

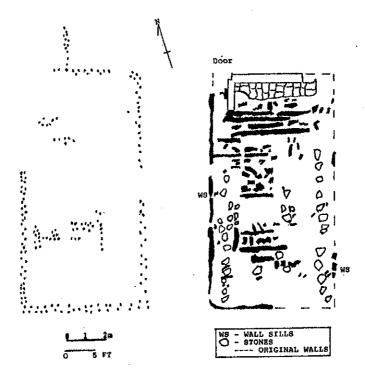
Ontario Archaeological Society

Arch Notes

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> Symposium Hamilton 2001 - Brad Bandow

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...editor's note

The theme is recurrent in this issue. Jim Shropshire revisits Kenneth Kidd's Sainte-Marie I excavations, Bruce Welsh revisits Egypt (although not in person, sorry Bruce), and Bob Mayer revisits self-regulation.

A quick thanks to all those who have contributed over the past half year – outstanding work!

A reminder that nominations for OAS awards are due by July 1, 2001.

The AN cover features Phase 1 and 2 of the suggested Chapel at Sainte-Marie 1.

President's notes

THIS ISSUE'S column is largely devoted to congratulations. First, congratulations to our Society's Executive Director, Jo Holden, and our Treasurer, Henry van Lieshout, for their successful application to the Trillium Foundation. Their hard work resulted in the Ontario Archaeological Society (OAS) receiving multiple-year funding of \$162,000 to be used to develop and sustain public archaeological programs at the A.J. Clark Interpretive Centre and the McGaw Iroquoian village site. The Town of Richmond Hill, our corporate partner in developing these programs, was also successful in obtaining a \$7,100 grant from the Cultural Strategic Development Fund to assist with the purchase of field equipment.

Congratulations to the Canadian Archaeological Association (CAA) for hosting its successful 34th annual meeting held in early May at the Banff Centre for Conferences in the middle of the magnificent Rocky Mountains of Alberta. The Centre's facilities and breathtaking vistas were excellent, as was the CAA's exciting programme of conference papers, poster sessions, forums, workshops, field trips, and social events. At least 15 OAS members contributed to this success by either chairing sessions, presenting papers or by their organizational efforts. These members include: Dale Boland, Aubrey Cannon, Dena Doroszenko, Ian Dyck, Neal Ferris, Bill Fox, Mima Kapches, Dean Knight, Martha Latta, Holly Martelle, Robert Park, Jean-Luc Pilon, Caroline Walker, Ron Williamson, and Phil Woodley (my apologies to any member who I may have missed).

A very special highlight of the CAA conference was the announcement that Charlie Garrad, a retired Executive Director and a past President of our Society, is the first winner of the James and Margaret Pendergast Award. This award recognizes exemplary contributions to Canadian archaeology by an avocational archaeologist, and was established through the generous support of the Pendergast family in 2000 to honour the memory of a dedicated Canadian avocational archaeologist, the late James F. Pendergast (1921-2000) who also was a long-time OAS member. Nominated by Bill Fox, the stipulated criteria for

Community Links: using Archaeology as a multi-faceted teaching tool

Looking for innovate ways to teach your students about culture heritage, archaeology and/or Aboriginal history? Then, think about the Archaeological Education Program that the OAS has to offer.

In a joint partnership with the Town of Richmond Hill and the York Region District School Board, the OAS has begun testing a one-day educational archaeology program at their new suite in the Elgin Mills Community Centre. The program takes advantage of the previously undisturbed Late Woodland Iroquoian Village, the McGaw Site (circa A.D. 1400-1450), which backs on to the community centre property. The program complies with the new government expectations for the grade 6 Native Studies unit, and Grade 11 History and Social Science courses. It introduces students to the world of archaeology and Aboriginal history through in-house mapping, profiling activities, a museum-like artifact display, and it gives them a true experience of being on a real archaeological dia.

The Town of Richmond Hill has been very eager to collaborate with the OAS and promote their culture heritage through the unique, undisturbed, nature of the McGaw Site. While the York Region District School Board has jumped at the chance to give their students such a hands-on, physical experience as being an archaeologist for a day.

As a current participating archaeologist and Bachelor of Education intern with the OAS, the implementation of this program is a fabulous opportunity for students in the York region to learn what this discipline is all about. Even though our initial day with a group of grade 6 students was on a rainy (and therefore muddy) May 8th, the interest, enthusiasm, not to mention artifacts, that the experience generated by the students, teachers, parents and my colleagues at the OAS, was undeniably impassioned and hopeful for the future.

the award are: an individual who has conducted original research; published; delivered papers at conferences; been involved and supportive of National, Provincial and/or Territorial Archaeological societies; actively trained other avocational archaeologists; positively interacted with professional archaeologists; and embodies all the principles of the CAA. Congratulations Charlie - well done and well deserved!

The previous issue of *Arch Notes* announced the copublication by the CAA and the OAS of the proceedings of the CAA's 33rd Annual Conference in held in Ottawa in May 2000. However, due to a minor glitch, Jean-Luc Pilon, Web Editor of the CAA, has indicated that this electronic publication will not be available until September. At that time it can be accessed at www.canadianarchaeology.com.

Congratulations to Wayne Crockett, Senior Archivist at the Archives of Ontario (AO), who indicates that finding aids for access to archaeological records on are now online at http://www.archives.gov.on.ca. These records include not only the corporate material transferred last year from the OAS to the AO but also archaeological reports (RG 47-47) and archaeological licences (RG 47-100). For more information, Mr. Crockett can be reached in Toronto at 416-327-1528.

Similar congratulations are extended to Fred Cane, Heritage Conservation Officer, Ontario Ministry of Tourism, Culture and Recreation, for announcing that the Ontario Heritage Properties Database is also online with information on approximately 5,000 heritage properties. The database includes properties that are designated or protected under the Ontario Heritage Act; protected by a municipal heritage conservation easement; owned by the Ontario Heritage Foundation (OHF); protected by an OHF heritage conservation easement; listed on the Ontario Heritage Bridge List; protected by the federal Heritage Railways Station Protection Act; designated a national historic site; or listed in the Canadian Register of Heritage Properties. For more information, Mr. Cane can be reached in Toronto at 416-314-7127. This searchable database is publicly and freely avail

Teacher's edge cont'd.

Here is an extended opportunity to any interested members to come on out and investigate our program at the McGaw site. For further information please contact Jo Holden at the OAS office, 1-888-733-0042, 905-787-9851 or oas@ globalserve.net

As well, look for future updates on the success of the McGaw educational program, and the wonderful finds that this site will undoubtedly generate.

> Regards, Terri Brennan

able at www.culture.gov.on.ca/english/culdiv/ heritage/index.html.

In April, the OAS sent the Honourable Tim Hudak, Ontario Minister of Tourism, Culture and Recreation a letter congratulating him on his recent appointment as Minister. The letter also asked about the status of the existing draft of a new Heritage Act. Upon provincial request over the past ten years, the Society has provided input on the development of a revised Heritage Act, and therefore is deemed to be a senior stakeholder in this process. The Society, understandably, wishes to be kept informed as to how the current draft has been received and what progress it has made through the legislature. The letter requested that the Society be advised if any additional public consultations are to take place so that it can be better prepared to make appropriate representation.

In response to the growing need for developing public awareness of the Society, the OAS Board of Directors has appointed Lanna Crucefix to serve as Director of Marketing and Promotions. Welcome Lanna and congratulations.

The May 12, 2001 edition of the Ontario Gazette reports that new regulations under Ontario's Environmental Assessment Act will expand EA requirements to apply to both public and private sector electricity generation and transmission projects. This is another step in a series by the Ministry of Environmental Cazette

ronment (MOE) intended to ensure that an open market for electricity operates in an environmentally sound manner. These requirements will lead undoubtedly to more work for consulting archaeologists who will be contracted to conduct background research, surveys, and mitigative excavations for these projects as part of the approval process. An 84-page "Guide to Environmental Assessment Requirements for Electricity Projects" may be viewed in the "special interest' section of the MOE web site, <www.ene.gov.on.ca>. More information is available from Mark Rabbior in Toronto at the MOE at 416-314-6643.

Bob Mayer, President

From the OAS office...

PROGRAMMING, grant applications, meetings on and off site have been the order of the day, or should I say the past couple of months. The office is alive with activity and it is a challenge to find a day, let alone two days in a row where I can tackle "heads down" projects with the quality time they deserve.

This is a stimulating, busy time, however, and a delight to walk into the office on a daily basis!

In this issue of Arch Notes is the annual call for the 25 Year Members to step forward and identify themselves. This collection of names is the largest since I have started combing our membership roster. I will look forward to meeting and 'pinning' each and every recipient.

Programming has started on the McGaw Site. The smiles and enthusiasm of the eleven and sixteen year olds coming away from the programming is absolutely contagious! Our very first day of programming was a mud bath! Kids and adults came back to our suite dripping and super charged about their experience! In fact, we had one Principal that just didn't want to go back to school!

Back to the paper excavation on my desk... have a great summer.

Jo Holden, Executive Director

OAS awards

Nominations Reminder

HERITAGE CONSERVATION AWARD

Significant voluntary contribution to heritage preservation within the Province of Ontario

J. NORMAN EMERSON SILVER MEDAL

Outstanding Ontario non- professional archaeologist whose work has been consistently of the highest standard, who has made an exceptional contribution to the development of Ontario Archaeology

KENYON CITATION OF MERIT AWARD

Non-professional archaeologist who has made an exceptional contribution to the development of Ontario archaeology

PEGGI ARMSTRONG PUBLIC ARCHAEOLOGY AWARD

Outstanding contribution of individuals, groups or institutions in the dissemination of knowledge and the advancement of archaeology for a public audience in or about Ontario

Closing date for nominations is July 1st, 2001

CALL FOR VOLUNTEERS

PTTP Opportunities

The Passport to the Past (PTTP) programme is looking for field and lab opportunities for volunteers for the 2001 season. Volunteers play a crucial role in the recording and preserving of Ontario's archaeological resources. In order to encourage and maintain the fine work that volunteers have contributed to Ontario archaeology over the past century, CRM (consultants) and academic archaeologists can submit PTTP opportunities to the OAS office.

Please contact Jo Holden, OAS Executive Director, at (905) 787-9851, or email <oas@globalserve.net>, to submit your volunteer opportunities.

Bud Parker, Director of Public Services

Individuals

Are you interested in volunteering for the OAS? If so, the OAS Marketing and Promotions Committee wants you!

We are looking for members to:

- Organize and help out at events.
- Plan campaigns and promotions.
- Create promotional material.
- Develop ideas to raise the profile of the OAS in the province.

... and much more!

If you'd like to lend a hand or want more information, please contact Lanna at lannac@usa.net, or (416) 580-3909.

Lanna Crucefix, Director of Marketing and Promotions

Chapter News

This is the first installment of a new feature in *Arch Notes*. This column will be featuring news and events from the OAS chapters. It is my hope that this will be a vehicle for all members to keep track of events from around the province. Through sharing news of events from across the province I hope to create a greater sense of community throughout the society.

As we move into the summer months most chapters are preparing summer dig activities and field trips and monthly meetings are going into hiatus until the fall. This is an exciting time for the society and its members.

As Director of Chapter Services I too have a summer project I wish to complete. It is hoped that over the next several months a new chapter can be established in Huronia. This new chapter will service Barrie, Orillia, Collingwood and, hopefully Parry Sound.

The exact structure of the chapter will be determined by those who wish to join. However, some preliminary suggestions have been put forward for meetings and projects. One suggestion is that the meetings be held in the different communities mentioned on a rotating basis. By this means responsibility is shared throughout the area the chapter services. Similarly, the range of speakers, topics and projects is broadened to include a much larger area. Any OAS members who would like further information or who is interested in participating in the new Huronia Chapter are asked to contact me at the address below.

Charlton Carscallen, Director of Chapter Services
P.O. Box 68, Moonstone ON LOK 1N0
705-835-5464
charlton.carscallen@utoronto.ca

First Notice of the Annual Business Meeting and First Notice of the President's Meeting

The Ontario Archaeological Society will hold its ABM and its President's Meeting at the OAS's 28th Annual Symposium held this year in Hamilton, Ontario. As the final arrangements are made for this Symposium, further news regarding the date, time and location of the meetings will be posted in your July/August 2001 Arch Notes and on the Registration Flyers detailing the Symposium Events.

SPECIAL NOTICE TO TWENTY-FIVE YEAR OAS MEMBERS

Check the list below ~ any member who believes him/herself eligible but has not been contacted by the OAS office, please contact the office and identify yourself. The special recognition of the 25 Year Member was introduced by the Society in 1987. To date nineteen members have established eligibility for Twenty-Five Year Membership in 2001. These are: Christine CAROPPO, Brian CLARENCE, Peter CARRUTHERS, Philip C. COOKE, David CROFT, Dale DAUTNER, Brian DELLER, Dr. William ENGELBRECHT, Art HOWEY, Charles KWIATKOWSKI, Robert MAYER, Deborah and Robert PIHL, Rosemary PREVEC, Garth and Irma RUMBLE, Sheryl A. SMITH, Andrew STEWART, Carole STIMMEL.

The award, a 25 year membership pin and accompanying certificate will be presented at the 2001 OAS Symposium, Saturday, October 13, 2001 in Hamilton, Ontario. Recipients unable to attend personally or by a representative will receive their awards later. Ninety members have previously received the award.

THE OAS IS LOOKING FOR A FEW GOOD MEN AND WOMEN....

The OAS Nominating Committee is asking the OAS members to recommend individuals for election to the OAS Board of Directors.

Please contact either:

Caroline Theriault (416) 787 - 2926 or Hugh Daechsel (613) 384 0947 with your nomination!

WELCOME New OAS Members

A. Demers	Ottawa	J.T. Hawkins	London
G. Reed	Richmond Hill	C. Dawson	Kemble
C. Spencer	Toronto	B. Gillett	Richmond Hill
M. Blainey	Aurora	T. McDougall	Keswick
M. Roberts	Richmond Hill	S. Beattie	Burlington
A. van der Vink	Ottawa	K. Pettke	Royal Oak, Michigan
L. Shulze	Toronto	K. Mills	Toronto
R. Koptyn	Toronto	C. Ritchie	Toronto
H. Alanen	Thunder Bay	J. Bates	Scarborough

A Tale of Two Buildings

by James W. Shropshire

In 1941, the Royal Ontario Museum in co-operation with the Society of Jesus, sent a young archaeologist, Kenneth E. Kidd, to excavate Sainte-Marie I. Excavations at the site continued during the summer months until 1943. In 1949, Kidd published the results of his work in his excellent report The Excavation of Sainte-Marie I. Further excavations were conducted by Wilfred Jury from 1947 to 1951.

This article is the second part of a larger paper that attempts to take a fresh look at the work done by Kenneth Kidd. It is my interpretation of Kidd's published report and the original field notes, along with today's better understanding of French building methods of the period, and the advancement of archaeological techniques, which gives us a clearer view of the original structures at the site of Sainte-Marie I. This paper in no way intends to criticize the exceptional work done by Kenneth Kidd.

It is an immeasurable loss to us that he chose not to be involved with the later excavations of Sainte Marie I.

Introduction

During his excavations, Kidd uncovered the remains of three buildings which he designated the Residence, the Chapel, and the Workshop (Figure 1). Two of these buildings, the Residence and the Chapel, were represented by their charred wall sills. Under the sills of both buildings he found "... two rows of small postor stake-moulds the stakes staggered so that they were not opposite to each other" (Kidd 1949: 53). He was of the opinion that "these stakes had supported the sills off the ground to keep them from too rapid decay" (Kidd 1949: 53).

After extensive research on buildings in 17th and 18th century New France, there is no evidence of this type of sill support ever being used (posts supporting sills). French building methods of the

17th century called for sills to rest on either a stone foundation, wooden blocks or stones at intervals, and in some cases, the sill was laid directly on the ground (Moogk 1977: 40). When Father Chaumonot arrived in Huronia on September 10th, 1639, he wrote "that there was three residences of bark like the Indians ... at Ossossane, Teanaostaiae, and Sainte-Marie" (Thwaites 1899: 118117).

This article will re-examine the evidence and offer an alternative explanation that the posts represent two of the earliest buildings at Sainte-Marie with the possibility that one could be Chaumonot's "house of bark", and that the sills of both buildings represent a second building phase. I refer to this as Phase One and Phase Two.

Residence - Phase One

This house is a poorly defined structure of staggered posts lacking a definable east wall and south end (Figure 2). This could be due to the inexperienced work crew that Kidd was using. He states that "there was no money whatsoever to engage professional help, and all such had to be found within the Museum's personnel structure ... although none of those available had any field experience..." (Kidd 1949: 56).

There were two identifiable features within the house: that was, a row of small posts in the north end which served to partition off that area, and (the most interesting) a post-lined pit off-set from the centre of the house in the south end. In addition to these features, there was a row of posts north of the pit suggesting a possible partition. Kidd had difficulty

in excavating this pit feature. "Excavation of this feature was carried out near the end of the second season's work, at a time when heavy rains kept it almost constantly flooded. What with fallen boulders, tree roots, and

ments" (Kidd 1949: 45). This is reflected in his field notes, as there are no floor plans or profiles for levels below level 6. The pit was found to be 6 feet wide by 9 feet long and 6 feet deep (1.83 m x 2.75 m x 1.83 m), and was

than H

Figure 1: Ground plan of Sainte-Marie I, modified after Kidd (1948). Key: (1-4) Bastions, (5) Workshop. (6) Residence, (7) North Building (A) 1649 ditch, (B) Western ditch, (C) Moat?, (D) Jury aqueduct, (E) Retaining boards, (F) Pit, (G) Western channel, (H) Section of central ditch to river (predates moat)

water it proved a difficult task indeed, and it was virtually impossible to make accurate measurereinforced by 58 posts sharpened at one end, driven into the bottom of the pit, and sloped slightly outward to stabilize the walls. The posts averaged 7 to 16 inches (18 to 41 cm) in diameter (Figure 3).

From the following observations, Kidd came to the conclusion that the pit was built for the disposal of garbage. "The profile on the south wall of the pit may be taken as typical. It shows, beneath the burnt clay material, a layer of charcoal - probably from an old flooring. Under this was a band, 6 to 8 inches (15 to 20 cm) wide, consisting of a mixture of clay, humus, and sand, and containing also some charcoal and a few fragments of burnt clay - then followed another thin band of humus impregnated with charcoal, pure humus, and finally sand. This alternation of humus and sand could be followed in most parts of the pit, suggesting that refuse had been thrown in and covered from time to time with sand. At least two distinct bands of vegetable matter, one of which was on the floor of the pit, could be seen distinctly. "A few artifacts were found, but less than one might expect from a general refuse pit, which fact suggests that it was used only for organic waste" (Kidd 1949: 45).

The following evidence suggests that this feature was used as a cellar, contemporary with the first phase. Kidd's (1941) profiles of this feature show that 3.5 feet (1.07 m) of the pit was already filled-in when the floor of the later building collapsed into it. At the bottom centre of the pit were the remains of a central reinforced support post and on a few of the better preserved posts, lin-

ing the pit, notches could clearly be seen (Kidd 1949: 46), suggesting that whatever was used to cover the pit needed to be supported. This would not have been necessary if the pit was covered by a wooden floor laid on joists. It is also inconceivable that the Jesuits would have tolerated a garbage dump directly under their residence, and to expend the energy to construct such a pit when it would have been more convenient just to throw the refuse outside.

Due to the absence of posts and features south of the cellar it is not possible to determine the actual length of the house, although there is the likelihood that the row of posts just south-west of the cellar are the continuation of the west wall. From the width of the partition in the north end, the house was approximately 25 feet (7.63 m) in width.

The Residence ... Phase Two

This phase was represented by the remains of the charred wall sills, flooring and a masonry foundation. The prominent interior features were two fireplaces: the larger one situated in the northeast corner of the building and the other a double fireplace in the southeast quarter (Figure 4).

A section of the west wall sill illustrates the type of construction that the French chose to use for the building that replaced the earlier longhouse-type structure. The sill was "...originally a stout timber, some 15 inches (38 cm) in diameter and wider that it was deep. The upper surface was hol-

lowed out to make a concave trough 5 inches (12.7 cm) wide and the same depth - The ends of two stakes or upright timbers which had been wedged into this sill were found in position, a fact which suggests that a continuous row of such stakes constituted the

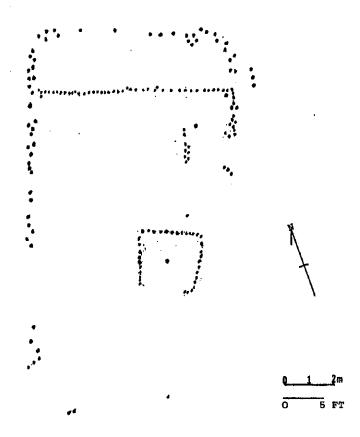


Figure 2: Residence Phase 1, modified after Kidd (1949:55).

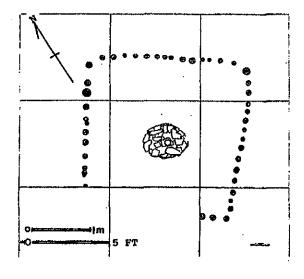


Figure 3: Pit, Kidd (1949:46).

outside wall of the Residence..." (Kidd 1949: 38). The latrine box (Shropshire 1999) just southeast of the residence was built in the same manner (Figure 4).

years later. There were two methods used: the wall posts were planted directly into the ground or the posts were placed on a horizontal plate or sill. The wall

from a wall of vertical posts. Kidd's excavations recovered large quantities of fired or burnt clay with many pieces showing the impressions of the binding agent.

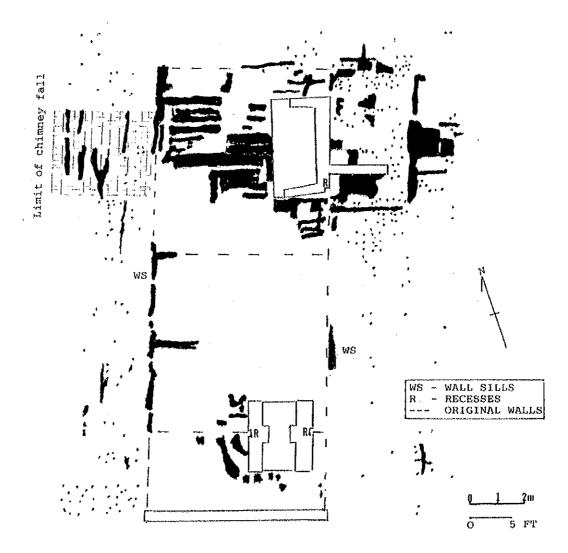


Figure 4: Residence Phase 2, showing fireplaces, south foundation, flooring, wall sills, and nails found in situ for east wing and west exterior, modified after Kidd (1949:55).

This style of construction, piquet or piquet-on-sill, known in Normandy and Picardy, was used in the French fishing communities of Newfoundland and Cape Breton, and was still in use at the Fortress of Louisbourg sixty-eight was then capped on top with a corresponding plate. The posts were then chinked with clay mixed with a binder, such as straw or grass (Figure 5). This provided good insulation, also water would drain more easily

A masonry foundation wall 19.5 feet long and 1.5 feet wide (5.96 m x 46 cm) of cut limestone slabs laid in mortar was all that remained of the south wall of the Residence. It would seem that the intention of the builders was to

lay the sills of the Residence on masonry foundations but after the south section was completed there was a change in plans and the sills were laid directly on the ground. The abandonment of the building of the foundations could have been due to a combination of factors: time constraints, a misjudgment of the amount of stone needed and the subsequent reassigning of the accumulated stone towards the fireplaces, or some other factor involved in the col-

lection and transportation of the stone. The nearest source of limestone is the out-cropping at Flat Rock Point, near present-day Port McNicoll.

As mentioned earlier, the two major features within the Residence were the two fireplaces the largest in the northeast corner was designated by Kidd as the "Central Fireplace" and the other with two hearths as the "Double Fireplace." These were offset from the centre of the building so as not to create a break in the ridge of the roof, and again keeping to French building practices of the period.

The Central Fireplace was placed at a slight angle to the east of the centre line of the building: its overall length was 11.5 feet (3.59 m) by 6 feet (1.99 m) wide including the hearth floor (only 3 feet [0.92 m] of the chimney wall was

left standing). The outer wall of the fireplace was constructed of squared limestone blocks, and the inner face was rougher with the lower courses made up of long thin slabs. On the southeast corner of the fireplace "...was a vertical recess 4 inches (10.16 cm) deep in which were the remains of a wooden upright". (Kidd 1949: 50). An interesting and yet unexplained feature of the fireplace was an appendage or extension 7 feet (2.14 m) long by 21



Figure 5: One of the very few French post-on-sill buildings on this continent, at Cahokia, Illinois, built ca. 1737. The posts are of dressed timber and spaced apart, however, at Sainte-Marie I, they would have been undressed and spaced closer together. Note the two chimneys offset to the roof ridge. The roof, with its flared projecting eaves extending into a verandah was an eighteenth-century development.

inches (0.53 m) wide built of rectangular limestone blocks of different sizes which extended east from the outer east wall of the fireplace. Enough of the fireplace chimney that had collapsed to the west of the Residence remained to estimate that its original height was at least 28 feet (8.55 m). The artifacts found in the vicinity of

the fireplace included a bone ladle, a fork, knives, burnt and boiled bone, and charred corn, beans, peas and squash; this leaves no doubt that this was the Residence's kitchen fireplace.

There was little left of the Double Fireplace but enough lower courses remained to indicate that it had two hearths and was 7.5 to 8.5 feet long by 7.5 feet wide (2.21 to 2.52 m x 2.29 m), constructed of dressed limestone

blocks with a dividing wall through the centre. Both hearths shared a common flue. Like the Central Fireplace, the Double Fireplace had a recess containing the remains of a wooden upright. This recess was situated in the centre end of the west wall: the east end wall also seemed to have a corresponding recess. Not enough stone remained to estimate the height of the fireplace and its chimnev.

With the absence of any remains of a wall sill for the east wall, Kidd seems to have taken the following fac-

tors into account to determine the width of 30 feet (9.16 m) for the Residence, although it would seem that he himself questioned it. Firstly, the wooden upright in the east end of the Double Fireplace functioned as a roof support. Secondly, the flooring east of the Central Fireplace was part of the interior flooring of the Residence, and thirdly, the pit or cellar was contemporary with the Residence's second phase and would therefore be inside the Residence.

French roof construction of the period called for a series of trusses to carry the roof without the aid of central ground support posts. The wooden uprights found in the recesses in both fireplaces. suggested by Kidd to have served as the bases for roof supports, could have served a different function. In general, double fireplaces were built to heat two rooms, so here, in this case, the south end of the Residence has a wall creating a separate room; the two recesses in the Double Fireplace could have held the end posts of this dividing wall.

Found on top of the fill on the east side of the pit was a 5.5 foot (1.70 m) section of a concaved log similar in size and makeup to that of the sills of the west wall. This log was lying in a north-south direction (Kidd 1941 a), in line with the east wall of the Central Fireplace and south wall foundation. From its location and orientation, there is a high probability that it is a section of the east wall sill that had collapsed into the pit. If it is, it could explain the function of the southeast corner recess of the Central Fireplace. Like the Double Fireplace, this recess could have held the end post of a wall, in this instance, the north end of the east wall. This would have made the Residence 20 feet (6.1 m) in width, matching the width of the south wall

foundation. Traces of flooring were evident throughout the Residence, in the form of charred boards some of which were 4 feet (1.22 m) long, and from 5 to 21 inches (12.7 to 53.34 cm) wide, with their thickness varying from 1.5 to 3 inches (3.8 to 7.6 cm). In some areas, there was two floors, one laid on top of the other and these were laid on joists approximately 5 feet (1.53 m) apart (Kidd 1949: 42). Two of the better preserved joists found extending east from the west sill were 4.5 and 9 feet long (1.37 and 2.75 m). The 4.5 foot (1.37m) joist "...appeared to be one log hollowed out. The ends of two uprights remained in the channel. The placement of the feature indicates that a partition stood here" (Kidd 1949: 42).

A section of flooring 10 to 15 feet (3.05 to 4.58 m) by 17 feet (5.19 m), with the remains of a sill or floor joist (Kidd 1941) extended east of the Central Fireplace. The high concentration of nails recovered in this area (5.2% of the total number for the Residence), along with other artifacts such as an axe, a file and a door latch, suggests that an enclosed wing or porch with an entranceway existed here. If so, the back of the fireplace would have supplied some heat to this area.

As none of the walls are represented by a complete wall sill, combined with an absence of in situ door hardware along or near the sills (except for a door latch in the north wing), there is no indication as to where the doors once stood. I would suspect that they would be situated on the east

side of the Residence, which would have given access to the compound.

The type of roof covering used at Sainte-Marie is not known. Jury felt that the buildings were shingled with elm bark, as he recovered this material from his "mythical canal" (Shropshire 1999). Bark was known to have been used for roof covering in New France, but so too was board and batten, over-lapping boards, shingles, thatching and even sods.

It is possible to determine the approximate height of the roof from ground level by using the following variables in a simple formula. The known width of the Residence and the roof pitch was "around 55 degrees from the horizontal" (Moogk 1977: 22-23), which was the average roof slope of buildings in New France. Although we do not know the original exterior wall height, we can refer to the known wall heights of the period, which ranged from 6 to 12 feet (1.83 to 3.66 m), but 10 feet (3.05 m) seemed to be the norm. By projecting a 55 degree slope from the top of two walls 20 feet (6.1 m) apart, we have the following roof heights from ground level.

If the original chimney for the Central Fireplace was 28 feet (8.55 m) or slightly more in height, then a roof height of 22 feet (6.7 m) would give the chimney a clearance of 7 feet (2.14 m) above the roof ridge. Likewise, a roof height of 24 feet (7.33 m) would leave a clearance of 4 feet (1.22 m), and a roof height of 26

feet (7.94 m) would result in a 2 foot (0.61 m) clearance. A clearance of 7 feet (2.14 m) seems excessive and one of 2 feet (0.61 m) would not have been high enough to allow the sparks from the chimney to have been extinguished before they settled on the roof. But a roof height of 24 feet (7.33 m) would give the chimney a comfortable clearance of 4 feet (1.22 m).

Wall height (feet)/ (metres)		Roof height (feet)/ (metres)	
6	1.83	22	6.7
10	3.05	24	7.33
12	3.66	26	7.94

Of the total of 1,368 nails recovered from the site, 651 came from inside or immediately outside of the Residence. Of this number, 632 were between 1 and 4 inches (2.54 cm and 10.16 cm), and 19 were 4.5 to 6 inches (11.43 cm to 15.24 cm). This would suggest that the larger parts of the building's superstructure (i.e. the roof trusses) were held together by wooden pegs. With the recovery of nails along with charred boards found lying length-wise to the west of the Residence, it is possible that the exterior walls were weather-boarded (Figure 5). Larger items such as door hinges (as was mentioned earlier) were absent, which suggests a thorough stripping of anything useful during the last days of the mission before the Jesuits left.

Other artifacts recovered from the Residence, such as axes, clothes hooks and eyes, scissors, knives, a fork, glass fragments and fish hooks, reflect the many common objects that would be found in a household of the period.

The Chapel (The North Building) Phase One

Kidd's identification of this building as 'the Chapel' was "purely tentative" as he knew "that a chapel existed on the site and this building merely seems to be the one best suited to such use" (Kidd 1949: 59).

It was situated 4 feet (1.22 m) north and in line with the Residence, and was 40 feet (12.2 m) long by 20 feet (6.1 m) wide, rectangular in shape with square end walls consisting of 116 staggered posts (Figure 6). Over 18 feet (5.49 m) of the northwest wall is missing again. This could be due to the inexperience of the crew or some other factor such as soil conditions (even an experienced crew has trouble at times recognizing post moulds under certain conditions). The only internal features were a series of posts in the south half and north quarter of the building. There is a 5 foot (1.53 m) break in the east wall that could represent an entranceway. One external feature is a line of posts, starting just north of the north end wall: this either terminates here or continues under the north curtain, so it may or may not be associated with this phase.

Phase Two

Like the Residence, the wall sills were made of heavy timbers laid directly on the ground, and al-

though their charring was less complete, enough of the sills were present to outline three walls. A fireplace occupied the greater part of the north wall, and like the Residence, this building was constructed over the previous building. Its measurements were 40 feet (12.21 m) long by 20 feet (6.1 m) wide. (Figure 7). The only internal feature that is associated with this phase was "irregular rows of large flat stones paralleled the north and south sills - The stones were mostly limestone. undressed, but relatively flat, and averaged about 14 inches (35.56 cm) in diameter. They lay on a thin layer of humus which seemed to have been the original topsoil and, so far as could be determined, had been placed there rather than dropped from some higher position." Kidd was convinced that "whatever their purpose, the stones undoubtedly were placed in their present position, either to carry roof supports or wooden columns" (Kidd 1949: 54-56). As discussed earlier, no ground support posts were normally used in roof construction of the period.

One other explanation for the presence of the stones has been advanced, that is, that the building was used as a church and the stones supported posts giving the impression of a longhouse interior which would make visiting natives more comfortable (Kapches 1995). But why mount them on stones? The archaeological records show that longhouse posts were placed into the ground, and if they were used as proposed, as decorative interior posts, they

would essentially be props not needing such strong support as no substantial weight would be carried by them. wall sills on which the floor joists rested was used at the Laborde residence, a piquet constructed house built one hundred years later at the Fortress of Louisbourg used undressed, then the posts could have been of different thicknesses and some would need to be shimmed up more than others to produce a level upper

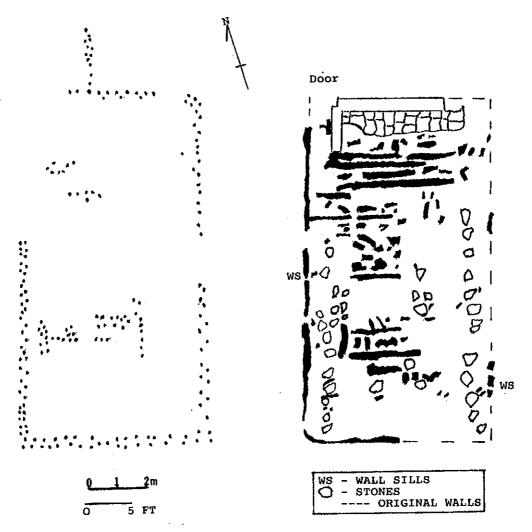


Figure 6 (left): Chapel? (north building) phase 1, Kidd (1949:55).

Figure 7 (right): Chapel? (north building) phase 2, showing fireplace, wall sills, flooring and stones, after Kidd (1949:55).

As there was evidence of flooring just south of the fireplace, and in other parts of the building, there is the possibility that these stones could have been used for supports to carry floor joists. This same type of arrangement of stones being laid parallel to the (Parks Canada 1976: 17). The presence of other stones scattered throughout the building is harder to explain, although they could have been used for additional supports for other floor joists as needed. When one considers that if the joists were dressed by axe or

surface on which to lay the flooring.

A door in the northwest corner of the building was represented by a threshold and door jam, the jam being recessed into the northwest corner of the fireplace. The width

of the door was 33 inches (83.8 cm) here; as in the Residence. there was no evidence of door hardware. The fireplace which occupied 14.5 feet (4.43 m) or more of the north wall was similar in construction to the Central Fireplace although the hearth was somewhat shallower being 3 feet 4 inches (0.08 m) at its widest. When Kidd excavated the fireplace he found that its east end was missing. This could be due to the activities of Rev. F. Martin. who visited Sainte-Marie in 1855 and conducted excavations in this area looking for the non-existent south wall to the north-west bastion which he thought terminated at this point. Indeed, he mentions "...uncovering a foundation bed with traces of a charred wooded floor" (Jones 1908: 11). Since the fireplace had a recess built into it for the accommodation of the door jam, it seems likely that the fireplace and the building were constructed at the same time. As with the Residence, there was no evidence of the type of roof covering used. With the building being the same width as the Residence, one would suspect that the roof heights would be the same.

Only 189 nails were recovered from inside and immediately outside the building: the sizes ranged from 1 to 4 inches (2.54 to 10.16 cm). As this is less than one third of the total (651) of the Residence, this would suggest that this building lacked the interior and exterior finishing possessed by the Residence.

Summary - The Residence

The first building was approximately 25 feet (7.63 m) wide with an undetermined length, and the walls consisted of staggered posts. The north end was divided into a separate room that was 7 feet (2.14 m) wide and ran the width of the house. There was some evidence of another internal dividing wall. The main feature was a cellar that was offset from the centre of the house. No doubt other European features, such as hung doors, were added as they were at an earlier cabin which the lesuits used in the Huron village of Ihonatiria. There is evidence that it had a European-style pitched roof with eaves. In describing a vision he had in February of 1640 at Sainte-Marie, Brebeuf mentions that their house had eaves (Raqueneav 1925: 73).

The second building (second phase) was built in the piquet-on-sill style, 55 feet (17 m) long by 20 feet (6.1 m) wide consisting of one storey with a possible attic. The ground floor was divided into at least two rooms and heated by two fireplaces, with a 10 foot (3.05 m) by 15 foot (4.58 m) porch or enclosed wing on its north-east corner.

Summary – The Chapel (North Building)

Like the Residence, the first phase was a building whose walls were constructed of staggered posts with a possible entranceway in the middle of its east wall. There were no definable interior features. It probably had a pitched roof.

In the second phase, judging from the type of sill construction which remains and the large quantities of fired clay found in its interior, the building was of pique-on-sill construction. The most outstanding feature was the fireplace, which dominated the north wall. The small quantity of nails recovered in and around this building suggests that it lacked the finish of that of the Residence. Again we come back to the question, was this the Chapel or not? Although no artifacts of a religious nature were recovered, this does not prove or disprove such a use. When the mission was abandoned, no religious objects would have been purposely left behind. Churches and chapels of that period, however, were not normally heated. The recovery of a concentration of bone on the hearth floor and elsewhere throughout the building, along with the artifacts (an adze, metal spear points and a fish hook) suggest that by 1649 this building was not being used as a chapel.

Overall Summary Both Buildings

The first two structures were a mixture of native and European-style architecture reflects the limitations with which the Jesuits were faced. In the spring of 1640, Father Lalement wrote from Sainte-Marie, "we are labouring to establish ourselves there and to erect some abode reasonably suitable to our functions having no help or assistance from the country, and being withal in an almost

universal dearth of workmen or tools" (IR. XXXVLLL: 257). There are two clues as to what vear the lesuits decided to replace the first residence with a more European-style building. First, according to Jones' 1908 Catalogus Personarum, in which notes the special skills of the donnes, Corolus Bovin was listed as "Faber lign" (carpenter) in 1640, one year after his arrival at Sainte-Marie. In 1641, he is listed "Praief Aedif" (Foreman Builder), suggesting that there was a building project in the making that needed supervision. When the west sill of the building was laid, it consisted of two sections that were spliced and held in place by "six large angle irons, Lshaped, and each about 7 inches (17.78 cm) long" (Kidd 1949: 38). It is recorded that Louis Gauber, the mission's blacksmith, arrived in 1642. Thus it seems unlikely that the sill could have been laid prior to this year. The choice of wood that Bovin made for the sills and walls of the Residence was excellent, as Kidd was of the opinion that it was cedar and thus "...most resistant to damp rot" (Moogk 1977: 38; Traquair 1947: 31). Also the construction of the walls of the Residence reflect the restrictions that Bovin was working under – that is, by slotting the top of the sills to hold the ends of the posts, the need to use nails to hold the posts on the sills was eliminated.

Conclusion

In the first phase, the two buildings exhibited by the post mould pattern are typical of Huron longhouses, but lack interior features such as pits and numerous scattered post moulds usually found in longhouses. It could be argued that since there is evidence of pre-historic Native occupation just south of Kidd's excavations, the houses could be from this earlier time period but it is highly unlikely that the French just happened to build both buildings over earlier native structures by random chance. The exact parallel alignment of the two buildings and the post-lined pit of the Residence suggest a European-style rather than native.

Admittedly, I have speculated in this paper. I do believe, however, that in conjunction with the archaeological evidence, Kidd's field notes, the documented building practices of the day, and what little *The Jesuit Relations* offer, there is enough here to lift the veil that surrounds Sainte-Marie to give us a peek at the evolution of two of Sainte-Marie's most important buildings.

Acknowledgements

I would like to thank Rosemary Vyvyan, Historical Planner at Sainte-Marie, and the staff at Sainte-Marie for access to Kenneth Kidd's material. Also, thanks to Peter Hamalainen for his helpful comments on the paper, and to Marjorie Clarkson, without whose patient assistance this project would not have been possible.

References Cited

Bankoff, H. A. and F. A. Winter 1979 A house burning in Serbia. *Archaeology* 32(5):8-14.

Hewett, C. A.

1969 The Development of Carpentry, 1200-1700: an Essex study. Newton Abbot: David and Charles.

Jones, A. E. S. J.

1908 Fifth Report of the Bureau of Archives 1908. p. 377-379.

Jury, W. and E. M. Jury

1954 Sainte-Marie Among the Hurons. Oxford University Press, Toronto.

Kapches, M.

1995 Kidd's Chapel at Sainte-Marie Among the Hurons. Toronto Chapter, Ontario Archaeological Society, May 14, 1995. Kidd, K. E.

1941-1942 Profiles Books I-VIII; Graph Books 1-26. Kidd / ROM Collection, Sainte-Marie Curatorial Centre, Midland, Ontario.

1943a The architecture of Sainte-Marie. Royal Architectural Journal of Canada 20(5).

1943b Miscellaneous Notes; Research Notes; Nail Catalogue; Artifact Lists; Black/white Photograph Negatives. Kidd / ROM Collection, Sainte-Marie Curatorial Centre, Midland, Ontario.

1949 The Excavation of Sainte-Marie I. University of Toronto Press, Toronto.

1994 The Phoenix of the North. In *Pioneers in Historical Archaeology*, edited by S. South. Plenum Press, New York.

Krause, R. E.

1974 Private Buildings in Louisbourg, 1713-1758: Canada. *An Historical Magazine* 114:47-59.

Monckton, S. G.

1992 Huron Paleoethnobotany. Ontario Archaeological Reports 1. Ontario Heritage Foundation, Toronto.

Moogk, N. P.

1977 Building a House in New France: An Account of the Perplexities of Client and Craftsmen in Early Canada, McClelland and Stewart, Toronto.

Parks Canada

1976 Research at the Fortress of Louisbourg, 1974-1975 Research Bulletin No. 34. National Historic Parks and Sites Branch, Ottawa.

Parnell, C.

1945 Life at Charles Fort. *The Beaver.* 55-56 (June issue).

Raqueneay, P.

1925 Memoires Touchant in Mort et Les Vertus des Freres Jesuits. Repport del Archiviste de la Province de Quebec pour 1924-1925. The King's Printer, Quebec City.

Rempel, J.

1980 Building with Wood and other Aspects of 19th Century Building In Canada. University of Toronto Press, Toronto. Shropshire, J. W.

1999 A question of convenience: a water system at Sainte-Marie 1. Profile: Newsletter of the Toronto Chapter of the Ontario Archaeological Society 18(2).

Sulte, B.

1870 Historie de la Ville de Trois-Rivieres, Montreal.

Thwaites, R. G. (editor)

1899 The Jesuit Relations and Allied Documents. 3 vols. Burrows, Cleveland.

Traquair, R.

1947 The Old Architecture of Quebec. MacMillan, To-

Trigger, B. G.

1976 The Children of Aataentsic: A History of the Huron People to 1660. McGill-Queen's University Press, Montreal.

Trudle, M.

1966 Historie la Nouvelle France le Comptoir, 1604-1627. Fides, Montreal.

Tummon, J. and W. B. Gray

1995 Before and Beyond Sainte-Marie: 1987-1990 Excavations at the Sainte-Marie Among the Hurons Site Complex (circa 1200-1990). Copetown Press, Dundas, Ontario.

Wilson, P. R.

1975 The Beautiful Old Houses of Quebec. University of Toronto Press, Toronto.

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This exhibit highlights the early digs in the 1950s that involved the cooperation of both the University of Toronto and the Ontario Archaeological Society, when the Society was in its first decade of existence. Sites exhibited include Aurora, Benson, Downsview, MacMurchy, Parsons, Seed-Barker and Warminster as well as a special exhibit dedicated to the distinguished career of Dr. J. N. Emerson, who was instrumental in the founding of the OAS.

If you haven't yet seen the new office of the OAS, this is the perfect opportunity!

A Preliminary Tour of Egypt (Part 1) Helpful tips and sage advice

by Bruce Welsh Staff Archaeologist, Archaeological Services Inc.

HE FORTHCOMING OAS trip to Egypt and Henry's exceptionally thoughtful commentary on Khufu's (Cheops) pyramid - which appeared in the Jan/Feb issue of Arch Notes - prompts me to write the following commentary on a variety of aspects about Egypt. During my 12 years of study in London, England at the Institute of Archaeology, I spent the better part of 4 years working in Egypt, mostly as a guest lecturer and tour guide for Isis Travel, Cairo and Hayes and Jarvis, London, but also occasionally surveying with and for colleagues whilst I was there. The rise and nature of complex societies was one of my specialities and I became very familiar with Egyptian history and its sites.



Allow me to pause a moment, however, lest I create a wrong impression of the place. Egypt may have a history that seems to go on and on and on, but so too does it have a prehistory that seems unending. It has very old, ca. 25 million+ years, pongid and possibly hominid fossils being excavated in the Fayum, and a rich upper palaeolithic, epipalaeolithic and a Neolithic prehistory, including rock art and cave painting, that has attracted European archaeologists since the days of Petrie and Lepsius. Such work, however, has never been considered as fascinating (or as sexy!) as studying the pyramids, tombs, mummies

and temples of the historic period, i.e. ca. 3,200 B.C. – A.D. 600. So, even though it has a grand prehistory, it is to the historic period I shall concentrate, especially since it is the historic sites that attract all the attention on tours of Egypt. I shall do this in two parts. The first part, appearing now, includes a discussion of the pyramids, especially Khufu's pyramid, and some tips on visiting Saqqara, Giza and other attractions around Cairo. The second part, which I hope will appear in a future issue of *Arch Notes*, will focus upon the Valley of the Kings, Aswan, Abu Simbel, Abydos, tomb robbing, both ancient and modern, and birdwatching tips. (Please note that I provide a bibliography of suggested readings, maps and guides. I strongly recommend the Penguin Guide, the Freytag & Berndt map of Egypt and Clayton's excellent narration of the European rediscovery of ancient Egypt as sources of introduction.)

The Pyramids

Pyramid building had a long period of development and then decline during much of the history of ancient Egypt. There are at least 82 - and possibly over 100 - pyramids in Egypt. Single step, mud brick mastabas were built from the First Dynasty (and possibly earlier) around Abydos and Saqqara. These then evolved into mud brick stepped pyramids during the Second and Third Dynasties that were also located at Abydos and Saqqara. (The significance of this will be explained when we discuss Abydos in Part 2.) Eventually construction became more adventurous with Imhotep's six tiered stone pyramid design for Djoser, followed two generations later by a series of huge stone pyramids – one of which was notably unsuccessful at Meidum – that culminated in the complex at Giza, all Fourth Dynasty creations. Thereafter, pyramid building declined to much smaller stone or mud brick constructions and, despite numerous and often prolonged interruptions, continued up to the arrival of Alexander the Great (332 B.C.). Since the pyramids of the Giza plateau attract the most attention, it is to these we shall fo-

cus. In so doing, I shall comment on some of the issues and questions raised by Henry in his fine commentary.

In four years, I must have visited the Giza plateau and/or viewed those pyramids over a hundred times. As Henry suggests, your first view is unforgettable and mind

numbing, but no matter how many times I viewed them. I never lost a sense of awe. There is no question that these are truly remarkable structures. The manner, method, technique and organization involved in building them was phenomenal and stirs the imagination to try to explain how and why it was done. Unfortunately, the Egyptians did not tell us (or if they did it disappeared when the Christians burned down the library in Alexandria in A.D. 391). However, they left us some clues from contemporary tomb paintings and quarry sites, and recent archaeological investigations have revealed more clues about how they were built. From Henry's commentary, he is obviously not aware of some of this evidence and I suspect some of his readings are from individuals that have misled him. His thoughtful inquiries and considerations about pyramid construction are good but his assumptions and suggested solutions are often unnecessarily complicated. Although the building of the pyramids was an extraordinary feat requiring enormous

manpower and very complex organization, simpler solutions are more likely to provide the answers about how they were built.

Henry, however, does not have the benefit of the many years of discussion and correspondence I had with civil engineers, physicists and archaeological colleagues from University College and Imperial College, London; University of Manchester; University of Bradford; the Rijksmuseum, University of Leiden; and the University of Hamburg. Nor would he have access to some rather obscure journals in which engineers and archaeologists have provided some ingenious ideas about pyramid construction, e.g. Peter Prevos, Daniel Ger-

ardo, David MacAulay and Phil Watson. Rather than endlessly ramble on, I provide suggested readings in the attached bibliography and I especially recommend the volumes by Arnold, Hodges, Lehner and, yes, Petrie. May I also provide the following statements about the pyramids, which are often forgotten or not known:



- The Egyptians built the pyramids, not slaves and not aliens.
- Since the Nile flooded the countryside (floodplain) annually every spring for a period of 6 weeks to 3 months, pyramid construction and its related activities may well have occupied the entire population during the annual flood.
- Several tomb paintings and drawings illustrate stone blocks resting on sledges that are being dragged either over logs or ground. In both instances, an individual is depicted in front pouring a liquid of some kind – water or oil? – presumably to reduce friction. In one other drawing, several stone blocks are depicted on a barge floating on the Nile.
- Several tools have been encountered and recovered from the quarries in which the stone blocks were

- cut. These include dolerite hammers and chisels, copper and bronze saws and a variety of other stone tools.
- Within the last decade, the harbour, the workmen's village and the ramp bases for the Giza pyramids have been found and are currently being excavated.
- Agricultural production, food distribution, food production, quarry production and material transportation, tool manufacturing, and the logistics of manpower for each must be included in any consideration of pyramid building, in addition to the construction itself.
- The principle of using a counterweight for lifting water from one level to another, as with a shadouf, was well known to the ancient Egyptians. Such a device must have been a principal mechanism used to lift blocks during pyramid building. Several such devices were probably used during construction and thus, probably eliminated the need for making huge ramps.
- Discussion of the pyramids often brings out theories that reach the realms of psychokookiness, such as the pyramids being near the centre of the surface of the earth or at a unique and magical latitude and longitude. As for the former simply look at any map of the globe. As for the latter, although the principle of latitude has been known for a very long time, longitude was only determined in the 18th century by John and William Harrison's invention of the chro-

nometer. Neither Greenwich nor GMT existed at the time of Khufu.

It has often been stated by similar new age authors that the pyramids were built in relation to the Golden Mean. This is categorically false. Instead, Khufu's pyramid, and indeed many others, were built with an association to pi. (Pi is the transcendental number that gives the ratio of the circumference of a circle to its diameter, evaluated at 3.14159....) Now, although it is possible that the Egyptians may have accidentally established this relation simply by making a unit of length equal to one turn of a (circular) drum, I believe it was an important and deliberate relationship. Khufu's pyramid is constructed such that the pyramid's perimeter is equal to twice the height times pi. And although the four sides of the pyramid are not the same - in fact one side is 8 inches longer than any of the others - the overall perimeter is less than two feet off from this proportion. For whatever reason, this association was important to the ancient Egyptians.

As important and interesting as it is to explain how the pyramids were built, it is equally important to be aware of what pyramid building did for and to Egypt, both in terms of its political, social and economic organization, and the national identity.

So much for the pyramids. Should Henry or anyone wish to discuss the pyramids further, do not hesitate to contact me. I love to talk about them and I have barely scratched the surface here.

Essential Visits around Giza, Saqqara and Cairo

Cairo Museum

The best time to visit the museum is in the afternoon. Most tours go during the morning. Even though Tutankhamun's treasures are the main attraction on any tour, do not miss the Old Kingdom section on the ground floor and the predynastic (prehistoric) section on the upper floor, south wall. Some of the pottery and tools recovered by Petrie are truly exquisite.

Old Cairo

There are so many things to see in Cairo that giving just a few suggestions is a gross injustice. However, the Coptic museum, Ben Ezra synagogue and the Sultan Hassan mosque should not be missed.

Giza Plateau

The pyramids should be visited as early in the morning as possible. I usually took groups as early as 6:00 a.m. Few other groups arrive before 8:00 a.m. One has a much better appreciation of the site's grandeur with no other people around and the local buyers, sellers and dragoman will not be there either. Moreover, the electricity of the pyramids is often not switched on until later. A view of the Grand Gallery with just a flashlight and a handful of people is quite unforgettable. You may even

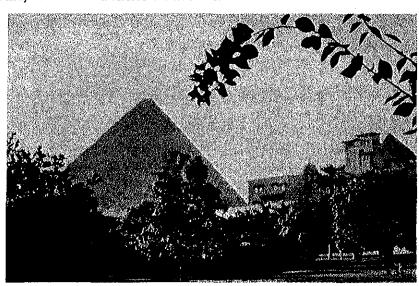
encounter some interesting wild life. We twice encountered a hyena wandering around!

Also check out the entire pyramid complex of Khafre. This includes the valley and mortuary temples and the grand causeway from the floodplain to the pyramid. (Each pyramid has its own associated landscape, first noted by Petrie.) If possible, you should also check out the most recent excavations of the workmen's village, harbour and ramp. Mark Lehner may even be there early in the morning. He is a fine chap, very

approachable and loves to babble about the pyramids or his home state of North Dakota. Go early!

Saqqara

This complex is almost as spectacular as Giza with even more places to see. I have three favourite sites: the Pyramid of Unas, with the historically important and lovely pyramid texts, and its temples and causeway, Ptah-hotep's tomb (and others adjacent to it), the serapeum. There are so many other things to see there that a visitor cannot lose.



Bibliography

Arnold, Dieter, 1997, Building in Egypt: Pharaonic Stone Masonry. Oxford: Oxford University Press.

Clayton, Peter A., 1982, The Rediscovery of Ancient Egypt: Artists and Travellers in the 19th Century. London: Thames & Hudson.

Freytag & Berndt, Map of Egypt. (in German and English).

Hodges, P., 1989, How the Pyramids Were Built. London: Element Books.

Lehner, M., 1997, The Complete Pyramids: Solving the Ancient Mysteries. London: Thames & Hudson.

Lipke, Paul, 1984, *The Royal Ship of Cheops*. Greenwich: National Maritime Museum Archaeological Series No. 9.

Lipre, J.P., 1990, The Egyptian Pyramids: A Comprehensive Illustrated Reference. London: McFarland,

Mendelssohn, K., 1974, The Riddle of the Pyramids. London: Thames & Hudson.

Murnane, W.J., 1984, The Penguin Guide to Ancient Egypt. London: Penguin.

Petrie, Flinders, 1883, The Pyramids and Temples of Gizeh, New York: Charles Scribners & Sons.

Letter to Arch Notes

Self-Regulation - Five Thorny Issues

THE MARCH/APRIL 2001 issue of *Arch Notes*, Phil Woodley asked five questions regarding some "thorny issues" that keep nagging him concerning the OAS taking over archaeological licencing from the Ontario Ministry of Tourism, Culture and Recreation (OMTCR). Being that I seem to be one of the more vocal proponents for archaeological self-regulation in this province, I appreciate the opportunity of providing some answers for his consideration that I hope will clarify the situation.

MR. WOODLEY'S first question asks, "Why would the OAS want to oversee archaeological licencing? Just because it was included in the strategic plan does not necessarily make it a good idea. Rather than by arguing by assertion, I would like to see a logical discussion of the issue." -- I do not know if, as Mr. Woodley puts it, the OAS wants to oversee archaeological licencing or not. The matter has not been discussed as yet by the Board of Directors. It is my understanding that the matter will be on the agenda for the next meeting of the Board of Directors in July. However, the strategic plan states that, "the OAS represents all aspects of archaeology in Ontario. It is recognized as the voice of archaeology in the province. The Society compliments the activities of the provincial government through its high quality public programming, publications and events. The Society understands where archaeology has been and where it is going in Ontario. It embraces and benefits from change and proactive adaptation. It provides a leadership role and a forum for the process of self regulation of archaeology in Ontario [by 2003]".

I PREVIOUSLY suggested in *Arch Notes* my personal preference for a model of self-governance that Mr. Woodley might have read, and that is repeated here to answer his question(s). "Under the proposed model, it is not intended that the OAS be the regulatory body and perform the same licencing functions like the Archaeology Committee of the Ontario Heritage Foundation once did on behalf of the Ontario Ministry of Citizenship, Culture and Recreation (OMCzCR). Under existing or new legislation, a separate body, perhaps a Board or College of Archaeologists could be created using the facilities, corporate experience and leadership of the OAS to arrive at that stage. Although this proposed Board would consist of archaeologists that are elected/appointed by licenced practitioners, it would be separate from and independent of the OAS and every other professional body. It would also operate at arm's length from the OMCzCR" (*Arch Notes* 2001, Volume 6, Issue 1:21).

MR. WOODLEY'S second question asks, "Why would this be good for the OAS? Professional archaeologists seem to be the most concerned with this issue, obviously because it directly affects their livelihood. Without the actual numbers, I would estimate that the majority of OAS members are not professional archaeologists and have no intention of becoming professional archaeologists. For the most part, most members will never or only sporadically hold an archaeological licence. How will the OAS overseeing licencing help them? Why would or should the membership care?" -- The OAS is a province-wide and discipline-wide service organization. It exists to provide the various kinds and levels of services requested by its members. Current licencing as administered by the Ministry has been criticized and to some extent condemned by practicing professional archaeologists, the development industry, the Red Tape Commission, and the Ministry's own internal Archaeological Customer Service Project. There can be no doubt that the Ministry could make great improvements in

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the delivery of services if it had the political will plus the support of the development industry and the archaeological community. Should the OAS decide to take a more active role in licencing, self-regulation, or upgrading the skills of its members (professional or otherwise) on a fee for service basis, it would be an inducement to attract more members, improve the quality of the archaeology performed, and thereby increase the efficacy of the OAS in helping to shape government policy. It isn't so much of what's in self-regulation for the OAS (except for it to mature naturally as a professional service organization and as a means to sustain itself in an era of dwindling operating grants) but more a matter of the benefits for OAS members. Does it really matter to professional archaeologists who is in charge of licencing? I think so because in providing these services, the OAS or any other non-government organization would certainly be more responsive to its members' needs and concerns than has the Ministry.

MR. WOODLEY'S third question asks "Is MTCR actively seeking an organization to take over licencing? Is MTCR interested in handing the job to the OAS? If so, why is MTCR not advocating on behalf of the OAS to take control of licencing." -- Archaeological self-regulation has been widely recognized as a goal in discussions leading to the various drafts of a new Heritage Act over the past 15 years. It is my understanding that senior staff in the Ministry and the Red Tape Commission would welcome a bona fide proposal with broad-based community support that "can be sold upstairs." Until an organization or group officially comes forward and states that it is interested, the Ministry is not in a position to negotiate with anyone.

MR. WOODLEY'S fourth question asks, "Other than the President, I have not seen any OAS Directors advocating that the OAS take over licencing. Why is that? Does the OAS President have the backing of the Board of Directors on this issue?" -- As indicated in my answer to his first question, neither the OAS President nor the Board of Directors has yet advocated that the OAS take over licencing. The matter remains to be discussed as soon as time and circumstances permit. If Mr. Woodley would like to have an organized public debate on the pros and cons of self-regulation at the next OAS symposium, I would gladly accept the offer.

MR, WOODLEY'S fifth question asks, "Shouldn't report review go hand in hand with archaeological licencing? And if report review goes with licencing, would the OAS be capable of undertaking this task effectively?" My reply to this is that it does not necessarily follow that the two go together. But, if the OAS or a new organization does take over licencing from the Ministry, why would it want to review reports? It would not be the approval authority for development projects subject to the regulations of the Planning Act, the Environmental Assessment Act, or the Aggregate Resources Act. Why should every archaeological consulting, research or avocational report have to be reviewed so stringently, as has been the case for the past ten years, creating a backlog of hundreds, if not upwards of a thousand, reports that have not yet been reviewed by the Ministry let alone acknowledged as having been received? If the Ministry cannot keep up in a timely and effective manner for whatever reason, then it should not be in the business of reviewing all reports. The resulting delays in obtaining construction approvals have cost taxpayers and new homebuyers untold millions of dollars in added interest payments on money borrowed for development. The Archaeology Customer Service Project has prepared some draft options for licencing and reporting (including auditing only a random sample of reports or just Stage 4 mitigative excavation reports) that were recently discussed by a cross-section of licenced archaeologists representing avocational, consulting and academic practitioners. The project's final thoughts are to be presented soon to the Ministry's senior management as part of a five-year plan. It will be interesting to see what, if any, new initiatives are adopted by the Ministry. But if the Ministry does get out of the business or reduce its involvement, peer review by parties in opposition to proposed development would take up the slack and create a boom employment opportunity for consultants.

AS I HAVE said before, all I'm really suggesting in very broad brush strokes at this point with regard to selfregulation is that the OAS take the lead and host at least one full-day meeting to be organized by an experienced moderator/facilitator where all interested parties can attend and voice their opinions on strategic

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agenda topics. Because not every relevant topic could be covered in one day, additional meetings should be hosted by other organizations on a rotating basis especially if this helps eliminate the false perception that the OAS is running the entire show. Because such meetings will take some time to organize and to assimilate previous results, this proposed consultative process might take as long as two years to complete. Although it most definitely will not happen quickly, one would not have to wait as long as the Archaeology Customer Service Project's proposed five-year plan with its proposed draft options that may or may not ever be implemented.

Bob Mayer May 20, 2001

~ Estelle Boutillier ~

To my fellow OAS travellers sadly I pass on the news of the death of a very dear travelling companion

Estelle Boutillier charmed everyone who met her and many of us have memories of a delightful dinner companion in several odd corner of the world. Her first trip with the OAS was to Egypt in 1981 under the intrepid leadership of Marti Latta. Estelle convinced a fellow employee at Hamilton City Hall to come along and that was Ken Rouff's first OAS overseas adventure.

Warm memories come to mind of Estelle gracing our table at a country restaurant in the Corinthian Peninsula of Greece. It had huge casks of wine, grape arbours overhead and good food. Estelle charmed the waiters who were young enough to be her grandsons, to the great delight of everyone. The waiters just adored her and fawned over her.

I can still see her astride a horse riding through a rock crevice into the Nabatean city of Petra in Jordan. She was 78 years old at that time and rode much better than a lot of her companions. I can also see her dancing with Ken Rouff to foot-tapping Greek folk tunes in Heraclion, Crete.

Estelle loved meeting people and making friends wherever she went. We will all miss her very much.

Stewart Leslie

NOTICE: Robert J. Pearce has been appointed Executive Director of the London Museum of Archaeology, effective April 1, 2001 following the retirement of William D. Finlayson.

OAS Media Watch

Have you come across an article about Ontario archaeology in your local community newspaper?

The next time you do, please clip it out with the newspaper name and date and send it to the OAS office. We are adding to our collection of Ontario archaeology stories with clippings from across the province.



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