State. The most dramatic feature adopted from the south was the construction of earth burial mounds. During this period stone implements

Fig. a. Fragments from

artifacts.

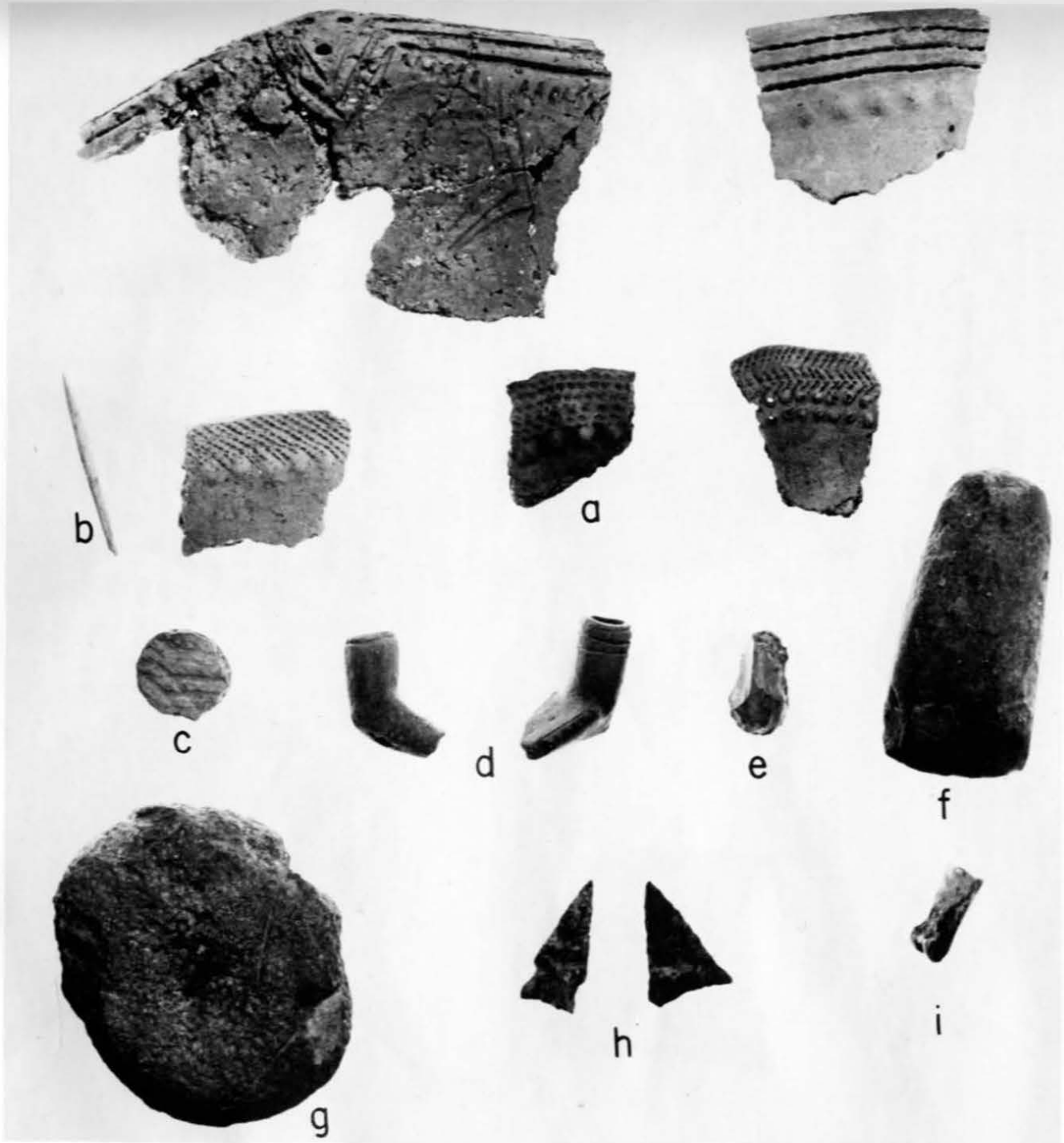

Plate 3. Pickering culture artifacts.

Fig. a. Fragments from the rims of typical pottery vessels.

Fig. b. Bone awl.

Fig. c. Pottery gaming disc.

Fig. d. Typical small, simple pottery pipes.

Fig. e. Scraper.

Fig. f. Polished stone adze used in woodworking.

Fig. g. Anvil stone which also functioned as a hammerstone.

Fig. h. Arrowheads.

Fig. i. Deer toe bone, modified in a fashion typical of this culture but for an unknown purpose.

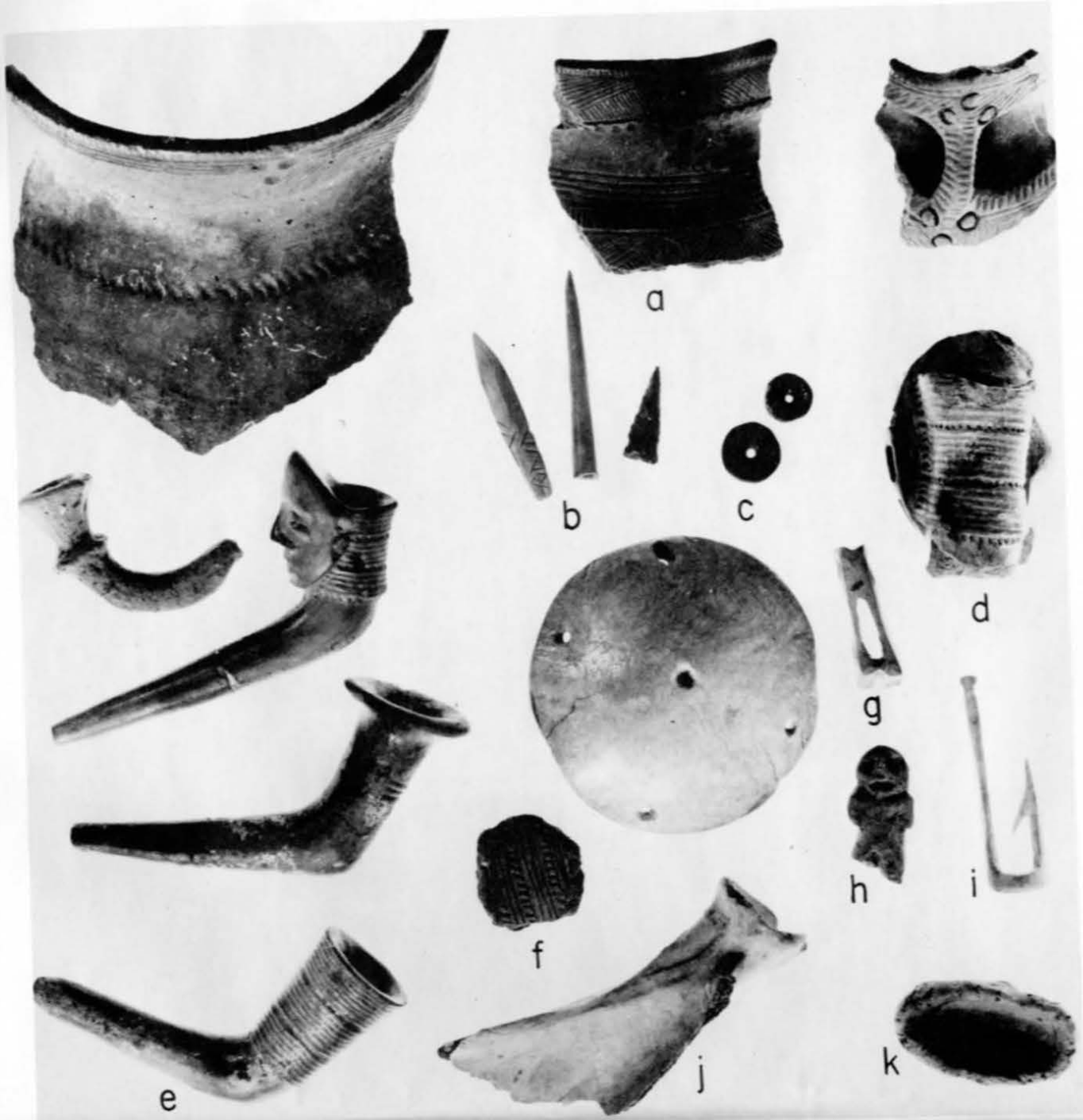

Plate 4. St. Lawrence Iroquois culture artifacts.

Fig. a. Fragments from the rims of typical pottery vessels.

Fig. b. Bone and stone arrowheads.

Fig. c. Soapstone beads.

Fig. d. Distinctive pottery pipe for whose symbolic meaning is unknown.

Fig. e. Typical pottery smoking pipes. The uppermost specimen was probably made by a young boy who had not yet mastered the art of pipe manufacture.

Fig. f. Gaming disc made from a decorated fragment of pottery.

Fig. g. To the left, a gorget or pendant made from a human skull cap - such items were very likely war trophies.

Fig. h. This rare specimen is a human figurine produced in pottery.

Fig. i. Bone fish-hook.

Fig. j. Deer shoulder blade that has been modified in a clever fashion into a smoking pipe.

Fig. k. Juvenile pottery

Fig. k. Juvenile pottery

in the graves are frequently made from flint originating in Ohio, Pennsylvania, and eastern New York. The earlier Archaic period trading patterns - marine shells from both the Gulf of Mexico and the Atlantic coast to the east and native copper from Lake Superior - are maintained. Items made from Ohio pipestone and Ontario silver (from Cobalt) appear in the graves. Ohio Valley items such as copper ear spools, stone platform pipes, worked wolf and bear skull parts (probably portions of headdresses) and copper panpipes also appear for the first time. Certainly the most impressive expression of the new burial practices is to be seen in the 194-foot-long "Serpent Mound" at Rice Lake southeast of Peterborough. Southern Ontario sites directly involved in mound building and Hopewellian ceremonialism, however, are relatively few in number and are restricted to the St. Lawrence Valley and southern edges of the province.

Saugeen culture shared Southern Ontario with Point Peninsula culture but occupied the region between Lake Huron and Lake Erie to the west of Toronto. The culture of these people was, in most respects, quite similar to that of the Point Peninsula people. Differences between the two cultures appear to be the result of their slightly different Archaic ancestry as well as their geographic locations.

Most Saugeen culture village and camp sites discovered to date are found along rapids or at the mouths of rivers and creeks emptying into Lake Huron and Lake Erie. Discarded food bones from these sites are predominantly of fish that spawn in rivers from spring to early summer. Such sites must represent one segment of the seasonal rounds of the Saugeen people when individual families gathered at a favourite fishing location during the spring and formed a larger community. Perhaps marriages were contracted and various other ceremonies, involving the population as a whole, were carried out at this time. The villages may have been occupied throughout the summer and into the fall. Certainly for the first time substantial rectangular house structures with hearths and pits can be recognized from the moulds left in the soil by the house wall and interior posts. Apparently with the coming of winter these villages were abandoned and the individual families travelled to their winter hunting territories. Such a move was necessary for, in the absence of stored foods such as corn, large numbers of people could not find enough food in the area during the winter months and they were forced to scatter across the country in small family groups.

Although the development of Saugeen culture out of an earlier Archaic population around 700 B.C. is well documented, what eventually happened to these people is a puzzle. They may have, in a manner yet unknown, developed into the following Princess Point culture.

Princess Point culture occupied the north shore of Lake Erie and the western end of Lake Ontario between A.D. 500 and A.D. 1000. Relatively little is known about Princess Point culture; the sites are small and often located in the river valley flats where they became buried under the sediments deposited during spring floods. One extremely important fact about this culture, however, is the evidence that its people were the first to adopt corn agriculture in Ontario. All of the cultivated plants used by the native peoples of Canada had been domesticated far to the south and only gradually penetrated into the North. Corn was domesticated in northern Mexico about 5,000 years ago but did not enter Ontario, through the Windsor and Niagara areas, until A.D. 500. It took time for the various plants to adapt to the shorter growing season and more rigorous climate as they spread northward. Also, the various domesticated plants did not move as a group. Some form of tobacco had probably entered eastern Canada as long ago as 1000 years before corn. Beans, on the other hand, did not appear until nearly 900 years after the adoption of corn.

Archaeological research in Ontario is only now beginning to concentrate on what happened when mobile, hunting peoples accepted corn and were transformed into sedentary farmers.

While the preceding events were taking place in Southern Ontario the Laurel culture inhabited Northern Ontario as well as western Quebec, central Manitoba, Saskatchewan, and northern Minnesota from approximately 700 B.C. to A.D. 1000.

This widespread culture in the northern forests of the Canadian Shield represents the preceding Shield Archaic people with the addition of pottery. Laurel pottery is related to the pottery of the Point Peninsula and Saugeen cultures of Southern Ontario and it is probably from this region that the northerners obtained their knowledge of ceramics.

Stone scraping tools for working hides, wood and bone dominate the Laurel culture tool kit although arrowheads, lances, knives, hammerstones and net-sinkers are common. Bone tools consist of awls, harpoons, beaver incisor knives, snowshoe netting needles, and pottery markers. The copper items are mainly beads, bangles, awls, parts of composite fishhooks, and chisels. Nothing, of course, remains of the wooden, bark,

and leather goods that probably represented the most common and elaborate items in the material culture of these people.

It is now apparent that these hunters of the harsh northern forests did not live in complete isolation from the outside world. Meadowood culture and Saugeen culture materials have been found in Laurel sites, and vice versa. In the west, between Lake Superior and the Manitoba border, particularly along the Rainy River, numerous burial mounds were constructed by the Laurel people. These mounds are the largest prehistoric structures in all of Ontario and can be over 100 feet in diameter and 24 feet high. There is no doubt that the mound ceremonialism of the Laurel people was derived from the Hopewell culture of southern Minnesota. Hopewell burial ceremonialism, however, appears to have expressed itself in only a very peripheral way as far as Laurel culture was concerned. Indeed, these mounds are only found in a very restricted portion of Northern Ontario and are totally absent from adjacent Quebec and Manitoba.

This brief description of Laurel culture ends our consideration of the Initial Woodland period. As will become apparent in the examination of the Terminal Woodland period, however, the subsequent cultures are in all likelihood the direct products of the Initial Woodland period cultures.

The Terminal Woodland Period
(A.D. 1000 - Historic Period)

Three major cultural groups will be considered in this section: from Southern Ontario, the Ontario Iroquois who gave rise to the historic Huron, Petun, Neutral and Erie; the St. Lawrence Iroquois, a distinctive population encountered by Jacques Cartier in A.D. 1535 but who had disappeared by the time Sanuel de Champlain returned to the same area in A.D. 1603; and, from Northern Ontario, the prehistoric groups that gave rise to the historic Algonkian-speaking people - the Cree, Ojibwa and Algonkin.

The Ontario Iroquois

There is no question that the information available for the Ontario Iroquois exceeds that of any other archaeological group in Ontario. This does not mean that there are not gaps in our knowledge or areas of controversy - quite the contrary. It does mean, however, that of all the archaeologically recognized populations of the province, we can speak with the greatest authority on the Ontario Iroquois and particularly the Huron.

The archaeological information indicates that for sometime prior to A.D. 900 and up to A.D. 1300, Southern Ontario was occupied by two related populations practising corn agriculture, supplemented by hunting and fishing. To the east was the Pickering culture that had developed out of the preceding Point Peninsula culture. To the west was the Glen Meyer culture, a direct descendant of Princess Point culture. The presence of warfare is indicated by the location of palisaded vallages on easily defended hillocks. The presence of longhouses indicates that a number of different families lived in each dwelling in contrast to earlier small one-family houses. A burial pattern is in evidence that leads to the large pits containing the remains of many people, typical of a later period. In short, a whole series of cultural practices in both Glen Meyer and Pickering cultures foreshadowed historic Iroquoian culture.

At approximately A.D. 1300 a portion of the Pickering population expanded to the southwest and conquered the Glen Meyer people. This major event resulted in a relatively uniform culture in Southern Ontario that also overlapped into southwestern New York State. It was from this common base that the historic Huron, Petun, Neutral and Erie gradually developed.

Significant events that can be recognized in the archaeological record are as follows: sunflower seeds, used mainly for their oil, appear in the garbage dumps by A.D. 1300; by A.D. 1400 beans and squash become a common occurrence; evidence of cannibalism appears at A.D. 1300 and reaches a peak shortly after A.D. 1500; tobacco smoking in pipes becomes a common practice by A.D. 1350; and village sites become larger and more abundant after A.D. 1400.

As early as A.D. 1400 the regional developments that terminated in the historic Ontario Iroquois can be recognized. The Neutral eventually occupied the region around the west end of Lake Ontario while the Erie were situated near the south-east shore of Lake Erie in New York state. A large number of villages gradually moved up the rivers draining into the north shore of Lake Ontario and joined a related population near the south end of Georgian Bay. They became the historic Huron and Petun.

The first close contact of the Ontario Iroquois with Europeans came in A.D. 1615 when the Recollets and then later (A.D. 1625) the Jesuits began missionary work among the Huron and, to a lesser extent, the Petun. Also, Samuel de Champlain became involved in the wars of the various Algonkian and Iroquoian-speaking peoples. A close relation-ship between the French and the Huron-Petun was maintained until A.D. 1649. The involvement of the Ontario Iroquois

in the fur trade and the political intrigues of European powers, however, was to prove disastrous. The culture of these people terminates with their destruction by the Iroquois League of Five Nations (Mohawk, Onondaga, Oneida, Seneca, and Cayuga) between A.D. 1649 and 1654.

The St. Lawrence Iroquois

In A.D. 1535 Jacques Cartier visited the village of Hochelaga on the present site of the city of Montreal. In A.D. 1603 Samuel de Champlain found that the village of Hochelaga and related villages along the St. Lawrence River were abandoned and that a Huron-Algonkian alliance was contesting possession of the territory with the Iroquois League of Five Nations. Archaeological evidence now suggests that sometime between A.D. 1535 and 1603 the Hurons participated in the destruction of the St. Lawrence Iroquois. Huron sites of this period along the rivers draining into Lake Ontario frequently contain large quantities of the typical St. Lawrence Iroquois pottery vessels but not the equally typical pipes or bone tools. It is known from the historic records that in their warfare Iroquoian peoples frequently adopted the conquered women and children but killed the men. It is also known that women made the pots and men made the pipes. Thus the St. Lawrence Iroquois pottery on Huron sites was very likely made by captive St. Lawrence Iroquois women who had been adopted into Huron society.

St. Lawrence Iroquois sites are not only recorded in Quebec; as well, numerous villages have been found in eastern Ontario and adjacent New York state near the St. Lawrence River. From the evidence it can be tentatively suggested that out of a regional expression of Point Peninsula culture the St. Lawrence Iroquois developed in the upper St. Lawrence River valley.

The St. Lawrence Iroquois lived in large, stoutly defended villages and were farmers who grew corn, beans, squash, sunflowers and tobacco. Some of the villages contained as many as forty longhouses which could have sheltered close to 2,000 people.

The Algonkians

It would be very convenient if we could refer to the northern Algonkian-speakers who occupied Ontario as Algonkins,

Ojibwa and Cree. These names, however, refer to groups of small, independent bands of hunters who were loosely related through marriage and clan affiliation and, more generally, through language and way of life. Tribal names equivalent to those used in describing the Iroquoian-speaking people of Southern Ontario cannot be applied to the Algonkian-speakers of Northern Ontario. Despite this difficulty there is sufficient archaeological evidence to propose three major areas of Algonkian development in Northern Ontario.

The Eastern Area

The Eastern area of Algonkian cultural development extends northward to Lake Abitibi, westward to the north-east shore of Lake Superior, and on the east is adjacent to the Huron, Petun, and the St. Lawrence Iroquois.

Pottery and pipe styles in this area are similar or identical to those of the Huron and Petun. Indeed, portions of the eastern Algonkians appear to have shared the same ceramic tradition with their Iroquoian neighbours from as early as A.D. 800. In addition to the Iroquoian style pottery, however, these people also made pottery in the same styles as related people in northern Michigan and Wisconsin. The mixture of pottery styles appears to be characteristic of the northern Algonkians. Within the small bands there would have been a limited number of marriageable women. As a result men would frequently obtain their wives from other areas. Imagine, for example, that there were three brothers living on a site near Manitoulin Island who required wives at the same time but that there were no marriageable women in their small, local community. If one man obtained a wife from Lake Nipissing, the second a wife from northern Wisconsin, and the remaining brother a spouse from the west end of Lake Superior, their three Algonkian-speaking wives would eventually be sitting together at the same site making completely different kinds of pottery vessels.

Despite the similarities between eastern Algonkian and Huron-Petun pottery, the stone and bone tools of these two peoples are distinctively different as were a number of other cultural traits.

Certain of the eastern Algonkians adopted corn agriculture from their Iroquoian-speaking neighbours but

only in a half-hearted fashion. The crop was planted in the spring, abandoned during the summer and the remnant, which survived the ravages of raccoons, birds and insects, was harvested in the fall.

The Western Area

The Western area of Algonkian cultural development involved a region running from Lake Superior to the height of land separating the Hudson Bay drainage from the Great Lakes drainage, to southern Manitoba and the northern edge of Minnesota.

The dominant pottery style in this region developed out of the preceding Laurel pottery of the Initial Woodland period. The western area Algonkians also retained the Laurel cultural practice of constructing earth burial mounds. As was the case with the Laurel mounds, these later mounds are restricted to a narrow band along the Ontario and Minnesota border and extend eastward to the western end of Lake Superior and westward into Manitoba.

The stone tools of the western Algonkians are very similar to those of the eastern Algonkians. The former group, however, had more ready access to the native copper deposits of Lake Superior and, as a result, copper awls, beads, bangles and knives are relatively common. Stone smoking pipes appear as early as A.D. 950 and are shaped in a typical western style that has no relation to the pipe complex of the Iroquoian peoples to the east. In the rare instances where bone survives the acid northern soils, tools such as harpoons, beaver incisor knives, and awls are common and bone refuse consists mainly of fish and big game such as caribou and moose.

As was the case with the eastern Algonkians, a number of western Algonkian sites containing European (French and English) trade goods have been excavated. The historic period is thus ushered in.

The Northern Area

The Northern area of Algonkian cultural development was centered basically in north-central Saskatchewan and Manitoba, but also extended into adjacent Northern Ontario. Very little is yet known of the northern Algonkians of Ontario. What little information is available suggests that

these people are fundamentally the same as the western Algonkians except for their development of a distinctive kind of pottery.

If one ignored the pottery and considered only the stone and bone tools, the Eastern, Western and Northern Algonkian areas would be regarded as part of a large, general archaeological complex. This impression is supported by the occurrence in the same area of rock paintings and boulder constructions, both of which probably served some religious function. The different pottery traditions have, however, been useful in dividing the enormous area of Northern Ontario into the three geographic regions outlined above. The cultural and linguistic similarities seen among the present Algonkians of Northern Ontario are strongly reflected in their prehistory.

With the coming of Europeans and written records, the story of the native peoples of Ontario passes from prehistory to history. It should be pointed out, however, that more than ninety-seven percent of the time that man has occupied this province belongs to the dim and still largely unwritten pages of prehistory.

N O T E S

GORDON D. WATSON

Born February, 1917, Rouleau, Saskatchewan. University of Saskatchewan, 1940, Hons. Physics; University of Western Ontario, 1940-42, Physics Instructor and radar research. Artillery Proof Establishment 1942-43 and Deputy Superintendent, Internal Ballistics Lab. 1943-45. Scientific Observer on Army-RCAF trans-Arctic exercise 'Musk-Ox' winter 1945-46. Superintendent Ballistics Wing, Defence Research Establishment 1949-54. Director, Weapons Research, DRB, 1954-59. Scientific Adviser to Chief of the General Staff, 1959-61. Defence Research Attaché, Washington, Chief of Personnel, DRB, 1965-69. Chief of Plans, DRB, 1969-75.

On retirement attended Trent University to extend his basic knowledge of Anthropology and Archaeology and graduated M.A. Anthropology 1982 and has recently been appointed Research Associate in Anthropology at Trent.

Field work in 1975-78, Archaeological Survey of the Rideau Lakes; excavation of the Wyght Site, a multi-component Archaic and Initial Woodland site on the Lower Rideau; 1979-81, an analysis and report on the Wyght Site with continuing investigations in the Lower Rideau through 1981-82.

Associations: Fellow, Canadian Aeronautics and Space Institute, (President,Ottawa Chapter 1960-61); Senior Member, Institute of Electrical and Electronic Engineers; Canadian Archaeological Association; Ontario Archaeological Society, (President, Ottawa Chapter 1973-76); Manitoba and Saskatchewan Archaeological Societies; Society for American Archaeology; Archaeological Institute of America, (President, Ottawa Chapter 1981-); Ohio Archaeological Society.

PREHISTORIC PEOPLES OF THE RIDEAU WATERWAY

Gordon D. Watson

Introduction

The prehistory of the Rideau Lakes is known from surface collections made by several early settlers of the area and from archaeological surveys and excavations undertaken recently. Some of the early collections, of which those of W. L. McLaren and C. C. Inderwick are the largest, and some recently excavated materials, are in the Perth Museum, where they make up a major part of the displays of Indian artifacts.

The earliest human occupants of the region arrived soon after the last great ice age about 8000 B.C. and there is archaeological evidence of, more or less, continuous occupation since that time. The nearly ten thousand years between 8000 B.C. and the 15th Century is known as the Prehistoric Period, because there were no written languages in northern North America prior to the arrival of Europeans. Our knowledge of human existance over that long time is derived, therefore, from archaeological investigation and, to a lesser extent, from orally transmitted legends about earlier times.

The prehistory of Ontario has been divided into four major time periods for convenience (Wright 1972). They are: the Palaeo-Indian Period (9000 B.C. to 5000 B.C.), the Archaic Period (5000 B.C. to 1000 B.C.), the Initial Woodland Period (1000 B.C. to A.D. 1000) and the Terminal Woodland Period (A.D. 1000 to the Historic Period). In the Terminal Woodland Period, archaeological evidence can usually be related to either the Algonkian or the Iroquoian speaking peoples of the area but the language affiliations of earlier peoples is much more difficult to establish.

An outline of the prehistory of Ontario has been presented by Dr. Wright and information about the St. Lawrence Iroquois is to be given by Dr. Pendergast. This paper will deal more specifically with the prehistory of the peoples of the Rideau Lakes area. My presentation will be more easily understood if it is stated at the outset that one of the primary conclusions of archaeological research is that,

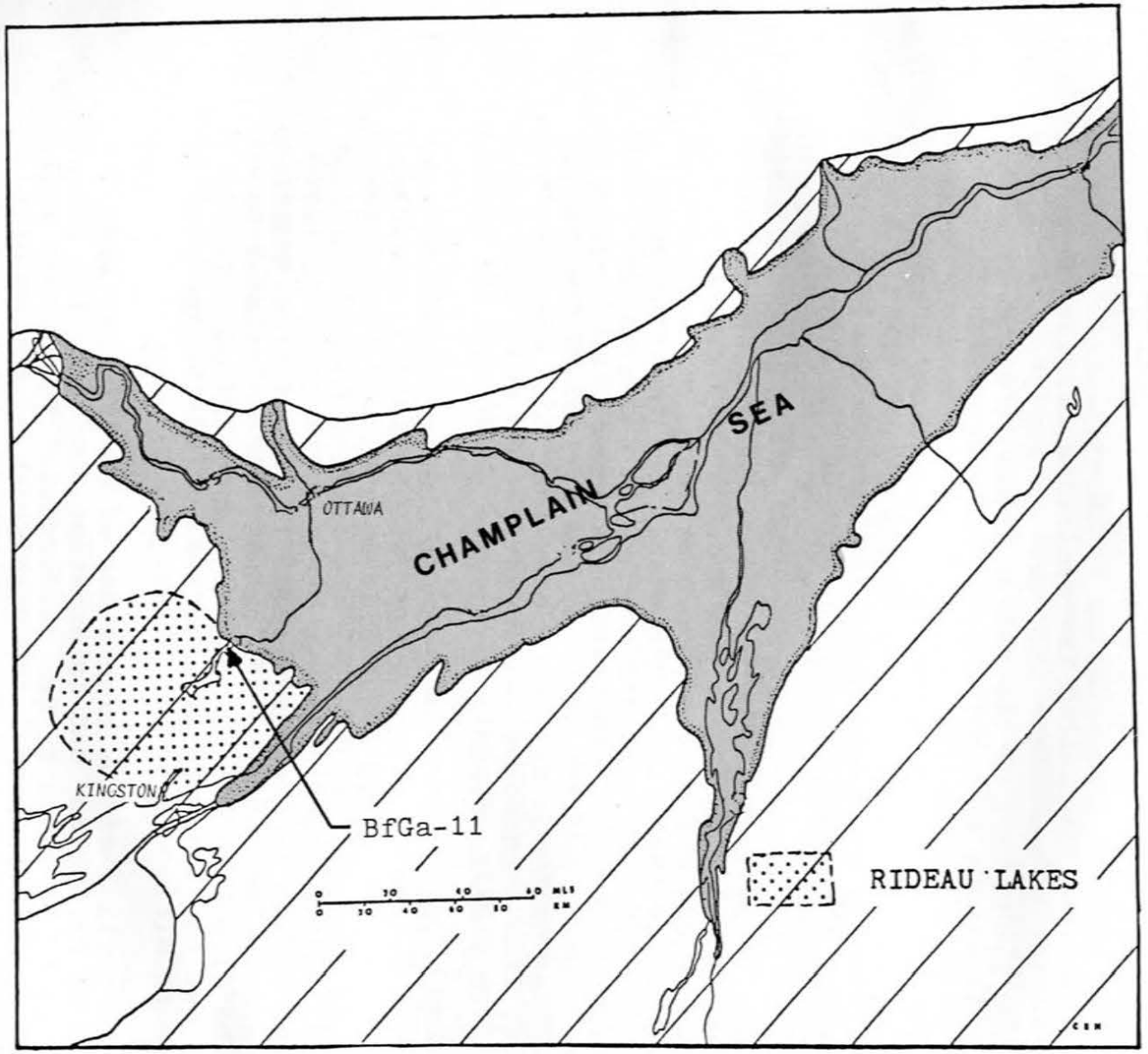

Fig. 1 - Wyght site location related to the Champlain Sea (Harington 1976) and Rideau Lakes area of Ontario.

although there is a long prehistory, the aboriginal people of the Rideau Lakes remained as hunter-gatherers right up to the arrival of European settlers. There is no evidence that they adopted either the village lifestyle or the corn agriculture of their nearby Iroquoin neighbours of the St. Lawrence Valley. Although there are some Iroquoin pottery sherds, which relate to the latest phase of the prehistory of the area, they are believed to be evidence left by Iroquoian hunting parties or to be from pottery made by Iroquoian women who married Algonkian speaking hunter-gatherers.

The Earliest Peoples of the Rideau Lakes

The earliest peoples of the New World south of the glaciated area, whose sites have been radiocarbon dated, are known as the Palaeo-Indians. It is generally accepted that they migrated southward from Alaska and the Yukon, where there is early man evidence dating to at least 27,000, and possibly, to 60,000 years ago. After the melting of glacial ice cleared a corridor east of the Rocky Mountains, these hunter-gatherers spread rapidly throughout much of North and South America in pursuit of the large mammals, such as mammoth, mastodon and bison, which were plentiful in the early post-glacial era.

As the glacial ice retreated from eastern Ontario, a heavy cover of ice over the northern parts of Quebec and Ontario depressed eastern Ontario to below the sea level of the time, which had been raised by melting of the glacial ice. This resulted in the whole of Ontario east of Pembroke and the Rideau Lakes being flooded by a salt water estuary known as the Champlain Sea (Figure 1.).

At the time of the Champlain Sea, there were already Palaeo-Indians hunters in the area now known as southwestern southern Ontario who had been able to migrate easily from Michigan through the area around Windsor/Detroit, since the present Detroit River did not exist. At that time, the water from the Upper Great Lakes drained through the Ottawa River and into the Champlain Sea at about Pembroke (Prest 1970). As the climate became milder and the vegetation recovered, these early Palaeo peoples migrated or hunted eastward to the shores of the Champlain Sea, in the vicinity of present day Perth.

Although there is, so far, little archaeological evidence to confirm the presence of Palaeo age people in the

Rideau Lakes area, there are two fluted projectile points of that age in the Royal Ontario Museum, one of which is reported to have been recovered from just northeast of the Lower Rideau Lake. This would correspond with the Champlain Sea shoreline at the time this type of point was made and it is evidence that Palaeo-Indians hunted eastward to what was then the eastern seaboard. The other fluted point has been side-notched, probably by Archaic people, who reworked it to their concept of a properly made projectile point. Replicas of these two points (Figure 2) are in the Perth Museum Archaeological display. We have not yet discovered fully documented evidence of the late Palaeo or very early Archaic in the Rideau Lakes area. However, there is a Plano projectile point of that age from the Inderwick Collection in the Perth Museum and we have two radiocarbon dates of about 6000 B.C. from the Wyght site, one of which is associated with lithic flakes of a white chert, similar to that used by Palaeo peoples of the area around Windsor.

Archaic Peoples of the Rideau Lakes

After the Champlain Sea had receded from the area, the vegetation recovered and the distribution of rivers and lakes took approximately their present configuration by about 5000 B.C., at the opening of the Archaic Period. This configuration of watercourses mades the Rideau Lakes, particularly the Lower Rideau Lake, an important area for the study of prehistory. The Lower Rideau Lake (Figure 3) is at the cross-roads of the waterways in all directions. As on the present Rideau Canal, prehistoric man could travel south to Lake Ontario and the St. Lawrence Valley, or north on the Rideau River to the Ottawa and Gatineau Rivers and their tributaries or, on the Ottawa, to the St. Lawrence and Hudson Rivers. He could also travel west on the Tay River to Christie and Bobs Lakes or, by a short portage from the Tay into Bennett Lake and the Mississippi River (of Ontario), he could get to Dalhousie, Mazinaw, and the many lakes of Algonquin Park. He could also follow the Mississippi down to the Ottawa River, with its many connections to the north and east. Because of this natural setting, at the cross-roads of waterways, the Lower Rideau Lake had many prehistoric visitors and many of the shoreline locations with level terraces became the camping places for these early travellers.

The Archaic Period (5000 B.C. to 1000 B.C.) is well represented by surface collected artifacts of the Perth Museum and the Royal Ontario Museum. We also have several

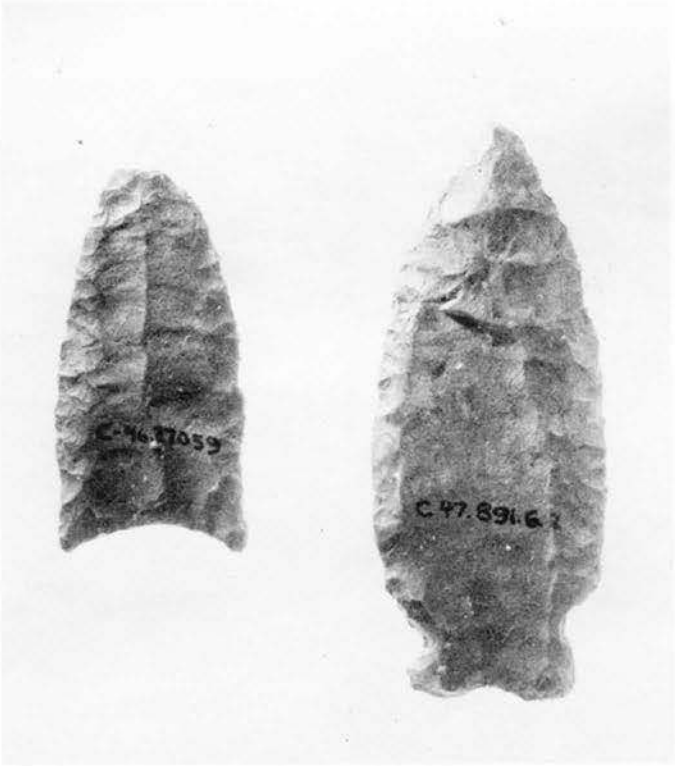

Fig. 2 - Fluted Points of the Rideau Lakes Area.
Scale - Full.

Grade student visits to the Wyght site where radiocarbon dating indicated occupation between 6,050 B.C.and 1,335 A.D. did much to promote an interest in both Archaeology and History. Essay contests associated with the visits strengthened the relationship.

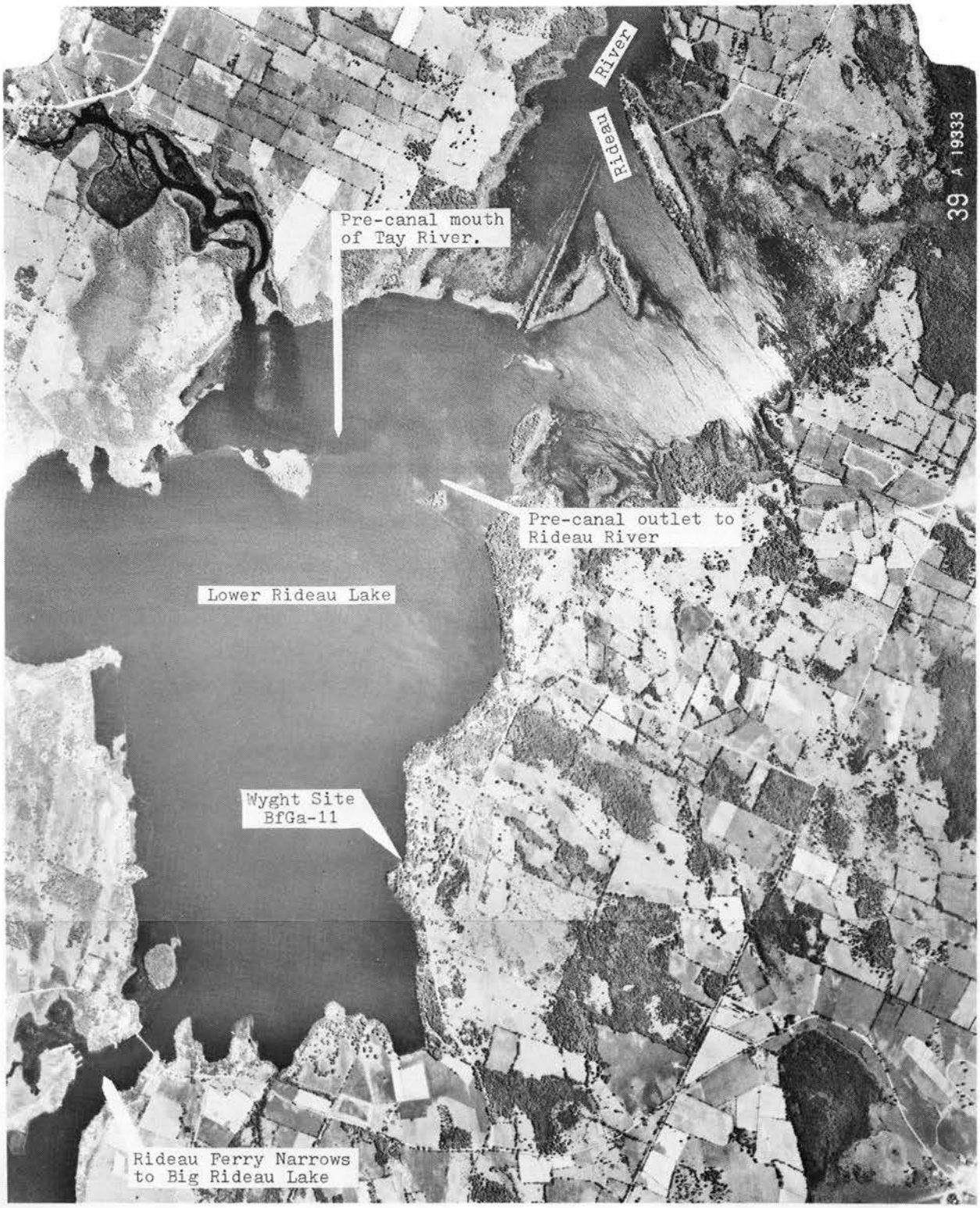

Fig. 3 - Air photograph of the Lower Rideau Lake, Ontario, indicating the location of the Wyght site, BfGa-11.

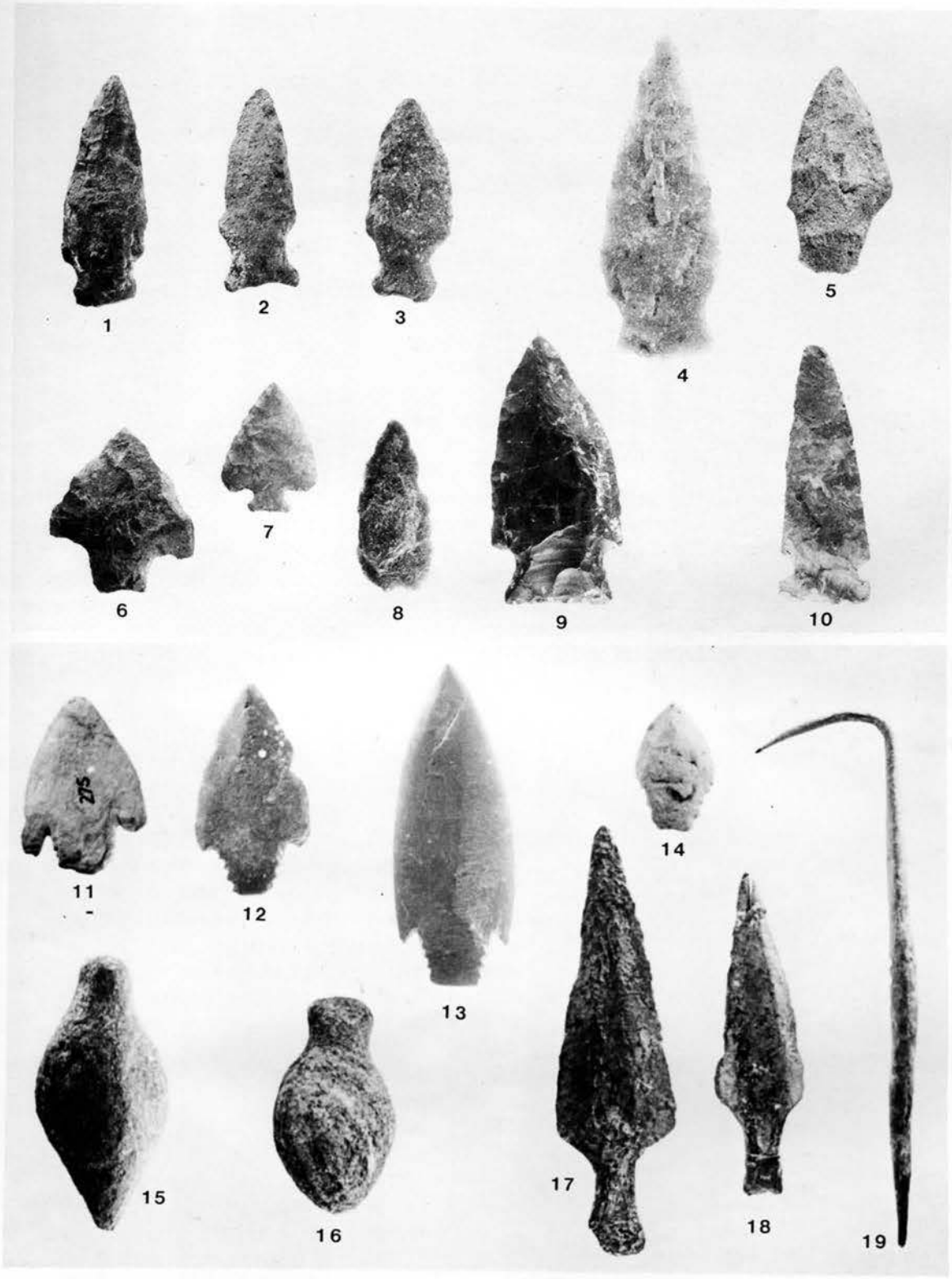

Fig. 4 - Archaic Period Flaked (1-10) and Ground Slate (11-14) Projectile Points, Groundstone Plummets (15-16), Copper Spear Heads (17-18) and a Copper Gaff (19). Scale - Approx. 3/4.

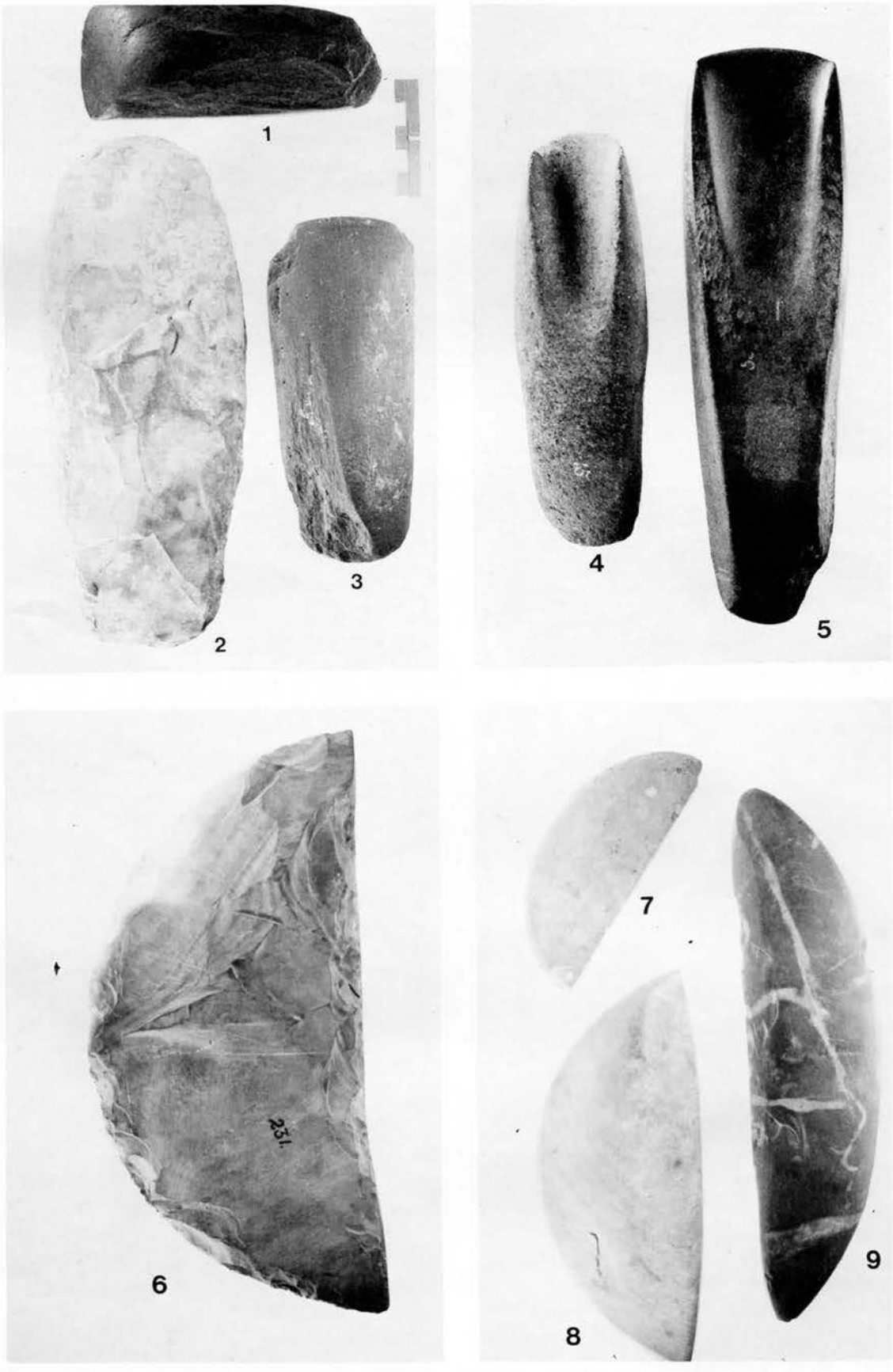

Fig. 5 - Groundstone Axes (1-2), an Adze (3), Gouges (4-5) and Semi-lunar Knives (6-9), typical of those made in the Archaic Period.
Scale - Approx. 1/3.

Archaic Period radiocarbon dates from the excavated Wyght site. However, the Archaic evidence of the Wyght site is limited and no other site of that period has yet been excavated in the Rideau waterway. Nevertheless, we can infer something of the Archaic lifestyles, travel modes and populations from the examination of the functions and distributions of stone tools and by comparing them with Archaic tools of other areas of Ontario, New York and Pennsylvania, where archaeological research is more complete.

Archaic Period stone tools (Figure 4) and the stone flakes and cores, discarded during tool manufacture, have been found mainly on the shorelines of the lakes and rivers of the area, although a few individual tools have been plowed up on inland sites. We infer, therefore, that Archaic peoples travelled on and camped near the lakes and rivers, which undoubtedly provided fish and waterfowl. The presence of arrow heads, spearheads, skinning tools, scrapers, awls and drills lead to the conclusion that the Archaic lifestyle also depended on the hunting of mammals such as moose, deer, beaver, otter and other smaller animals and birds, including squirrels, chipmunks, groundhogs, passenger pigeons, geese, ducks, partridge, etc., for food and skin clothing. This lifestyle is also likely to have included the collection of plants, such as lily and cattail roots, wild rice, wild onions and the many berries and fruits, including blueberries, raspberries, wild cherries and grapes. Some plants and herbs were probably also used as medicines.

In addition to the hunting tools, we also have many examples of Archaic groundstone axes, adzes and gouges of the kind used for woodworking and of semilunar knives used for food preparation (Figure 5). There is also an image inscribed on an Archaic age ground slate tool fragment (Figure 6) of a relatively large six-passenger canoe of a shape which suggests the dug-out canoes, which were still in use after the arrival of Europeans in the Rideau Lakes area.

Archaeological evidence of Archaic peoples also provides us with some knowledge of their beliefs, rituals and attitudes, even after some 2000 to 7000 years have passed. For example, the presence of objects of personal adornment, such as, gorgets and beads of stone, copper or shell, indicate a development of personal vanity, probably relating to some recognition of status in the family or social group to which the individual belonged. Furthermore, the practice of burying some of these objects in graves suggests a belief in a life after death in which the deceased person could use some of the tools or ornaments used during his, or her lifetime.

The Transition between the Archaic and Woodland Periods in the Rideau Lakes

The Woodland Period is defined as beginning when pottery making was added to the stone industries of the Archaic peoples at about 1000 B.C. However, toward the end of the Archaic, just before the introduction of ceramic pottery, soapstone pots, similar to those still made by the Inuit of the Arctic, were made. In this period, a particular stone tool industry appears, which differs from that of the preceding Laurentian Archaic peoples and from the subsequent early Woodland Meadowood peoples. These people, who made a unique set of broad corner-removed stemmed broadpoints are referred to as the Broadpoint Culture or the Susquehanna Tradition; a name that is derived from the fact that the culture was first defined at sites in the Susquehanna River Valley of Pensylvania (Witthoft 1953).

The Broadpoint cultural phase is of considerable interest to the study of the prehistory of the Rideau Lakes (Watson 1981). The stone tools of the phase were made of quartzites, slates and rhyolites as opposed to the more customary flints and cherts and these unique tools are easily recognized by the broad corner-removed stemmed broadpoints (Figure 7: 1-21, 23-27), by crudely flaked large bifacial blades and choppers (Figure 8: 1-7) and by a unique stemmed blunt (Figure 8: 8, 9, 13). The stemmed blunt, which is a globular stone with a stem to attach it to a javelin, is believed to have been used as a stunning weapon for hunting of small animals or birds.

We have recently identified several sites on the Rideau Lakes where Broadpoint tools exist. We also have one radiocarbon date from the Inderwick site of 1350 B.C. +/- 195 (Watson 1981), a date that is consistent with similar, but slightly earlier, dates in New York State (Turnbaugh 1975). This is of special interest because, although much of Ontario prehistory is believed to be characterized by gradual in situ cultural evolution of peoples in particular areas, the Broadpoint peoples apparently migrated (Turnbaugh 1975) from Florida up the east coast and up the eastward-flowing rivers to the height of land in New York and Pennsylvania in pursuit of the migrating fish like salmon, alewife and eel, which provide a rich supply of food as they run up the rivers. Since the fish run also takes place in more northerly rivers, it would have been natural for the people who reached the height of land in New York and Pennsylvania to then pursue these fishes during the runs in the rivers flowing into the St. Lawrence and Lake Ontario. This migration of peoples into

Fig. 6 - Archaic Period Ground Slate Knife Fragment with an inscribed image of a Six Passenger Canoe.
Scale - x 2.5.

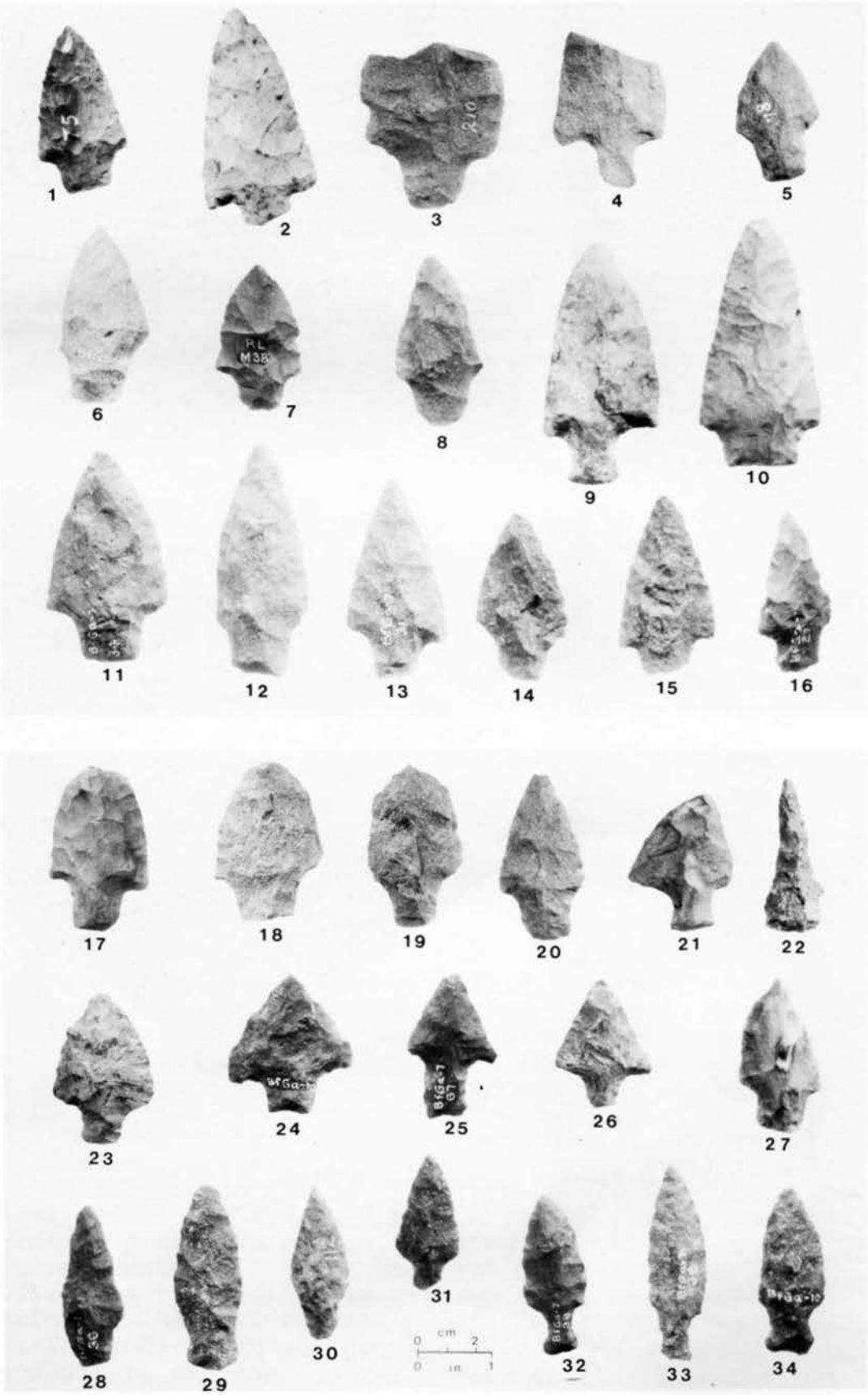

Fig. 7 - Lake Archaic Period Broadpoints, 1-21 and 23-27: and some Narrower Projectile Points typical of those of the end of the Broadpoint Phase, 28-34. Most are of Red Quartzite.

Fig. 8 - Late Archaic Broadpoint Phase Red Quartzite Bifacial Blanks or Choppers, 1-7, 10-12, and Stemmed Blunts, 8, 9 and 13.

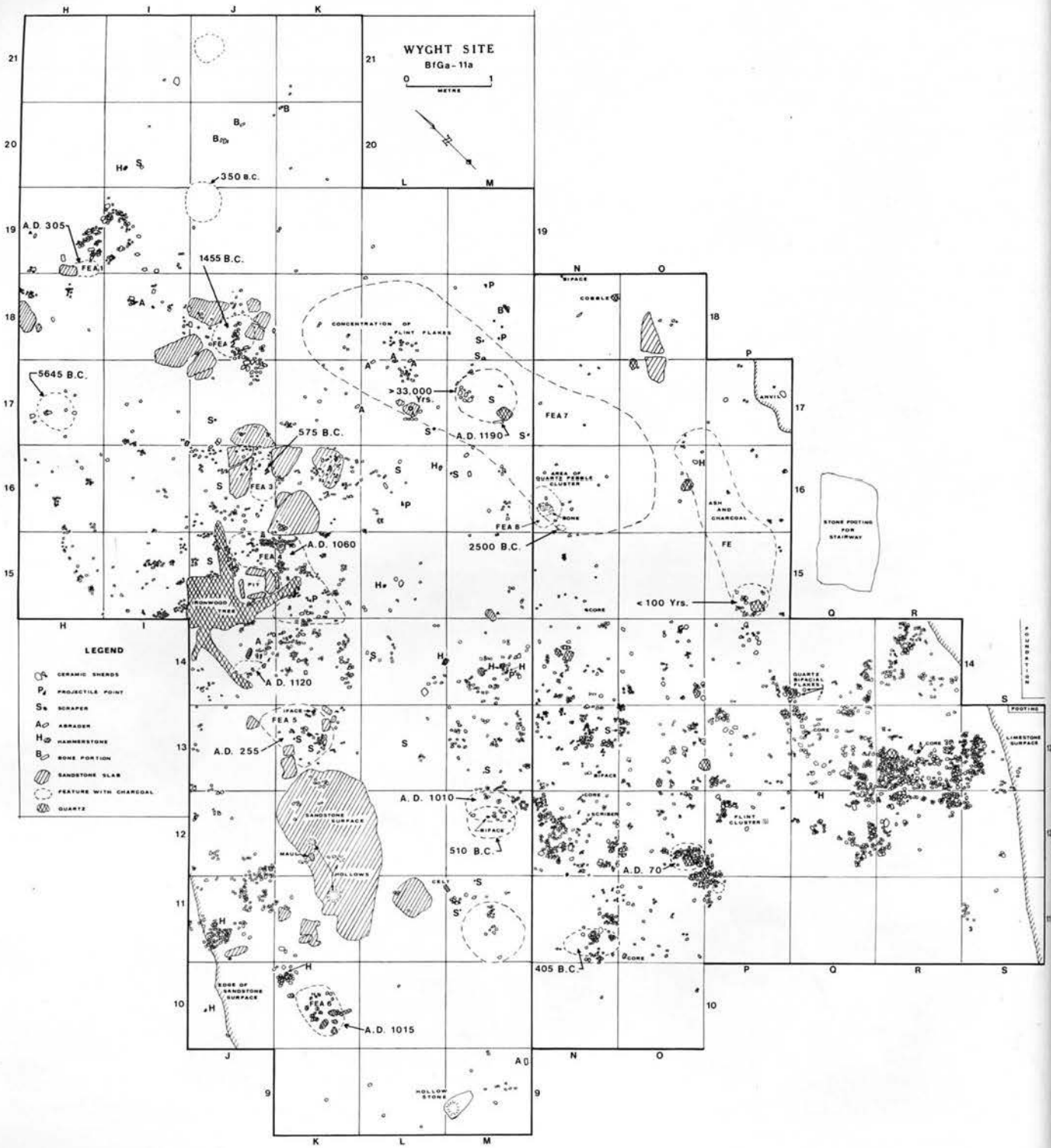

Fig. 9 - Plan of the Wyght site indicating the distribution of features, ceramics and stone artifacts and the radio-carbon dates obtained.

an already occupied area represents one of the ways by which cultural ideas are transferred from one group of peoples to another. Another is by the diffusion of ideas across a boundary between groups without any major change in the location of the groups. For example, the adoption of pottery making at the beginning of the Initial Woodland and of corn growing at the beginning of Terminal or Iroquoian Periods are activities which are believed to have moved northward from their origins in the warmer climates of Central America and the southern United States without major migration of people.

Although the presence of Broadpoints and the related scrapers, choppers, blunts, drills and steatite fragments is documented in Rideau Lakes sites, there is insufficient evidence, at present, to outline the complete artifact assemblage, the subsistence patterns, or other cultural traits of these peoples who occupied the area about 1500 to 1200 B.C. We do know, however, that their campsites are found on the shorelines, a fact which supports Turnbaugh's conclusion that they were adapted to a river valley environment and harvested fish as a major source of food.

As more data becomes available, we hope to better define the traits of the Broadpoint peoples and their cultural interaction with the Archaic peoples, who were already present in the area.

Initial Woodland Peoples of the Rideau Lakes

The Initial Woodland peoples (1000 B.C. to A.D. 1000) are much better known than their predecessors. This is probably due to the addition of fragile pottery to an inventory of stone tools. The pottery sherds, which dominate the artifact inventory on Woodland sites, provide us with objects, whose stylistic attributes change with time and, at any particular time, have recognizable similarities to, and differences from, those of other regions.

There are relatively large samples of Initial Woodland pottery in the surface collections of the area and the archaeological surveys of the Rideau Lakes (Watson 1977, 1979a, 1980a, 1982) revealed many sites with evidence of Initial Woodland ceramic pottery. Although the surface collections provide significant information, they cannot be dated independently. We have, however, undertaken the

archaeological excavation of the Wyght site in 1978 and 1979 and the Sand Island sites in 1981 and 1982. These are the first sites systematically excavated and analysed in the Rideau Lakes. Although the multicomponent Wyght site yielded two radiocarbon dates of about 6000 B.C., another of about 2500 B.C., and one of 1455 B.C., these dates can only be related to a few flint flakes. However, they do serve to confirm the presence of Archaic peoples, who are presently mainly known from the Archaic tools in the surface collections.

The primary significance of the Wyght site relates to the information which it provides about the Initial Woodland Period. It yielded the sherds of more than 100 pottery vessels in conditions which allow us to date several of them by association with hearths from which we obtained sufficient charcoal for radiocarbon dating. The dates represent several occupations between 510 B.C. and A.D. 1120, which spans all but the earliest part of the Initial Woodland.

The Wyght site is about equidistant between Rideau Ferry, Ontario and the northern end of the Lower Rideau Lake (Figure 3). It is one of the several aboriginal sites which our Archaeological Survey of 1975 and 1976 confirmed to be on the shores of the Lower Rideau Lake. It is on a small terrace on an otherwise rocky or swampy shoreline and is, therefore, one of the few places where a small boat or canoe can be beached easily. This undoubtedly is the reason for so many occupations in the same location.

As a site is excavated, an archaeologist attempts to discern, from the distribution of the artifacts and other evidence, not only the nature of the artifacts but the kind of activities carried out at the site or outside the site while it was in use. Thus, from the distribution of features, including hearths with charcoal, flat stone surfaces showing evidence of wear from food preparation, concentrations of flint chips where stone tools were shaped, the distribution of faunal bone near one of the hearths, a stone-lined pit for food storage or cooking and a pattern of ash and charcoal representing a possible fish or hide drying rack, we are able to discern the activities carried on at the Wyght site.

From the 3218 classifiable ceramic sherds, including 285 rims, from more than 100 pottery vessels, we can see that the use of pottery was important to the people who visited the site. The stone artifacts were limited to only 6 partial projectile points, 22 scrapers, one groundstone adze bit, and a relatively small quantity of lithic flakes, mainly concentrated in one area of the site. This relative

sparsity of evidence of stone tool working indicates that hunting was either not a major activity carried out from the site, or that the working of stone tools was undertaken at some other location. From the nature of the pottery and stone tools it is also possible to infer cultural relationships to peoples of other areas and, where the age of different types has already been established, to estimate the time when the site was occupied.

Archaeologists are faced with the dilemma that while a simple site representing a single occupation may be easy to analyze, particularly if a good radiocarbon date can be related to that specific set of artifacts, it provides much less information than the rich but complex Wyght site. On the other hand, a complex multi-component site presents a major problem of deciphering the messages which are written by the distribution and relative depths of its artifacts, particularly since subsequent occupational evidence inevitably becomes mixed with the earlier evidence. A few examples of the methods used to decipher the complex evidence of the site are of importance to assessing the conclusions that will be presented later.

The complex nature of the Wyght site can be seen by examination of the site plan (Figure 9) which has been drawn from the records of the exact location in the site of all of the artifacts and features. Features 1 to 6, which lie parallel to the shoreline at the time of the occupations, are all hearths which contained charcoal in varying quantities, which was used to obtain radiocarbon dates to indicate their ages. All of the features have associated ceramic sherds and all, except Feature 6, have flat limestone or sandstone slabs adjacent to, or surrounding the hearth. Lying between Features 5 and 6 there is a large slab of bedrock, which was exposed during at least one of the occupations. It has three smooth hollow depressions apparently made by a pounding or grinding process. A cobble maul, or hammerstone with a worn end, was found lying on the surface of this limestone slab within a few centimetres of the hollowed area. Feature 4 also includes the stone-lined pit, which is adjacent to an area of charcoal, ceramics and the highest concentration of calcined bone fragments. The pit has four large stones arranged to form the upper part of a roughly circular pit with lower layers of stone laid to form a freestone wall and bottom. The pit was approximately three quarters filled with water rounded pebbles which we classify as "boiling" or "roasting" stones. This suggests that it is probably a roasting pit in which hot stones were interlayered with food.

The charcoal samples from individual hearths were purposely selected from relatively small areas and thin layers in depth to avoid the possibility of mixing of charcoal from different fires. When the dates for the samples were returned from the laboratory, there was found to be very strong correlation (.93) between depth of recovery and the age of the charcoal. This indicates that there is a strong depth relationship to age and provides a method of estimating the age of artifacts by the depth of their recovery. Statistical methods were then used to obtain an estimate of the age of each of 27 vessels along with a measure of the uncertainty of the estimate (Watson 1980:85). This method could then be compared with the results of estimating age by the association of individual vessels with radiocarbon dated hearths.

The overall distribution of pottery sherds can be seen from the site plan (Figure 9) but it became important to try to relate individual pottery vessels to the hearths that were used at the same time. It was possible to identify sufficient sherds belonging to individual vessels to gain knowledge of their location in the site. By using a computer to select the sherds identified with a particular vessel and by programming the computer to indicate their locations in the site, it is possible to see the individual associations between vessels and radiocarbon dated hearths. Although, the distribution of sherds of twenty vessels were studied in this way (Watson 1980), it is only possible to present a few examples here.

Table 1

ESTIMATE OF VESSEL AGE BY DEPTH AND BY ASSOCIATION WITH RADIOCARBON DATES

Vessel Serial No.	Vessel No.	Date by Depth	Date by Radiocarbon Assoc.
2	4	77 B.C. +/- 200	350 B.C. +/- 55
3	41	31 B.C. +/- 495	510 B.C. +/- 65
4	60	A.D. 20 +/- 685	A.D. 70 +/- 110
8	62	A.D. 169 +/- 530	None
25	20	A.D. 733 +/- 423	None
22	10	A.D. 558 +/- 622	A.D. 1060 +/- 70

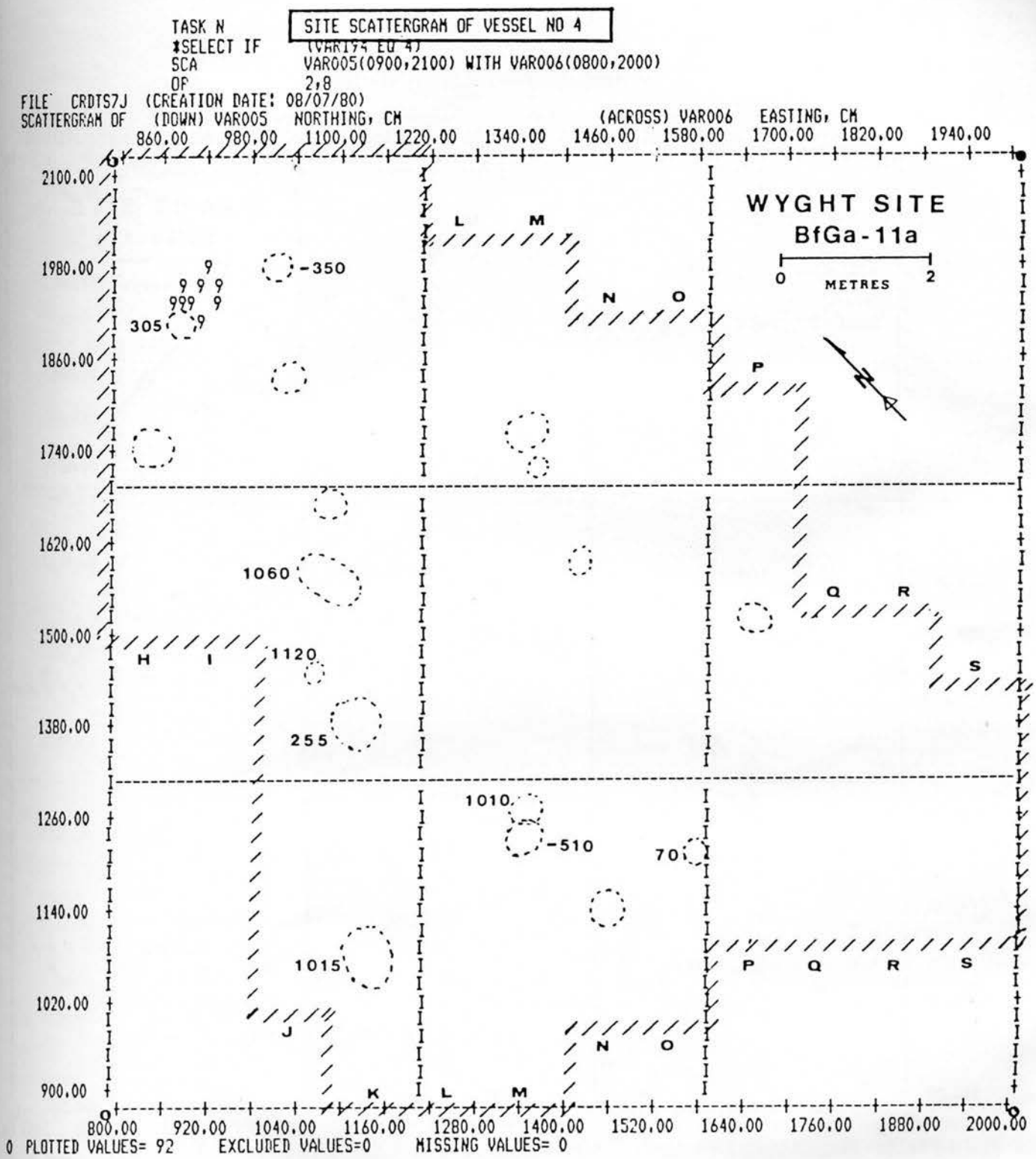

Fig. 10 - Wyght site plan indicating the distribution of sherds of Vessel No. 4.

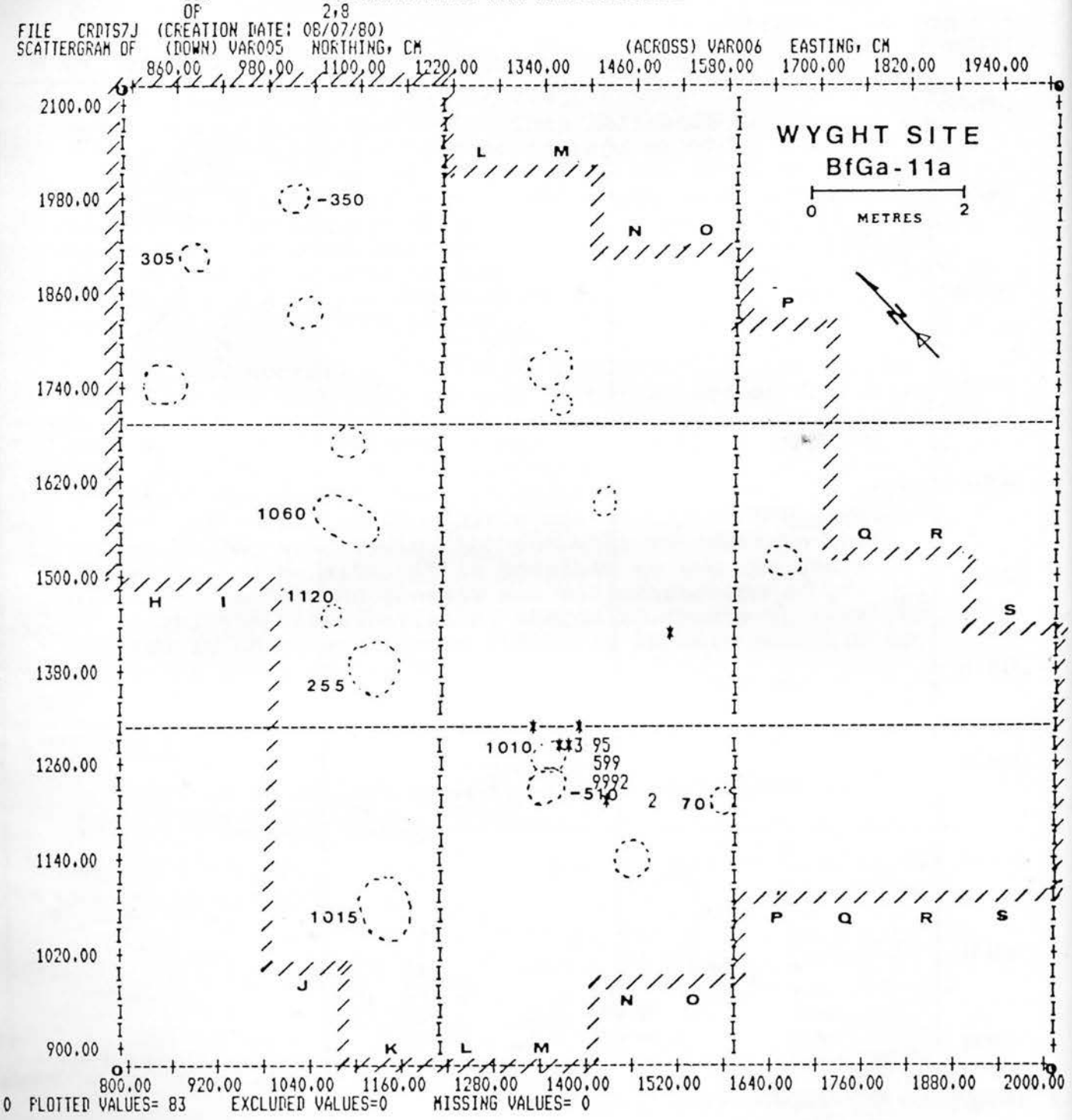

Fig. 11 - Wyght site plan indicating the distribution of sherds of Vessel No. 41.

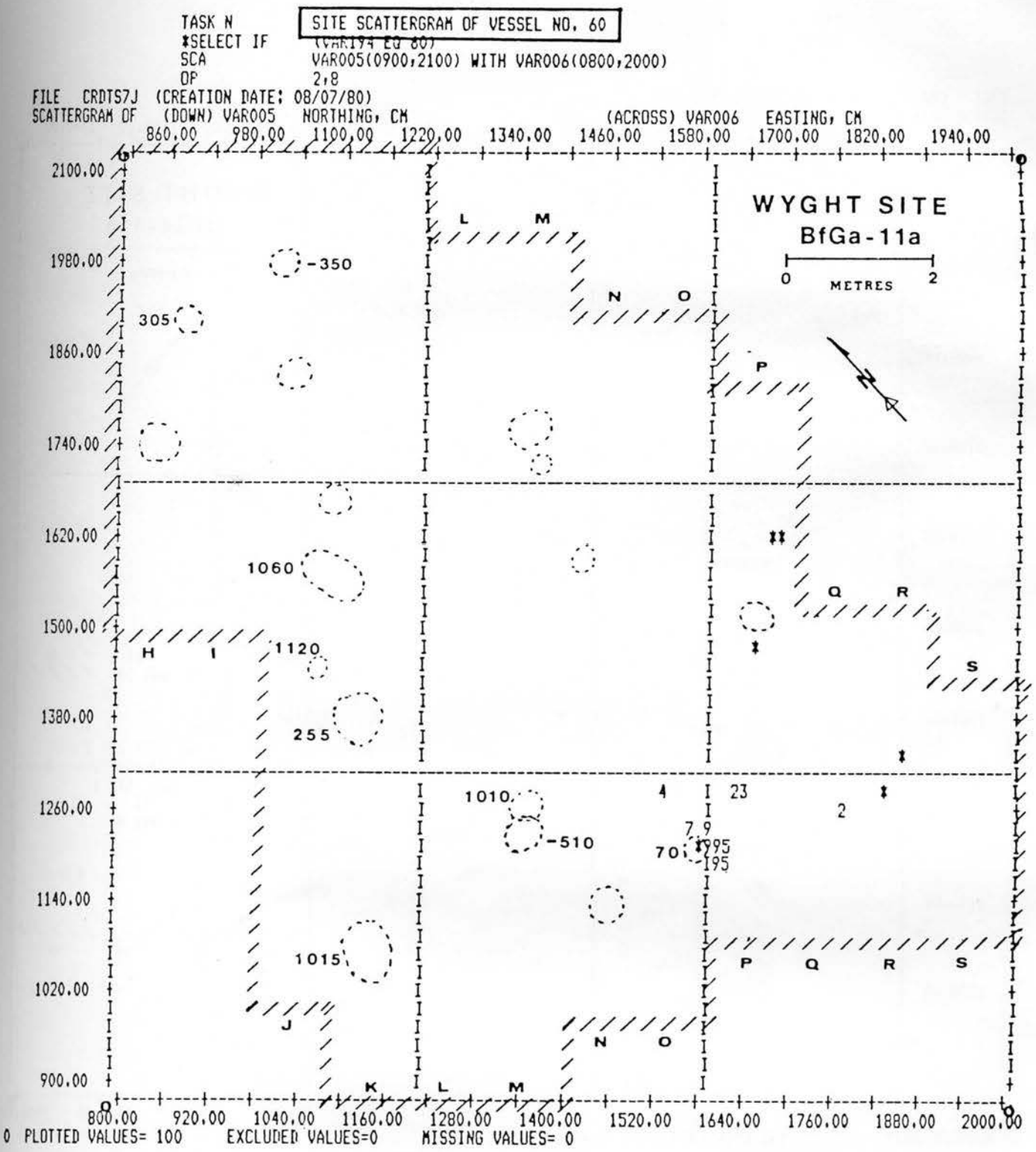

Fig. 12 - Wyght site plan indicating the distribution of sherds of Vessel No. 60.

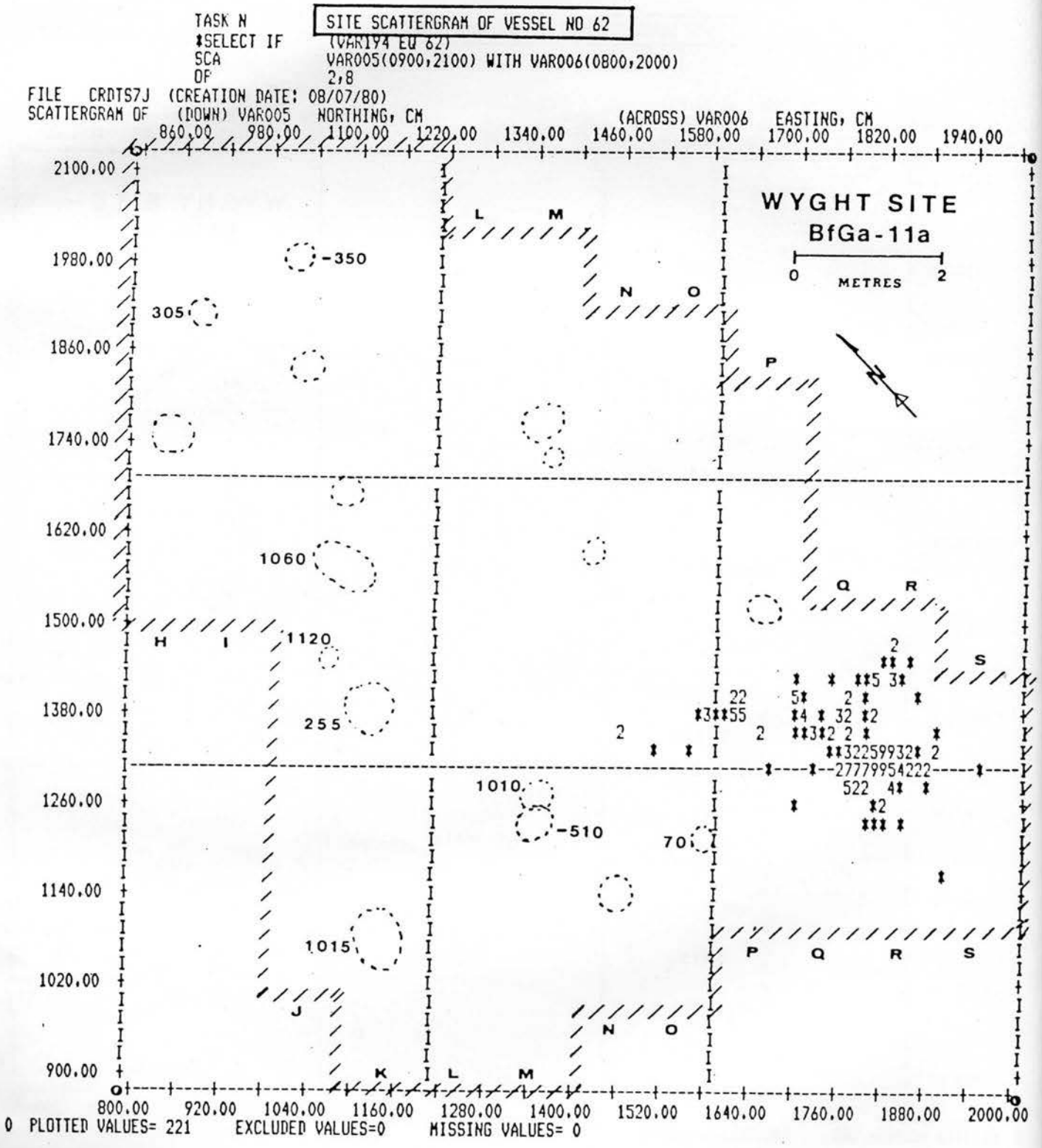

Fig. 13 - Wyght site plan indicating the distribution of sherds of Vessel No. 62.

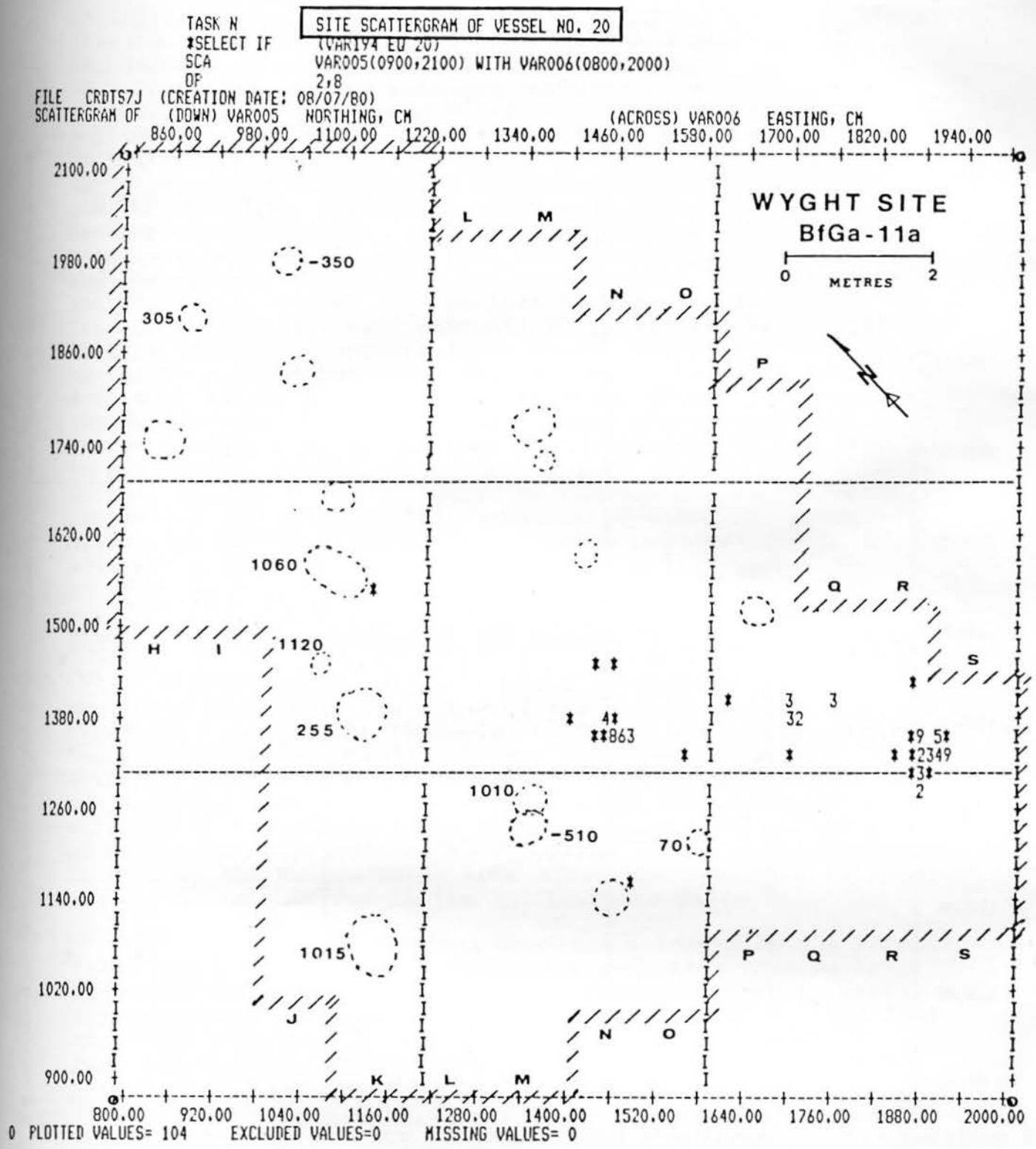

Fig. 14 - Wyght site plan indicating the distribution of sherds of Vessel No. 20.

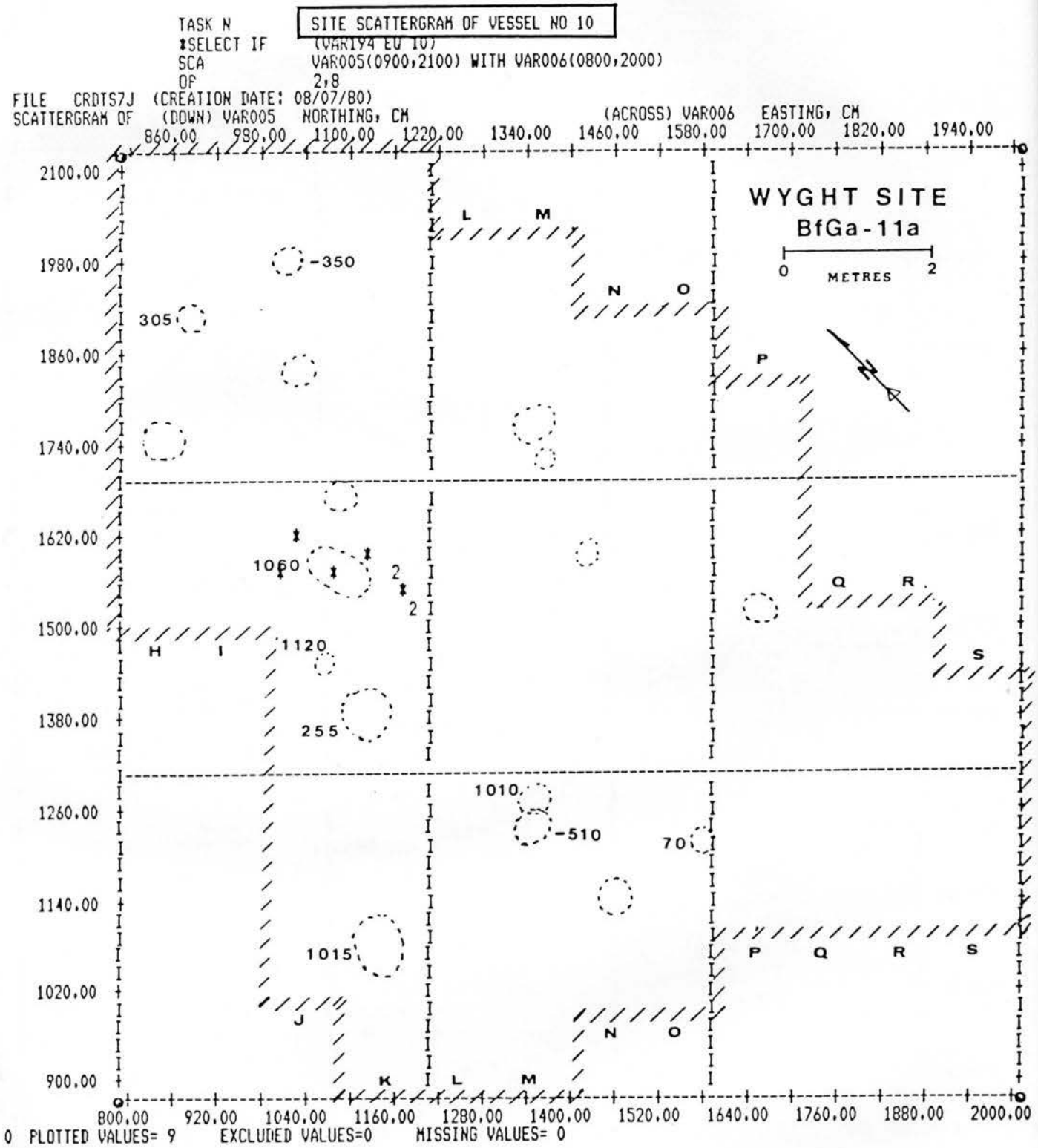

Fig. 15 - Wyght site plan indicating the distribution of sherds of Vessel No. 10.

The associations between dated hearths and the sherds of individual vessles can be seen by examining the site plans (Figures 10 - 15). In these diagrams a single sherd is represented by an asterisk; multiple occurences within a 10 x 20 cm. resolution unit are represented by numbers from 1 to 8; whereas the number 9 represents 9 or more, sherds. Stylistic change can be seen by examining the photographs of the vessels concerned (Figures 16, 17). It can be seen that there is a tendency for the decoration to proceed from simple oblique or criss-cross rims with horizontal body decoraction over plain or rocker stamped bases (Figure 16, Vessels 4, 41 and 60) to a more elaborate lip decoration and more complex zoned body patterns (Figure 16, Vessel 62 and Figure 17, Vessel 20) and then to very simple lightly trailed criss-cross body decoration (Figure 16, Vessel 10). In fact, Vessel 20 appears to be transitional from the middle to the late group, with its complex body pattern including a zone of simple crosses as a forerunner of the later body styles represented by Vessel 10. These three stylistic groups cover a time period from about 500 B.C. to A.D. 250 to A.D. 1000. In our present and future work we hope to further delineate the evolution of ceramic styles of the region and, by study of the variation of style, to examine cultural boundaries or relationships to cultural groups of adjacent regions.

Terminal Woodland Peoples of the Rideau Lakes

Although there are Terminal Woodland (Iroquoian) artifacts on some of the sites of the Rideau Lakes frequented by earlier peoples, no Iroquoian village site has ever been found in the area. It is believed that the Iroquoian evidence results from the temporary presence of Iroquoian hunters, who carried the produce of their hunt back to villages in the St. Lawrence Valley, or from the presence of Iroquoian women married to Algonkian hunters, who continued to live in the Rideau Lakes area after the Iroquoian villages had become established in the St. Lawrence Valley.

This lack of Terminal Woodland evidence in the Rideau Lakes applies to the hunter-gatherer campsites that we have excavated and also to the surface collections made by early investigators. The latest radiocarbon date that we have from the Wyght site is A.D. 1335 +/- 120. Our current work at Sand Island does not reveal any Iroquoian evidence and the latest of the two dates so far obtained is A.D. 850 +/- 210. It is postulated elsewhere (Watson 1980) that the reason for the apparent absence of hunter-gatherer sites in the Terminal Woodland period may be because of the establishment

and rapid growth of the large Iroquoian villages in the nearby St. Lawrence Valley during the A.D. 1000 to A.D. 1200 period. Although the Iroquoians lived in villages and cultivated corn in the adjacent fields, they continued to hunt in the surrounding territory. However, instead of consuming their game in local camps, they carried it back to the villages. These larger populations undoubtedly over-hunted the nearby Rideau Lakes area and the former Initial Woodland hunter-gatherer were forced to withdraw to more distant hunting grounds in search of an adequate supply of food.

Summary and Conclusions

Although modern archaeological research is in its very early stages, with only one site excavated and analyzed and a second in progress, a considerable amount of information can be derived from the surface collections made about 80 years ago by several early residents.

The archaeological surveys of the Rideau Lakes indicate the presence of many aboriginal sites with important potential for investigation. However, the upgrading of many waterfront properties seriously threatens the ability to investigate these non-renewable cultural resources before they are destroyed by major surface modifications of the sites.

There is evidence of the presence, in the Rideau Lakes area, of the makers of fluted projectile points by about 8000 B.C. but, to date, no archaeological site of these earliest peoples has been discovered.

There is an abundance of artifacts of the Archaic Period (5000 B.C. to 1000 B.C.) in the surface collections of the area and new information about this period was derived from the Wyght site and Sand Island excavations.

There is both surface collected and excavated evidence of the presence of the Transitional Broadpoint peoples of about 1500 B.C. to 1000 B.C. and the Inderwick and Sand Island investigations are expected to provide additional knowledge of this cultural group.

The most complete knowledge that now exists relates to the Initial Woodland (1000 B.C. to 1000 A.D.) hunter-gatherers, who inhabited the Rideau Lakes as predecessors of the Algonkians, who were still in the area on arrival of the

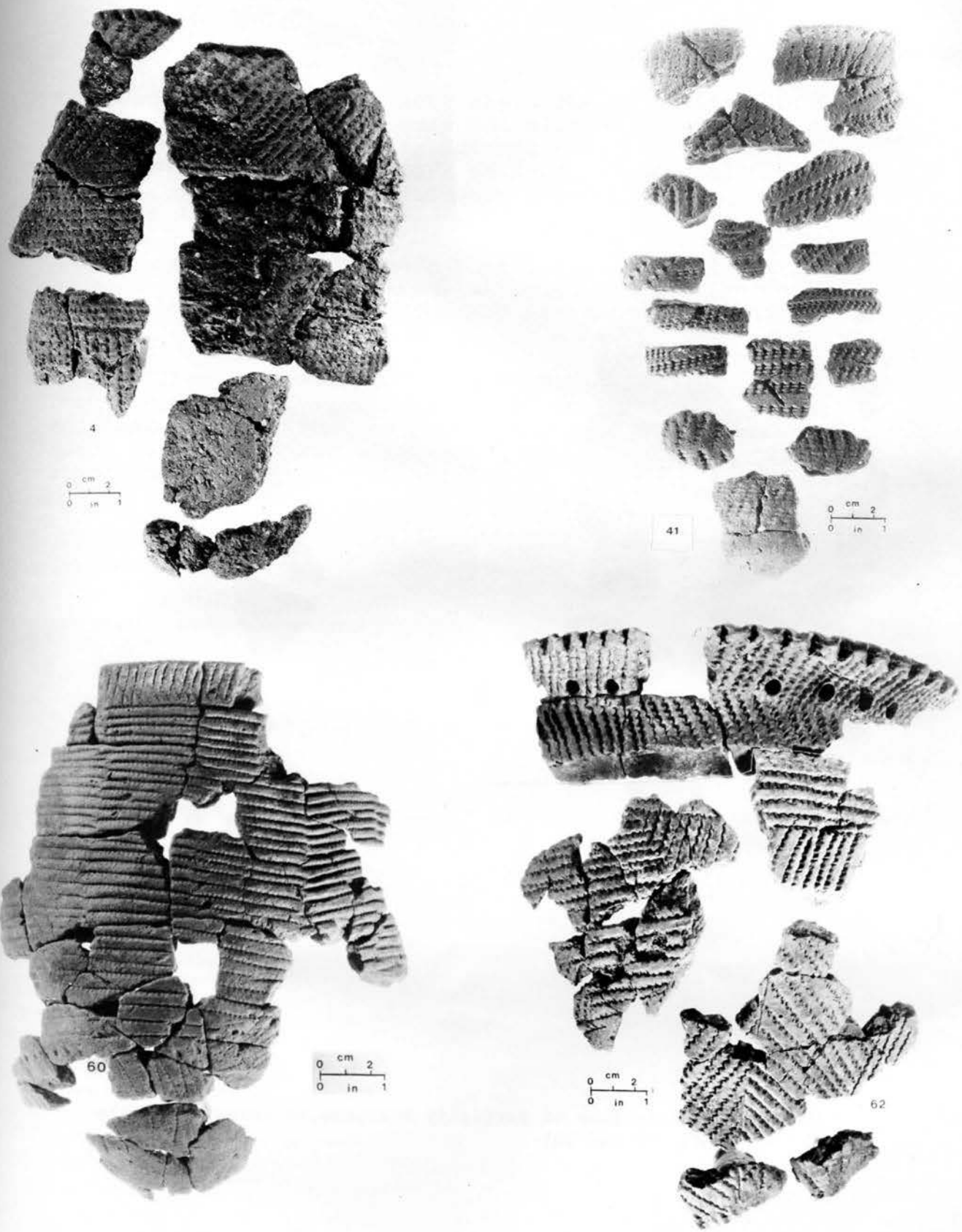

Fig. 16 - Photographs of partially reassembled ceramic vessels No. 4, 41, 60 and 62.

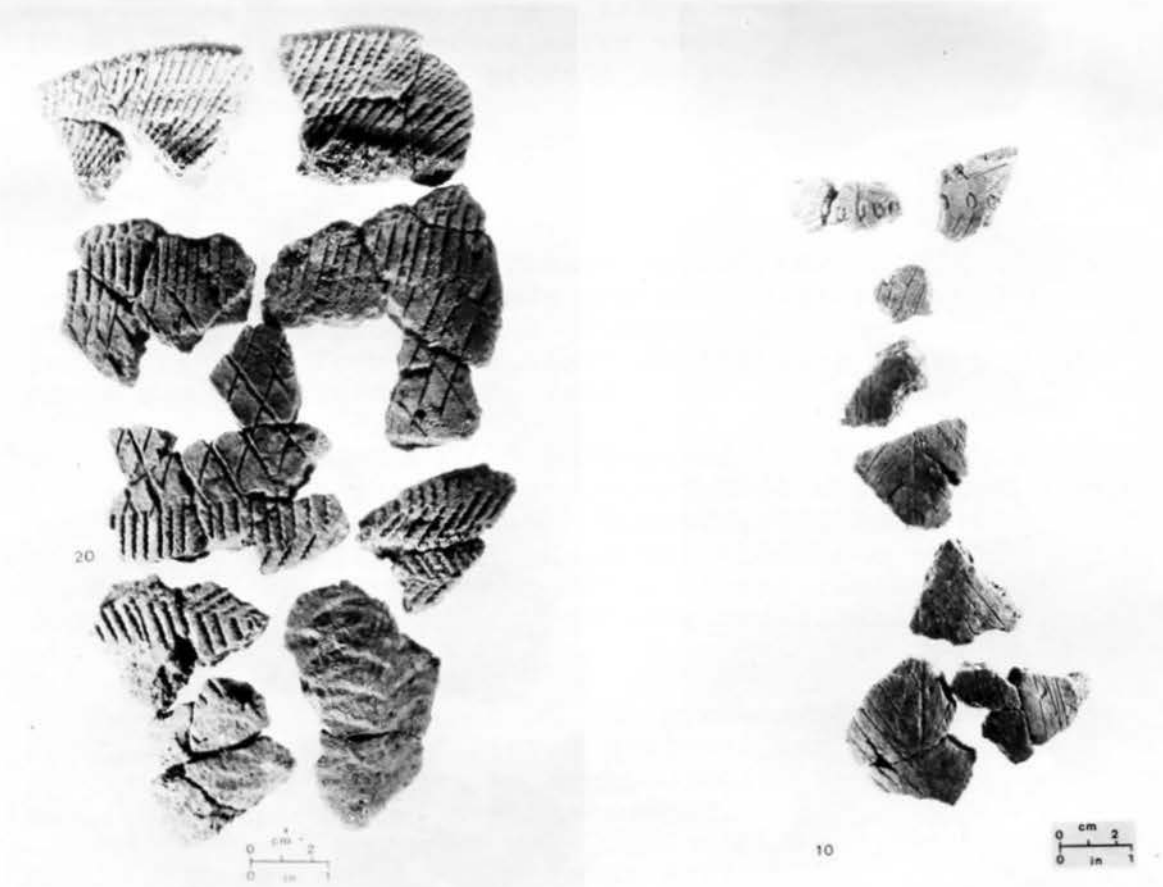

Fig. 17 - Photographs of partially reassembled ceramic vessels No. 20 and 10.

European fur traders and settlers. The Wyght Site, with its more than 100 ceramic vessels and sixteen radiocarbon dates is, currently, the most significant site of the Rideau Lakes, while the current work at Sand Island will provide new knowledge of the relationship between the Archaic and Woodland Periods.

There is no evidence that Iroquoian villages were ever constructed in the area, although there is evidence of some Iroquoian presence, probably as transient hunting parties.

There is evidence that the Rideau Waterway has been a corridor of water travel for at least 8000 years and that the Lower Rideau Lake was a significant cross-roads for prehistoric travellers over much of the period since the end of the last glacial age.

Acknowledgements

The Perth Museum collections have been examined and photographed through the courtesy of the Perth Museum Board. The Royal Ontario Museum kindly permitted examination and photography of Rideau Lakes artifacts held there. The ROM also made replicas of the two fluted points of the area, which are now on display in the Perth Museum.

The author's archaeological work is undertaken under licences issued by the Ministry of Citizenship and Culture and by Research Grants of the Ontario Heritage Foundation. The work of 1981 was also supported by a contract with Parks Canada. The National Museum of Man sent a number of charcoal samples for dating, while the Geological Survey of Canada conducted the first Wyght site radiocarbon date in their laboratories.

Archaeological work on private property can only be undertaken with the permission of the owners. We are much indebted to Colonel and Mrs. F.C.L. Wyght, who graciously hosted us during two years of excavation of the Wyght site, and to Mrs. C.C. Inderwick, who kindly permitted investigation of the Inderwick site. We are also indebeted to Mr. Stewart Wood, Mr. and Mrs. W. Driscoll and Mr. Vernon Himmelman for permission to conduct our current archaeological work at Sand Island.

Finally, the data and number of illustrations pertaining to the Wyght site were first reported in a MA thesis prepared to Trent University (Watson 1980).

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NOTES

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Received his B.A. and M.A. from McMaster and commenced field work in archaeology from that University in 1968. After graduation he undertook contract archaeology with the Ministry of Natural Resources from 1972 to 1974 and with the Ministry of Culture and Recreation in 1975, both Provincial appointments. This work was largely concerned with archaeological surveys of the Mattawa, French and Upper Ottawa Rivers. Since 1976, he has been Regional Archaeologist, Eastern Region, Archaeology and Heritage Planning Branch, Ministry of Citizenship and Culture, Ontario. His work is primarily concerned with conservation archaeology on both pre-historic and historical sites; it also includes the development of management techniques for the protection of the archaeological component of heritage properties and the interpretation of Eastern Ontario's archaeological record. He is currently involved in developing an underwater archaeological programme which stems from his association with the underwater investigation at the Charleston Lake Sites. Several phases of his work are associated with sites in the southern region of the Rideau Waterway.

Associations: Member--Ontario Archaeological Society; Champlain Society; Society of Field Archaeologists;Society of Historical Archaeologists; Society for Archeoastronomy and the Association for American Archaeology.

THE WOODLAND OCCUPATION OF CHARLESTON LAKE

Phillip Wright

Since the 1860's, the waters of Charleston Lake have provided fond memories of long sun-filled days spent swimming, boating, fishing - in the happy pursuit of leisure in a rugged northern-like landscape. Little did anyone realize that along these shorelines lay a record of prehistoric inhabitants who, over a 2,000 year period, used this lake not for recreation but for obtaining food for survival.

Today, the only record we have of these prehistoric inhabitants is the physical evidence they left behind at the various campsites used. Only part of the prehistoric evidence has survived the ravages of time...items such as pieces of ceramic pots used for storage and cooking or the remains of hearths used for cooking and warmth. For the most part, the physical evidence is now buried beneath the present landscape, invisible to the eye. Yet it is this evidence that forms the archaeological record from which a researcher attempts to understand and reconstruct the prehistoric past. It is not expected that a complete picture of the past can be created from the archaeological record...only a glimpse of the past based on those physical clues that have survived the passage of time.

Geographically, Charleston Lake is located in eastern Ontario approximately eight miles north of the 'Thousand Islands' section of the St. Lawrence River. The lake drains via a small creek into the Gananoque River, which in turn, flows into the St. Lawrence River. The lake is located along the boundary of two distinct physiographic zones: The Frontenac Axis and the Ottawa-St. Lawrence Lowlands. The Frontenac Axis is part of the southern Canadian Shield and forms a narrow bridge of Precambrian rock that extends south from Ontario into the Adirondack Mountains of New York State. Like areas further north, this 'bridge' has granite outcrops, shallow soils, and undulating landscapes containing many lakes and streams.

The Ottawa-St. Lawrence Lowlands geological formation of archaeological interest in the Charleston Lake area is called the Nepean Sandstone Formation. This consists of a

buff-coloured sandstone cverlying a conglomerate of sandstone containing quartzite pebbles as well as pebbles derived from the lower Precambrian rock. Sections of this conglomerate have undergone differential erosion and weathering creating concavities with overhangs or roofs of solid limestone which were used as shelters during prehistoric times.

The ecology of this unique landscape has some important characteristics. The lake lies in a transitional zone of mixed northern coniferous forests and the more deciduous forests of the eastern United States. The ecology of this zone is further complicated by the fact that it is located within the Frontenac Axis. Nowhere else in Canada, outside of mountain areas, does the flora and fauna change as much over so short a distance as the first twenty miles of the Frontenac Axis north of Lake Ontario and the St. Lawrence River.

This southern shield landscape with its great diversity of plant and animal life was the chief attraction that drew prehistoric people to Charleston Lake on a seasonal basis.

To date, over twenty-five prehistoric archaeological sites have been found in the immediate vicinity of Charleston Lake by various researchers. Of these sites, six have been excavated and only three have been excavated extensively enough to provide data for analysis.

The evidence from the excavated sites indicates the lake was occupied during the Woodland Period from circa 300 B. C. until contact with early European explcrers in the early 1600's A.D.

It appears that throughout this prehistoric Woodland Period small groups of people moved onto this lake annually on a short term basis to exploit seasonally available natural resources. Charleston Lake was cnly one part of a much larger territory exploited in a regular cyclical pattern by a prehistoric group or groups. The excavated sites on Charleston Lake suggest the area was used mostly by small hunting groups.

Two main types of archaeological sites have been identified on the lake: the open air campsite and the rockshelter campsite. Both types were used on a seasonal basis during warm weather (late spring to fall).

Most of the open air campsites along the lakeshore are in areas that are favourable for camping even today. The prehistoric open air campsites appear to have been stations where animals were processed for hides, meat, fat, and bone marrow. Bone fragments recovered from these sites

suggest that white-tailed deer was the main game harvested. Other mammals such as beaver, river otter, muskrat, squirrel, racoon, porcupine, and black bear were also hunted. In addition to hunting animals, evidence indicates a limited amount of fishing, fowling, and gathering of wild nuts, seeds, fruits, and other plant materials.

Deer were apparently butchered at inland kill sites to prepare them for transport to an open air campsite located on the lakeshore. At the campsite area, the animal remains were processed at a work area separate from the living area. Splintered and fractured bones recovered from the site show that even the marrow from the bones was removed and utilized.

As well as the separate processing areas, these open air campsites had an area used by prehistoric people for more domestic activities such as eating and sleeping. Much of this this daily life appears to have been centered around fire hearths.

The second type of campsite used by the prehistoric people at Charleston Lake is the rockshelter. These rockshelters are the natural overhangs dug out of the previously mentioned Nepean Sandstone Formation. They are located both inland and close to the water and were used by small parties of people in much the same way as the open air campsites. Rockshelters offered readily accessible temporary shelter for family groups hunting and processing game in the Charleston Lake area.

In the rockshelters, the fire hearth was located on the living floor under the rock overhang and activities such as cooking and tool making took place in this area. On the terraces below the rockshelter game processing operations were carried out.

While researchers have recovered a wide range of prehistoric artifacts at the Charleston Lake sites, this paper will be limited to two types of artifacts which tell us a great deal about the people who manufactured them.

Chipped stone tools were important to prehistoric people. Tools such as projectile points were used for hunting game and scrapers or knives were used in processing the game hunted. Other chipped stone tools were used to make artifacts of wood, bone, and other organic materials... none of which (except for a few bone tools) have survived the ravages of time.

Evidence of the manufacture of chipped stone tools was found on some of the Charleston Lake campsites. The raw materials most commonly used for chipped stone tools were chert and grey-coloured quartzite.

Cert is perhaps the most desirable material for making stone tools, but is found only in certain areas. The particular chert used most frequently at Charleston Lake is called Onondaga chert and is found only in western New York and southwestern Ontario, where it can be quarried from layered veins in exposed limestone bedrock outcroppings. At these faraway sites, prehistoric craftsmen prepared the chunks of chert, called cores, and reduced them by flaking into biface blanks of unblemished chert. The blanks were suitable for forming into tools such as projectile points, or knives, or for driving off flakes to make scrapers and other small tools. These bifacial blanks, or preforms, appear to have been a medium of exchange in an extensive prehistoric trade network. The occurrence and use of Onondaga chert preforms at Charleston Lake is evidence of such a trade system over long distances.

At Charleston Lake campsites, these 'imported' chert preforms were reduced by chipping and flaking into finished tools as required.

The second raw material used at Charleston Lake was a light grey quartzite which is obtained locally. It was transported to the campsites in prepared quarried blocks. These quartzite blocks were reduced by hammering to produce flakes which could, in turn, be modified by flaking into crude flake tools. The locally available quartzite had poor flaking properties as compared with the imported chert.

The majority of the chipped quartzite and chert tools produced at Charleston Lake were used in the animal processing areas of the campsite. The most frequently found tools are scrapers - flakes with one edge shaped to a bevelled edge whose angle varied depending on whether the tools was to be used on bone, wood, or skins. Some scrapers were attached to handles for more efficient use. Flakes struck from quartzite cores or chert preforms were used without modification as sharp cutting tools and were discarded when they lost their sharpness. These flakes and scrapers were used in the animal processing areas to prepare hides or furs, to cut and slice meat and skin, or to soften skins. Other chipped stone tools such as knives, projectile points, and drills were also being manufactured.

The second artifact type to be considered is prehistoric ceramics. While numerous sherds were excavated and analyzed

from Charleston Lake sites, the ceramics record will be examined from a collection of ceramic pots recovered, not from a land based site, but from an underwater deposit.

The prehistoric people who lived at the open air campsites and rockshelters used a single trail, some 400 metres in length, for easy access to Charleston Lake from the Gananoque River system. At the lake end of this portage, there is a small campsite overlooking the point where the portage trail drops steeply from a rock terrace to the lower shoreline rock ledge.

While researchers were aware of this portage trail, it wasn't until several years ago that divers, while snorkling off the portage landing, found the remains of both intact and broken prehistoric pots - a unique archaeological record left behind by the various prehistoric groups who had used the lake. Following the initial discovery, trained marine archaeologists spent three years investigating the underwater site. Over thirty ceramic vessels were recovered along with animal bones and a few stone tools.

This underwater site consists of a steeply sloped rock bank that drops from the portage landing to a depth of 90 feet where it disappears into heavy sediment. A series of irregular rock shelves occurs at various depths along the slope, the two largest of these shelves being at 30 and 60 foot depths. The pots were found on these rockshelves both exposed and partially buried in sediment. It is believed that some of the archaeological artifacts recovered had been deposited on the shelves as a result of accidents that happened while people were making the portage. Other material was no doubt deposited as refuse by prehistoric people who used the small campsite that overlooks the underwater site.

Once the ceramic vessles were removed from their underwater environment, they had to be taken in water-filled containers to proper laboratory facilities where conservators consolidated each piece. Consolidation of the pottery involved the controlled removal of water, using a liquid substance that replaces the water in the pottery. On completion, the process actually strengthens the walls of the vessels and prevents warping and cracking.

The study of prehistoric ceramic technology is important to archaeologists in attempting to understand the prehistoric past since pottery, like stone tools, has survived the ages. Generally, archaeologists have only small fragments

of pottery to examine from land based sites. In order to gain information from this material, researchers identify those traits (such as the decorative pattern) that were shared by people who made certain types of pottery. It is these shared attributes that have been used by archaeologists to identify cultural groups of prehistoric people who occupied an area at various time periods.

By careful and painstaking excavation of land based archaeological sites, it has been possible to place the ceramically defined cultural groups into a chronological framework.

Using this chronological understanding of the ceramic record, it is possible to interpret the ceramic pots left by the people who used the portage at Charleston Lake.

The first appearance of ceramic vessels in prehistoric times is used to denote the beginning of what archaeologists call the Woodland Period, which, in southern Ontario, runs from circa 1000 B.C. to Historic Contact with the Europeans. The arrival and development of pottery making is thus used as a key time marker.

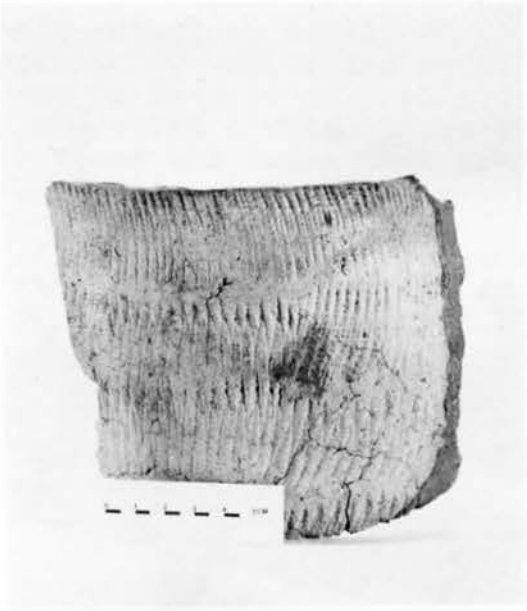
Ceramic technology appears to have advanced northward from the southeastern United States, where ceramics were present as early as 2000 B.C. The earliest vessels in the southeast were simple beaker-shaped pots with smoothed or roughened surfaces. None of these early ceramic styles have been found at Charleston Lake.

The earliest vessels found at the underwater site and at other sites on Charleston Lake are representative of what archaeologists define as Point Peninsula people (circa 700 B.C. - 900 A.D.) who occupied southeastern Ontario as well as adjacent New York State and Quebec.

The early Point Peninsula vessels were small with conical bases and thin, pointed or rounded lips. The vessels were intricately decorated with geometric designs usually over their entire surfaces. These designs were impressed or stamped in the clay with toothed tools that were manipulated in various fashions. For example, a toothed instrument when stamped into the clay at an oblique angle leaves a pattern different than when the tool is applied directly at right angles.

Later towards the end of Point Peninsual times, the vessels became larger and more globular in shape with

1. A Sample of the ceramic vessels recovered from the underwater site.



2. A Point Peninsula rimsherd.

3. A Pickering vessel.

4. An Iroquoian vessel.

5. Upper portion of a Point Peninsula vessel.

As the Charleston Lake underwater site was inaccesible to the Field Trip on October 3, 1982, Mr. Phillip Wright displayed,(at the Wyght site)a selection of artifacts which he recovered during those investigations.

rounded or flat lips, and were more likely to be decorated with an impressed corded or trailed design.

The next set of vessels is representative of two more or less contemporary cultures, the Pickering people of southeastern Ontario and the Owasco people of adjacent New York State (circa A.D. 900 - 1300). These pots are much larger and are decorated with stamped impressions made by a cord-wrapped stick or some other stamping tool on the upper section of the vessel. Through this period, vessels became even more globular in shape and began to develop collars.

The last prehistoric group to use Charleston Lake were the Iroquois (circa A.D. 1300 - 1500). Vessels during this time period became highly stylized in shape (globular bases with collared rims) and were decorated by cutting or incising the clay with a sharp instrument. Decorations were restricted to the upper shoulder, neck, and collar of the vessel.

The Charleston Lake ceramics provide us with a physical record of changes through time in the style of ceramic vessels. These style changes reflect the social evolution of these peoples, as new ways developed for obtaining food and living together. Throughout the entire Woodland Period, various groups, with the lifestyles represented by their ceramics, continued to use Charleston Lake as a seasonal home. While the material cultures reflected in the ceramic vessels of prehistoric people changed through time, there was little change in the prehistoric harvest of the flora and fauna that prevailed in the lands and waters of Charleston Lake.

It has been several centuries since the last band of prehistoric people departed from Charleston Lake; yet, hidden away from the casual observer, there still exists traces of these people. It becomes our responsibility to protect and to endeavour to understand this record of the prehistoric past.

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JAMES F. PENDERGAST, C.D.

Born in Cornwall, Ontario 1921. While attending Cornwall Collegiate Institute enlisted in Stormont, Dundas and Glengarry Highlanders in 1940. After service overseas returned to Canada to serve in various army intelligence appointments in Canada and the United States. Enlisted Canadian Regular Army after World War II and served in the Artillery as well as appointments to the U.N. peace keeping forces in the Middle East in 1958 and to NATO in 1968. After 35 years service retired in 1972 with the rank of Lieutenant Colonel accepting an appointment as Assistant Director of Operations in the National Museum of Man, National Museums of Canada.

Dr. Pendergast's active association with Iroquoian culture dates from 1946 and from that point he has excavated a number of Iroquoian sites in Eastern Ontario and New York State.

He has published some 25 papers and 3 monographs. Published, together with Dr. Bruce G. Trigger of McGill University, a definitive book on the Iroquoian village site located in downtown Montreal which may be Jacques Cartier's Hochelaga. His work has centered on the St. Lawrence Iroquoian who, although visited by Cartier in 1535 and 1541 at Stadacona (Quebec City) and Hochelaga (Montreal) had disappeared when Champlain arrived in 1603; the origin and reason for their disappearance remains his active quest. In 1976 he was made a Doctor of Science (Honorus Causa) in recognition to his contribution to a segment of our history which has been largely overlooked.

Associations: Pennsylvania and New York State Archaeological Societies; Ontario Archaeological Society; Canadian Archaeological Association (Past Vice-Pres.); Research Associate, National Museum of Man; Champlain Society; Past Chairman, Heritage Canada, Eastern Ontario and Western Quebec; Merrickville Historical Society (Past Pres.); Royal Canadian Artillery Association and other service affiliations.

THE IROQUOIANS

James F. Pendergast

Introduction

Archaeology is a discipline of Anthropology, but if you were to look in on Iroquoinan archaeologists you would find them counting the pot sherds, measuring minute variances and discrepancies, doing statistical analysis and so on. Multiplying, dividing, and coming up with a jargon which doesn't sound anything like you heard this morning concerning the history of these people; but all the time they are doing it with a view to better understanding (in some cases just gaining a basic understanding) of the people who produced these artifacts.

Definition

The Iroquoians are that family of Indians who spoke the Iroquoian language in contrast to the numerous and widespread group which spoke the Algonkian language. The Iroquoians lived in a relatively small area surrounding the lower Great Lakes and the St. Lawrence River: the Huron in Ontario between Belleville, Toronto and Midland; the Petun or Tobacco in the small peninsula near Penetanguishene; the Neutral near Hamilton and St. Catherines; the Wesso near Niagara Falls; the Erie at the east end of the south shore of that lake; the Seneca, Cayuga, Onondago, Oneida and Mohawk located in that order from west to east in New York State between Buffalo and Albany; the St. Lawrence Iroquoians who lived along the St. Lawrence River from Watertown, New York, to Quebec City and were visited by Jacques Cartier at Stadacona (Quebec City) and Hochelaga (Montreal) in 1535 but had disappeared when Champlain visited that area in 1603; and the Andaste or Susquehannock who lived on the Susquehanna River.

This small island of Iroquoians were surrounded by a virtual sea of Algonkians which stretched from the Atlantic seaboard between Nova Scotia and North Carolina westward to the foothills of the Rocky Mountains in Canada. Some of the better known of these are the Micmac in Nova Scotia, the Malecite in New Brunswick, the Delaware in New Jersey and Delaware, the Naskapi and Montagnais in Quebec, the Woodland Cree in Ontario, the Plains Cree in Manitoba and the Blackfoot

in the Alberta foothills. The well known Algonquins were a small group of Algonkian speakers located along the Ottawa River in the Pembroke area who entered Canadian history when they were visited by Champlain during his journey up the Ottawa in 1613.

These people did not call themselves Iroquois. They called themselves 'Ho-do-ne-sau-nee' or 'People of the Longhouse'. Nor did the individual tribes we know as the Mohawk, Onandaga, Oneida, Seneca and Cayuga know themselves by those names. The Mohawk called themselves 'People of the Flint' whose name in Iroquois escapes me. The French knew them as the 'Agnier'. The Huron were given that name by the French but they called themselves 'Wendat' or 'The people who lived on an island'. Do not be concerned by these numerous names - the common names you know will suffice. The point here is simple - what may mean one thing to one person may have an entirely different meaning three counties away. To demonstrate this phenonema and with apologies to Frank Wyght, I will repeat a story:

> A fellow from Merrickville, while on a visit to New York, became part of a quiz program covering three separate nights. He made it through to the final night and was looking $1,000,000 dead in the eye when the Master of Ceremonies came up with the final two questions and they were: 'How many days in the week start with the letter "T"?; and 'How many seconds are there in a year?' The chap from Merrickville visibly paled and appeared greatly agitated; the MC said 'Not to worry, just go on over to the booth and you have 25 minutes to come up with the answers.' Twenty-five minutes later the MC said 'Alright, how many days in the week start with the letter "T"?' And the fellow from Merrickville replied 'Two'. The MC 'Two?' Merrickville replied 'Yep, - To-day and To-morrow'. Panic in the studio audience. MC - 'Very well, we'll give you that one'. But how about 'How many seconds are there in a year?' Merrickville replied, '12'. MC - '12?' And Merrickville replied 'Yep - the 2nd of January, the 2nd of February ...'.
>
> It's all a matter of definition.

Generality

The Iroquoian culture is distinct and readily identified. But, as might be expected, being so well delivered many variations to the common theme abound. Of necessity, this brief account will be confined to generalities applicable in a broad sense to the whole of Iroquoia.

Subsistence

The Iroquoians were farmers who supplemented their crops of corn, beans and squash with meat from the hunt, fish from the seasonal fish runs, birds from the annual migrations and their seasonal use of nuts, berries and plants. The importance of corn, beans and squash to the Iroquoians is apparent by the frequency in which they appear in their rituals where they are known as the 'Three Sisters'. Their having planted beans among the corn, which served as bean poles, is indicative of Iroquoian innovativeness. While farming was the prime food source, they made full use of all foods within reach. The extent to which any particular food was used varied from area to area and time to time as the amount of food available from that source fluctuated. Crop failure due to weather, insects, animals, war and cyclical low production years greatly influenced the Iroquois subsistence pattern.

Villages

Being farmers they lived a relatively sedentary life in villages adjacent to their fields. Villages might be populated by 2,000 people living in some thirty houses. They sited these villages remote from major waterways on the headwaters of small streams or near springs which provided them with water. Sometimes as in eastern Ontario, the villages are on flat lands. Sometimes as in Huronia and in New York State, they are on high hills or promontories at the junction of two streams. However well the village may have been sited for defence, frequently it was protected by a palisade which may have encircled the settlement or simply sited to reinforce weak points in the natural defences. The palisade was as high as thirty-five to forty feet consisting of posts 3 to 6 inches in diameter sunk into the subsoil, but sometimes banked with earth to provide greater support. Galleries on the palisade served to store stones which were cast at the attackers and water which was used to put out fires set by the enemy to destroy the palisade.

Houses

The houses, called longhouses, were long, narrow, tunnel-shaped buildings. Most were approximately 20 to 25 feet wide and high but they might vary in length greatly, some being 300 feet long. The walls were made of vertical posts 2 to 6 inches in diameter sunk into the subsoil. The roofs were often semi-circular giving the structure an arbour-like appearance. Sometimes the roofs were peaked. The pole framework was covered with bark lashed to the posts and secured with long saplings which extended horizontally the length of the house on the walls and the roof. Inside the house a shelf about five feet wide and five feet above the ground extended the full length of the house along the walls on both sides. Down the middle of the house was a row of fires some 20 feet apart. Each fire was shared by two familites, one on each side of the fire, who slept and kept their belongings on the portion of the shelf adjacent to their fire. Simple arithmetic using these facts can be an aid in arriving at the number of people who lived in a house and the size of the village. At each end of the house were compartments in which firewood and large bark casks of shelled corn were stored. Braided strings of corn-on-the-cob were stored in the rafters as were personal belongings and items of daily use. Smoke from the fires escaped from holes in the roof which could be opened and closed with large moveable pieces of bark. One can imagine the Dante-like appearance of these dark smoky tunnels as the many occupants appeared and disappeared in the shadows of the firelight.

Dress

Iroquoian dress varied but it was never that frequently depicted in Hollywood movies. Huron men wore breech cloths in the summer while Huron women wore knee-length skirts. In the winter moccasins, leggings which reached to their waist, a robe worn as a cloak and sleeves were worn. They adorned their person with beads and often greased their body and hair. They painted themselves black, red, green and violet and tattoos were common. Their clothing was sometimes trimmed with bands of red and brown or red porcupine quills. Some men wore feathers in their hair. Others wore small skull caps with feathers or small antlers. Huron women and girls wore their hair in a uniform style, a long braid or tress which hung down the back. To the embarrassment of the Huron, their neighbours, the Neutral, frequently went nude in the summer.

Let us now look at their life-style. But once again, I must remind you that the time available dictates we must do so in the most general terms. While much of what follows refers to the Huron if we avoid detailed particularization, it can be attributed to the Iroquoians in general.

Birth

Huron families averaged about three children which in part was due to women abstaining from intercourse for two to three years while they breast fed each child. Women usually worked up to the time of their delivery and tried to continue with their work as soon afterwards as possible. Upon birth, the child's ears were pierced and it was given a name fitting for its lineage. Babies were carried about tied to a cradle board while the mother carried out her tasks in the village and in the fields.

Adolescence

Girls were not given formal training. At an early age they mimicked their mothers tasks in their daily play. This soon led to their acquiring skills which enabled them to help the women in their tasks and taught them to co-operate with the other women in the longhouse. Boys training was different. At an early age they were taught to use weapons. They were not expected to help with womens work and would refuse to do so if asked. They were encouraged to be brave and self-reliant enduring hardship and misfortune without emotion. To foster this spirit, they went about scantily clothed in winter and they spoke deliberately, infrequently and unemotionally. Some youths went on vision quests seeking guidance from their guardian spirit during a two week period that they went without food.

Marriage

While the Hurons were expected to be restrained in public, they considered premarital sex to be normal and they practised it from puberty. There was no kissing or necking, shall we say, in the daylight but after dark - there was great activity. Although girls might establish a lasting relationship with a single male, she shopped around sexually for the best husband. Young men were expected to recognize

her right to decide which of her lovers she preferred at any one time. If she became pregnant (and was a popular choice) the boys would appear before her claiming the child to be theirs, hoping she would select them as father of the child. After having made her selection they would then live together for a trial period..... Sounds familiar! Parents could not compel their children to marry, but they excelled as marriage brokers providing gifts to prospective brides frequently approaching her parents seeking consent. Marriages were solomized with a feast given by the bride's father. Prior to the birth of a child, infidelity and divorce were common. Any marriage could be terminated by the wish of either partner, but upon the birth of a child, couples separated infrequently. Being a matriarchy, the husband took up residence with his wife in his mother-in-law's longhouse more often than not.

Division of Labour

There was a firm division of labour among the Iroquois. The women were responsible for planting, tending and harvesting the crops. They gathered a wide variety of plants, nuts and berries to supplement their food supply. They were responsible for cooking, sewing and tending the children. They made the pottery vessels which feature so prominently in Iroquoian archaeology. They wove reed and corn-husk nets and made cord from various plant fibers. Sometimes women accompanied their husbands on the late winter hunting expeditions, but they did not participate in the autumn hunts for fear they be captured in the warfare that continued into the fall. Contrary to an early European-originated opinion, the men were not idle. Men cleared the fields for the women to farm. This was a labourious task using fire and stone axes which never ceased as new fields were required to replace those exhausted by continuous cultivation. The men contributed food by hunting and fishing. They also carried out the arduous tasks of constructing and maintaining the longhouses and the defensive palisade. Men manufactured the tools and weapons required and the smoking pipes which, like the womens pottery, play so large a part in Iroquoian archaeology. In addition to these largely maintenance tasks, the men conducted matters of government, trade and war which brought them into contact with the men of other villages and tribes. In essence, the women were the guardians of family life and its traditions while the men were responsible for the safety and good order of the village and its links with the outside world.

Government

Iroquoian government, coupled with the functioning of the confederacies they frequently formed, is a complex subject which would be difficult to explain in the short time available. Nevertheless, this facet of the Iroquoian culture is so fundamental to Iroquoian greatness that it can not be ignored. In the interests of time and simplicity, I will limit my remarks to the Huron model. The basic element was the clan which was made up of individuals who claimed descent from a common female ancestor. Although there were many clans in the Huron confederacy, each was named after one of eight creatures: Turtle, Wolf, Bear, Beaver, Deer, Hawk, Porcupine and Snake. Clans in different villages acknowledged a symbolic affinity for one another and they were not permitted to inter-marry. Clans, in turn,were grouped to form larger entities called 'phratries' for ritualistic reasons although phratries, too, may have been exogamous. Small villages might be composed of one or two clans while large villages might include several clans. Each clan had two headmen. One was the civil leader who was concerned with maintaining law and order in the clan. The other was the war chief who was responsible for military matters. The selection of these headmen arose from the prominence and the respect they held in their areas of responsibility. Upon elevation, they assumed their predecessors name, thereby creating an endless tradition from one generation to the next. While the individual clan headman was responsible for clan matters, collectively the clan headmen became the village headmen responsible for village matters. Each of the four tribes in the Huron confederacy were governed by a council consisting of the village headman from the tribal villages. Each tribe recognized one of the tribal councellors as its principal headman and tribal treaties were made in his name. The confederacy council appears to have been composed of all the tribal councils. A similar system in modern Canadian politics would result in a single man being simultaneously the Mayor of Toronto, the Premier of Ontario and a member of the Federal Cabinet.

War

The quickest way to recognition for a young male was to distinguish himself as a warrior. Youths would band together in small parties to retaliate in a series

of blood-revenge raids and ambushes. Until the whiteman arrived native weapons alone were available. They wore armour made of twigs and carried shields of hide. Subsequently the Dutch and English traded guns to the Five Nations which gave them a great advantage over their Huron enemies.

In a typical ambush they would lie in wait outside an enemy village waiting for their quarry and upon taking a captive they would hurry back to their homeland. The prisoner would then be tortured to near death, usually by fire, before being killed and eaten by which ritual the captors destroyed their enemy and acquired their bravery. Their torture was not carried out in a frivolous manner - it was ritualistic, done in a wholly stoic, emotionless context. Throughout the captive would be called 'cousin' or 'brother' as he was carressed - but in this case carressed with fire. Having been careful to keep the captive alive until sunrise he was taken to a scaffold and there killed and pieces of his body given to the assembled villagers to eat. It is the bones of these captives that archaeologists find in village middens.

Cosmology

All Iroquoians shared the same belief in how the world was made. And it is amazing to find how much of this myth later was adopted by the Algonkians. The basic story is as follows:

> "A woman by the name of Aataentsic was cutting a tree one day and fell out of the sky world. She fell to earth where she was seen by the turtle. The turtle had all the acquatic animals dive to bring up mud to place on his back and so build the land that became earth. Aataentsic was pregnant at the time and later gave birth to twins. One twin, born naturally, was called the 'Good Twin' while the other twin burst through his mother's side and so killed her. He was known as the 'Bad Twin'. He is responsible for all the bad things in the world while the 'Good Twin' is responsible for all the good things. One of the things that the Good Twin did was to make the maple trees give forth syrup instead of sap. The Bad Twin seeing this

said, "This is too good for the people - we must give them some work to do." So he diluted the syrup and now we have only sap which requires a great deal of work to collect and boil down to make syrup."

Editor's Note: In conversation with Dr. Pendergast some obvious questions were asked along this line; 'Is it implied that 'earth' was all water? But if so then how could the animals dive for mud, which is earth, to build earth and so on?' J.P's reply, 'There is the myth - don't attempt to reason it.'

Death

When a man died, his name was given to someone else so that no name was ever lost. When a man was selected to be given the name of a deceased, he assumed the duties associated with that name. If the deceased had been a chief, then the new possessor of that name became a chief and much ceremony was observed in his elevation. In this manner, the dead were resuscitated and they were given immortality. A dying many often made a farewell feast for his friends to show he did not fear death. When a man had died, he was placed in a flexed position almost as a child in the mother's womb. A fine feast was prepared in his honour at which only the women, except little girls, wept. Upon a signal from the chief, weeping ceased. The men did not weep or lament. They put on a sorrowful and melancholy look with their heads sunk on their knees. At this time someone of importance spoke in praise of the deceased.

Burial

The Huron buried their dead on scaffolds in a cemetary near the village. Every 8 to 10 years, the bones of the dead were collected and with great ceremony buried in a common pit, called an ossuary, at some distance from the village. This was the Feast of the Dead which was witnessed by the Jesuit missionaries in Huronia. Other Iroquoians buried their dead in a flexed position in the ground sometimes within the longhouses. Not all dead were buried alike. Those who died from drowning or from freezing were stripped of their flesh which was burned

to appease the sky or Lake spirits. Hurons who died a violent death were burned or buried immediately, often while still half alive. These persons were not exhumed for re-burial in an ossuary later.

Afterlife

The soul was believed to be immortal. The Huron believed it could enter other bodies after death and it is for this reason that babies were buried near the path to the village so as to enable the soul to enter a woman passerby to be born again. There were two souls. One soul separated from the body on death, the other remained with the bones of the deceased. It was a common Huron belief that souls left the body to make a difficult journey by way of the Milky Way to where the souls of the dead went. The very old and little children were not strong enough to make this difficult journey. They remained in the country inhabiting their own villages where they lived on as they had before death. The souls of those who had died in battle formed a group by themselves for the other souls feared them and would not let them into the soul villages occupied by the old and the very young children.

Conclusion

I have explained that the time available dictates this description of the Iroquoians be confined to generalities. I suggest to those of you who wish to pursue your interest in the Iroquoians that you read Dr. Elizabeth Tooker's "An Ethnography of the Huron Indians, 1615-1649" published by the Smithsonian Institution; Dr. Conrad Heidenreich's "Huronia: A History and Geography of the Huron Indians, 1600-1650" published by McClelland & Stewart, Toronto; or Dr. Bruce Trigger's "The Children of Aataentsic: A History of the Huron People to 1160" published by McGill-Queens University Press. Those of you who wish to become involved in the archaeology of the area might consider joining the Ottawa Chapter of the Ontario Archaeological Society or the Canadian Archaeological Association. I would be pleased to provide you with information on these societies.

ADDENDUM

During the lunch hour, I was approached by two or three people asking how they could gain access to the mine of information they had been hearing about this morning, and I would like to tell you that all of these agencies to whom you pay your taxes to maintain have this material in many forms available on request. Those of you who run museums or historical societies can contact the National Museum of Man who have films, one on the Draper Site this morning in which we saw the longhouse layout; they also have numerous popular publications that can be used for teaching. There is Canada's Visual History which provides a booklet in a plastic wrapper with slots for 30 to 40 slides which illustrate the history and the text of the subject. There is the Edukit accompanying texts. Then there is the Mercury Series - a scholarly series. There are also the popular publications you saw in connection with Dr. Wright's talk which are handouts at the National Museum, Ottawa. The point I'm getting at, in just the National Museums alone, there are many, many publications, film strips, films and slides available on this subject; but that is only the National Museums. The National Museum of Man has an exhibit 'Prehistory' which has been circulated in Ontario and Quebec and which may be available on request.

The Royal Ontario Museum has its publications and last, but meant to be least, Phil Wright wherever you are, the Ministry of Citizenship and Culture, Ontario, has a series of publications and exhibits. And have been largely in support of such events as this.

Many things are available. Look to your National Museums; look to the Royal Ontario Museum and other provincial sources in Ontario. You pay for them - you make use of them.

DR. W. A. B. DOUGLAS

Born Southern Rhodesia 1929. Spent the war years 1940-43 as a war guest in Canada. Returned from England to Canada in 1947. Attended the University of Toronto, graduated 1951 with B.A. Modern History. In 1960-61 obtained M.A. in History from Dalhousie University and obtained his Ph.D. from Queen's University in 1973.

Enlisted RCN 1950 and qualified as a specialist in navigation. In 1961 appointed Squadron Navigator and Operations Officer 7th Canadian Escort Squadron. Appointed to R.M.C. Kingston as the Naval Staff Officer and Associate Professor in military studies in 1964. In 1967 posted to C.F.H.Q. as an historian in the Directorate of History and in 1970 promoted to Commander and appointed Senior Historian.

Principal Publications - Books: 'Out of the Shadows: Canada in the Second World War' with Brereton Greenhous; Articles - 'Prelude to Louisbourg: Canso and the Royal Navy, 1713-1745'; 'The Sea Militia of Nova Scotia 1749-1755'; 'The Anatomy of Naval Incompetence...Defence of Upper Canada before 1813.'; 'The Blessings of the Land: Settlement of Naval Officers Upper Canada 1815-1841'. 'Kanadas Marine und Luftwaffe in der Atlantkschlacht' and others.

In preparation - Books: 'Official History of the Royal Canadian Air Force, Vol. II' with Owen Cooke. Articles - 'The RCAF and RCN in the Battle of the Atlantic'.

Associations:Member of--Ontario Historical Society, Past President;Canadian Historical Association; United States Military Institute; Military Institute, Editorial board of ' Military Affairs '; Society for the Promotion of Nautical Research, (U.K.); Secretary of Canadian Sub-commission of the International Commission of Maritine History and Member Canadian National Commission of Military History

THE PRECURSORS OF COLONEL JOHN BY

W. A. B. Douglas

There are some who question the greatness of Colonel John By, but few will dispute the fact that he has become a Canadian hero. Like some others who enjoy that distinction he triumphed over adversity to perform his duty, received little better than abuse from his political and military masters and died a premature death, unadorned with the honours he thought, and his admirers still believe, that he deserved. The scene of his labours was the Canadian wilderness, "the seat of pestilential fever and ague", and there he left his monument. In the backwoods of Upper Canada where the Rideau Canal ran its course he was "beyond the pale of envy, of jealousy or depreciation. There, if you would realize his talent and genius, do as directed of a greater man -- Sir Christopher Wren, architect of St. Paul's Cathedral --' Lector, si momumentum requiris, circumspice...' (Reader, if you seek a memorial, look about you). (1)

The author of that handsome epitaph, Sir Richard Bonnycastle, had much in common with John By. Both had long and distinguished service in the Royal Engineers; both associated themselves with tory causes in Upper Canada. (2) The men who paved the way for By were not dissimilar; sometimes visionaries, often soldiers -- particularly engineers -- all of them in their way either patrons or patriots of Upper Canada. That tories could be patriots is sometimes forgotten, but defenders of the Ottawa-Rideau waterway project usually placed local ahead of British interests. John By himself, whether he understood it or not, seemed instinctively to grasp and put into operation the combined traditions of the Royal Engineers, the Upper Canadian Militia and the tories of Upper Canada. He was both the product and embodiment of what could be called an Ottawa-Rideau waterway lobby.

Upper Canada was the raison d'être of the entire project. When it became clear, after 1783, that British settlers would occupy the region north of the Great Lakes, its defence and future prosperity began to occupy the minds of colonial administrators. British military surveyors and engineers examined the topography of the area. Two principal

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(1) Sir Richard H. Bonnycastle, The Canadas in 1841 2 Vols. (London, 1841) II, 67, 87.

(2) Dictionary of National Biography; Macmillan's Dictionary of Canadian Biography.

lines of communication attracted their attention, the St. Lawrence River and Great Lakes to the south; the Ottawa and French Rivers leading to Lake Huron in the north. Should the south shore of Lake Ontario and Lake Erie fall into the hands of the United States, major difficulties would present themselves. Not only would the Canadians need naval superiority in the face of a population able to increase much more quickly than they but, argued Captain Gother Mann of the Royal Engineers in 1792, this might lead to "an excess of competion beyond the value of the Object", (he referred to both commerce and ship building), and the carrying trade "might be liable to be frequently deranged by the jealousies and intemperance of the lower classes of the people, the subjects of different nations, engaged in the same kind of business, meeting continually in a mixed intercourse upon the narrow Communications". (3) John Graves Simcoe, first Lieutenant Governor of the province, soon appeared on the scene and tried to dispel such gloom with his enthusiasms,(4) of which more later, but neither he nor subsequent military observers could rid themselves of fascination with Upper Canada's remarkable network of inland waterways. An Englishman only had to look at a map and he began to see canals. "In a large Map which I have of your part of Canada", wrote the Duke of Northumberland to Simcoe in 1795, "it appears as if there was a communication from L. Ontario through the Bay of Quinty, Rice L. and L. Simcoe to Gloucester (Penetanguishene) on Lake Huron. If this is the case, or such a communication could easily be made it certainly would be of the utmost consequence to you, especially now as we have consented to give up the Forts and content

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(3) Capt. Gother Mann, R. E. "A General View of the situation and importance of the several Military Posts in Upper Canada, with a brief description of the Great Lakes and their Communications, together with some remarks on the frontier and the Boundary Line of the Province.", 29 Oct 1792, MG 13, WO 55/1551 (6) PAC Microfilm reel B-1280.

(4) S. R. Mealing, "The Enthusiasms of John Graves Simcoe", Canadian Historical Association Report, 1958, 50-62.

ourselves with the Boundaries fixed upon by the Treaty of Peace...". (5)

Jay's Treaty (1794) which gave the United States jurisdiction south of the lakes, was one of many setbacks to Simcoe's ambitions for the new province. By the time he left in 1796 he had failed to establish the great entrepot of trade he foresaw, part of a continuous waterway from Montreal to the Gulf of Mexico; he had not created military settlements on the Roman model by which he hoped to bring order, discipline and productive labour to the region; he had not made Upper Canada "the Bulwark of Empire in America". Like John By forty years later, moreover, Simcoe forfeited the goodwill of his superiors because he lost touch with Westminster. Like By he nevertheless placed his stamp on Upper Canada. (6)

The province survived the War of 1812 in spite of strategic weaknesses that Simcoe and other military and naval observers pointed out. Initially the credit could be claimed by those who framed British strategy: the Governor in Chief, Major General Sir George Prevost, for the forebearance and subtlety that kept New England out of the war, and Major General Sir Isaac Brock for his bold use of temporary naval advantage in Lake Erie, and seizing upon the enemy's mistakes. As the war dragged on and the shipbuilders of both sides fulfilled Gother Mann's prophesied "excess of competition" the weight of British naval mastery on the oceans, and ability to compete on the lakes, led to stalemate. Yet luck was the greatest single reason for the

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(5) Duke of Northumberland to Simcoe, 6 Nov 1795; E. A. Cruikshank (ed), The Correspondence of Lieutenant Governor John Graves Simcoe, 4 Vols (Toronto, 1926) IV, 128. This paper will focus on the Ottawa/Rideau waterway which Northumberland did not single out. It should be noted here that British interest in various other inland routes of Upper Canada remained strong throughout the period under consideration. For some useful documents and commentary see Florence Murray, Muskoka and Haliburton, 1615-1875 (Toronto: The Champlain Society of Ontario, 1963).

(6) Mealing, "The Enthusiasms of Simcoe"; George Raudzens, The British Ordinance Department and Canada's Canals (Waterloo, Ont, 1979) 99.

preservation of Upper Canada. Total dependence on the River St. Lawrence for supplies became only too evident to the American high command. In 1814 Lieutenant Colonel "Red George" Macdonnel had won a breathing spell by routing an American force at Ogdensburg but found the American General Jacob Brown was planning an attack on Canada's vulnerable lines of communication in 1815. (7) The fiery Scot, one of three professional soldiers in the British army who returned to their native Canada during the war, (8) urged his superiors to set up an alternative supply system. He proposed "a secret, safe and convenient channel of communication from Montreal to Kingston, by a kind of anastomosing branch of the St. Lawrence --- to be formed by the Rideau etc.". He had learned that "the casual erection of Mill dams had overflowed the country & assumed a proximity to each other highly desirable.".(9)

Macdonnel did not explain how he learned about this phenomenon, but it is an interesting coincidence that in the winter of 1814 both he and Captain Reuben Sherwood of the Leeds Militia carried out surveys of the route. Sherwood, who was at this time a Captain of Guides, was the son of Thomas Sherwood, the first settler in Elizabethtown. Reuben has surveyed several other townships on the route before the war, for example Pittsburgh, South Crosby and North Crosby, and was probably more familiar with the terrain than anyone else. (10) Even so, neither his plan nor Macdonnel's impressed Colonel Robert Nicholl, Quartermaster General of the Militia. Acknowledging that both men ought to have been more competent

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(7) C. P. Stacey, "An American Plan for a Canadian Campaign", American Historical Review, XLVI No. 2, January, 1941, 348-58.

(8) W. S. Buell,"'Red George' - one of the Macdonnels", Canadian Historical Review (CHR) IV, No. 2, June 1923, 150-159.

(9) Lieutenant Colonel E. Macdonnel, "The Topography of the Canadas", 1817, RG 11, C.O. 42/177, 303-5, reproduced in George Raudzens, "'Red George Macdonnel , Military Saviour of Upper Canada?", Ontario History, LXII, No. 4, December 1970, 199-212.

(10) Don W. Thomson, Men and Meridians, (Ottawa, 1966) I, 233; MG 30 D1, Vol 27, Francois Joseph Audet, Biographical notes; RG 8, I, C38/97-104; RG 5, A1, Upper Canada Sundries, Vol. 6, 2349-52, 2655-6.

judges than he, Nicholl still believed that "in the present uninhabited state of a great part of the route it is quite impracticable with any however large outlay of money to make it an available communication." He argued that to travel over the ten portages suggested by Sherwood it would be necessary to hire 1700 yoke of oxen or pairs of horses. Even if populous parts of the country could provide teams, he understood forage was not to be had. (11)

Nicholl was still prepared, if ordered, to carry out a trial, and the idea did take root. It received support from the commander of the forces, General Gordon Drummond, who forwarded it to Prevost with his endorsement, even though "the difficulties will be immense and the expense enormous". (12) The war was over before the plan could be tried out, but Sherwood's rough estimate of costs in July 1815 seemed to downplay the difficulties. He thought that a route by way of Kingston Mill Stream, Schofield Mill Stream, Irish Creek and the Rideau to the Ottawa River, would cost £10,000 currency. Batteaux could then, he claimed, get up to Kingston from Montreal as fast as they did by the St. Lawrence route. (13)

Why were Drummond and Prevost, who forwarded the proposal to the Colonial Office, prepared to accept the word of Macdonnel and Sherwood against the persuasive arguments of the local Quartermaster General? The clue may lie in a document received in 1815 by Colonel Gustavus Nicolls, commanding the Royal Engineers in Canada, from one of his departing subordinates, Captain Gaugreben of the King's German Legion. The Royal Engineers had established a reputation for efficiency and reliability in the Revolutionary and Napoleonic Wars, as well as in North America. The engineer officers in the German Legion, of whom there were ten in 1815, had met what were considered to be the exacting standards of the Royal Military Academy at Woolwich, and like their British counterparts commanded respect for their scientific attainments. (14) Before

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(11) Nicholl to Drummond, 7 Jan 1815, RG 8, I, C38, F. 97.

(12) Drummond to Prevost, 17 Jan 1815, ibid., 105.

(13) Sherwood to Lieutenant Colonel Christopher Myers, DQMG, 13 July 1815, ibid., 118.

(14) Whitworth Porter, History of the Corps of Royal Engineers, Vol. 1 (London, 1889), 397-408. There is evidence that Gaugreben was not a good practical engineer, but his opinion was evidently still respected.

leaving Canada, Gaugreben subjected the War of 1812 to a dispassionate analysis, and confirmed among other things the vital importance of inland waterways to the mobility of troops defending Upper Canada. Noting how Indian tribes had previously compensated for inferior strength by using these waterways, Gaugreben went beyond Macdonnel and Sherwood to advocate canals between the Ottawa River and Kingston (15)

Like Gother Mann in 1792, Gaugreben exuded a pall of gloom. If British control of the lakes was not to be unchallenged he virtually recommended abandoning them. He wanted to prevent American possession of Canada by leaving the frontier a wasteland to a depth of forty miles, something which would also insulate the inhabitants from "those turbulent Americans". "People who are the remotest from each other fight with the greatest rage against each other", he wrote.

> People speaking the same language, having the same laws, manners and religion can never be depended on as enemies. The minority will always be brought over by the majority, particularly if the system of Government of the latter is the most favourable to the gratification of the passions of the Lower Orders of people. (16)

Here was tory orthodoxy, and it evidently found a sympathetic ear in Nicolls. It certainly reflected the consensus of what was considered scientific military opinion. Thus Lord Bathurst, who in October 1815 was "deeply impressed with the importance of carrying into execution the works necessary for

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(15) MG 24, F 13, Gustavus Nicolls, Vol. 1, Captain Gaugreben, "Memoir on the Defence of Upper Canada".

(16) Ibid., Note the almost identical language of General Sir George Murray writing to Lord Melville on 27 March 1815: "(By) having considerable bodies of New Settlers in the same neighbourhood, it is probable that a National Spirit could be kept longer alive...; amongst soldiers, feelings of attachment to the Crown, and of hostility to the United States, would keep their hold longer...". G. S. Graham, "Views of General Murray on the Defence of Upper Canada, 1815", Canadian Historical Review, XXXIV, No. 2 , June, 1953, 158-165.

the improvement of the Water Communications between the Upper and Lower provinces" (17), also hastened to authorize military settlements, naming the disbanded regiments which were to receive land on the Rideau route. (18) Even Gaugreben had conceded it would be impracticable and inhumane to dispossess inhabitants closer to the frontier, and they were left undisturbed. Although fortifications such as those at Niagara and Amherstburg were of doubtful military value, they had an important role, not only in deterring an enemy, but also in providing a show of defence to the population. Twentieth century politicians and generals were to reach somewhat similar conclusions about the defences of Canada during the two World Wars. (19) But in 1815, if Canada was to remain British, there also had to be secure lines of communication.

The alternative to such measures, abandoning Upper Canada to the United States, occurred to many people in Britain, some of them highly placed, but the War of 1812 had enhanced the importance of North America in British eyes to such an extent that the province won a new lease on life. Not that it was now Simcoe's bulwark of Empire, although that dream was closer to reality than before, nor that it had become a great commercial entrepot, but it was no longer expendable. A strategy like that of Sir George Prevost in 1812, one which worked on the assumption that Upper Canada would fall into American hands, gave way to a deliberate policy of making the province defensible. "Red George" Macdonnel argued in 1817 that "If very considerable attention be not paid to the Canadas they will, I much fear, ere long swell the number

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(17) Bathurst to Drummond, 10 Oct 1815, C38-129. George K. Raudzens, Canada's Canals, 44. Robert Legget, Rideau Waterway (Toronto, 1955) although it does not deal with the background to the building of the Rideau Canal in comparable detail, is still the most useful general account.

(18) Robinson to Bathurst, 29 July 1815, CO 42/356/69; Gore to Drummond, 3 Feb 1816, CO 42/357/10-41; Bathurst to Sherbrooke, 1 July 1816, CO 42/24; Lillian F. Gates, Land Policies of Upper Canada (Toronto, 1968), 85-89; J. M. Hitsman, Safeguarding Canada, 1763-1871 (Toronto,1968), 116. The Regiments named were the 97th, 99th and 100th Regiments of Foot and de Watteville's Regiment.

(19) MG 24, F13, Vol.1, Gaugreben Memoir; Roger Sarty, "Silent Sentry: Canadian Coastal Defence 1867-1939", draft Ph.D. thesis, University of Toronto, 1982.

of the American States, and drag after them the whole of our trans-atlantic Possessions and important nurseries of marine". (20) This was precisely what Britain's principal statesmen, Castlereagh, Canning and the Duke of Wellington, believed. Getting out of the American's way in Canada, as Professor Kenneth Bourne has put it, "had little appeal for full-blooded British foreign secretaries". (21) Bathurst's support was therefore a symptom of changed attitudes, and it helps to explain the sequence of events over the next ten years.

One historian of these events, Professor George Raudzens, has written with disapproval about the shady methods used to pry money for canals out of the British Treasury. (22) There seems to be little doubt that the British Department of Ordnance, and colonial authorities on both sides of the Atlantic, resorted to some bureaucratic "bafflegab" to obtain approval for their projects. The trick was first to commit the Lords Commissioners of the Treasury to the principle of subsidising Canadian public works, then urge additional support so that money already spent was not simply going to be thrown away. Bureaucracies of every age and every place are familiar with the technique. It is usually reserved for urgent requirements, the arguments must be thoroughly plausible to succeed, and they are seldom advanced without first testing the waters of government and Cabinet opinion. Raudzens tries to get behind the smoke screens thrown up by bureaucrats to cover their flanks, and argues that one colonial administrator after another misrepresented the facts to hoodwink the Treasury. Deliberate falsifications of figures is difficult to prove, even though there are some anomalies in the financial statements of three Governors-in-Chief, Sir John Sherbrooke, the Duke of Richmond and Lord Dalhousie. There is truth, furthermore, in Raudzens' contention that Canadians wanted canals in the St. Lawrence more than the Ottawa-Rideau waterway. (23) He is on much weaker ground when he speculates that the Lords Commissioners

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(20) "The Topography of the Canadas", published in Raudzens, Macdonnel, Military Saviour of Upper Canada?", 212.

(21) Kenneth Bourne, Britain and the Balance of Power in North America, 1815-1908 (London, 1967), 71.

(22) Raudzens, The British Ordnance Department and Canada's Canals, 37-53.

(23) Ibid., 47.

of the Treasury thought the Ottawa-Rideau route was that being requested, and that it was the logical link between the provinces, purely because they were ignorant of geography and had no map to consult. And his suggestion that there was little evidence of Canadian support for this route is eminently arguable. (24)

Canals, which were being built at a great rate in North America, were at the core of politics in the Upper and Lower provinces between 1815 and 1827, when the Upper Canadian assembly passed the Rideau Canal Act. The House of Assembly at Quebec, dominated by the Canadian Party, (the patriots, as they became known after 1826), came to resist the use of public funds for interal improvements. They won a great election in 1827 on the issue of revenue control, as a result of which Lord Dalhousie was recalled and sent to India. (25) The tories, who dominated government in Upper Canada, embraced a very different view of the world. They related internal improvements to independence from American institutions. (26) Let the Americans build the Erie Canal, wrote an anonymous correspondent to John Macaulay's Kingston Chronicle in 1819. Without it "the inhabitants of these districts would have been continually urging their Government to procure from Great Britain a free passage by the St. Lawrence, a privilege which could not have been granted them without sacrificing the security and opulence of both Provinces". The Canadas would have to wait until the country became more populous. Then would be the moment to seize advantage of canals along the St. Lawrence route; and for such projects Government would be the only reliable source of financial support. (27)

The Chronicle published, in one of the issues containing these letters about internal improvement, the report of the commissioners appointed in Lower Canada to examine the need for canals. George Garden, George Hamilton and Joseph Papineau (the conservative seigneur whose son Louis Joseph

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(24) Ibid., 28.

(25) Fernand Ouellet, Lower Canada, 1791-1840: Social Change and Nationalism, 183-209.

(26) S. F. Wise, R. Craig Brown and R. A. Preston, Canada Views the United States: Nineteenth Century Political Attitudes, (Seattle, 1967), 42-3.

(27) Kingston Chronicle, 5 March, 1819.

became a leading radical) adopted a line sympathetic to the tory point of view. To compete with the United States, they said, Canadian canals must be free to modify tolls as necessary without regard to immediate profits, and they must generate a wide diffusion of trade throughout British North America. "These two important points", they argued, "indicate the River Ottawas (sic); let the communications between the River Rideaux as far as Kingston be adopted. If it be asked how far that is practicable, cast an eye over Eaden's Map of Upper Canada (of the 1st January 1813) and over the Pamphlet intitled "A Topographical Description of Upper Canada, 2nd. Edition, London, 1813, p. 17." Then came the revealing, almost triumphant statement, "Besides, this tract is in Upper Canada". Presumably, they concluded, the Upper Canadian government would feel its importance, and adopt the necessary means to open up the route. (28)

Their evidence merits closer examination, because it shows how the Rideau district had already attracted local attention. As early as 1783 Governor Haldimand had sent an officer to explore the route, and even before Simcoe's arrival settlement had begun. By 1813 Lieutenant Governor Francis Gore attached importance to the region.

> In the rear of (townships bordering the St. Lawrence) are 24 others, in which settlement has commenced, to the south of the Ottowa (sic) or Grand River, which many of them front; others are well supplied by the waters of the Radeau (sic), and Petite Nation with the Gananoque lakes and streams...
>
> The heads of the rivers Radeau and Petite Nation, communicate by short portages, or carrying places, with the waters which fall into the St. Lawrence, and promise to afford great advantages to all kinds of inland communication. The forks of the Radeau, about which are the townships of Oxford, Marlborough and Gower, promise to be, at some future period, an emporium

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(28) Ibid. 9 April 1819. The Commissioners referred to David William Smith's, A Short Topographical Description of His Majesty's Province of Upper Canada in North America, drawn up for Lieutenant Governor Simcoe and brought up to date in 1813 by Lieutenant Governor Francis Gore. Eaden's map has not been located.

for future commerce. (29)

Smith's survey of Upper Canada prepared under the Simcoe regime and brought up to date under that of Francis Gore, a map that gives great emphasis to inland waterways, provides ample graphic substantiation for the written text. (30)

The Lower Canadian Commissioners in 1819 had further reason to be confident. Meeting with their Upper Canadian counterparts, Thomas Clark and James Crooks, at Niagara in October 1818, they had confirmed an urgent desire to cooperate in opening up a route to the sea that would permit navigation by vessels no smaller than those using American routes. (31) Both the St. Lawrence and Ottawa-Rideau alternatives were then being considered, and by 1821 the Upper Canadian Select Committee on Internal Resources was reiterating the arguments of 1818 with utter conviction. The report of this committee included the view that "the great and indeed only efficient measure by which...a permanent relief can be afforded to the commerce of Upper Canada" was the improvement of inland navigation. Having described the waterway needed, the report stipulated:

> a work of this description should not be on an exposed frontier, but should be wherever circumstances admit of it inland. Could it be on a scale which would enable the Governor to bring the smallest sized vessels of war right into the lakes it would prove in the opinion of your committee the best barrier against the future hostile attempts of the United States of America that could be formed. Military protection and commercial facility would thus be united, and the Province of Upper Canada, instead of being as it is at this particular time a dead weight upon the Government and

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(29) Ibid. 16-17. cf. Lillian F. Gates, Land Policies of Upper Canada, 30, 34; Glen Lockwood, Montague: A Social History of an Irish Ontario Township, 1783-1980 (Kingston, 1981), offers the best account of early settlement in the region.

(30) David William Smith's map of Upper Canada, 2d. Edition, 1813, PAC NMC 0015292.

(31) Upper Canada, Journals of the Legislative Assembly, 30 October 1818.

and commerce of Great Britain, would be one of their most flourishing colonies. (32)

"An Act to make provision for the improvement of the internal navigation of this Province" enjoyed a swift passage through the House on 13 April 1821 and received Royal Assent on 14 April from Lieutenant Governor Sir Peregrine Maitland. (33)

Timing was important. Since Sherwood's proposals of 1815 there had been a great deal of activity in both civil and military circles. Bathurst's encouragement had prompted the Ordnance Department to authorize a complete survey of the Ottawa-Rideau route by Royal Engineer officers in 1816. The reports of these officers, Lieutenants R. J. Baron and Joshua Jebb, had prompted Lieutenant Governor Gore (returned to Canada after several years' absence) to advertise for tenders to proceed with design and construction of a waterway. In 1817 the Lords Commissioners of the Treasury brought a rapid halt to the project, which at that time was not for a full-scale canal but a modest combined waterway and overland railway. (34) Heavy public debt and financial retrenchment prevented the expenditure of the necessary funds. Sir John Sherbrooke, the Duke of Richmond and Lord Dalhousie then lent their not inconsiderable weight to support of the waterway as a necessary defence measure that would also bring economic benefits to the region. They assaulted the Treasury citadel by degrees, first by implementing a cost-sharing agreement with the Lower Canadian government for improving the Lachine Canal, then committing the Lords Commissioners to a substantial outlay for essential work related to the military uses of the canal. By 3 April 1818 Sir John Sherbrooke and Lord Bathurst had achieved this objective; the Duke of Richmond then took up the reins. Before his untimely death on 10 August 1819 he had convinced London of the need to extend the works up the Ottawa route, and his

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(32) Ibid., 31 March 1821.

(33) Ibid, 13-14 April, 1821.

(34) Raudzens, Canada's Canals, 45; Lieutenant J. Jebb to Col. Gustavus Nicolls, 8 June 1816 and 14 July 1816, RG 8 1B, Vol. 1915, 1-36; Notice for tenders, February 1817, RG 8 C 39/11.

successor Lord Dalhousie persuaded Whitehall in 1822 that enough money was left over from the Lachine project to divert £25,000 to the Grenville Canal. (35) In 1824, the Treasury agreed to Dalhousie's request for a further £25,000 to complete the Grenville Canal, observing that it would eventually pay for itself by tolls and was giving employment to destitute immigrants. Moreover, Dalhousie argued, "to check the work now would be to throw away all the money already expended." (36)

In the meantime, the Duke of Wellington confirmed the respectability of these endeavours by issuing, on 1 March 1819, his definitive plan for the defence of the Canadas. This document, which placed particular importance on the waterways, stemmed from correspondence between Sir John Harvey, the Duke of Richmond and Lord Bathurst in November 1818. (37) Its language reveals much deeper roots. It echoes the reports of military engineers and administrators who had been writing about the defence of Upper and Lower Canada since 1792. Behind the cool military appreciation lay the conservative philosophy of the so-called Age of the Democractic Revolution, a philosophy whose words by 1819 were beating upon increasingly unreceptive ears among the inhabitants of both provinces, and for that reason possibly uttered with more circumspection than they had been when Simcoe still held his joyful vision of an Upper Canadian bulwark of empire. By 1819, moreover, it was already clear that military settlements were not working out. Men were abandoning unprofitable lands in the rocky soil of Bathurst, Drummond, Beckwith, Goulbourn, Burgess and Elmsley Townships. Lieutenant Governor Gore and Lord Dalhousie were tempering the enthusiasm they may originally have entertained for this system, to the bitter resentment of the agents responsible for making the settlements succeed. Without the waterway, as both agents and governors perceived, the settlements were of doubtful value. All energy went into measures to further the project. (38)

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(35) Raudzens, Canada's Canals, 48-51.

(36) Ibid., Hitsman, Safeguarding Canada, 118-9.

(37) Raudzens, Canada's Canals, 37.

(38) Gates, Land Policies of Upper Canada, 87-93; A.R.M. Lower, "Immigration and Settlement in Canada, 1812-1820", Canadian Historical Review, III, No. 1, March 1922, 37-47. See also R.R. Palmer, The Age of the Democratic Revolution: A Political History of Europe and America, 1760-1800 (Princeton, 1959).

Upper Canadian Executive and Legislative bodies concerned themselves principally with the future prosperity of their own land: it was to their advantage that growing Anglo-American tension gave added impetus to the Duke of Wellington's plans for the fortification of the province. After the death of Viscount Castlereagh in August 1822 the new British Prime Minister, George Canning, provoked the distrust of two American presidents, James Monroe and John Quincy Adams. The gulf between American and British views about French designs in the West Indies led to the American enunciation of the Monroe Doctrine, and the British dispatch of a commission consisting of engineers under Colonel Sir James Carmichael Smith to report on Caribbean defences in 1823. In 1825 the Duke of Wellington sent Smith to British North America in response to a further straining of relations. (39) In the meantime the Upper Canadian Committee of the Improvement of Internal Navigation urged progress in opening up the Rideau route. In 1823 the Legislature commissioned Reuben Sherwood and the civil engineer Samuel Clowes to conduct a survey. In laying the results of that work before the House the following spring, the committee members John Strachan and John Macaulay, teacher and pupil respectively in the business of tory government and Upper Canadian rights, expressed the widespread support of the ruling elite:

> It is hoped...that the same enlightened patriotism which originally suggested the canal surveys, will watch over them until they shall be perfected, and until the capabilities of the country for internal improvements, vast and noble as they are, shall have been fully investigated and made known. (40)

When in 1825 Carmichael Smith made his report, a report that received endorsement from the Duke of Wellington in almost all respects, he revealed his awareness of local realities by pointing out that enthusiasm probably did not extend to "the bulk of the Inhabitants of the Province", (41) which

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(39) Bourne, Balance of Power in North America, 38; H.C. Allen, Great Britain and the United States: A History of Anglo-American Relations (1783-1952) (London, 1954), 351-389.

(40) Maitland to Bathurst, 1 April 24, with enclosures, CO 42/372, f. 171.

(41) Wellington to Bathurst, 6 Dec 1825, with enclosures, CO/42/208, ff 1, 74.

meant that Britain probably would have to pay for inland waterways. The evidence does not however seem completely to support Professor Raudzens' argument that "the military canal scheme was instigated by imperial officers too often acting on their own initiative, and able to carry on by exploiting London's inadequate knowledge of the details about colonial expenditures". (42) Those officers had both the support and the gratitude of Upper Canadian tories on the one hand, and the concern of the British Prime Minister and Master General of the Ordnance (the Duke of Wellington, who had built this office up to a cabinet post) on the other. Thus, once Carmichael Smith had done his work it was natural and inevitable to organize and carry out the task of building the Rideau Canal.

The first engineering survey by Joshua Jebb in 1816 had retraced the footsteps of his predecessors. Jebb was no exception to the natural tendency of early explorers to seek the shortest route between the Ottawa and St. Lawrence rivers. When he reached the junction of Irish Creek and the Rideau River, about six miles above Merrick's Mill, he followed the tributary rather than bearing off westwards towards the Rideau Lakes and the intervening rapids. Even though the creek, highly promising at first, degenerated into drowned land that had been mere swamp before the building of various mill dams, he persisted on his way. Between the southwest tip of Irish Lake and what he called Gananoque Stream, lying in a very fertile and highly cultivated valley two miles long and eight to twelve hundred yards across, was a three mile portage. By sacrificing the valley and making a dam head across to supply a canal, navigation leading through what are now the Beverley Lakes would have been possible, but he did not think it worth the trouble and expense. Instead, he recommended a railway built of cast iron "which could easily be obtained and brought by water if Government would again occupy and work the furnace on the Gananoque Stream" (at what is now Lyndhurst). If that was not feasible, the railway could be made with timber. Navigation could resume at Parishes' mill, with a lock and canal to pass the fall from Gananoque Stream to what he called Whitefish or Gananoque Lake. Another lock would have been needed for the stream up to Haskins Mill (now Morton), where a dam secured communication with Cranberry (now Whitefish) Lake, made passable

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(42) Raudzens, Canada's Canals, 39.

by a dam at the head of Kingston Mill stream. There would then be the necessity of overcoming some minor rapids before constructing a major set of locks at Kingston Mills. Jebb also offered a means of linking the Irish Creek route with the settlements near Perth by way of Smiths Falls and Rideau Lake. These routes would handle vessels from three to ten feet wide and with a two foot draft. (43)

The Duke of Wellington's statement of 1819, based as it was on the Duke of Richmond's recommendations, referred to Jebb's proposed route, and accepted Jebb's military assessment of its importance. Assuming a strength of 10,000 men in Upper Canada he intended to divide the force into two corps of 5,000 men, the right on the communication between Lake Simcoe and Lake Erie; the left on Irish Creek, from whence "it could reach Montreal in four days, and the frontier of the Richelieu and the Isle aux Noix in two more, or Quebec in three..." (44) In 1823 Reuben Sherwood and Samuel Clowes, working under the auspices of the Upper Canadian parliament, also reconnoitred Irish Creek. After doing so Samuel Clowes received instructions to take the most direct line and the lowest summit -- that is to say the most elevated point of the waterway -- possible. All concerned thought this would probably be found in Kitley Township at Plum Hollow, where the Rideau and Gananoque systems came closest to each other. But Clowes was given much more ambitious terms of reference than Jebb had received. After five months of labour he submitted an estimate based on a waterway that would compete with the largest American canals, 7 feet deep, 40 feet wide at the bottom and 61 feet at the surface, with locks 100 feet long and 22 feet wide. The elevation of Plum Hollow was found to be two feet higher than that at the Indian Carrying Place joining Mud Lake and Rideau Lake (the present site of Newboro), and the Plum Hollow route would have required a feeder canal ten miles in length from Rideau Lake before being canalised itself. Consequently Clowes recommended cutting through the rock at Indian Carrying Place, which would result in "a magnificent summit pond 31 miles in length 154.105 feet above

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(43) Jebb to Durnford, 14 July 1816, RG 8 IB, Vol. 1915, ff 16-30.

(44) Memorandum on the Defence of Canada, 1 March 1819, Despatches, Correspondence and Memoranda of Field Marshall Arthur Duke of Wellington, K. G., edited by his son the Duke of Wellington in continuation of the former series (London, 1867-78) I, 39.

L. Ontario". (45) Ten miles longer than the direct route, this was close to the channel adopted by Colonel By and his engineers in 1826, although there were several major differences between the final canal and that recommended by Clowes. (46)

The Smith commission accepted with question Clowes' proposals and his estimates, which both contemporaries and historians have delighted in ridiculing because they were so low -- only £169,000 compared to the final figure of approximately one million pounds sterling -- and the Duke of Wellington authorized General Gother Mann to undertake the project in 1826. (47) Gother Mann, now commanding the Royal Engineers, came full circle when he recalled John By to active duty in order to carry out his great life's work. It has been suggested (48) that the choice was a hasty one, but in a small elite corps it is almost certain that Gother Mann, so long acquainted with American canal problems, also knew intimately the capabilities of his officers. By, who had served under Mann in construction of the Cascades Canal in 1805,(49) was evidently competent and he was available. With commendable celerity he assessed the problem and began the work. He also adopted with even more enthusiasm than Carmichael Smith the most ambitious ideas of Canadians for developing the canal as a great commercial as well as military route. In this he exceeded his instructions, as the Duke of Wellington was quick to notice. (50) By overlooked certain military disadvantages in the revised proposals he advocated, yet he was not proposing a radical change from the Carmichael Smith recommendations. Smith's report had adopted the scheme of the Upper Canadian parliament in its entirety, and in doing so had far exceeded anything proposed by Joshua Jebb in 1816. Furthermore, John By made a more realistic assessment of costs -- about £500,000 -- than Samuel Clowes

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(45) CO 42/372, ff 138-172.

(46) Chewett's draft of Upper Canada showing the Ottawa-Rideau system and including an inset of Bytown in 1828, PAC Map Division, H1/410; V2/410; NMC 0011233 (H1); NMC 0016695 (V2).

(47) Raudzens, Canada's Canals, 58.

(48) Ibid.

(49) RG 8 B1, C38, ff 50-58.

(50) Raudzens, Canada's Canals, 67.

had done. That he considerably underestimated the final expense is also true, but whether he is to be blamed for that is an ongoing controversy which this paper will not attempt to address. The point is that in 1826 he entered wholeheartedly into the spirit of canal building in North America. It is doubtful if others would have done differently.

More than has been realized, therefore, By was heir to his precursors' ideas. They emanated as much from the society in which he found himself in 1826 as from the great organization he served, the British Department of the Ordnance. As so often in the history of governments and military departments, the tail wagged the dog. The results in this case were fortunate. Even Colonel By's harshest critic has conceded this. Quebec and Ontario, points out Professor George Raudzens, "are beneficiaries of one of the outstanding military organizations of the modern era which did more for the pursuits of peace than war." (51) Sir Richard Bonnycastle himself would not have offered a more fitting description of Colonel By's task and his achievement.

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(51) Ibid., 146

N O T E S

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Born in Toronto, graduated from Malvern Collegiate Institute in 1956 and four years later from University of Toronto with Honours in Modern History. Enrolled in University of Toronto's School of Graduate Studies specializing in Canadian and American history 1961. Completed his M.A. with a thesis entitled, "The Role of the Rideau Waterway, 1825-1856", under the supervision of Professor J.M.S. Careless.

Entered the teaching profession in 1962 and for the next 13 years was on staff at East York Collegiate as well as serving as an associate in the College of Education, University of Toronto in conjunction with an adult university entrance programme in Canadian studies at the same University. Accepted a post with Smiths Falls District Collegiate Institute where he is currently Head of the History Department.

Beyond his professional attributes his personal background is closely linked with the Rideaus where his family background represents some 200 years in Leeds County.

THE RIDEAU ROUTE IN THE 1840's:

TRIUMPHANT YEARS OF CANADA'S FIRST SEAWAY

R. B. Sneyd

This paper shall explore the commercial significance of the Rideau system when it formed the key section in the only water borne route from the Atlantic to the Great Lakes. It will focus in particular on that period in the 1840's when Canada enjoyed a large measure of prosperity. It was a unique time during the canal age when the commercial empire of the St. Lawrence came closest to fulfulling the brave hopes of those who envisioned a Canadian trade channel that could compete successfully on an international level with the Erie-Hudson route centred on New York. Yet in this period of its greatest usefulness, the importance of the Rideau has been largely unrecognized over the years. It remains the task for students of history, no less than those of archaeology, to dig up the evidence - while admitting that the excavation process may leave us with somewhat cleaner hands than our archaeological colleagues. From the bits and pieces that we find, what pattern of truth emerges?

Why has this vital portion of the Rideau's history been obscured, if not entirely hidden? Perhaps the waterway has just lived up to its name. The word 'Rideau', of French derivation, means curtain; hence early fur traders applied the word to the impressive falls, that looked a pair of giant, silvery curtains where they dropped almost forty feet into the Ottawa. Beyond these "curtains" rose a gently winding river that carved its way through a dense wilderness, occasionally surprising the early traveller with challenging rapids. At its headwaters, and southwestward into the lake district of the Rideau, the expanse of those waters was concealed by the bold, forested shorelines, with their innumerable bays, headlands and wooded islands.

Even as nature provided no simple perspective - and the physical elements camouflaged many obstacles to those who would try to tame the waterway - historical forces seemed to have veiled much of the Rideau's importance to later generations. Of all its phases since 1832, the 1840's remain the most important and the least understood. Until

quite recently most text books passed the Rideau off with a few sentences, usually noting that the military canal, itself a questionable expense, was never of importance as a commercial artery. Writers of more significant books would often venture a similar judgment, although no evidence was offered to prove the statement. (1) Perhaps this is not surprising when it is remembered that research and writing of our economic and social history has traditionally lagged behind that of the political. Dr. Legget's popular "Rideau Waterway" began to turn the tide of our ignorance.(2) But it was clearly beyond the scope of his excellent general book to delve into the dozens of specialized studies in the long history of the Rideau. Almost thirty years after its appearance, however, few published works touch on this period of the 1840's effectively.

In the historic period there are several reasons why attention was diverted from the Rideau: the stirring political events of the 1830's and 1840's in the Canadas; the frustrating struggle to complete the canals on the St. Lawrence; uncertainties associated with the breakdown of the old colonial system; painful dislocations and re-adjustments at mid-century during a gloomy depression, amidst the despair that accompanied Canada's apparent economic abandonment by Britain. In the 1850's, a more integrated and maturing society was moving toward independence. Increasingly, hopes for economic recovery looked more to the United States than Britain and seemed wedded to railroads, not canals. Under such circumstances it is possible to understand something of the 'bad press' given the Rideau by the noted hydraulic engineer of the day, T. C. Keefer. He admitted no sympathy for the military objectives that had inspired its construction, unfairly blamed it for delaying the improvements of the St. Lawrence, and condemned the

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(1) See, for example, G. Stanley and R. Preston, A Short History of Kingston as a Military and Naval Centre (Kingston, 1950), pp. 18-9; G. M. Craig, Upper Canada, The Formative Years, 1784-1841 (Toronto, 1963), p. 153; W. T. Easterbrook and H. G. J. Aitken, Canadian Economic History (Toronto, 1958), p. 262. A similar view is in J. Spelt, The Urban Development of South-Central Ontario (Assen, Netherlands, 1955), p. 62.

(2) R. Legget, Rideau Waterway (Toronto, 1955)

Rideau as an "absurdly insignificant" navigation. (3) Strangely, for one hundred years, Keefer's interpretations influenced much of whatever was written about the Rideau. This occurred despite an impressive body of more contemporary and objective evidence to the contrary. (4) Keefer's views floated along through the years, while the truth seemed to sink beneath the waters of time.

With the foregoing in mind, there may still be some myths to be destroyed or, if you will, 'curtains' to be drawn. Nothing in the period suggests that the Rideau was insignificant in the sense that its locks or its channels were too small. Colonel By himself had the foresight and deserves the credit for having them built on a scale that could serve what were for the day a large class of steamer and barge. (5) Trade flourished despite three smaller locks on the Ottawa that acted somewhat as a bottleneck in the system. Nor was the Rideau insignificant in the sense of being parochial or of limited regional utility. The truth remains, paradoxically, that this British military canal admirably served national and international commercial purposes just when it was needed and when there was no alternative.

A thriving commercial system depended on three factors: products to trade; beneficial tariff regulations, and transportation facilities. Development of the Great Lakes basin after 1820 assured new staple products for export, such as grains, flour and potash. And growing inland settlement increased demand for British goods.

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(3) T. C. Keefer, The Canals of Canada (Toronto, 1850), pp. 13-15.

(4) Q/387 (Part 2, 1119), pp. 444-446, Sir F. B. Head to the Colonial Office, March 18, 1836; W. O. 44/45, pp. 203-214, G. Adams to R. Byham, July 22, 1845; York Observer, July 23, 1827, enclosed in U. C. Sundries , J. Carey to P. Maitland, July 25, 1827; J. Lumsden, American Memoranda (Glasgow, 1844), p. 36.

(5) R. B. Sneyd, Role of the Rideau Waterway, 1826-1856, (unpublished University of Toronto Thesis, 1965), pp. 21-26; R. Passfield, Building the Rideau Canal, A Pictorial History (Parks Canada, 1982), pp. 21-29, 181.

Preferential tariffs generally assured ready access to British markets for Canadian goods up to 1846. Most significantly, the Ottawa-Rideau route allowed steamboats to tow barges westward, from the tidewater port of Montreal to Kingston. At this point goods would be trans-shipped to schooners for distribution to ports along the Great Lakes. Meanwhile the barges were loaded with the heavy, bulky exports and shot down the St. Lawrence rapids to Montreal. Many steamers would return via the canal and repeat their shuttle service on the Montreal-Bytown-Kingston triangle. The Rideau thus provided the vital link for the transportation system in the busy days of the 1840's.

During the 1830's the Ottawa-Rideau had become the established route for immigrants. This was a notable service at a time when immigration to British North America was at a peak. (6) In 1840, for example, 12,000 immigrants passed the locks at Bytown, the vast majority of whom were destined for points west of Kingston. By comparison, only 350 moved inland via the upper St. Lawrence. The following year the Rideau conveyed more than 12,000 immigrants; in 1842, 30,000. And so it went through this busy decade. The chief emigrant agent in Canada West was obviously pleased with the transportation facilities when he wrote: "the facility and comfort with which any number of immigrants can now be conveyed from Quebec to any of the ports on Lakes Ontario and Erie is so great, as to render the journey compared to what it was a few years since, rather an excursion of pleasure, than a serious undertaking." (7)

Competition amongst various forwarding companies in the 1840's helped to keep rates on the Rideau low. In fact there is evidence to prove that low costs ensured that immigrants would not be diverted to the United States.(8)

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(6) H. Cowan, British Emigration to British North America, (Toronto, 1961)

(7) Q/431, (Part 1, 1225), pp. 251-265, A. B. Hawke to S. B. Harrison, December 28, 1840, including the reports of G. Burke, Bytown immigrant agent and J. Roy, agent at Kingston; G20/34, #3891, No. 11, pp. 6-11, Hawke to Buchanan, November 29, 1844.

(8) C.O. 42/527, No. 3, pp. 424-426, Buchanan's Report for 1845, December 20, 1845; G20/36, #4082, Buchanan to Higginson, May 23, 1845.

The Rideau did not lose the immigrant trade until the St. Lawrence canals were finished in 1847. Thus the military route was part of the great inland highway to the interior and an invaluable asset in the settlement of Ontario at a time when the cost of land transportation was prohibitive. Unfortunately this great service to Canada never proved to be an asset to canal revenues, since there was no toll on immigrants carried in barges. But it was typical of its history that the remarkable utility of the Rideau was never accurately revealed in its ledger books.

This immigration story nicely reflects all aspects of Rideau commerce in the decade. The triangular trade pattern established in the 1830's was reinforced by a commercial boom in the 1840's that was unequalled in its history. The commercial heyday was produced by national and international forces. But it remains its unique contribution that the Rideau supplied essential transportation facilities that fostered Canadian prosperity in these sunset years of the old colonial trading system.

An old account of the early 1840's recorded that, "These were the days when the Rideau canal was made good use of by a large trade being done between Montreal and Kingston via Ottawa."(9) In 1841 six forwarding companies were busy in this trade, while two others were operating just on the St. Lawrence. McPherson and Crane Company was the principal forwarder, having 11 steamers and 45 barges, the latter averaging 90 tons. Five other companies - notably Hooker, Henderson and Company, Sanderson and Murray Company and H. and S. Jones Company - ran 10 steamers and about 90 barges and smaller craft. The two forwarding firms on the St. Lawrence (Ferguson and McGibbon; Mattie and Ross) owned 50 barges of 60 tons, but no steamboats.(10) Returns for the 1841 season (210 days) show that about 1650 vessels passed the canals, requiring almost 57,000 lockages - an average of 270 per day, among the 47 locks on the Rideau. A survey of the lockmasters' journals also illustrates the marked increase in traffic over the

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(9) P.A.C., Keefer Collection (1819-1901), Entry #75, History from the early 1840's, Modes of Travel.

(10) Journals of the Legislative Assembly of the Province of Canada (hereafter cited as Journals), 1841, Appendix EE, Report of the Select Committee on... U.C. Communications, August 26, 1841, Appendix to the Report, A., Evidence taken before the Committee.

late 1830's. Then it was not uncommon for one lock station to pass 5 steamers a day, each towing from 4 to 8 barges. A typical entry at Jones Falls in 1841 was that of the steamboat "Margaret" which passed every second day on its shuttle service between Bytown and Kingston.(11)

Public attention was fixed on commerce. Fears over any possible interruptions in the trade pointed up the significance of the Rideau. If one of its dams had broken, "it would be ruinous to half the commercial interests of the country", warned H.H. Killaly, Chairman of the Board of Works for Canada. (12) A Cleveland merchant who testified before a select committee of the Canadian assembly in 1841 completely agreed. On the same occasion, McPherson - of the McPherson and Crane Forwarding Company - calculated that if a dam had broken, only half the craft on the canal could have been employed on the St. Lawrence. Many of those who gave evidence before the committee complained of high freight costs. Yet the very nature of the Canadian pattern of trade tended to keep prices up. It was estimated that the proportion of upward to downward freight was in the range of one to four. McPherson believed that if the forwarders were given plenty to do both ways they could transport for half the price. (13) For example, the encouragement of a bulk import such as British salt would increase the up trade and thereby reduce freight charges. (14)

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(11) W.O. 44/16, p. 411, Elliott's statement re: number of vessels and lockages in 1841; P.A.C., Rideau Canal, Lockmasters' Journals, vol. 139, Jones Falls, 1838-1844, 1841, (manuscript, hereafter cited as Lockmasters' Journals).

(12) Report of H.H. Killaly, August 1841, Enclosure #1 in Despatch #35 Metcalfe to Stanley, June 29, 1843, in Imperial Blue Books on Affairs Relating to Canada. Reports, Returns and other Papers Presented to the Imperial Houses of Parliament relating to Canada, XIV, (London, 1841-3).

(13) Journals, 1841, Appendix EE, Appendix to the Report, A., Evidence taken before the Committee.

(14) Q/431A (Part 1, 1227), pp. 28-40, J. Macaulay, Report on Trade, 1841.

The Rideau canal from the start had been a grand imperial design. And, of course, the Ordnance was still responsible for its maintenance and operation. By the beginning of the 1840's, more than ever before, British officials were deeply concerned with the very practical question of making the canal pay its way. This mattered little to North Americans who stood to benefit from the facilities as long as they remained open to the public. But Ordnance officials stated the British case clearly:

> The splendid water communication from Montreal to Kingston, a distance of 278 miles, has cost the mother country the vast sum of more than a Million Sterling in its construction, and although it has improved the Country through which it passes in an incalcuable degree - and whether in peace or war must be considered of the very highest importance to the safety and welfare of the Canadas - and moreover, is at the present moment the medium of a brisk and increasing trade; yet instead of paying the current expenses and yielding an interest upon the outlay as in the case of the Erie Canal...; from circumstances which the Ordnance Department have been prevented from controlling, the Revenues of these Canals have never been adequate to defray the current expenses of Repair and Maintenance - but a considerable deficit has annually been made good by an application to the Imperial Parliament. (15)

The economic problem was highlighted by the fact that under the existing schedule, tolls were levied on goods only. The key point was that the Rideau was supplying virtually all the tonnage for the export trade, those barges that would be filled in Kingston and shoot down the St. Lawrence rapids to Montreal. Thus 75 percent of west-bound vessels passed the Rideau free of charge. The Ordnance officials therefore urged that tolls be levied

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(15) W.O. 44/25, pp. 298-302, R. Eaton and J. S. Elliott to R. Byham, August 25, 1841, with S. Thomas' Observations, October 21, 1841.

on vessels, whether full or empty, according to tonnage and distance. Based on actual shipping in 1840, this system would have almost doubled revenues and more than covered the years' expenses. (16)

While the Ordnance Department in London and the Treasury approved this plan, it was not implemented in 1841 by the Canadian government, probably owing to the political preoccupations during the Governor Sydenham's regime. Upon Bagot's arrival in Canada, a proclamation was issued in March of 1842 proclaiming the new system of tolls. A storm of protest erupted: "If the Ordnance had dropped a Bomb Shell amongst the merchants they could not have affronted them more...had half the locks on the canal been blown up it could not have more effectively injured the work or trade of the Country."(17)

An examination of this controversy over tolls is useful because it reveals, more clearly than anything else, the importance of the Rideau to Canadian commerce.

Virtually all the forwarding companies cried out that imposition of the new rates would amount to a prohibition of all the carrying trade on the canals. Collectively, they petitioned the governor. They feared the most "disastrous consequences", perhaps the ultimate ruin of their business. (18) Also, it would affect the commercial community at large. They reminded Bagot that, apart from the reduction of timber dues, there had been no material alteration in the tolls since the canal was opened in 1832. Having abandoned the St. Lawrence, the forwarders had invested over £100,000 in adapting their vessels to the navigation of the inland waterway. It was essential for them to convey empty craft upwards.

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(16) W.O. 44/23, pp. 25-31, Abstract of the Report of the Commissioners, R. Eaton and J. Elliott, November 9, 1840;

(17) P.A.C., Hill Coll., pp. 1392-3, S. Derbyshire to A. Christie, April 9, 1842.

(18) W.O. 44/25, pp. 267-74; and C.O. 42/42, No. 86, pp. 168-73, Memorial of Forwarders to Bagot and a second Petition to Bagot, April,1842.

In order to tap the vast American trade, they had formed contracts (on the basis of the old rates of toll) to transport downwards at prices up to 30 percent less than ever before. The forwarders charged that the government had not given them sufficient warning of the change; tied to the existing contracts, they stood to suffer heavy losses. They therefore petitioned the governor to rescind the proclamation and postpone any new scale until the end of the season.

Nor was this controversy confined solely to those with craft on the canal. The Montreal and Kingston Boards of Trade sent similar petitions that amounted to a full scale condemnation of the unprecedented tolls. The vital interests of the province - which were interwoven with the carrying trade - were dependent, they said, on transportation facilities. (19) Because of the great advantage of the Rideau in these respects, the St. Lawrence had been abandoned for upward freight. Under the new circumstances, however, traders would be forced to build smaller barges and revert to the old route, to the general injury of commerce. Only the existing low charges for forwarding maintained present exports and imports in Canadian channels. Inevitably, higher tolls would divert the trade to the United States. Furthermore, the importation to Canada West of British salt - on which the Sydenham government had lowered duties - would be prohibited. Extensive arrangements had been made for this item in anticipation of a flourishing trade. Packers of provisions would now be forced to import inferior American salt. These arguments seemed to be quite reasonable. In another instance, an American Company estimated that it could save £10,000 by shipping a large quantity of railroad iron via the Rideau. The Boards of Trade continued, however, that the new rates would make any such contract with Canadian forwarders impossible. They concluded that only a withdrawal of the new Ordnance tolls would save the forwarders from the "ruinous contracts" already formed.

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(19) W.O. 44/25, pp. 261-4, 276-82; and C.O. 42/492, No. 86, pp. 163-5, 175-8, Memorial of the Council of the Montreal Board of Trade to Bagot, April 9, 1842 and Memorial of the Board of Trade at Kingston to Bagot, April 12, 1842.

But what of the welfare of the Rideau canal itself? Should its revenues be sacrificed to the demands of Canadian commerce? Considering the great advantages afforded by the waterway, this would have been most unreasonable. Even the Kingston Board of Trade admitted that hitherto the tolls had been too low, and that with sufficient notice they might be increased somewhat next year. Notwithstanding this verbal concession, the two sides - Canadian traders and British Ordnance - were, however legitimate their respective motives, hopelessly deadlocked. This was the more unfortunate, since the interests of both were mutually dependent; for all parties recognized the fact that the Rideau was an integral part of an international trading system.

Displaying a refreshing quality of understanding of both sides in this dispute, Governor General Bagot, while sympathizing with the objectives and principles of the Ordnance Department, suspended the new toll schedule for the 1842 season. Bagot added that the importation of British salt should be encouraged even at a considerable sacrifice of income on the canal. Salt, as well as other bulky articles such as coal, gave British ships returning with timber the advantage of a double voyage, and was inexpensive at Montreal. With continued cheap internal transportation, it could compete with American salt. This was important. In earlier years the necessity of importing this item from the United States had produced a distressing loss of precious metals, helping to create an unfavourable balance of trade. (20)

While the British had to forego benefits of increased revenues, more steamers than ever plied the waterway in 1842 : Most lock stations passed four or five daily, with their barges. Lock labourers were busy. At Jones Falls on June 6, for example, they worked ten hours during the day and five at night. Time was of utmost importance to the traders, so that no delay could be permitted; lock workers were on call at all hours of the night. (21)

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(20) Ibid., see also, W.O. 44/25, p. 285, Bagot's Modified Scale, April 16, 1842.

(21) Lockmasters' Journals, vol. 139, Jones Falls, 1842, and vol. 112, Newboro, 1840-44; W.O. 44/16, pp. 403-10, Elliott to Byham, April 7, 1842.

With the increasing number of vessels, there came a demand to widen the entrance to the canal at Bytown. This improvement was considered to be essential to the welfare of commerce. Yet the Inspector-General of Fortifications, Sir. F. W. Mulcaster, disagreed in principle: The Rideau was a military work, he held. Britain should make no outlay solely for commercial purposes; it was unwise to adapt the Rideau "for spectacular competition with the St. Lawrence". When the canals along that river were finished they would serve all through traffic. But the Ordnance Board was quick to point out that Colonel By's canal, in spite of its strategic significance, was primarily commercial in its use. It was to the advantage of the Ordnance Department, of course, to nurture the Rideau in this way, since an estimated annual income of almost £9,000 would be lost if trade abandoned the route, while its costs of upkeep would remain a charge on Britain in any event. The Treasury accepted this argument and authorized the expenditure for the improvement at Bytown.(22) Thus the British military canal continued to serve the needs of Canadian commerce.

Under the new schedule of tolls effective in 1843, empty barges were assessed at half rates. Forwarders took advantage of this system by trans-shipping as much cargo as possible to the steamers and thus increased the number of empty barges in tow. (23) Nevertheless - and despite a serious trade recession that lowered revenues on other canals up to 50 percent - Rideau income was reduced only 3 percent. And this decline was owing entirely to the collapse of the local lumber trade in 1843. In the depressed economic conditions the export trade dropped 66 percent and thus only one-third as many barges went up the Rideau. Meanwhile the drive to encourage transportation of British salt and coal was successful. Double the quantity of 1842 was imported, though it did little to raise income.

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(22) Ibid., /16, pp. 300-302, Thomas to Byham, November 30, 1842; W.O. 44/16, pp. 303-305, Mulcaster to Byham, December 9, 1842, with Marginal notes by the Ordnance Board, December 21, 1842; ibid., p. 306, C. Trevelyan to Secretary of the Ordnance, January 24, 1843.

(23) W.O. 44/25, pp. 138-146, Elliott to Byham, December 27, 1843.

Late in the 1843 season some delays had been caused on the Ottawa as a result of cave-ins on the banks at Grenville and malfunction of the locks at Carillon. Forwarding companies complained of their inconveniences and losses. Without waiting for ratification from London, the Canadian Ordnance authorities took immediate steps so that the necessary repairs could be finished before the ice broke the following spring. Ordnance officials feared "alarming consequences" to Canada's commerce if there was a serious stoppage along the route, and sought to avoid the "calamitous results" that might otherwise ensue. (24) The secretary of the Montreal Board of Trade wrote that large quantities of produce were ready for shipment from the ports of Lakes Erie and Ontario. He observed that the provice would suffer "extreme inconvenience" and loss of business if there was any lengthy delay in the opening of the interior communication. (25)

In the spring of 1844, local authorities closed the Bytown locks daily from 10:00 p.m. to 6:00 a.m. This was apparently because of the heavy traffic which placed too onerous a burden on the lock labourers. Forwarders protested vigorously, pointing out that ever since 1832 every facility had been offered to pass vessels at all times, day and night. This new obstruction would mean costly delays of up to eight hours per craft. It would increase freight rates, discourage trade, and divert more American produce to New York. Recognizing these serious implications, J. S. Elliott, the Ordnance Commissioner in Canada, observed that, "under the strong feeling which appears to be getting up", it would be wise "to meet the wishes of the Trade."(26) In fact, any complaints about the operation of the Rideau had been energetically and conscientiously met by those in charge of the canal.

There was only one exception: the Presbyterian Church had grounds for complaint. Its Synod regretted the evils and desecration resulting from the Rideau canal being open on the Sabbath day. It petitioned the Governor-General that business should be performed only on "the

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(25) W.O. 44/44, p. 198, F. A. Wilson to R. O., March 14, 1844. The route was opened, without delay, on April 25; ibid., pp. 209-210, R.O. to Secretary of the Board, April 24, 1824.

(26) W.O. 44/49, p. 25, H. Jones and Company, Henderson, Hooker and Company to Elliott, May 21, 1844; Elliott's note of May 23, 1844.

six lawful days of the week". The Executive Council, fearing that the forwarders would raise strong opposition, advised against the imposition of this restriction. Elliott noted that his Department had no power to impede daily use of the canal, which the Rideau Canal had assured:

> Upon every occasion when a regulation has been adopted in the least restricting the Trade...it has been made the subject of serious remonstrance and complaint from the Forwarders, who regardless of the works, only seek to ensure a speedy arrival of their craft at Kingston. (27)

Commercial interests ruled supreme! Steamboats continued to ply up the Ottawa and Rideau to Kingston, returning to Montreal via the St. Lawrence. The military canals still commanded the up trade and the vessels used for the down trade. For the labour required to bring even an empty barge up the St. Lawrence was excessive, and the steam power there could not stem the strong currents. The best that could be done was to drag small barges (8 to 14 tons) up the rapids by oxen and horses. In fact, with its still incomplete canals, the St. Lawrence remained a "very imperfect navigation, and totally impassable at night". (28) And in 1844, it was obvious that the St. Lawrence canals still could not be finished for two more years.

Traffic on the Rideau in 1844 showed the return of much better times. The quantity of imported merchandise passing up the route doubled. In addition, the produce shipped down to Montreal - for which the Rideau supplied the vessels - mounted significantly compared with the previous year. During the spring and fall of 1844, it was not uncommon for the locks at Jones Falls, for instance, to

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(27) P. Sec., 1844, vol. 138, #8708, Memorial of the Synod of the Presbyterian Church of Canada to C. T. Metcalfe, September 23, 1844; J. S. Elliott to J. M. Higginson, October 18, 1844.

(28) R. Mudie, The Emigrants' Pocket Companion (London, 1832), p. 152; Lumsden, American Memoranda (Glasgow, 1844), p. 39; W.O. 1/540, pp. 29-36; and G20/30, #3455, H.H. Killalay to J. M. Higginson, April 23, 1844; W.O. 1/553, p. 22, Boxer's and Holloway's notes on merchant's letter of September, 1844.

pass 20 vessels, including 5 to 7 steamers per day. Of the 29 steamboats now in service, 22 could navigate down the St. Lawrence, making a round trip in 8 or 9 days. The remaining large steamers, like the "Beaver", "Albert", "Otter", "Hunter", "Vulcan" and "Prince Albert" were confined to the Rideau canal, at least until such time as the Grenville locks were enlarged. What was most gratifying, especially from the British viewpoint, were the financial results of the 1844 season. For the first year in its history, the Rideau canal had realized a surplus over its expenses - £1,500! This was an actual increase of 35 percent over 1842 and 40 percent over 1843. (29)

For the next year and a half the Ordnance officers carried on an internal debate as to the fairest and most profitable way to adjust tolls. Yet this Departmental controversy was increasingly overshadowed by stark realities, caused by the impending completion of the St. Lawrence canals. Soon the two routes would not be complementary, but in competition. In this circumstances the charges on the Rideau would have to be less than those the Canadian government would set for the St. Lawrence. (30)

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(29) W.O. 44/25, pp. 78-81, Respective Officers, Bytown, to Secretary of the Board of Ordnance, December 24, 1844; ibid., p.82, Comparative Statement of Traffic through the Rideau Canal in 1842, 1843 and 1844, signed, F.R. Thomson and S. Thomas Jr.; ibid., p.85, Comparative Statement of all produce arrived at Montreal to November 23, 1844; W.O. 44/25, pp. 68-75, J.S.Elliott, Observations upon the Report of the Respective Officers at Bytown, January 2, 1845; Lockmasters' Journals, vol.141, Jones Falls, 1844. These were the largest canal steamers of the day. The Hunter, Beaver and Otter, for example, were 197 tons each with 28 horsepower engines, see (W.H.Smith), Smith's Canadian Gazetteer (Toronto, 1849) p.97; W.O. 44/25, pp. 55-61, Elliott to Byham, January 3, 1845.

(30) W.O. 44/25, pp. 78-81, Respective Officers, Bytown, to Secretary of the Board of Ordnance, December 24,1844; p. 84, Schedule of tolls proposed by Respective Officers, Bytown; pp. 38-43, Ordnance Officers, Bytown, to R.O., July 24, 1845. J. S. Elliott had been made Ordnance Storekeeper and therefore one of the R.O., in January, 1845.

Meanwhile the Rideau enjoyed another busy season in 1845. Under the existing tolls, the canal had yielded its greatest revenue to date, about £13,000. The profit since 1844 now stood at £5,000! In 1846, the Rideau still commanded the westward trade, because one set of locks on the St. Lawrence was not completed. That year, therefore, despite a reduction in the rates of toll, revenues dropped only marginally. (31)

In a real way the year 1846 marked the end of an era for the Rdieau canal, just as it did for the old colonial economic and political system. Britain abandoned the protective tariffs that had fostered imperial trade. And the achievement of responsible government foreshadowed Britain's transfer of the canal to Canada. Contemplating such action, the Master-General of the Ordnance in London had re-affirmed his belief that the Rideau should be regarded primarily as a commercial work: "The general and daily purposes of that line of Navigation are commercial; and it is that Interest which has the most constant and most urgent motives for its maintenance and its good management." (32)

Collapse of the through trade on the Rideau after the completion of the St. Lawrence canals in 1847 was sudden and dramatic. The fact that the Rideau was closed for repairs for four months that year was symbolic of its lost purpose. Revenues dropped from about £12,000 to £4,000.

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(31) W.O. 44/46, pp. 211-46, Report of the Commission appointed with the concurrence of the Lords Commissioners of Her Majesty's Treasury and Master-General and Honourable Board of Ordnance to inquire into, consider, and report on the Military Canals in Canada, February 28, 1849, (hereafter cited as Ordnance Commission Report, 1849).
Journals, 1846, p. 261, H.H. Killaly, Board of Works, Montreal, for the information of Cathcart, April 13, 1846. The enlargement of the Lachine Canal (locks 200 by 45 feet; draught 9 feet), was not completed until 1848. G.P. deT. Glazebrook, A History of Transportation in Canada (Toronto, 1938) p. 80. But this did not act as an effective block to the usage of the new locks on the upper St. Lawrence.

(32) W.O. 1/553, pp. 503-6, Sir George Murray to the Board of Ordnance, December 16, 1844.

Nor did the following years change the picture. Deficits rose to the range of £10,000 to £19,000 annually. (33) Certainly the situation was made worse by the depression of 1847-50, to say nothing of increasing American competition caused by new legislation that allowed Canadian goods to pass through U. S. channels in bond. Moreover, considering that Canada was on the brink of the railroad age, the prospects for recovery were dim. But the first word in this story was the great river to the south. As a contemporary observed, the opening of the St. Lawrence canals had "a most annihilating effect upon the traffic on the Rideau". (34)

Thus ended the first and greatest commercial age on the Rideau. The heady days of the canal age were over, ironically, just when the St. Lawrence was ready for service. To be sure the Rideau would continue to be used for local and regional needs for years to come. But the first St. Lawrence seaway arrangement, in which the Rideau was the linch-pin, was gone. While official correspondence lay buried in the archives of London, no conscious written record remained to celebrate its significant achievement. How reminiscent this is of that great architect and builder of the waterway, who was so abruptly and unjustly recalled and soon forgotten.

Our concentration on the boom years and the Rideau's role in international trade has necessarily omitted any development of the theme that persists throughout its history: the significant contribution the waterway has made to the communities and region through which it passes. That is properly the subject for another paper. One aspect of the period that cannot escape brief treatment, however, is the military function. It would be wrong to disregard it just because there was no war. For the often

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(33) W.O. 44/49, pp. 211-46, Ordnance Commission Report, 1849; The Report itself is in ibid., pp. 211-24, A minority report was filed by the Commissary-General, W. Filder; along with some marginal comments by the other members, it is in ibid., pp. 225-30. Appendices to the Report "Proceedings of the Commission", March 1848, and "Receipts and Expenditures on the Ordnance canals, 1844-48" is in ibid., pp. 231-46;
W.O. 1/566, pp. 78-80, Report of a Committee of the Executive Council, May 13, 1853.

(34) W.H. Smith, Canada: Past, Present and Future, (2 vols., Toronto, 1851), II, 369.

unspoken military considerations were important in their own right, in addition to their relationship to the world of commerce.

From the military point of view it is clear that the Rideau Canal served a useful role for many years. In 1832 one observer stated the case flatly: "It is one of the greatest securities by which we hold the Canada's and the protection of every other great work that has been, or may be, undertaken there". (35) The prevalent feeling throughout the period was not if but when Anglo-American hostilities would resume. So the old lessons learned from the war of 1812 were still valid: British control of the Great Lakes and the security of Kingston, essential to hold inland British North America, depended on a secure water communication remote from the St. Lawrence frontier.

Border tensions following the rebellions of 1837 tended to point up more than ever the potential military usefulness of the Rideau route. Virtually every military expert of the period realized the importance of the interior canal. That the whole question of Canadian defence turned on the facility of the water communication was a fact that the Duke of Wellington had long recognized. He had been re-appointed as the Commander-in-Chief of the British forces in 1842. Strictly from a military point of view, he still firmly believed that, despite the financial outlay on the Rideau, nobody could doubt "the wisdom of the plan, its efficiency and above all its Economy". Lord Hill, Wellington's predecessor as Commander-in-Chief, agreed that the waterway was "the most useful and important work...that had been undertaken for the prosperity and security of Canada". (36) In 1844 the Commanding Royal Engineer in Canada, Colonel Holloway, wrote that the capability of speedy conveyance of troops and stores to Upper Canada assured the "preservation" of Canada to the British Supremacy". (37) Or we might rather

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(35) Q/375, p. 361, R. Shirreff to Viscount Howick, September 29, 1832.

(36) W.O. 1/537, pp. 137-207, Wellington's Memorandum on Defence, March 31, 1841; ibid., pp. 285-321, Lord Hill on Canadian Defence, March 5, 1841.

(37) W.O. 44/49, pp. 2-8, Holloway to Mulcaster, October 26, 1844.

add, in view of the emergence of self government in the 1840's, the preservation of Canadian independence.

As if to prove again the ancient military logic of the Rideau, the British Treasury authorized the expenditure of almost £24,000 to begin the enlargement of the locks at Grenville. (38) The Ordnance Board had presented convincing arguments that the interior canal would only be of maximum effectiveness when the smaller Ottawa locks were reconstructed to become the same size as those on the Rideau. But it was 1845! Within a year the collapse of the through trade would negate commercial benefits from such construction. While the military arguments remained strong, the will to carry through on such a project was lost. A commission appointed by the British government to study the canal's future prospects recommended in 1849 against proceeding with the enlargement at Grenville. (39)

Simultaneously, however, this commission insisted that Britain should maintain control of the canal. Though imperial defence considerations were weakening, and in the very year of the confirmation of responsible government, the familiar military arguments would hold the Rideau to Britain for a while longer. The military rationale that had justified the canal in the first place thus survived the death of the old colonial political and economic order. Nevertheless, other forces within Britain placed increasing pressure to have the canal transferred to the Canadian government. Finally, in 1856, the Rideau passed from the

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(38) W.O. 1/553, pp. 269-74, Stanley to Wellington, September 10, 1845; W.O. 44/44, pp. 213-4, Commanding Royal Engineer, Canada, to Inspector-General of Fortifications, November 22, 1845; W.O. 1/552, pp. 29-33, Metcalfe to Stanley, February 17, 1845; ibid., pp. 701-13, Cathcart to Stanley, December 11, 1845; C/61, p. 36, Holloway to Military Secretary, March 5, 1846; W.O. 44/25, pp. 21, S. Thomas' comments, April 23, 1846; W.O. 1/555, pp. 74-7, Wellington to Gladstone, April 29, 1846.

(39) W.O. 44/49, pp. 198-9, R.O. to Byham, June 4, 1847. W.O. 44/49, pp. 211-46, Ordnance Commission Report, 1849.

control of Great Britain. (40)

Despite the canal's transfer, a confidential British military report as late as 1862 stated that the Ottawa-Rideau route was "absolutely essential" to Canadian defence. (41) Colonel Jervois' report on Canadian fortifications in 1864 repeated the old wisdom: A secure water communication to Kingston was necessary to control Lake Ontario and maintain the upper province. Ironically, in the half dozen years after the American civil war, with the United States emerging as one of the world's strongest military powers, Canadian defence concerns declined. The present age of the undefended border really began with the treaty of Washington in 1871. Consistent with waning British interest in Canadian defence, the last British troops were withdrawn from Canada on November 11, 1871. When one recalls that the Rideau canal was Britain's most expensive military work in North America, it was perhaps fitting that units of the Royal Engineers were among the last to leave Canadian shores. (42)

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(40) W.O. 44/49, pp. 488-9, Treasury Minute, January 13, 1854; ibid., p. 502, Elliott to R. O., June 19,1854; ibid, p. 577, Ordnance Board Minute, June 13, 1855; C/61, p. 272; Stacey, British Army, pp. 102-3.

(41) P.A.C., Ordnance Records, Reports and Returns, 1757-1878, vol. XVIII, Report of the Commissioners appointed to consider the defence of Canada in 1862, signed by Col. J. W. Gordon R.E., Lt-Col. H.C. Gardiner R.A., H.H. Killaly, C.W. Crossman R.E., especially paragraphs 11, 79, 110. This report was transmitted to Lt.-Col. W.F.D. Jervois by direction of the Secretary of War and marked "strictly confidential"; see also ibid., vol. VII, Military Memoir of the Province of Canada, by Captain W. H. Noble R.E., July 26, 1856, which expressed essentially the same ideas; J.W. Fortescue, A History of the British Army, (13 vol., London, 1930), XIII, p. 523; C. P. Stacey, "British Military Policy in Canada in the First Era of Federation", C.H.A.R. (1934), p. 21.

(42) C.P. Stacey, The Undefended Border, The Myth and the Reality, Canadian Historical Association, Historical Booklet No. 1 (Ottawa, 1953), p. 11; and his Canada and the British Army (Toronto, 1963), pp. 253, 255,

Notwithstanding the Rideau's rich and varied history in subsequent years - together with all those stories yet to be uncovered - the early days of commercial triumph should remain a high point in the canal's history. Perhaps something from this year of sesquicentennial celebrations may arrest our tendency to forget; to be so caught up with present and future as to disregard useful lessons from the past that, however hidden, help to make us what we are. It may be that more people will be stimulated to draw the 'curtains of concealment', to reduce our ignorance and thus reclaim a sense of appreciation for unique historical achievements.

One hundred and forty six years ago a petition to the Upper Canadian government revealed such a sense: "the munificence of the British Goverment in the construction of the Rideau Canal cannot fail to call forth the gratitude of every inhabitant of this Province, being the greatest among the numerous instances of the fostering care of the Mother Country". (43) Hardly the language of the 1980's! And the imperialistic overtones might seem even more anarchronistic. But the central thought is surely as relevant today. Nor should Anglo-Saxon blood be a prerequisite to appreciation for a grand British legacy to Canadians. It is said that one of the most unique and meaningful events of our 150th observations was a Service of Thanksgiving held in Westport for those people who laboured on the canal. In this season of the year, and as the sesquicentennial draws to a close, we might join in the same spirit: to celebrate a waterway that beautifully blends human achievement with the world of nature; and that, in exemplary military fashion, was there just when it was needed, to perform its duty.

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(43) Q/389 (Part 1, 1126), pp. 99-115, Memorial of sundry inhabitants of the Midland, Johnstown, Bathurst and Ottawa Districts to Sir. J. Colborne, January, 1836.

N O T E S

LEGGET and CANALS: A NOTE

When on the teaching staff of Queen's University, Robert Legget once rowed up the Cataraqui River from the bridge at Kingston in the early summer of 1937, with his wife and small son, as a part of his exploration of the city in which he had come to live. Rounding a corner, he came across a beautifully built masonry lock. Fascinated but puzzled by what he had seen, he inquired at the University and was told that this was the first lock of the Rideau Canal. But even the University librarian had to tell him that he knew of no written account of the Canal and its building. Already keenly interested in the history of his profession of civil engineering in Canada, Legget determined to find out all he could about this "unknown" canal. All he was then able to find, in addition to official publications of the Department of Transport, Canada, were two somewhat remote and quite brief articles.

A move to Toronto in 1938 and then the years of war put a temporary stop to his inquiry. In 1947 came a move to Ottawa, to start the National Research Council's Division of Building Research. It took some time to get settled but about 1950 he was able to take up again his search for information on the Rideau Canal. Study of the relevant "C" volumes in the Public Archives of Canada in late evening hours, and weekend journeys up and down the canal finally gave enough information for the writing of an account of the canal which he called Rideau Waterway, in view of the unfortunate connotations of the word "canal". Rejected by one leading publisher in Toronto, it was finally accepted by the University of Toronto Press, almost as an experiment since it was the first "local history" which they had published. It appeared in print in 1955.

Because it was meant to have a "popular" appeal, it was decided to omit all footnotes and even textual references at the end of the book, although a complete bibliography was included. This can now be seen to have been an error in judgment since it has led to some caustic comments on the book in academic circles. But its more popular appeal is indicated by the fact that it was re-printed in 1957, 1960, 1962 and 1967. It appeared as the third book in the University Paperback series of the University of Toronto Free Press in 1962. It was revised and published as a second edition in 1972 and this has now also been re-printed.

Official duties left no time for any further such writing but after official retirement in 1969 these personal interests were taken up again. Following the success of a book on the Railways of Canada (1973) commissioned by a British Publisher (David and Charles), Legget was asked to write Canals of Canada (1976), also in no more than 60,000 words, by the same publisher. This is now handled by Douglas and McIntyre, of Vancouver, successors to the Canadian affiliate of David and Charles. In part because of this canal book, the St. Lawrence Seaway Authority asked him to prepare The Seaway (1979) a well illustrated history, published (by Clarke Irwin) to mark the 150th. anniversary of the opening of the first Welland Canal and the 20th. opening of the Seaway itself.

Interest in the waterways of the Ottawa area, however, continued to be Legget's main historical interest, reflected in the publication of Ottawa Waterway in 1975, also by the University of Toronto Press. Its subtitle is "Gateway to a Continent". It might possibly have been better if subtitle and title had been reversed since the great Ottawa River is not now a through waterway, even though for over two hundred years, in the age of canoe travel, it was indeed the main route to the west and north of our continent.

The attempts throughout more than a century to build "The Seaway" up the Ottawa River (the Georgian Bay Ship Canal as it was finally called) are featured in one long chapter of the Ottawa book. Reference is there made also to the Ottawa River Canals. These little known canals, the Grenville, Chute à Blondeau and Carillon, were just as vital a part of the alternative route between Montreal and Kingston as the Rideau Canal. Constructed between 1819 and 1834 they do not appear ever to have been described in print, apart only from the brief references in the official canal guides. Even the fact that they were built by the Royal Staff Corps and not by the Corps of Royal Engineers has not been appreciated in some official statements. Legget described them briefly in a paper which he presented in February 1968 in London, England, to the Newcomen Society for the study of the History of Engineering and Technology (The Ottawa River Canals and Portage Railways). Their story has long been a continuing study and it has now been fully told in Ottawa River Canals which Legget has written and hopes to see published in 1983.

Concurrent with his studies of the "canals down the river", now submerged by the raising of the water level of

the Ottawa River by the Carillon Dam, has been continued interest in the Rideau system. This is reflected in another paper presented to the Newcomen Society in London, this one in November 1958; it is an account of The Jones Falls Dam on the Rideau Canal. It aroused much interest among engineering historians since the dam was, at the time of its building in the virgin forests of Upper Canada, one of the most notable dams in the world; in some ways, it still is.

As part of the celebration of the 150th. anniversary of the opening of the Rideau Canal by the Historical Society of Ottawa, Legget consolidated his researches of the last twenty-five years into the life of its builder. This first biography of John By was published by the Society in May 1982 in a simple format at the request of the author in the hope that more information about John By may yet be forthcoming, enabling a fuller account of his life, well illustrated, to be prepared.

The Editor, to a small degree, has rounded out Legget's Note by including the following:

> "R. F. Legget was a graduate of Liverpool University, Civil Engineering. He came to Canada in 1929 and spent the next 11 years in construction. The following 11 years were divided between the University of Toronto and Queen's University where he taught Civil Engineering.
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> In 1947 the National Research Council called on him to form and direct the newly conceived Building Research Branch where he remained until his retirement in 1969."

Chronological List of "Canal Publications"

Rideau Waterway, University of Toronto Press, 249 pp. (1955); revised edition 1972.

"The Jones Falls Dam on the Rideau Canal, Ontario, Canada", Transactions of the Newcomen Society, London, England, 31, pp. 209-218 (1959).

"The Ottawa River Canals and Portage Railways", Transactions of the Newcomen Society, London, England, 40, pp. 61-73 (1968).

Ottawa Waterway, University of Toronto Press, 289 pp., (1975).

Canals of Canada, Douglas, David and Charles, Vancouver (now Douglas and McIntyre, Vancouver), 261 pp., (1976).

The Seaway, St. Lawrence Seaway Authority, Ottawa, and Clarke, Irwin and Co. Ltd., Toronto, 92 pp. (1979).

John By, Historical Society of Ottawa, 63 pp., (1982)

Ottawa River Canals, available for consultation as typed draft; 221 pp., publication hoped for in 1983.

THE RIDEAU CANAL AND SOME OF ITS BUILDERS

(Notes for a talk at dinner on Saturday, October 2nd, 1982.)

by Robert F. Legget, O.C.

The one hundred and fifty years of unbroken service of the Rideau Canal have been well and truly celebrated this summer, all the way from Kingston to Ottawa. Residents along the waterway have been given a new perspective of the Canal which for so long, and by so many, was just taken for granted. Many people from other places, some far away from the Rideau, have come to know what a beautiful and still useful waterway the Rideau Canal really is.

This fine meeting, held so appropriately in the heart of the Rideau country - and not at either end of the Canal - is in some ways the culmination of the anniversary celebrations. You have had the privilege of hearing something about the first users of the waterway as a route linking the St. Lawrence with the Ottawa, some of the original Canadians so long neglected in so many aspects of Canadian history but here given their rightful place in the Rideau story. You have had a lucid review of the complex historical background to the actual building of the Canal and so can now appreciate the better its full significance. And, finally, you had an interesting summary of its first decades of useful service. The six papers will long prove to be essential reading for all who come to study this long use of the Cataraqui and Rideau Rivers.

All that I can now do is to add one or two footnotes to these main presentations and perhaps pave the way for your inspection, tomorrow, of some of the focul points of this central part of the Canal. But let me first pay tribute to those who have been responsible for the anniversary events in this central area. I have witnessed only a few of these many happy happenings but I have heard glowing reports from others of the success which has attended every event of the summer. It is especially gratifying to hear of the many out-of-Valley visitors whom you have been able to attract, many of whom - probably most of whom - will want to return.

In view of this, it is regrettable that next summer will see a break in the continuous summer service of the Canal with the closure of the Ottawa end while three locks are reconstructed. Let us hope that, in the future, all such essential rehabilitation work will be carried out and completed within the seven or eight months of winter, just as was done

at Washburns Lock, and as is now perfectly practicable for even larger works using the techniques of modern civil engineering construction.

I mention this matter in order to remind you of the engineering works - the dams and accompanying locks and channels - that really make the Rideau Canal what it is. Even today, they can be admired as fine examples of civil engineering works. That they were built, in the bush, one hundred and fifty years ago places them in the first rank of heritage engineering works in North America. The great flight of entrance locks coming up from the Ottawa River are familiar to all who know Ottawa and have been well publicised in many a photograph. Almost as impressive are the four locks at Kingston Mills, and the associated dams, although they are not quite so much in the public eye. (It was a first glimpse of the lowest lock here back in 1937 that started me on my continuing study of the Canal.) The flights of three locks at Merrickville and Smiths Falls, the latter still there although now paralleled by the new single lock, are similarly familiar to many if only because of their proximity to well travelled roads.

Two of the greatest engineering features of the Canal are, however, not well known at all; they will, however, be visited tomorrow. The one is the most spectacular work on the Canal, the other a feature now so much a part of the local landscape that very few even today appreciate its significance. I refer to the great arched dam at Jones Falls with its associated four locks; and the Narrows lock and its relation to the cut at Newboro or the Isthmus Canal as it may rightly called. Let me describe briefly each of these brilliant pieces of engineering which show so clearly the imaginative planning and design concepts of the Superintending Engineer, Lieutenant Colonel John By, so much in our minds this summer, and rightly so (as I feel sure that you will agree) when you reflect upon what you have heard and will see during this weekend.

The Narrows Lock

The height of land, separating the watersheds of the Rideau and the Cataraqui Rivers, is - as you will all know - the isthmus on which the village of Newboro now stands. This separates Rideau Lake from Newboro Lake (formerly known as Mud Lake). Across it must have run the portage used by the Indians and early white travellers between the Ottawa and the St. Lawrence. One can still encounter references to the name "Carrying Place" but I know of no studies yet made of this important early feature, one which might prove to be of

real archaeological interest. A route for the necessary canal connection between the two lakes was suggested by John McTaggart, the first Clerk of Works on the Canal, not in a direct line since this would have involved excavating through a rocky hill, rising 44 feet above lake level. He says that, along his route, "little rock is expected to be met with, except about the ridge...the excavation through this cut will probably be full of mineral substances..."(1) It was apparently on this assumption that the work of excavation started.

Just how soon it was realised that much of the excavation would be in rock I have not yet been able to trace, but it seems clear that the work was started without any test borings being first put down, to determine exactly the character of the ground. Rock was close to the surface, however, as you may see today if you walk to the far upper end of the well-kept grounds around Newboro Lock. And in those days, rock excavation was a costly, dangerous and laborious business - all drilling being done by hand, one man holding the drill "steel" while another hammered away at it, blasting being crudely done with black powder.

Any reduction in the quantity of rock to be excavated would therefore be a great advantage; it was for this reason that attention was directed to the Narrows on Rideau Lake. MacTaggart tells us that the lake was here only 100 feet wide and very shallow. He proposed dredging through the "freestone and gravel" (2) so that the ridge across the lake was almost certainly a glacial feature such as a moraine (or possibly an esker). If a lock were to be built here, the level of the upper part of Rideau Lake could be raised and in consequence the depth of excavation - rock excavation - in the Newboro cut would be reduced. So the Narrows Lock was built for this unusual but eminently sensible reason, and Upper Rideau Lake was thus formed. It was an inspired piece of design for it must be remembered that it was conceived on the basis of observations from the water, there being no such aids as aerial photographs or accurate levelling.

Many who pass through the Narrows Lock today must be irritated by having to "waste time" in this way for a drop of only three feet - but they were three crucial feet in the building of the Canal. And sailors are today almost the only

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(1) MacTaggart J., Three Years in Canada etc. 1829, vol.1, p. 144-5.

(2) MacTaggart, loc. cit., p. 143.

ones who do see this Lock at close quarters since it can be reached on land only down long side-roads. It is, however, well worth a visit.

The Jones Falls Dam

Twelve miles downstream from Newboro Lock, where the decent to Kingston starts with a drop of almost eight feet, we come to Jones Falls. When MacTaggart visited this location in 1827 he found "a narrow ravine scarcely a mile in length, and having a 60-feet fall. The banks are lofty, averaging 90 feet in height..."(3). It must have been a quite beautiful sight. MacTaggart discusses various ideas for getting the Canal past this formidable obstacle. He noticed Macdonald's Gully and even in his initial rather vague schemes he could see that it provided a suitable location for the necessary locks if the Cataraqui River itself could be suitably dammed. The solution finally adopted after John By had himself visited the site was daring in the extreme - the damming of the head of the gorge by a masonry dam, raised to such a height that it would flood water into Macdonald's Gully, where the four locks could be built "in the dry" prior to the water level reaching its final height.

Where John By got the idea of building an arched dam, we do not know, apart only from his remarkable engineering intuition shown in so many other ways, since at that time there were only two other major arched dams in the world, both in Spain. But they were located near the east coast (facing the Mediterranean Sea) far removed from the Badajos area in which John By served for some months in 1811 during the Peninsular War, so that it is unlikely that he saw them. He was well read in the very limited engineering literature of that time (as we know from other sources) and so might have read about them,but this is improbable. Be that as it may, John By and his assistants designed a true arched dam for Jones Falls, curved in plan, keyed into the rock sides of the gorge, 68 feet high with a base width to height ratio of only 0.44 instead of the more usual ratio of 0.75 to 0.90 for gravity type dams. Not only so but they somehow located the only exposure of sandstone in the whole of the area around the Falls. You can still see the quarry they used on the north side of the road between Elgin and Phillipsville. And the method of construction, by what is called "leap-

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(3) MacTaggart, loc. cit. p. 148.

frogging", with a clay blanket upstream in front of the dam, could not be improved upon today with all our modern construction techniques. It was a true masterpiece. It still is, as good today as when it was built one hundred and fifty years ago, deep in the wild bush of British North America (4).

Who were the men who designed and built these pioneer works? Men are always so much more interesting, and important, than things that I would like to use what time I have left to talk about some of them. I have already mentioned John By, the presiding genius over the whole project - and genius he certainly way, despite the attempts of some to denigrate his superb achievement and even his personal character. It has been possible, finally, to piece together all the main events of his life and interesting career; a printed record of this is now available for those interested in knowing more about this great man (5).

John By was aided by a group of quite remarkable assistants, most of them younger officers in the Corps of Royal Engineers. We know their names and when they arrived in Canada, as well as when they left here for duties in other places, but beyond that not very much. The little we do know, however, confirms their stature as engineer-officers of unusual ability and (to me at least) indicates what a born leader of men John By was since he clearly had much influence upon the formative years of these young men. Several achieved high rank in the British forces, two at least becoming Generals and one a Field Marshall, occupying posts of great responsibility such as Commanding Royal Engineer in Ireland, Scotland and then Great Britain; another served for a short period as Governor General of India.

We must remember, however, that these young men were specially selected for their duty on the Canal and they had all been trained at the Royal Military Academy at Woolwich. The training they received, by our standards of today, was rather crude and elementary; it included instruction in modelling, in French, in mathematics and fortifications, but little else. But it <u>was</u> training, the best available at the

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(4) Legget R. F., "The Jones Falls Dam on the Rideau Canal, Ontario, Canada", <u>Trans. Newcomen Society</u>, vol. XXXI, pp. 205-218, 1959.

(5) Legget R. F., <u>John By: Builder of the Rideau Canal, Founder of Ottawa</u>, Hist. Society of Ottawa, 63 pp., 1982.

time, whereas the actual builders of the locks and dams were generally unlettered men without any such advantage. And they stayed in Canada, some of their descendants with us today, whereas the Royal Engineer officers had to go on to other parts of the world in their Corps service. Let me ask you, therefore, to think with me about two of the builders, while appreciating that the whole project was a real team effort, probably involving more than two thousand men at the peak of construction activity.

Another of the special features of the building of the Rideau Canal is that it was one of the first great public works in Canada to have been carried out by what is called the contract system, now virtually universal in the prosecution of civil engineering construction. Under this system, works are designed by engineers (or architects in the case of buildings). In the case of the Canal, all designs were prepared by the engineering staff under John By. Experienced builders are then invited to "tender" on the work - to offer to build what has been designed by the engineer for a certain sum of money and within a certain period of time. One of the tenders, usually but not always the lowest in cost, is then accepted and a contract signed between the owner of the work and the tenderer who then becomes the contractor, legally responsible for carrying out the work. This was the way in which most, but not all, of the Rideau Canal works were constructed. Although he had a lot of trouble with some of the contractors on the Canal, almost always for small works such as excavation in soil, John By was fortunate in having been able to obtain the services, as main contractors for the major works of some excellent men, some of whom had gained valuable experience on the building of the first Lachine Canal, completed just before the Rideau Canal works were started.

How fortunate he was is well shown by the fact that, as the end of construction approached, he sent to England for four beautifully crafted silver loving cups as gifts to four of the main contractors, indicative of his appreciation of their good work. He presented them to Thomas McKay, John Redpath, Robert Drummond, and Andrew White and Thomas Phillips jointly. The Historical Society of Ottawa, under the leadership of its fine President, Mrs. Judith Burns, had the inspiration to assemble all four of these cups, with the cooperation of the respective owners, in the Bytown Museum as part of the excellent exhibit they had as one of their contributions to the 150th celebrations of the completion of the Canal. To me, at least, the sight of these four beautiful pieces of silverware, together for the first time

since 1827, was the real highlight of the celebrations. I hope that all of you managed to see them since they have now been returned to the safekeeping of their owners.

One of the cups was given to John Redpath to whom was entrusted the great task of building the Jones Falls dam and the four associated locks. He was a Scot, born in Earlston, Berwickshire in 1796; here he was trained as a stone mason. He came to Canada in 1816, ready to turn his hand to anything. His first job was the building of a dairy in Montreal. Clearly he did well in Montreal since in 1821 he was one of the partners who did the masonary work of the locks on the first Lachine Canal, completed in 1825. When, therefore, John By established his little office in Montreal, in the winter of 1826-27, it was but natural that he would meet the builders of the Lachine Canal and negotiate with them for building the masonry work on the Rideau Canal.

Thomas McKay and John Redpath entered into a partnership for the parts of the work for which they were the contractors. Apparently by agreement, McKay carried out the work at the Ottawa River entrance to the Canal while Redpath undertook the forbidding task of building the Jones Falls dam. Redpath kept careful records and fortunately many of these have been preserved at McGill University, with the early development of which he was closely associated. The completed dam is the best testimony to the excellence of Redpath's work. There is not time now to describe how closely he kept in touch with the works served by his managers at the site, and by his workmen, almost equally divided between Scots and French Canadians (6).

After the Rideau works were complete, Redpath went on to complete much important building work in Montreal, including the great church of Notre Dame, good Presbyterian that he was! He built some of the first buildings housing McGill University. When the City Council of Montreal was first organized in 1832, Redpath was one of the originally appointed members; he served on the Council for eight successive terms. When, in 1840, a group of Montreal business men crossed the Atlantic in order to lay before the British Parliament their views on the problem of self-government for British North America, he was one of the delegation. He invested wisely in Montreal real estate and business ventures

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(6) Redpath Papers, McCord Museum, McGill University,

such as an early railway and a coal mine, and he became a Vice President of the Bank of Montreal. By 1854 he was, therefore, one of the leading citizens of Montreal and a man of substance. It was in that year that he built a small sugar refinery on the banks of the Lachine Canal, the first (I believe) in Canada and the foundation of the great Redpath business enterprise of today. When, therefore, you "let Redpath sweeten it", you are a minor beneficiary of the building of the Rideau Canal (7).

The other main contractors for the masonry works on the Canal also made substantial contributions to the early life of the Canada we know but tonight there is time to mention only one more of them, Robert Drummond. He was responsible for the building of the locks and dam at Kingston Mills, but also for the two locks at Upper Brewers Mills and the single lock at Lower Brewers, or Washburns; you will all know that these are the locks that come between the four at Jones Falls and those at Kingston Mills. As you may have gathered from my brief summary of John Redpath's life, we know quite a bit about Redpath and his family but unfortunately not nearly as much about Robert Drummond, even though he was also and without question one of the early builders of Canada. In some ways he is the "forgotten man" of the Rideau Canal since you rarely hear his name mentioned even though (as we have seen) he was so highly regarded by John By. Let me summarize for you what we do know.

The ninth Earl of Dalhousie (whose name must be at least mentioned even in so brief a presentation as this) was the Governor in Chief of British North America when the Rideau Canal was started; it had his full support. Throughout his ten years of devoted service to Canada (two as Lieutenant Governor of Nova Scotia and eight as Governor in Chief) he kept a personal journal. The original of this remarkable document is in the Scottish Register House in Edinburgh, on indefinite loan from the present Earl (8). There I have read it, as a result of which I am most anxious to see it properly published since it is one of the most fascinating Canadian documents I have ever seen. I mention it to you since in his journal, the Earl describes in detail his two visits to John By at Bytown, the first in September 1826 and the second one year later. On this second visit, in the Fall of 1827, he examined the construction of the Union Bridge over the

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(7) "Redpath: One Hundred years of progress", Canada and Dominion Sugar Company, Montreal, 40 pp., 1954.

(8) Dalhousie Papers, Scottish Register House, Journal for 1827, p. 82.

Ottawa River, then complete except for the great central timber arched truss, so familiar from early prints of Bytown. And in his journal, the Governor recorded that "Drummond the Carpenter" showed him around and described the work. This might have been Robert Drummond since the first record of his being in Kingston is in 1828. But I am in some doubt about this since the great timber truss, although completed in March 1828, collapsed at the time of the spring flood and had to be rebuilt during the remainder of that year (1828) whereas work at Kingston Mills was started in early 1828.

All we know of Drummond is that he was another Scot. He must have been gifted in his choice of men - to supervise his three separate contracts - since in the records now available we read of no difficulties or troubles at his contract sites. As many of you will know, the layout of the dam and locks at Kingston Mills is far from straightforward; in all probability, Robert Drummond himself supervised this work, at least until it was well started. One has to make this qualification since he was soon engaged in other business activities in Kingston, notably shipbuilding. He built the vessel the first voyage of which through the completed Canal we have been celebrating this year. It was a simple craft, little more than a barge with an engine on it, on which pumps could be carried for pumping water out of cofferdams - hence its name, the Pumper. John By quite expected to sail through the Canal on a second vessel built by Drummond, named the John By, but this was not ready in time; this was perhaps just as well since, when launched, it was found to draw too much water to get into the locks and so never did sail the route for which it was intended.

As early as 1830, the building of a steamboat to sail on the Rideau Canal had been proposed; it was planned to form a Company "to navigate the Rideau Canal by steam" and Robert Drummond was a member of the committee charged with building this first boat, eventually being the actual builder (9). In March of 1832, he was elected, with nine others, as a Director of the Commercial Bank of the Midland District (10). In this, and other ways he soon became a leading citizen of Kingston. He must have been a kindly man since he helped John By with some of the problems he encountered with small contractors. The watchman at Jones

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(9) Kingston Chronicle, 25 December 1830, p. 2.

(10) Kingston Chronicle, 17 March 1832, p. 3; both courtesy of Dr. D. R. McLay.

Falls, after the dam was finished, left his valuables in Robert Drummond's office in Kingston when he had to make the long journey to his home, on foot, to visit his family, afflicted by the terrible scourge of cholera in the summer of 1832.

One report says that Robert Drummond "fell a victim" to the cholera plague but there is another record that says that he visited John By in his retirement at Frant, in England, in 1834. There is also confusion about his relatives. He is said to have brought three nephews out to Canada from Scotland, and that a niece of his was the second wife of John Redpath. But the Redpath family records show that John Redpath brought out from Scotland only in 1854 another Drummond, George A., "a bright young chemist out of Edinburgh University" to supervise the technical end of the operation of his new sugar refinery. We know that George A. Drummond married John Redpath's daughter, Helen. He became a partner in the Company in 1861 and later President. He was a President of the Bank of Montreal in 1905. He had been appointed to the Senate of Canada in 1880, and was knighted in 1904. Was he one of Robert Drummond's nephews? Most fortunately, the life of Drummond is now being studied by his great-great-grandson, Dr. D. B. McLay of Kingston and so we may look forward with confidence to this part of the Rideau Story eventually being sorted out. (I know that Dr. McLay would wish me to say that if anyone can guide him to information about Robert Drummond, he would like to hear from them; his office is at Queen,s University).

And all this from just two of the builders of the Canal! What other stories there must be about some of the other builders, locked up, maybe, in family archives. When you think of this, of all the archaeological "digs" yet to be made (and not only around Newboro), then words attributed as the last spoken by Cecil Rhodes come vividly to mind - "So much to do - so little done."

THE VISIT TO JONES FALLS

by Robert F. Legget

What a joy it gives me to be able to say a few words about this magnificant structure to a group of Canadians. Usually I have had visitors from other countries here, but this is the first time I have had the chance of sharing with you the wonder of this place which, as you know, looks like a nice grassy lawn until you start to study it and see what is here. And so it is a very real welcome that I express to you.

Just so that you know where you are, you are standing on a grassy slope built on top of the clay bank in front of the dam. The dam is behind the bus as most of you have seen. You can see its curvature in plan. Later on, I will be able to explain to you what to look for. This is MacDonald's Gully. If you are coming past this place in a boat, you do not see the dam, you just see this grass and you go down that way, because the locks are down there. And to reassure you, I have the permission of Colonel Wyght who says that if I don't talk too much, I can take those of you who want to walk down a rather steep hill this way, while the buses go back to where they cam from and we will then meet the buses at Kenney's Hotel which is at the bottom of the lock. So you will be able to see the lock.

I am delighted to say that there is coming up the locks a Chris-Craft operated by its owner who happens to be a friend of mine. I don't know how Colonel Wyght arranged all this, but everything is in our favour, even the weather, so far. So you may actually see a boat being locked through, if all goes well.

One of the things that a civil engineer has got to be able to do if he is going to be worthy of his profession is to have a very vivid imagination - to vitis a site like this before it is developed and to picture how he can build the structure that is necessary and then envision what the site is going to be like when the structure is built. This afternoon I want to ask all of you to be civil engineers in

reverse because I want to ask you to try and use your imagination to picture what this site was like before the dam was built - in other words, going backwards. And it's not very difficult because the country around - the trees, the banks, are exactly the same as they were, in general, 150 years ago, or let us say 155 years ago when John McTaggart first came through.

The river came where that bridge is behind me as a nice gurgling stream, running fairly rapidly; just about where we are standing, it started to tumble down the gorge which is on the other side of the dam. The only thing that has changed is the gorge, because it is now full of brush and small trees, but before you go, just go to the other side and look down and you will see the dam starting at the bottom. That is at the bottom of the gorge. So McTaggart's words which I mentioned last night were really a very vivid description of what must have been a simply magnificant and most beautiful waterfall starting just about where we are standing now.

I have brought McTaggart's book with me in case some of you have never seen it. This is an original copy: this book was published in 1829 while this dam was being built. It is not available on loan because it is a bit of a treasure, but here is the section on Jones Falls: this is what he says. "These Jones Falls are the greatest in the least distance that are met in the whole route, rolling down a narrow ravine scarcely a mile in length and having a 60 feet fall. The banks of this narrow and crooked ravine," (that's this) "are lofty averaging 90 feet in height and on the west side, there are deep bogs", (that's on this side in MacDonald's Gully) "surrounded by high land." This is just what he saw. He goes on to suggest how he might build the canal, but he was a little off in his ideas for the Canal. He saw this site. He told John By about it when he went back and made his report.

In the Spring of 1827, John By came through with one of his assistants in a canoe kindly provided by Sir George Simpson. They canoed down the river and must have berthed the canoe here at the portage. It would be quite a portage to get down that 60 foot drop, but we will follow down the locks, down the gully. At the foot of the gully was smooth water as it is today where Kenney's Hotel is. That is what he saw. You can imagine him standing on that hill because that is the best vantage point, looking at the river and wondering how on earth he was going to get the

canal up this gorge.

Well, as I said last night, he was a man of great imagination and wonderful intuition. He had the concept of damming the gorge not at the lower end where anyone would normally have thought, but at the upper end. He studied both sides, and there is rock on both sides and the bottom. He then conceived this idea of building this arch dam and we are probably standing at almost exactly the spot where he got this idea at the beginning of the operation of building. Then they had to design it; they made surveys, they had simple surveying instruments, they knew how wide it was - it's not very wide, about 600 feet - and the height of the dam itself is actually 68 feet high if you take it right down to the foundation. Then he designed the cross-section as an arch dam and you will see it's curved in plan and bears into the two abutments so that the stress on the dam is carried by the bedrock - just like an arched bridge only in the horizontal position.

Then they had to find the rock to build it all. The rock that you see is all pre-Cambrian rock, tough as nails, terribly difficult to excavate and they knew they couldn't build the dam with that. How on earth they found the exposure of sandstone which you are going to see in a quarry between Elgin and Philipsville, just as it was when they used it, I don't know, but they did find it. It's good sandstone so the blocks that you see in the dam are not of the rock around. They are blocks of sandstone from the quarry that you are going to visit.

Then By awarded the contract to John Redpath. Redpath came up himself, studied what he had to do and then they were ready to go; the work started probably in 1827, but they couldn't do very much that year. Therefore the construction of the dam and the locks, which are built down the gully, was done in 1828, 1829 and 1830 - that's three summer seasons; in 1831 the whole thing was finished. Now even by today's standards, that's pretty good going. In those days, as I look back on it, it was fantastic.

Don't forget they had no construction equipment whatever. Everything was done by hand, or by horses or by oxen. So let me, quite briefly, suggest how they did it. They had little windlasses and two or three men would wind the windlass to lift the blocks of stone up at the quarry and they were pretty heavy. They put them on stone boats, made of wood, and they were pulled by pairs of oxen

through the woods to the shores of Sand Lake just around the corner. There they hauled them on to barges and each barge would bring one piece of stone down here to that end. There they had another windlass and another group of men would lift the stone off the barge, bring it around and then they would have to man-handle it or horse-handle it into position. They had little derricks along the edge of the dam to lower the stone into place. When you see the size of the stone, you realize that, while I can describe it quickly, this really was quite an operation.

But that is the way they did it. They didn't have many men here because it couldn't take many men. The way they managed to control the river - because the river was flowing all the time - the Cataraqui, was first of all to start on that side and they let the river flow over the beginning of the dam on this side. They, when they had advanced about 10 feet, would proceed to open up that side and put a cofferdam of clay on this side and dam the river on this side and force the level of the water up slightly so that the river flowed on that side. Then they built it up another 10 feet, then they would reverse it and they blocked that end and forced the river over this side.

Now John By left in charge of this an officer named Lieutenant Briscoe; he had young assistants with him and they had to liver here, of course, throughout the summer season. They lived in a place just down in those trees which is called still "The Officer's Quarters" going back to the time when the officers lived there. The reason they went there is that there is a beautiful spring and the spring is still there. I have drunk out of it, but the place is obscured by a house on the front, but you can still see where they camped. The contractor's men probably lived in a camp just beyond the other side of this hill and there they lived during the summer. During the winter, they stopped work on the dam but after the dam was finished, they had to leave someone here and the watchman that I mentioned last night who walked to his family, leaving his valuables with Robert Drummond, was the watchman on this dam during the winter of 1831 and 1832.

Now what about the locks? Well, McTaggart spotted this gully over here and the gully is exactly the same today as it was 150 years ago except that the bottom was

excavated slightly. He saw, and By agreed, that that's where the locks could be and the beauty of this job was that by building the locks there in MacDonald's Gully - one at the end of this stretch of water, then there's a pond, then there are three in a chain and they lead down to the smooth water just by Kenney's Hotel - was that they were able to build those locks before the water level here was raised sufficiently to flow into the gully. So they were built, as we say, "in the dry"; this is a very economical operation but most of the other locks had to be built "in the wet" with a coffer around them. So the lock building was fairly straightforward. It was still difficult because of the weight of the stones. As we walk down, we won't have time to stop, I'll have to plead with you and get you to promise not to be stragglers.

The first lock is straightforward, then there is a pond, there are then the three in a chain. When we get to the bottom of the three we will stop, because I want you to see the extent of the masonry that these men built by hand; everything you look at was done by hand. Now the next thing is - What about the river? The river flowed from this side to that side, but when the dam was finished, and as it is today, where is the river? It hasn't disappeared. It is still flowing. Another bit of intuition was that John By and his assistants had a look around and just over this hill they saw a gully, another gully leading from this main gully down into the gorge and so they built a spillway. They thought of everything. So the river, instead of flowing down this way as it used to, once the dam was raised to its full height, went over the spillway. The spillway is still there. And today, fortunately, it is running fairly full, usually there is no water going through it for a reason I will mention in just a minute, but today there is.

The locks don't take very much water. But when you pass the first of the four locks, you'll see that it discharges into a big pond, sometimes this first lock will discharge before the other locks are ready to take the extra water. So, another problem was too much water. Well, they had another little look and they found another spillway and so there is a second spillway to discharge the excess water from the pond. Now these are things that, today in modern civil engineering, would be second nature in design. But when you remember all this was done 150 years ago, everything having to be looked at from a canoe or on a pathway hacked

through the forest, the forest was thick, imagine it was like that over there. How they managed to think of all these things and design them so well and build them so quickly is, to me, still a wonder even to-day and even though I have been here several times.

The people who did it were the workers employed by John Redpath but before we leave the building, I should note what has been mentioned to you earlier in the day - that is how was the work done when they didn't have contractors? Or when contractors failed, as they did and John By had to come along and take the work over and finish it himself? Well, he had the assistance of two companies of a regiment called the Royal Sappers and Miners. In those days the Corps of Royal Engineers consisted only of officers. It seems odd to-day but my military friends will understand this. It was an elite corps of officers, all Royal Engineers. When they wanted any work done, they had to call on the corps of Royal Sappers and Miners and they were also a very proud corps, but the top rank was a warrant sergeant. Two companies were sent over from England. One company stayed in Ottawa, or Bytown, and the other company, when things got bad at the Isthmus (Newboro), were sent up there and that's where so many of the deaths were caused due to malaria. The little cemetary that you stopped at just before the Newboro Cut is in memory of that company of the Royal Sappers and Miners. Eventually, of course, they were amalgamated with the Royal Engineers, into the Royal Engineers as we know them to-day, with the Commanding Royal Engineer the top man.

And there was another corps too - the Corps of Royal Draftsmen and Surveyors who did the drafting work and the survey work. They, too, were absorbed into the Corps of Royal Engineers. So we are really talking about three regiments who were responsible for this great work. Only a few draftsmen and surveyors - but two full companies of the Royal Sappers and Miners and quite a number of the officers of the Corps of Royal Engineers, all commanded by John By, a wonderful man, a genius. Now, that was all 150 years ago. On this lovely afternoon, it is hard to think back over 150 years, especially when I tell you that this dam to-day is exactly the same as it was 150 years ago. It's hardly been touched. No maintenance apart from clearing a few trees. There is only one very tiny leak in it, right at the bottom; you can't see it. It is just a trickle of water. Now you will realize we are talking about an engineering work that is really outstanding on a world scale.

Some of you may have seen something over here. This is the one change that has been made. Those are sluice gates there. When power began to get short in Ontario, there were people who saw that water going down the sluice-ways and thought what a pity to waste that water. So they got permission from the Government of Canada to utilize the flow of the Cataraqui River and the 60 foot drop and that building you see down at the bottom of the gorge is a power station, a water power station of the Gananoque Power and Light Company; I think it is still separate from Ontario Hydro.

To get the water down, they had to have pipes and you may have seen three large woodstave pipes going through the dam. I was here when they had workmen employed in cutting through the old masonry to get those pipes through. If there were not ladies present, I could tell the gentlemen some of the language that I heard on that occasion. I couldn't repeat some of it, because it has never passed my lips, but when they had to chip away, even with modern tools and with compressed air jack hammers, the mortar that linked together these stones of sandstone - I have never heard such blasphemy in all my life; if they could have got hold of the fellows who built the dam, they would have given them a piece of their minds. Well, they did get through. The dam was fixed up again and you will notice the only horizontal stones which are just over here, above the pipes and the power station is now automatic. It is controlled from the house up there and it has been operating ever since.

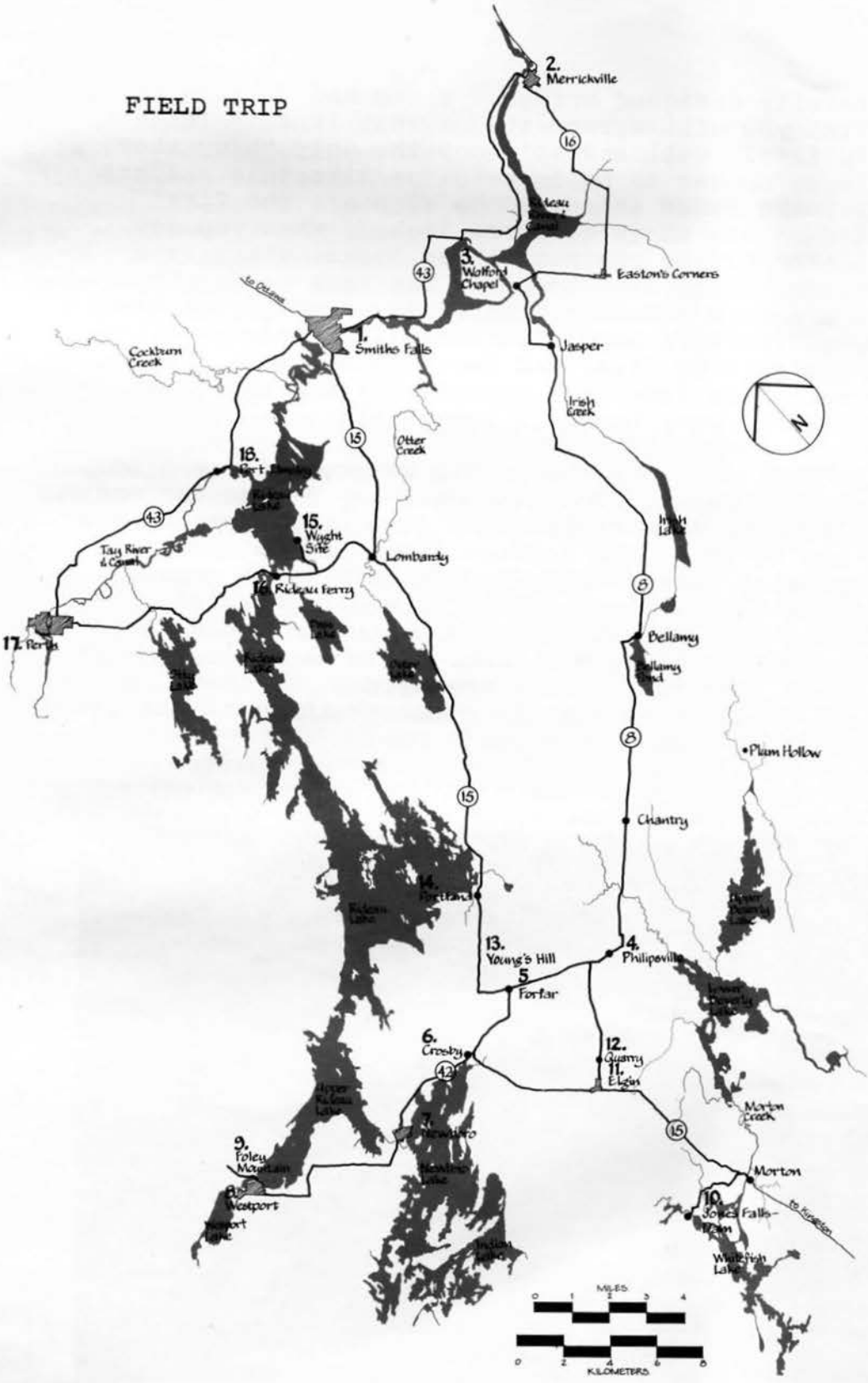
Now that's the only change which has been made to the dam itself, but in recent years, Parks Canada, concerned as they always are with visitors and trying to make convenient the parts of the Rideau Canada that can be seen, have put up the railing - previously you could walk to the edge and look over. It was probably a desirable precaution. As some of you saw at the viewing platform, you get a real feeling for the dam but there isn't time for the rest of you to go so you can just look at it if you walk past. These things have been added, to help with the appreciation of the dam for those who visit it.

Finally, there is a bridge and you may say, "What has that got to do with it?" That bridge goes across the river channel and it's quite new. It was built about 10 or 12 years ago. It carries what they used to call a back road; now it is a secondary road, an extension of the road that the buses came up. As you see, this was a

very carefully designed bridge. There had to be a bridge, but I think you will agree with me that it fits into the landscape fairly well and it's not the ugly thing that some bridges appear to be in settings like this. Apart from this, the other things to be seen are the first lock and then the chain of three locks. When you get to the bottom of the chain of three locks, there is a wooden bridge which used to carry the back road. Then there is a wooden causeway, the floor of which has been renewed; on the left hand side is a fish santuary where you can see lots of fish, and on the other side are the headwaters of the lake that extends all the way from Jones Falls to upper Brewer's locks.

As you look down the smooth water, this is a lovely stretch of the canal. You can see a gap at the far end. On the left hand side of that gap is a small opening and if ever any of you do go down in a boat, go into that opening because inside there is rather a large expanse of water and on the side of that is the highest cliff on the canal called Rock Dunder and you can't see it in any other way except from a boat. It's magnificant - it raises about 1200 feet out of the water. So there is much to be seen around here but the greatest thing of all is just down there - the Jones Falls Dam.

FIELD TRIP


2. Merrickville
16
3. Wolford Chapel
43
Easton's Corners
To Ottawa
1. Smiths Falls
Cockburn Creek
Jasper
Irish Creek
N
15
Otter Creek
18.
43
15. Wright Site
Tay River & Canal
Lombardy
16. Rideau Ferry
17. Perth
Irish Lake
8
Bellamy
Bellamy Pond
Plum Hollow
15
Chantry
14.
13. Young's Hill
4. Philipsville
5 Forfar
6. Crosby
42
12. Quarry
11. Elgin
Morton Creek
15
9. Foley Mountain
8. Westport
7.
Morton
10. Jones Falls
to Kingston
Whitefish Lake
MILES
0 1 2 3 4
0 2 4 6 8
KILOMETERS

THE FIELD TRIP - SUNDAY, OCTOBER 3, 1982

EDITOR'S NOTE: While there was a formal and printed set of notes for each of the conductors on each of the three buses, those three conductors also happened to have their own individual knowledge of the area travelled and so contributed additional information not contained in the official 'screed'. Further, on each bus there were individuals with knowledge of various locales along the way. The result? Each busload enjoyed an individual experience - unfortunately they were not recorded and so you are back to the original.

1. SMITHS FALLS: The original land grant of 400 acres from the Crown in 1823 was held by Major Thomas Smyth. Smyth, a United Empire Loyalist who never took a personal interest in his holding with the result it was sold for taxes to Justice Jonas Jones in 1825 who in turn re-sold it to Abel Russel Ward, an American immigrant industrialist. A small commercial settlement grew up around the area where now the town's museum, Heritage House, is located at Old Sly's Rapids. That house may have been the work of Ward. With the coming of the Canal in the late 1820s the land was expropriated by the Crown which forced the move of the several mills and small commercial interests in the area to the region of the upper falls now in the town's centre.

   The new combined lockstation in Smiths Falls reflects the one major change in the system since Colonel By's original work. The following data is based on work produced by Mr. Keith Dewar of Parks Canada staff, Smiths Falls:

   "The Old Locks: Construction began September 21, 1826, completed Summer 1831.
   Depth - each (2) 11 feet 2 inches. Width 33 feet.

Overall length - 134 feet. Length between sills - 110 feet.
Contractor - Rykert, Simpson and Adams.

The old locks were largely built of local dolomite. Many blocks have been replaced by sandstone from the Elgin Quarry. The locks were built along with the stone arch dam now landlocked behind the Smiths Falls water tower.

The Combined Lock: The new lock was built as part of an overall plan by the Department of Transport and later Department of Indian and Northern Affairs to speed up operations in 'bottlenecks' in the Rideau-Trent-Severn systems. It was one of three built in the CORTS (Canada, Ontario Rideau-Trent-Severn) corridor with the other two at Swift Rapids and Burleigh on the Trent Canal. They were designed by Mr. H. Grantz of Indian and Northern Affairs based on a European design.

The lock is designed with an 'energy dissipating floor' and discharge. This prevents excessive turbulence in the lock and downstream when the sluices are opened. The effect is achieved by building a floor in the lock with a number of holes in it. The water is directed into the lock under the floor with the force of the water distributed over the entire area of the floor with the same procedure being employed on the downstream discharge.

The gates are of B. C. fir and for their size and type are rare. Sluices and gates are operated by hydraulics controlled from the lockmaster's office.

Construction began November 27, 1972 and was completed May 15, 1973.
Lift - 27 feet. Width - 33 feet. Depth - 35.5 feet.
Length overall - 140 feet. Length between sills - 130 feet.
Depth of water from floor when lock is full - 34.8 feet.
Gate height, Upper - 11.75 feet. Lower - 37.25 feet.
Gallons required to fill - 1,003,000
Total gallons - including 6 feet depth and water in sluice tunnel - 1.5 million gallons.
Fill time - minimum of 6 minutes.
Contractors - Excavation, Gordon Mulligan; General-Ron Engineering."

2. MERRICKVILLE: William Merrick settled and erected his log house in 1796 and by 1821 had completed his stone house which is still in use to-day. The Merricks' imprint on the village is unmistakeable and not without a certain humour. It is a matter of history that Colonel John By opened the Rideau Canal in May of 1832 by proceeding from Kingston to Ottawa aboard Robert Drummond's steamboat 'Pumper', renamed 'Rideau' for that most auspicious occasion. But it is also a fact that the inaugural trip could have been made in the Fall of 1831 but for one fact: the Merrick's water-powered mills were in need of repair that Fall; accordingly they constructed a dam up-river from Merrickville so that the work could be carried out. In so doing, the down-river waters became unnavigable and By, catering to a local need, postponed his voyage until the following Spring.

   The Blockhouse at Merrickville was constructed at the same time as the Locks and other works. The military necessity was obvious; the village is most approachable from the St. Lawrence and the American border and further - as legend would have it - it lies at the end of an old game trail that led to the St. Lawrence and the border. There were four blockhouses in all and the other three may be seen at Newboro, The Narrows and Kingston Mills. There was a log blockhouse at Jones Falls and still stood within present living memory. Certain lockmasters' houses such as at Hartwells or Smiths Falls were constructed as semi-fortified structures.

3. WOLFORD CHAPEL: This Methodist chapel built in the mid-1820s before the Canal, is the earliest in the area with Wolford Township settlement pre-dating the Canal by a full generation. Before churches were established in Smiths Falls congregations worshipped here. Originally there was an upper row of windows but this level was removed in the last century giving a lower wall and a steeper sloping roof. The cemetary is one of the oldest in the region inland from the St. Lawrence. Samuel Dow was the first to be buried here and it is of interest that his daughter married Bradish Billings, (Billings Bridge, Ottawa.).

   Of equal interest is the activities of the early Methodists; following the American Revolutionary War

and the influx of Loyalists into the new territory of Upper Canada the American Methodists considered this as a missionary territory and so served the needs of the first settlers. Eventually it became the first autonomous church in Upper Canada much to the chagrin of Bishop John Strachan and others.

Irish Creek, in the vicinity of Wolford Chapel, is a reminder that there were alternate routes considered for the Rideau Waterway. For detail on this point refer to Dr. W.A.B. Douglas' paper. It might be noted that the extensive beds of wild rice seen in this immediate area were planted by the somewhat eccentric millionaire, H.F. 'Harry ' Maclean, so as to ensure his duck hunting was maintained at an adequate level.

4. PHILIPSVILLE: A copy of a Daybook circa 1823 for an Inn-General Store, (copies Ontario Archives, Toronto and Public Archives, Ottawa) outlines the activities of a business operated in this village by a man who was very much a part of the Reform movement in the County of Leeds - James Philips. Leeds during the period 1820-40 was the scene of the most bitterly contested elections for Upper Canada's Legislative Assembly ever recorded in a period noted for violence at the polls - bloodshed was common and murder not unknown. Philips faced a trial for murder in 1835 issuing from a wild brawl at the hustings in Beverley (Delta) and was found not guilty in a bizarre event and trial. A stalwart in the Reform ranks led by the Brockville Buels, Philips found his opposition in Ogle R. Gowan who mobilized the Orange forces in support of the Family Compact and through brute force controlled the polls in Leeds. Following the Reform defeat in 1836 Philips like many, despairing of Reform's hopes later left for the United States and became part of the Hunter movement dedicated to the overthrow of the Canadian government by force. In the summer of 1838 there were reports of Philips and a band of rebel brigands in the area and threatening to blow up the Canal's works in the Newboro locale. The local militia were called out in defence of the canal and in the Newboro area were led by Lt. Benjamin Tett of whom you will hear more of later in Newboro. The alarm proved to be a false alarm and probably was no more than Philips and one or two of his

relatives returning to visit their wives in Philipsville after an absence of nearly a year.

James Philips did return with the Hunter force which invaded Canada at Prescott and so was fought the battle of Windmill Point in which Philips was killed on November 13, 1838 fighting as an American general. His home, the Inn of 1823, still stands although much covered over, it is the white frame house, set well back from the street and is the second west of the plaque marking Philips' part in Upper Canada history. Other Hunter leaders such as Nils von Schoultz, the Polish patriot - who was neither Polish nor patriot - were hanged in Kingston the following December. The plaque was erected by the Ontario Government based on some three years of research by Lt. Col. F.C.L. Wyght.

5. FORFAR: The settlement dates from 1820 and was originally known as Hales Corners. There is a village in Scotland of the same name and there was also a family in this district of that name. Forfar is noted for its cheddar cheese which has been made here since the mid-19th century with the present factory being built in 1923. In a tenuous but direct relationship with our early history it may be noted that the current manager of the factory, Mr. Talmage Stone, knew James Philips' daughter - Maria - as his grandmother.

   It is interesting to note that this area had a greater population in its pioneer days than it has to-day; an inventory of the abandoned churches will demonstrate this population shift.

6. CROSBY: First known as Singleton's Corners was settled early in the 19th century. It enjoyed its greatest prosperity around 1888 with the construction of the Brockville & Westport Railway whose design did not appear to have been the subject of too much thought for when it reached Westport and started for the west Foley Mountain appeared to be more than it could handle and so there it stopped and died. Colonel Wyght's grandfather was responsible for the construction of the stations along

the line which also suffered from chronic financial problems and so earned the soubriquet - Broke Every Wednesday. (See Dr. Legget's remarks under WESTPORT.)

7. NEWBORO: Originally known as The Isthmus for such it was in pre-canal days; a height of land necessitating a portage between Rideau Lake and Mud Lake (Newboro Lake). It was an area notorious for its fever and endemic sicknesses which cut deeply into By's construction forces when he reached this point. His first move was to clear a wide path through the forest and undergrowth in an attempt to generate a flow of air which would improve conditions. Then by installing a lock at The Narrows - with only a four foot lift - he backed up enough water so that a very costly and deep excavation through The Isthmus was not required. Here at the Newboro Lock the summit height of the system has been reached and you stand 162 feet above the level of Lake Ontario at Kingston. The large, two storey stuccoed house to the right of the road in the village - just before the bridge over Newboro Cut - was the home of Benjamin Tett who we mentioned at Philipsville.

Tett came to Upper Canada from England about 1820 when he was 31 years of age. This large frame house, recently stuccoed, was completed when he was 45 years old and for the next 45 years was his home and the centre of his business. Tett's life here is an excellent example of a way of life generated by the newly constructed water-way. Early recognizing the opportunities afforded by the Canal he became involved with timber and milling oriented industries. Here in Newboro Tett became the focal point for trade between local farmers and urban markets in Kingston, Montreal and Bytown together with smaller centres in Ontario and Upper New York State. In an almost cashless society Tett was the middleman in a flourishing trade centered on the waterway before good roads and railways.

Tett was also a Lieutenant in the local militia and had his moment of military glory in July 1838 when he was called out on an alarm that James Philips and a group of rebel brigands from William Lyon Mackenzie's force of 1837 were in his area with the intent to blow up the Canal works in the Newboro area. The raid alarm was a reaction to the times - the uprisings of December

1837 and the impending and expected invasion of the American Hunter force of which Philips had become a part - but the fact of the 'raid' was probably no more than Philips being seen in the area for local legend has him visiting his wife that summer. A very natural affair for a comparatively young husband and father of two children. It was great copy based on little fact.

Just before crossing the bridge you will note plaqued cemetaries on either side of the road marking the graves of many who died in the construction period of the Newboro Cut.

8. WESTPORT: Aside from being the prettiest settlement in the whole of the Rideau Waterway - an unrivalled statement - Westport also provides a series of interesting sidelights from its founding days with the Canal to the present. There is no better reference source than Legget's 'Rideau Waterway': "Its churches especially stand out. The attractive Roman Catholic Church (built nearly 125 years ago) was built under the direction of Father J.V. Foley...and its building was distinguished by the fact that residents of all faiths assisted gladly in its construction. Considering the often bitter religious feelings of those early years in Upper Canada, such co-operation, which is reflected in other records of this part of Ontario, is worthy of note."

Of the Brockville and Westport Railway, "These meetings led...to the securing of a charter for the construction of the Brockville, Westport and Sault Ste. Marie Railway... The railway was completed as far as Westport and the first train operated on March 4, 1888. The initials invited parody, 'Bad Wages and Seldom See Your Money Line'. The slogan proved...to be true for the line was never extended beyond Westport...On August 30, 1952 the last train puffed its way from Brockville to Westport and back..." Of 'must' sites, "At least one private residence...will attract the visitor...a Canadian architect has shown that it is not necessary for the professional man to reside in a large city...for his work to become well known...From his office...in this apparently 'isolated' country village have come designs which have been translated into most acceptable buildings

throughout...Ontario and beyond."

John and Lucy Wyght, the Editor's grandfather and mother, removed their household and young family (not forgetting his favourite mare and carriage) from Westport to Smiths Falls on August 14, 1901 via one of the Rideau's many commercial steamboats of that era.

And so Westport continues on its most enviable way of life - catering to tourists in the summers but at the same time not losing its entity to commercialism while it becomes a most covetted retirement haven for those fortunate enough to make the move.

9. FOLEY MOUNTAIN: The luncheon break taken in the Park on Foley Mountain did not provide enough time for a geological appreciation of this area. It is a splendid example of the pre-Cambrian features of Ontario and provides direct links with the shorelines of the post-glacial Champlain Sea circa 12,000 years B.C. A further visit to this region is highly recommended ensuring that the Rideau Valley Conservation Authority services are included.

10. JONES FALLS: Editor's Note: A Review of Dr. Legget's two talks (final papers) will reveal that anything of consequence has been covered both with respect to technical appraisal and human aspects. The comments of the participants, considering their wide range of back-grounds and experience, should be recorded, particularly for consideration by the Parks Canada engineering and maintenance staff. These comments are as follows:

i) The paucity of parking space adjacent to the Dam at the road end.

ii) That the steel safety fence was 'out of place', 'hideous' and 'not here the last time I visited - why now?'

iii) That the cased outline of Jones Falls works with description on the observation platform should be set at a more acute angle as an aid to the photo-grapher, (which the majority of visitors would be.)

The criticism of the fence appears most valid for it would take little effort and less imagination to set in a steel net some 4 - 5 feet down on the Dam.

While the foregoing would not normally be part of such a collection of papers - it is not - but rather part of a most interesting field trip and equally valid and interesting comments from the participants whose heritage we were visiting.

In the vicinity of and at Jones Falls there were other points not yet covered - they follow.

Enroute to Jones Falls: About two miles past Crosby are railroad tracks, half a mile past those, up the first side road on your left, is a beautiful Gothic revival frame-house built in 1879; further down the lane is the original stone house which has seen five generations on this land. At this point you should have noted the change in landscape for you are now entering the massive rock region of the Canadian Shield which here is known as the Frontenac Axis.

Just before the turn to the Dam the frame house on your right was built as a retirement home in 1870 by Peter Sweeney, Jones Falls' first lockmaster.

Some 300 yards south of the turn off Highway 15 to Jones Falls is Morton Creek which flows from Lower Beverley Lake through a culvert under the highway to join Whitefish Lake (the next main body of water south of Jones Falls). It was this route, a very possible route, which interested such as James Philips and Ogle R. Gowan, members of the Beverley Navigation Company, as early as 1835. Study of an Ordnance Survey map, WESTPORT 31 C/9, will show just how valid their reasoning was particularly when you relate it to the population density of the region for that era. Another alternative was Charleston Lake via the Gananoque River to the St. Lawrence; again reference to a map, GANANOQUE 31 C/8, will outline that possibility - again - the might-have-beens.

As you walked down from the dam to inspect the locks, spillways, sluices, etc. with Dr. Legget you finally crossed back to the mainland and on your right was a large commercial building, the Kenney Hotel. This was one of the first hotels on the Rideaus and was built by

Thomas B. Kenney the grandfather of the current owner. The Kenney family migrated from Ireland and settled in Elgin; the young T.B. saw the opportunities for business associated with the Rideaus and so purchased a small store some distance south of the present site. Within two years he commenced construction on this site to take direct advantage of Canal traffic. In addition to a hotel he erected warehouse facilities to encourage the use of Jones Falls as a forwarding point and then added a general store and a post office. Thus he performed the same function as did Tett at Newboro. In the earliest days most hotel patrons were from Ontario but very soon American visitors moved in to take advantage of the very fine fishing in the region. The Kenney's didn't wait for the lake steamers to deliver tourists but rather ran two trips per day to Gananoque in a horse-drawn surrey. This shuttle service was extended by Dan, brother of T.B., when he moved to Gananoque and commenced the first ferry service to Clayton, N. Y. He was also the first to transport automobiles across the river and later operated ferries that would handle 40 - 50 vehicles in the days before the Ivy Lea Bridge. It would appear that those early entrepeneurs may have known what 'goverment' implied but it is doubtful if many could have defined 'grant'.

11. ELGIN: An early Methodist settlement with the Catholic and Anglican churches following in the later part of the 19th century. The Elgin Hotel - once The Empire - dates from the early 1890s. Across corner is a fine example of the old country store only recently closed - unfortunately. There are several examples of fine old Ontario houses in the immediate vicinity.

12. ELGIN QUARRY: Approximately a mile out of the village on county road 8 which intersects the Philipsville-Forfar road is the Elgin Quarry from which came the stone for the works at Jones Falls, (commences at the Mustard side road). This quarry was an outcropping in the probable form of a hill or ridge with the result that the normal hole in the ground associated with quarrying is not extant in this case. The dressed stone was moved from here by carts with teams of oxen to the water, some six miles off, and then to rafts towed by small tugs to the

site of construction at the dam and locks. The quarry was used into the late 1890s.

13. YOUNG'S HILL: On the Forfar side of the hill is an unusual 4-storey barn. The Summit of this hill - which is a drumlin, a formation from the glacial age - is approximately 550 feet above sea level and a view, some 20 degrees off to your left, will present a fine example of the pre-Cambrian features from Foley Mountain area on to the north-east and there some seven miles away - as the crow flies - the Champlain Sea shorelines lay at the base of that ridge which is approximately 100 feet above our location here.

14. PORTLAND: Originally known as 'The Bay' Portland was part of the early settlers' route; Quebec City-Montreal-Brockville-across country to The Bay-down the Rideau by barge or boat to Oliver's Landing (Rideau Ferry) then across country by the west shore, north as it is known locally, to Pike Falls (Port Elmsley) and so to Perth and all this as early as 1816. With the coming of the Canal the settlement grew with it and was a fairly self-sufficient community by 1850. As you come in to the village from the west on Highway 15 the nicely proportioned Anglican Church in stone dates to the 1860s. Down on the waterfront was located W.J. Dowsett's boat works where the Dowsett class, now classed as antiques, were built for the first half of this century. The two storey, frame and brown stained building on the lake side stands what was Scovil's store, a family business dating from the 1840s and continuing until the 1960s. The family belong with the earliest settlers in the region and members still reside in the village. At the height of the commercial steamboat period Portland had two hotels in the tourist trade as well as several mills, blacksmiths, tannery, cooperage, cheese factory and taverns. The derivation of the name for the Township - Bastard - is interesting but probably apocryphal; while a local committee, including a Scovil, was in session to supply names for the rewly surveyed townships they adjourned after completing their task. An observant and dutiful clerk noted that one township had been left unnamed. Scovil observed that without a name then surely it must be a bastard. In the tradition of bureaucracy the clerk so recorded the name of Bastard Township. A good story - but just that - a story. There was a family by that name in the area and the name was well established in England.

Turning off Highway 15 to the left for the Wyght Site we passed through the village of Lombardy - probably a dozen and a half dwellings at the most. Try to imagine the village in the mid and late 1800s when it boasted three hotels on the Bytown-Brockville-Kingston route.

15. WYGHT SITE: The first recorded native artifacts from this site date to about 1928 and were dug out by this Editor - in a most unscientific manner - he then being eight years of age, but eager. In 1977 preliminary investigations were carried out with Gordon Watson followed by a two-year investigation in 1978-79 which encompassed the excavation of 179.5 square metres in both the lower and upper terraces. Radiocarbon dating established occupancies ranging from 6,050 B.C. to 1,335 A.D. which covers a cultural range of Paleo-Indian, Archaic, Initial and Terminal Woodland periods. In ceramic artifacts over 100 spearate vessels were identified which when scaled against the established 7,385 years of occupancy would clearly indicate that this was a transient hunting-fishing camp stop as opposed to a fixed dwelling area. In short we are dealing with a nomadic way of life; follow the receding snow north in the spring for new game trails and come back south in the fall with the geese and ducks on the basic chain of existence - Hunt, Kill and Eat. No Hunt - no Kill - no Kill - no Eat, then Starvation and Death. This cycle would govern all native peoples until agriculture in the form of corn crops were imported from the south around the 12th century and resulted in a population explosion; from this came the tribal societies as we generally know our native people but in fact they were a very recent development with a very short life being disrupted and generally ended by mid 16th century with the arrival of the Europeans.

Such a use of the time scale as above, sic 7,385 years, is not correct with respect to expected finds of ceramics for they were not introduced to this region much before 1,000 B.C. Prior to that cooking or storage would have been accomplished in bark or hide containers. Cooking? Yes, cooking by heating 'cooking' stones and then dropping them into the containers with their mixture of raw food stuffs and water.

The groups that passed through the area were probably based on a family and connections and probably be no more than half a dozen or so per party. The site yielded little in lithics (flint or flint-like materials i.e. projectile points, knives, scrapers, gouges, chisels, etc.) and for good reason as there is no good workable material indigenous to the region hence all such items or raw material for them were imported on trade routes from the south. When an item was work-worn or broken it would be re-worked to another but smaller item until all virtually vanished in clusters of re-worked flakes. And again such small groups would carry little with them and in a nomadic existance it would be lost or left over a very wide area which could range from the Finger Lakes in Northern New York State to the reaches of the Ottawa River.

Despite what the uninitiated might consider to be meagre finds the Wyght Site has greatly added to the very sparce knowledge yet acquired for the Initial Woodland nomads, and this due to the work and dedication of Gordon Watson and his crews.

16. RIDEAU FERRY: First known as Oliver's Landing when it was a transfer point on the early settlers' route from Kingston to Perth. There tends to be a degree of confusion between the names, Oliver's Landing and Oliver's Ferry. The rationale is straight forward; in the beginning, circa 1816, boats or rafts came down the lake from The Bay and then off-loaded their passengers on the west shore at a point where there was a settler named Oliver, hence Oliver's Landing, for such it was. As traffic increased, particularly from the west, it made for the narrows at Oliver's Landing where Oliver was quick to appreciate a good thing and so commenced a ferry service between the east and west banks at the narrows--later came Oliver's Ferry.From the bridge there is a good view both to the south and to the north. Generally, to the south--up the lake--the banks tend to precipitous or at least jaggedly rocky, not making for good landing or camping areas; to the north in the Lower Rideau the shores tend to shelve, good for fishing--good for camping--hence more appealing to the nomadic and thus an increased likelihood of Archaic to Terminal Woodland sites.

17. PERTH: It is unfortunate that the visit to this most pleasant of county towns had to be such a whirlwind affair for to do justice to its antiquity at least four or five hours are required with a good guide; the knowledgeable guides we had - the hours we didn't. We can do no more than a Baedeker type of presentation.

Perth's founding is associated with the end of the Napoleonic Wars and so the end of the War of 1812-14 with the United States. Regiments no longer required were stood down and released; three of these - the Glengarry Light Infantry Regiment of Fencibles, Scots to a man, The Canadian Fencibles and the De Watteville Regiment - elected to settle in the Military Settlement on the Rideau (although it was actually located on the Tay River). First arrivals were in 1815 and by October of 1816 numbered 840 men, 207 women with 458 children. There were some 80 head of cattle and teams of oxen but oddly enough horses would not appear in the settlement until 1822. In the early years Perth was governed as a military settlement with rations coming in on a monthly basis from Fort Wellington at Prescott 52 miles to the south on the St. Lawrence. Perth was not considered part of the Rideau Canal which, finished in 1832, bypassed and ignored the county town on the Tay. The Honourable John G. Haggert, long a staunch supporter of John A. Macdonald and not without political significance, was Minister of the Department of Railways and Canals. They took over a dead-on-its-feet Tay Navigation Company and with a bit of pork barreling constructed a feeder canal to the Lower Rideau in the 1880s. It was promptly christened 'Haggert's Ditch' and to this day is still known as such. Modern Perth, for reasons unknown, has a bridge over the Tay at near town limits with clearance only for canoes and hence has cut itself off from water traffic to the Rideaus!

Perth, very conscious of its heritage in building architecture, maintains a tight control over its heritage and with the support of both Federal and Provincial Heritage oriented support keeps all honest. A very good example of this approach is to be found in the actions of one of our largest banks; they made a garish and very shoddy addition to the front of the very find old stone building in which they were housed and owned - in a no nonsense approach it was undone and refinished in keeping with the body of the structure as well as its surroundings.

The Town Hall, built in 1863, has recently refinished their Council Chambers and are well worth a visit. Short yards from the Town Hall is the Daniel McMartin house built in 1830 and its Federal-style architecture is unique for Ontario as it is commonly found only on the American Atlantic seaboard. Further, every bit of its construction materials, bricks to mortar, moldings to mullions and glass to gables were brought in from the United States. The house, true to its Federal style, presents a 'Widows-walk' where the wives of the Atlantic board sea captains could watch for the return of their husbands from the advantage of a glassed in lookout semi-storey on the roof-ridge of the house. The house is the property of the Ontario Heritage Foundation while day-to-day maintenance and upkeep is to the account of the town.

A block north of the Town Hall and still on Gore Street is the Matheson House built in 1840 by Senator Roderick M. Matheson who, at one time, was Paymaster for the Glengarry Fencibles. He also served in the government of Sir John A. Macdonald while his son, The Honourable Arthur Matheson, was Provincial Treasurer. Another son, Captain Allan, was manager of the Merchants Bank of Canada and one of the founders of The Links-'O-Tay Golf Club which claims to be Canada's oldest.

A further 'must' in your tour is a visit to 'Inge-va' built in 1823 by Major the Reverend Michael Harris, son of the Chancellor of Dublin University. The Reverend was the first Church of England padre and arrived in Perth in 1819. The house, built in the neo-classic style, has seen little change to its fabric and still presents most of its original hand blown glass lights in its frames. One owner was Thomas Radenhurst who with his nephew, Robert Lyon, lived here in the 1830s. The nephew would be the victim in Canada's last fatal duel and his body brought back here from the duelling grounds.'Inge-Va' is now a Heritage Ontario gem. The current and long-time occupant is Mrs. Winnifred Inderwick who was a very active part of this Symposium.

Perth's Last Duel Park is the site of the duel between John Wilson and Robert Lyon both articled in law. The point of honour was an alleged insult to a young lady, Miss Elizabeth Hughes. Despite Lyon's reputation as a crack shot he fell on the second exchange fired on the west bank of the Tay in the park. Wilson married Miss Hughes who turned out to be something of a shrew so, in a sense, Lyon may have been the ultimate winner! Wilson would afterward become a Supreme Court Judge.

Perth has one final claim to fame centered in the past. In 1893 the World's Fair was held in Chicago and it was the decision of the government that Canada's entry would be a gigantic cheese - the biggest in the world - manufactured in a Perth cheese factory. The idea for the cheese was fathered by one Daniel Derbyshire who would be the great-grandfather of Barbara Ann Scott - Canada's World and Olympic champion in figure skating in the late 1840s. So Perth made its cheese; it was 28 feet in circumference, was 6 feet thick and weighed 11 tons. Its mould was steel boiler plate 5/16 of an inch thick and it weighed 3,000 pounds. Final shipping weight was 13 tons. On arrival in Chicago and in being moved into its exhibit hall it promptly crashed through the floor to the basement! Still in its mould no damage was done. Following the World's Fair, it was purchased by Sir Thomas Lipton who shipped it to London for cutting and sale. The cheese factory which produced the monstrous cheddar lives on as the Links-'O-Tay Golf Club clubhouse while the cheese is commemorated in a full scale wooden model at the east end of Perth on Highway 7.

There are too many sites in Perth for further listing and our only advice is to revisit this remarkable town, so much a part of Upper Canada's early history and enjoy it as thousands before you have.

18. PORT ELMSLEY: This hamlet had two prior names, one Pike Falls which was certainly in use prior to the construction period of the Canal and the other Barbadoes apparently after the name of a mill operator here. Port Elmsley came in anticipation of the hamlet becoming a part of the Rideau System. The channel here was the course of the original Tay River and it had two wooden locks as part of the first but unsuccessful Tay Canal constructed by a private company (see Perth and Haggert) around 1835. Haggert's Ditch would reduce the Port to a what-might-have-been status.

SYMPOSIUM ORGANIZER: F..C. L. Wyght, E.D., U. E.

Born December 17, 1919, Trenton, Ontario. Graduated Smiths Falls Collegiate Institute in 1939. Landed United Kingdom in December 1939, First Canadian Division. Free-lance monologues to CBC (Overseas) and the BBC while with the Royal Montreal Regiment (MG). Transferred to the RCAF in 1942 while in U. K. and completed I.T.W. and initial flying training there. Graduated, Pilot Officer, Pilot/ Navigator in 1943. Took his discharge in 1945 while a Flight Commander at No. 6 B & G and No. 1 Air Armament School. Senior Officer, Air Traffic Control, Dorval 1946-48. Department of Defence Production in 1951 later responsible for Small Arms Production and then Chairman of the Small Arms Production Steering Committee 1955-63. Militia Staff College, Kingston 1957, graduated as Grade 2 Staff Officer, Lieutenant Colonel. Canada's first sitting member at NATO for the Group of Experts on Optical Instruments 1959-63 and Canada's civilian member on the Committee for the FMBT, London, England.

Writer/Editor of a wide range of semi-technical publications in support of Canadian firms in the export field with emphasis on defence products 1958-78, Departments of Defence Production and Industry, Trade and Commerce. May 1980 accepted the Chairmanship of the Central Region for the events associated with the 150th Anniversay of the opening of the Rideau Canal. One such event was this Symposium.

Archaeological: Guest 'digger' at investigations London and Winchester, England and Usk, Wales. Worked with Gordon Watson on Wyght Site 1977-79.

Historical: Four years of research on a forgotten piece of Upper Canada history which culminated in the Battle of Windmill Point now the subject of a historical plaque at Philipsville, Ontario. A series of historical articles ranging from Waterloo to the Battle of Britain.

Associations: Member, Canadian Aeronautical and Space Institute; U.E.L. Association; S.A.R.; Society of Mayflower Descendants; Smiths Falls Historical Society, Past President. Various Regimental and RCAF affiliations.

CANAL
RIDEAU
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The Committee

for the Central Region of RC 150

express their appreciation to

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a more complete volume to mark this

Anniversary Year and so has added to

our History and enriched our Heritage.