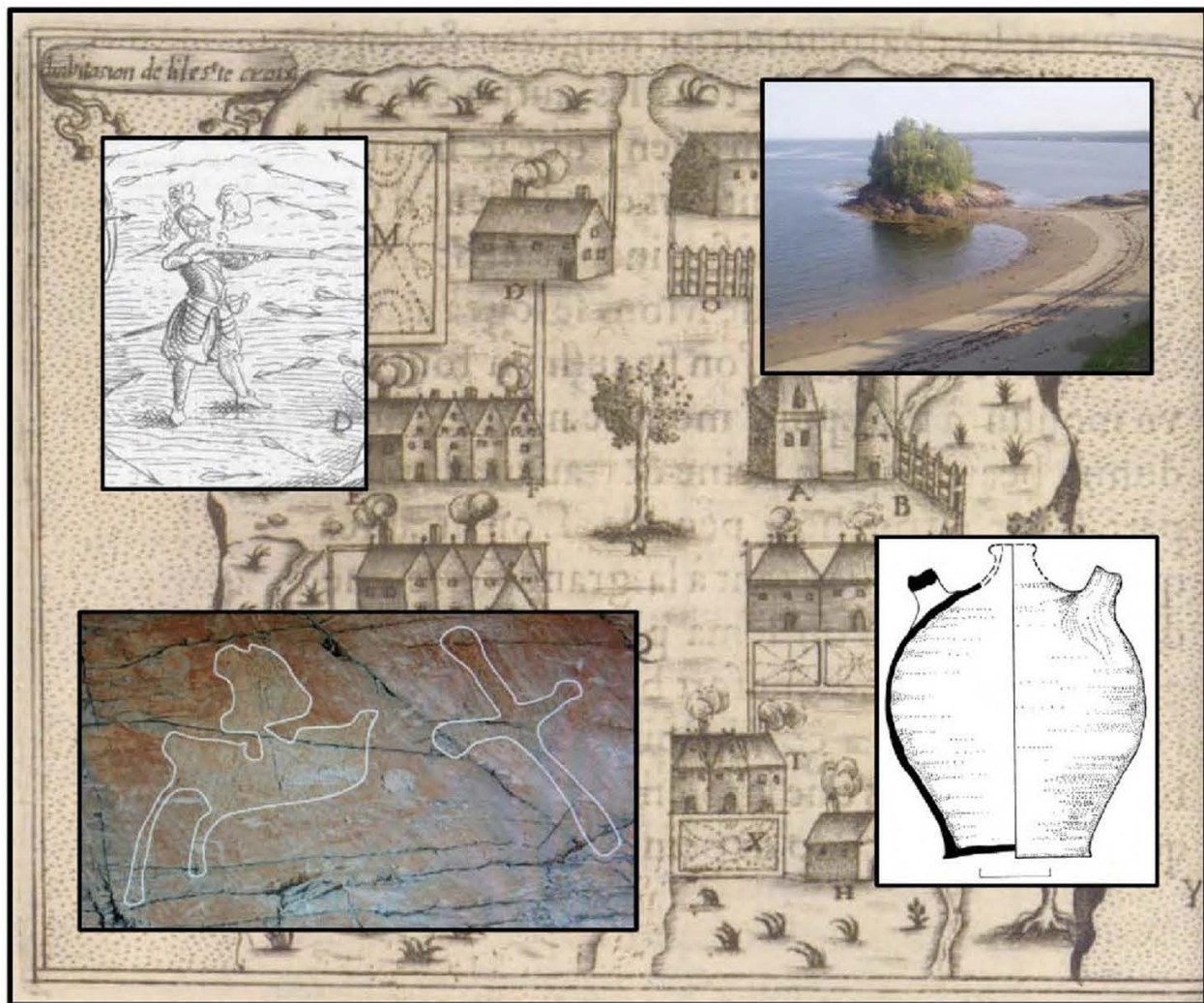


SAINT CROIX ISLAND

MAINE

History, Archaeology, and Interpretation



Edited by

Steven R. Pendery

Saint Croix Island, Maine
History, Archaeology, and Interpretation

Edited by

Steven R. Pendery

With contributions by

Harold Borns, Jr., James Bradley, Thomas Crist, Molly Crist, Eric Johnson,
Stéphane Noël, Joyce S. Pendery, Steven R. Pendery, Virginia A. Reams,
David Sanger, Donald Soctomah, Marcella Sorg, Arthur Spiess,
Eric Thierry, Giovanna Vitelli

With

Margaret M. Scheid and Deborah R. Wade

Foreword

by

David Hackett Fischer

Occasional Publications in Maine Archaeology

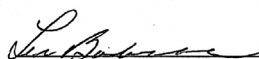
Number Fourteen

2012

The Maine Historic Preservation Commission and
The Maine Archaeological Society
Augusta, Maine

Report Certification

The archeological report "Saint Croix Island International Historic Site: History, Archaeology, Interpretation" with contributions by H. Borns, J. Bradley, T. Crist, M. Crist, E. Johnson, S. Noel, J. Pendery, S. Pendery, V. Reams (with D. Wade and M. Scheid), D. Sanger, D. Soctomah, M. Sorg, A. Spiess, E. Thierry and G. Vitelli dated 2011, has been reviewed against the criteria contained in 43 CFR Part 7.18(a)(1) and upon recommendation of Dr. Steven R. Pendery, Acting Archeology Branch Chief, Northeast Region, NPS, has been classified as "Available"



Superintendent

4/28/11

Date

Classification Key Words:

"Available" - Making the report available to the public meets the criteria of 43 CFR 7.18 (a)(1).

"Available (deletions)" - Making the report available with selected information on site locations and/or site characteristics deleted meets the criteria of 43 CFR (a) (1). A list of pages, maps, paragraphs, etc. that must be deleted from each report in this category is found below.

"Not Available" - Making the report available does not meet the criteria of 43 CFR (a) (1).

Occasional Publications in Maine Archaeology Fourteen Series Editor: Arthur Spiess

Printed in the United States

Distributed in the United States through the Maine Archaeological Society, P.O. Box 982
Augusta, ME 04330 www.mainearchsociety.org

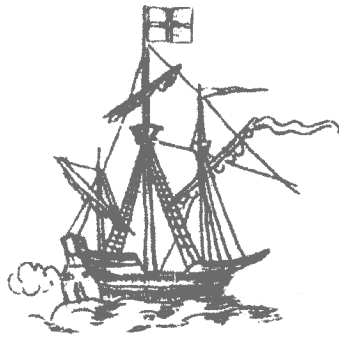
©2012 by The Maine Historic Preservation Commission

ALL RIGHTS RESERVED. NO PART OF THIS PUBLICATION MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPY, RECORDING, OR ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM WITHOUT PERMISSION IN WRITING FROM THE PUBLISHERS.

ISBN 978-0-935447-20-0

"French, British, Passamaquoddy, and American History" by Eric Johnson, is reprinted in altered form from his 1996 report, "Archeological Overview and Assessment, Saint Croix Island International Historic Site," by permission of the National Park Service.

This volume is dedicated to Gretchen Fearon Faulkner
and to the memory of Alaric Faulkner:
Two intrepid explorers of Acadia's archaeology.



Contents

LIST OF TABLES	ii
LIST OF FIGURES	ii
FOREWORD	ix
David H. Fischer	
PREFACE	xi
Steven Pendery	
1. INTRODUCTION	1
Steven Pendery	
2. FRENCH SETTLEMENT, 1604-1613	13
Eric Thierry	
3. SAINT CROIX ISLAND AND ITS IMPACT ON THE PASSAMAQUODDY PEOPLE	31
Donald Soctomah	
4. FRENCH, BRITISH, PASSAMAQUODDY, AND AMERICAN HISTORY	35
Eric Johnson	
5. HISTORICAL ARCHAEOLOGY	45
Steven Pendery	
6. THE CULTURAL LANDSCAPE	63
Steven Pendery	
7. METALLIC AND METALLURGICAL ARTIFACTS	85
Steven Pendery	
8. CERAMICS	107
Steven Pendery	
9. THE GLASS	137
Giovanna Vitelli	
10. GLASS BEADS	157
James W. Bradley	
11. DIET AND NUTRITION	171
Steven Pendery, Stéphane Noël, and Arthur Spiess	
12. THE SKELETONS	185
Thomas A. Crist, Marcella H. Sorg, Robert L. Larocque, Molly H. Crist, and John M. Benson	
13. MANAGEMENT AND INTERPRETATION	223
Virginia A. Reams with Margaret M. Scheid and Deborah R. Wade	
APPENDICES	
A1. Changing Geology and Climate of Saint Croix Island, by Harold Borns, Jr.	235
A2. Native Occupations on Saint Croix Island, by David Sanger	247
A3. 1604-1605 Pierre Dugua, sieur de Mons, Expedition Biographies, by Joyce S. Pendery	269
A4. Robert Pagan's Deposition (Maine Historical Society)	279
A5. Thomas Wright's Deposition (Ganong 2003)	283
A6. Glass Beads from Other North American Sites, by James Bradley	285
A7. Bead Inventory Carel-Soop Glasshouse, by James Bradley	291
A8. Faunal Analysis, by Arthur Spiess and William Burgess	295
LIST OF CONTRIBUTORS	303
INDEX	307

Tables

4.1	Known and potential nineteenth- and twentieth-century structures and features on Saint Croix Island.	40
6.1	Categories of Feature 1 artifacts.	81
8.1	Ceramic phases at Saint Croix Island.	108
8.2	Type and function of ceramics recovered from the <i>habitation</i> .	109
10.1	Current National Park Service inventory of glass beads from Saint Croix Island.	158
10.2	Total reported glass beads from Saint Croix Island.	159
11.1	Number of Identified Specimens (NISP) count and total percentage of faunal remains from Feature 1	176
11.2	Vitamin C content of foodstuffs.	178
12.1	Summary inventory of skeletal remains from Saint Croix Island brought to Philadelphia by the Temple University archaeological team in 1969.	188
12.2	Individuals from Saint Croix Island examined using computerized tomography.	192
12.3	Demographics of individuals buried at Saint Croix Island.	194
12.4	Age determination criteria for individuals excavated at Saint Croix Island.	195
12.5	Periosteal reactions in the oral cavities of individuals excavated at Saint Croix Island.	200
12.6	Mandibular periosteal reactions among remains from Saint Croix Island.	203
12.7	Lesions of the first and second cervical vertebrae among individuals excavated at Saint Croix Island.	203
12.8	French colonial autopsies in the New World.	212

Figures

1.1	Locator map for Saint Croix Island, Maine. (Map by the author)	1
1.2	View of Saint Croix Island looking north. (Courtesy of the NPS)	2
1.3	View of Saint Croix Island from the west. (Photograph by the author)	3
1.4	Overlay of Champlain's map (1604), Ganong's map (1902), and NPS map (1976) demonstrating changes in Saint Croix Island's configuration over 366 years.	3
1.5	Ground stone artifacts from the Saint Croix Island site.	4
1.6	Plan of the Saint Croix Island <i>habitation</i> from Champlain's <i>Les Voyages</i> (1613). (Library of Congress)	6
1.7	Pre-1924 view of Saint Croix Island from Red Beach, Maine. (Courtesy St. Croix Historical Society)	7
1.8	Plan of the Saint Croix Island <i>habitation</i> from <i>Les Voyages</i> by Champlain (1613). (Library of Congress)	8
2.1	Routes of the 1604, 1605, and 1606 expeditions.	15
2.2	Plan of Saint Croix Island from <i>Les Voyages</i> by Champlain (1613). (Library of Congress)	20
2.3	The <i>habitation</i> area on the north of Saint Croix Island from <i>Les Voyages</i> by Champlain (1613). (Library of Congress)	21
2.4	Port-Royal from <i>Les Voyages</i> by Champlain (1613). (Library of Congress)	25
3.1	<i>a</i> , Petroglyph from Machiasport, Maine, showing early seventeenth-century European ship; <i>b</i> , "chalk" outline of ship.	32
4.1	Lithograph of Red Beach Plaster Mill and Red Granite Quarry, Maine Red Granite Polishing Works ca. 1880. (Courtesy St. Croix Historical Society)	37
4.2	Colby Map of 1881 showing Red Beach. (Courtesy St. Croix Historical Society)	38
4.3	View of the Saint Croix Island lighthouse complex from the air, 1950s. (US Coastguard collection, <i>Lighthouse Digest</i> archives)	42
5.1	Passamaquoddy Bay and tributaries.	46
5.2	Detail of John Mitchell's <i>A Map of the British and French Dominions in North America</i> of 1755 (Library of Congress)	46
5.3	Site plan based on Wright's 1797 description of the Saint Croix Island <i>habitation</i> .	48
5.4	Wright's Map of Saint Croix Island, 1797 (Library of Congress)	49
5.5	Wendell's Hadlock's 1950 trench excavations (outlined), overlaid with Harrington's conjectural foundation locations. (Courtesy NPS)	52
5.6	Plan of the <i>habitation</i> based on Champlain's description and 1613 plan scaled in both toises and meters (courtesy NPS)	53

5.7	John Cotter visiting the site in the summer of 1968. (Courtesy NPS)	53
6.1	Champlain's 1613 plan of the Saint Croix Island <i>habitation</i> from <i>Les Voyages</i> (Library of Congress)	64
6.2	Modern map of area corresponding with Champlain's 1613 map of Saint Croix Island.	65
6.3	The Saint Croix Island <i>habitation</i> from Champlain's <i>Les Voyages</i> (1613). (Library of Congress)	67
6.4	Detail of storehouse from Champlain's <i>Les Voyages</i> (1613). (Library of Congress)	68
6.5	<i>Habitation</i> site plan showing distribution of yellow brick found by Tremer's team (by weight)	68
6.6	Detail of Gruber's site map showing locations of clay	69
6.7	<i>Habitation</i> site plan showing distribution of daub (by weight).	69
6.8	Samples of daub from the storehouse site.	70
6.9	Detail of de Mons' house at the Saint Croix Island <i>habitation</i> (Champlain 1613). (Library of Congress)	70
6.10	Detail of Poutrincourt's house at the Port-Royal <i>habitation</i> (Champlain 1613). (Library of Congress)	70
6.11	Detail of the barracks for the "Swiss" (Champlain 1613). (Library of Congress)	71
6.12	View of the Port-Royal <i>habitation</i> from <i>Les Voyages</i> by Champlain (1613). (Library of Congress)	71
6.13	View of the southern half of the Saint Croix Island <i>habitation</i> in Champlain's <i>Les Voyages</i> (1613). (Library of Congress)	72
6.14	Detail of the bake house at the Saint Croix Island <i>habitation</i> (1613). (Library of Congress)	72
6.15	Detail of the kitchen at the Saint Croix Island <i>habitation</i> (1613). (Library of Congress)	73
6.16	View of the smithy (E) at the Saint Croix Island <i>habitation</i> (1613). (Library of Congress)	73
6.17	View of Elson Small's Model T Ford truck on Dochet's Island. (from Connie S. Small, <i>The Light-house Keeper's Wife</i> . University of Maine Press, Orono (2005).	79
6.18	Elson Small's Model T Ford in 1969. (Photograph by Jacob Gruber, courtesy of NPS).	80
6.19	Elson Small's Model T Ford in 2011. (Photograph by author)	80
7.1	Iron fasteners: <i>a-e</i> , nails (1088, 1087); <i>f</i> , clenched nail (1088); <i>g</i> , spike (1131). (Drawing by Simon Pressey)	86
7.2	Distribution of nails and spikes in <i>habitation</i> area, based on Tremer (1970).	87
7.3	Distribution of small nails, based on Tremer (1970).	87
7.4	Architectural hardware: <i>a, b</i> , unperforated holdfasts or <i>pattes de masonerie</i> (606, 744); <i>c</i> , perforated example (218); <i>d</i> , looped spike or hinge (214); <i>e</i> , pintle (941); <i>f</i> , possible tenter hook (1273). (Drawing by Simon Pressey)	88
7.5	Distribution of architectural hardware.	88
7.6	Axe head (211). (Drawing by Simon Pressey)	89
7.7	Plates 79 and 284 from Diderot (1993) [1763]: <i>a</i> , curved blade axe (Figure 22) used in constructing defenses; <i>b</i> , use of a mortise axe in framing.	89
7.8	Axe head from Cartier-Roberval site at Cap-Rouge, Québec (Courtesy of © CCNQ, Sarahlyne Tremblay)	90
7.9	Iron tools: <i>a</i> , possibly modified caulking iron (769); <i>b</i> , caulking iron or splitting wedge (1730). (Drawing by Simon Pressey)	90
7.10	Iron tools and hardware; <i>a</i> , arrow or spear point (215); <i>b</i> , harpoon tip or end of cod hook (219); <i>c</i> , fish hook (217); <i>d-e</i> , awls or Leister points (943, 212); <i>f-g</i> , knife or spear blades (1202, 573). (Drawing by Simon Pressey)	91
7.11	Knives: <i>a</i> , either rat-tailed tanged knife or fragment of scissors or shears; <i>b</i> , knife with thickened metal handle. (Drawing by Simon Pressey)	91
7.12	Box lock hasp (218), 15 cm long: <i>a</i> , front face and cross-section; <i>b</i> , reconstruction view. (Drawing <i>a</i> by Simon Pressey, <i>b</i> by the author)	92
7.13	Musket rest (207). (Drawing by Simon Pressey)	92
7.14	Musket rest from Alden Site, Duxbury, MA. (Courtesy of Alden House Museum)	92
7.15	Musquetier from De Gheyns, ca. 1608. (Library of Congress)	93
7.16	Champlain's 1613 map of St. Croix Island showing cannon (Library of Congress)	93
7.17	Champlain in battle (Library of Congress)	95
7.18	Artifacts made of lead: <i>a</i> , sprue (955) full scale; <i>b</i> , lead waste from round shot production (953), item on left 3.5 cm long; <i>c</i> , spilled lead waste in form of disk (667); <i>d</i> , slice of lead from weight (299), 3.5 cm across. (Drawing by Simon Pressey)	96
7.19	Lead weight (199). (Drawing by Simon Pressey)	96
7.20	Detail of sailor with sounding weight from frontispiece of Waghenauer's nautical atlas, 1584 edition. (Courtesy of Museum Plantin-Moretus/Prentenkabinet, Antwerp - UNESCO World Heritage)	97

7.21 Lead or pewter spoon and knob (210). (Drawing by Simon Pressey)	97
7.22 Small lead or pewter cap (1238). (Drawing by Simon Pressey)	97
7.23 Brass spigot key (203). (Drawing <i>a</i> by Simon Pressey)	98
7.24 Photo of thimble (1793).	98
7.25 Brass thimble (202). (Drawing by Simon Pressey)	98
7.26 Gilded brass fittings, <i>a</i> (833) 3 cm wide; <i>b</i> , (834); <i>c</i> , conjectural reconstruction. (Drawing <i>a</i> and <i>b</i> by Simon Pressey)	99
7.27 Copper alloy porringer (115). (Drawing by Simon Pressey)	99
7.28 Copper kettle lug fragments: <i>a</i> , 1018; <i>b</i> , 951. (Drawing by Simon Pressey)	100
7.29 Copper alloy sheet fragments: <i>a-b</i> triangular; <i>c-d</i> , rectangular; <i>e-g</i> , scrap (all 846). (Drawing by Simon Pressey)	100
7.30 Rolled and folded copper alloy fragments, <i>a</i> , (950), <i>b</i> , (949). (Drawing by Simon Pressey)	100
7.31 Copper alloy flashing (948).	101
7.32 Copper alloy objects: <i>a</i> , ferule or bead (204); <i>b</i> , copper bead (952); <i>c</i> , bead (1019); <i>d</i> , bead found in area of neck of Burial 2 (116). (Drawing by Simon Pressey)	101
7.33 Broken and corroded copper alloy coin or jeton (200). (Drawing by Simon Pressey)	101
7.34 Copper alloy toy cannon fragment, probably nineteenth-century (205). (Drawing by Simon Pressey)	101
7.35 Possible metallurgical ceramic, now missing: <i>a</i> , <i>c</i> (J. Cotter, photograph); <i>b</i> , conjectural profile.	103
7.36 Metallurgical ceramic production showing lids (M), from Agricola (1556:217) (Library of Congress)	103
8.1 Location of production centers for French stoneware found at Saint Croix Island. (Map by the author)	110
8.2 Domfrontais stoneware forms represented at Saint Croix Island: <i>a</i> , <i>b</i> , preserved food jars (<i>saloirs</i>) in two sizes; <i>c</i> , bottle (<i>gourde bouteille</i>); <i>d</i> , unidentified lidded jar (<i>jarre</i>). (Drawing by the author, form <i>a</i> based on original by Matthew Palus)	111
8.3 Still life by Willem Kalf showing Normandy <i>saloir</i> in background. (Courtesy, Directions des Musées de France, 1986; photo: Réunion des Musées Nationaux, c. Franck Raux)	112
8.4 Domfrontais stoneware preserved food jar (<i>saloir</i>) rims: <i>a</i> (1327); <i>b</i> (149); <i>c</i> (1322). (Drawings by the author after originals by Matthew Palus)	113
8.5 Domfrontais stoneware preserved food jar (<i>saloir</i>) rims: <i>a</i> (624); <i>b</i> (781); <i>c</i> (1215); <i>d</i> (2273); <i>e</i> (762); <i>f</i> (1293). (Drawing by the author after originals by Matthew Palus)	113
8.6 Broken section of Domfrontais stoneware preserved food jar rim (1215).	113
8.7 Domfrontais stoneware preserved food jar (<i>saloir</i>) shoulders: <i>a</i> (519); <i>b</i> (9); <i>c</i> (1305); <i>d</i> (107); <i>e</i> (1060). (Drawing by the author after originals by Matthew Palus)	114
8.8 Domfrontais stoneware preserved food jar (<i>saloir</i>) bases: <i>a</i> (2419); <i>b</i> (749); <i>c</i> (623); <i>d</i> (1295). (Drawing by the author after originals by Matthew Palus)	114
8.9 Domfrontais stoneware jar or tableware bases: <i>a</i> (1323); <i>b</i> (6); <i>c</i> (628). (Drawing by the author after originals by Matthew Palus)	115
8.10 Domfrontais stoneware handle fragments for preserved food jars (<i>saloirs</i>): <i>a</i> , <i>recto</i> and <i>verso</i> (2277); <i>b</i> (63,1326); <i>c</i> (1268); <i>d</i> (518); <i>e</i> (1296, 1297); <i>f</i> (1061); <i>g</i> (2273). (Drawing by the author after originals by Matthew Palus)	114
8.11 Domfrontais stoneware handle fragment of preserved food jar (2277). (NPS photograph)	114
8.12 Domfrontais stoneware handle base fragment of preserved food jar (518). (NPS photograph)	115
8.13 Domfrontais stoneware handle and body fragments of preserved food jar (<i>saloir</i>): <i>a</i> , handle detail, <i>b</i> , reconstructed section (1321). (Photograph and drawing by the author after originals by Matthew Palus)	115
8.14 Domfrontais stoneware handle attachment and body (1296). (NPS photograph)	115
8.15 Rim of Domfrontais stoneware jar (783). (Drawing by the author after originals by Matthew Palus)	115
8.16 Rim sherd of Domfrontais stoneware jar (783). (NPS photograph)	115
8.17 Domfrontais bottle (<i>gourde</i>) body fragments: <i>a</i> , (593); <i>b</i> , (475); <i>c</i> , (912), <i>d</i> , (312); <i>e</i> , (888). (Drawing by the author)	116
8.18 Fragments of Domfrontais stoneware bottles (<i>gourdes</i>): <i>left</i> , (593); <i>right</i> , (475). (NPS photograph)	116
8.19 Conjectural vessel forms of Bessin Cotentin stoneware vessels found at Saint Croix Island: <i>a</i> , pitcher (<i>pichet</i>); <i>b</i> , preserved food jar; <i>c</i> , unidentified jar; <i>d</i> , unidentified tableware form. (Drawing by the author)	117
8.20 Bessin Cotentin stoneware vessel fragments found at Saint Croix Island: <i>a</i> , pitcher (<i>pichet</i>) rim (457); <i>b</i> , jar (<i>jarre</i>) shoulder (62, 278); <i>c</i> , base which may be same vessel as 457 (458); <i>d</i> , unidentified tableware	

base (915); <i>e</i> , jar (<i>jarre</i>) body (1313); <i>f</i> , handle (447). (Drawing by the author)	117
8.21 Handle of Bessin Cotentin stoneware vessel (447). (NPS photograph)	117
8.22 Distribution of Lower Normandy stoneware fragments at the Saint Croix Island <i>habitation</i> .	118
8.23 Reconstructions of Beauvaisis stoneware vessel forms recovered at Saint Croix Island; <i>a</i> , costrel (<i>gourde bouteille à deux anses</i>); <i>b</i> , small costrel (<i>gourde bouteille</i>); <i>c</i> , cylindrical pharmaceutical or preserves jar (<i>pot à l'onguent ou à conserves</i>); <i>d</i> , pharmaceutical or preserves jar (<i>pot à l'onguent ou à conserves</i>). (Drawing by the author)	119
8.24 Beauvaisis stoneware, necks of costrels (<i>gourde bouteille</i>): <i>a</i> , <i>b</i> , two profiles of same vessel, distorted during firing (1302); <i>c</i> , costrel neck (619); <i>d</i> , costrel neck (621). (Drawing by the author after originals by Matthew Palus)	119
8.25 Fragments of Beauvaisis costrel (<i>gourde bouteille</i>) (1322). (NPS photograph)	120
8.26 Beauvaisis stoneware costrel (<i>gourde bouteille</i>) (1324). (Drawing by the author after originals by Matthew Palus)	120
8.27 Beauvaisis stoneware costrel (<i>gourde bouteille</i>) bases: <i>a</i> , (461); <i>b</i> , (1300). (Drawing by the author after originals by Matthew Palus)	120
8.28 Beauvaisis stoneware costrel (<i>gourde bouteille</i>) handles: <i>a-g</i> (399, unknown, 826, 1267, unknown, unknown, 2286); <i>i-k</i> (302, unknown, 620,); <i>h</i> , possible handle of pitcher or <i>pichet</i> , (402). (Drawing by the author after originals by Matthew Palus)	120
8.29 Beauvaisis stoneware pharmaceutical or preserves jar (<i>pot à onguent ou à conserves</i>): <i>a</i> , base (499); <i>b</i> , rim (459, 460). (Drawing by the author)	121
8.30 Rim sherds of Beauvaisis stoneware pharmaceutical or preserves jar (<i>pot à onguent ou à conserves</i>): left, (460), right, (459). (NPS photograph)	121
8.31 Base of Beauvaisis stoneware pharmaceutical or preserves jar (<i>pot à onguent ou à conserves</i>) (499). (NPS photograph)	121
8.32 Beauvaisis stoneware pharmaceutical or preserves jar (<i>pot à l'onguent ou à conserves</i>); <i>a</i> , profile (150); <i>b</i> , photograph of reconstructed jar. (Drawing and photograph by the author)	122
8.33 Distribution of fragments of Beauvaisis stoneware at the Saint Croix Island <i>habitation</i> . (Plan by the author)	122
8.34 Conjectural reconstructions of Puisaye and Haut Berry stoneware vessels recovered from Saint Croix Island: <i>a</i> , salted-food jar (<i>saloir</i>); <i>b</i> , bottle (<i>gourde</i>); <i>c</i> , unidentified small jar; <i>d</i> , unidentified large jar, possibly a <i>saloir</i> . (Drawing by the author)	123
8.35 Puisaye and Haut Berry stoneware jars (<i>jarres</i>): <i>a</i> , <i>b</i> , unidentified (642, 1645); <i>c</i> , unidentified (543); <i>d</i> , handle attachment (396); <i>e</i> , body sherd with vertical clay band with thumb impressions (497); <i>f</i> , body of bottle or <i>gourde</i> (432); <i>g</i> , jar body (714). (Drawings by the author, some after originals by Matthew Palus)	124
8.36 Rim fragment of Puisaye- Haut Berry stoneware jar (543). (NPS photograph)	124
8.37 Shoulder of Puisaye and Haut-Berry stoneware showing <i>laitier</i> glaze (590). (NPS photograph)	124
8.38 Distribution of Loire stoneware at the Saint Croix Island <i>habitation</i> .	125
8.39 Stoneware of unknown origin: <i>a</i> , lower body (1083); <i>b</i> , base (2285). (Drawing by the author after original by Matthew Palus)	125
8.40 Stoneware of unknown origin (1083). (NPS photograph)	125
8.41 American stoneware Albany-slipped bottle fragments: <i>a</i> , neck and handle (unknown provenience); <i>b</i> , base (test pit V). (Drawing by the author after originals by Matthew Palus)	126
8.42 Earthenware found at Saint Croix Island: <i>a</i> , small red earthenware pot rim with interior green lead-glaze (597); <i>b</i> , cooking pot or <i>coquemar</i> with green lead-glazed interior (151); <i>c</i> , unidentified pot rim with interior green lead glaze (308); <i>d</i> , unidentified pot rim with interior green lead glaze (1241); <i>e</i> , lower body of light red earthenware jar (possible <i>tinaja</i> or <i>anfora</i>) with apple-green interior lead glaze (902); <i>f</i> , buff earthenware rim of pot with appliqué (Temple 20-791-69); <i>g</i> , lead-glazed buff earthenware rim (882); <i>h</i> , unglazed buff earthenware rim, possibly of a <i>marmite</i> or cooking pot (505); <i>i</i> , unglazed buff earthenware body sherd showing evidence of painting (397). (Drawings by the author)	126
8.43 Photograph of Saint Croix Island earthenwares taken by Cotter in 1969: <i>a</i> , "20-72-69 ... with partial green glaze over appliqué;" <i>b</i> , "20-35-69 ... possible crucible;" <i>c</i> , "20-36-69 and 20-31-69 Tan earthenware fragment of presumed vessel handle with hole at the end. In two pieces. Made in 2 longitudinal pieces and matched. Unglazed;" <i>d</i> , "20-191-69 Tan earthenware rim with appliqué fillet [?] unglazed;"	

<i>e</i> , “St. Croix 1969 (not numbered). Buff earthenware, interior green glaze;” <i>f</i> , “20-760-69 Red earthenware, well-fired, unglazed, expanded, flattened rim;” <i>g</i> , “20-343-69 Tan earthenware rim sherd, unglazed.” (NPS photograph)	127
8.44 Photograph of Saint Croix Island earthenwares taken by John L. Cotter in 1969 (shows, with exception of <i>g</i> and <i>e</i> , the reverse sides of sherds in Figure 9.43). (NPS photograph)	127
8.45 Reconstructed green lead-glazed earthenware cooking pot (<i>coquemar</i>) from <i>habitation</i> (151). (NPS photograph)	128
8.46 Interior lead-glazed buff earthenware rim of possible cup (1241). (NPS photograph)	128
8.47 Interior lead-glazed buff earthenware rim (882). (NPS photograph)	128
8.48 Distribution of green lead-glazed earthenwares found at the Saint Croix Island <i>habitation</i> .	129
8.49 Body sherd of unglazed painted buff earthenware (397). (NPS photograph)	129
8.50 Buff and red unglazed earthenware from the <i>habitation</i> : <i>a</i> , shoulder of unidentified red earthenware jar (443); <i>b</i> , possible Iberian jar body sherd (1055); <i>c</i> , lower body and base of high-fired red earthenware jar (443); <i>d</i> , lower body sherd of high-fired red earthenware jar (440); <i>e</i> , body of unglazed red earthenware, possibly Iberian (439); <i>f</i> , unglazed high-fired red earthenware body sherd (444). (Drawings by the author)	130
8.51 Possible body fragment of Iberian olive jar (<i>botija</i>) (1055). (NPS photograph)	130
8.52 Distribution of buff earthenware at the <i>habitation</i> .	131
8.53 Body sherd of green lead-glazed red earthenware (902). (NPS photograph)	131
8.54 Sherd of thin-bodied unglazed red earthenware (1076). (NPS photograph and drawing)	132
8.55 Distribution of red earthenware at the <i>habitation</i> .	132
9.1 Examples of later glass. <i>a</i> , (1571), early-mid nineteenth-century base, unprovenienced. <i>b</i> , (2296), early nineteenth century, French green glass, Gruber Test pit Q.	138
9.2 Range of indicative glass colors based on high-resolution scans. <i>a</i> , tinted/decayed; <i>b</i> , green/olive green; <i>c</i> , blue-green flask; <i>d-e</i> , blue-green case bottles.	142
9.3 Case bottle Type A: rim fragment (29).	143
9.4 Site distribution of glass vessels using EVE.	144
9.5 Case bottle Type C: diagnostic fragments from <i>a</i> , Saint Croix Island, (1220); <i>b</i> , Cap Tourmente, Québec, 85GD33-8Q.9Q; <i>c</i> , Québec <i>habitation</i> , 151QUII BB*8-821,830. NB bases and necks unrelated.	144
9.6 Examples of striations in blown vessel necks. Clockwise from top left: (525), (1250), (986), (671).	146
9.7 Green glass flask type, proposed reconstruction. Composite drawing based on <i>a</i> , (1250); <i>b</i> , Rouen R.E.P. 93 8706; <i>c</i> , Barrera 1989, Fig. 4.104 ; <i>d</i> , (1250).	146
9.8 Blue-green flask type, proposed reconstruction. Composite drawing based on <i>a</i> , (650); <i>b</i> , Rouen R.E.P. 93 9134.64.	147
9.9 Blue-green flask fragments, Cap Tourmente, Québec. From context 85G15A68.	147
9.10 Blue-green flask neck fragments (594/5).	148
9.11 Pinched fragment from group (1217), showing worked detail.	149
9.12 Site distribution of window glass.	149
9.13 Geometric window quarrels, from <i>a</i> , Pons, Chateau 2005 excavations, US2046 5/11, nos 65295-6; <i>b</i> , Cabart and Kuchler 2000, Épinal, US 7069. Photo <i>c</i> , (1186) showing grozing on edges.	150
9.14 Possible crown glass fragment with scoring (918). Not to scale.	150
10.1 Types of beads found at Saint Croix Island: <i>a</i> , type IIIb* (152); <i>b</i> , type Ia5 (153); <i>c</i> , type IIa40 (159); <i>d</i> , type IIa15 (191); <i>e</i> , type IVa16? (692). (Photographs courtesy Frank Ruggles, NPS)	158
10.2 Distribution of beads at the <i>habitation</i> .	160
11.1 Archaeological loci 1, 2, and 3 at the <i>habitation</i> .	179
12.1 Dr. Molly H. Crist excavates Burial 10 at Saint Croix Island on June 13, 2003. (All photographs courtesy of the authors unless otherwise indicated)	185
12.2 Photograph of Burials 17, 18, 8, and 19 (from left to right) taken during Temple University’s excavations in 1969.(Courtesy of NPS)	187
12.3 Commingled molars from Burials 13 and 14, occlusal aspect.	196
12.4 Posterior view of occipital from Burial 21 presenting large epiteric (“Inca”) bone at lambda (arrow).	196
12.5 Anterior aspect of maxillae and teeth from Burial 21. Note linear enamel hypoplasias located on buccal surfaces of central incisors (arrow).	197
12.6 Coronal computerized tomographic (CT) image of palate from Burial 4 presenting palatine torus with quantified height and breadth.	199
12.7 Palate from Burial 17, occlusal aspect.	201

12.8	Superior aspect of palate from Burial 10 presenting fistulae in floor of left maxillary sinus (arrows).	201
12.9	Left lateral aspect of sphenoid from Burial 2 presenting porosity at attachment of the left lateral pterygoid muscle (arrow).	202
12.10	Posterior aspect of left pterygoid fossa from Burial 8. Note porosity within fossa (arrow).	202
12.11	Inferior aspect of second cervical vertebra from Burial 21. Note lesions within transverse foramina (arrows).	204
12.12	Second cervical vertebra from Burial 11, left superior oblique aspect. Note lytic lesion located infero-posterior to left superior articular surface (arrow).	204
12.13	Inferior ectocranial aspect of occipital from Burial 8. Note hypertrophic mass located at basilar suture (arrow).	205
12.14	Inferior endocranial aspect of occipital from Burial 8. Note lytic lesion located at right jugular foramen (arrow).	205
12.15	Superior aspect of first cervical vertebra from Burial 10 presenting bilateral porosity of anterior portions of superior articular surfaces (arrows).	205
12.16	Inferior ectocranial view of cranial base from Burial 10. Note bilateral porosity of occipital condyles (arrows).	205
12.17	Anterior aspect of distal tibiae from Burial 11 presenting healed reactive bone indicative of subperiosteal hemorrhages (arrows).	206
12.18	Distal articular surfaces of tibiae from Burial 1. Note discoloration and porosity probably associated with inter-articular hemorrhages.	206
12.19	Cross-sectional computerized tomographic (CT) image of posterior right femur from Burial 10. Note linear intra-cortical lacuna representing sequelae of subperiosteal hemorrhages (arrow).	207
12.20	Transverse computerized tomographic (CT) image of right tibia from Burial 5. Note thickened cortical bone (arrow) and intra-cortical loss of density.	207
12.21	Anterior aspect of distal tibiae from Burial 5 presenting extensive swelling and gummatous remodeling resulting from osteomyelitis.	208
12.22	Lateral aspect of right tibia from Burial 5. Note widespread remodeling and cloacal opening at mid-shaft (arrow).	209
12.23	Occlusal aspect of palate from Burial 9 presenting probable evidence of antemortem oral surgery.	210
12.24	Occlusal aspect of palate from Burial 10. Note probable incision line indicative of antemortem oral surgery (arrows).	211
12.25	Occlusal view of palate from Burial 22 presenting probable evidence of antemortem oral surgery.	211
12.26	Left lateral aspect of cranium from Burial 10 presenting transverse autopsy cut.	212
12.27	Photograph of Burial 10 taken during Temple University's excavations in 1969. Note autopsied cranial fragment located <i>in situ</i> at center of Burial 10's head (arrow).	213
12.28	Posterior aspect of cranium from Burial 10. Note perimortem cut marks indicating use of fine blade to remove scalp (arrows) and thicker blade used for cutting the bone (thicker arrow).	213
13.1	2004 commemoration. (Courtesy of Doug Jones)	226
13.2	Bronze statues along interpretive trail. (Courtesy of NPS)	227
13.3	Replica of settlement. (Courtesy of NPS)	228
13.4	Basket-weaving demonstration. (Courtesy of NPS)	229
13.5	Junior Ranger patch. (Courtesy of NPS)	229
13.6	Passamaquoddy Kit contents. (Courtesy of NPS)	230

Foreword

Saint Croix, Island of Discovery

It is a very small island, barely 300 yards long and 100 yards wide, and has been growing smaller through the centuries. This tiny piece of terra firma sits in the middle of the St. Croix River, the international boundary between the state of Maine and the province of New Brunswick. For many years the island has been uninhabited. It is difficult of access, and remote from major centers of population in Canada and the United States.

And yet, even as the island is small and slowly shrinking, interest in it is large and rapidly increasing – never more so than in our own time. In the early twenty-first century Saint Croix Island has received much sustained attention – more perhaps than any small uninhabited place of comparable size in North America. The book that you have before you is a leading example.

Much history has happened on Saint Croix. And because this place is now uninhabited, and carefully protected by the United States National Park Service and Parks Canada, the physical remains of many centuries are unusually accessible in the ground. The island has become a laboratory for a dozen learned disciplines. Many questions can be studied here. In that great diversity of opportunity, we also find a unity in what has happened here.

Since the early seventeenth century, Saint Croix Island has been important as an island of discovery. That was the purpose of seventy-nine men who planted a French settlement in the summer of 1604. This not a colony of the usual kind. There were no women, no families, and no possibility of natural increase.

This settlement was something else--an outpost of empire and a base for discovery. Its mission was to learn about the new world. Saint Croix Island itself taught them hard lessons, at a terrible price. The French founders were unfortunate in their choice of a site, and unlucky in their timing. The winter of 1604-05 was one of the worst in a long era that climate historians call the Little Ice Age. Saint Croix was surrounded by a dense barrier of broken ice, and the settlers suffered cruelly. By the spring, 35 or 36 of them were dead, mostly from scurvy, and many more were severely ill. Of the original 79 settlers, only eleven remained in good health.

The survivors were quick to learn from that experience. They abandoned Saint Croix Island, but continued their mission in Acadia and Québec, where they planted other settlements. Slowly they established a permanent presence of France in North America. That success grew from hard lessons of failure that were painfully learned on Saint Croix Island.

Another process of discovery also happened at Saint Croix Island in 1604, when the new French settlement was under construction. Its leader, the sieur de Mons, asked his young lieutenant Samuel Champlain to lead a mission of exploration and discovery to a place they called Norembega. We know it as the coast of Maine.

De Mons and Champlain were part of an extraordinary circle who had gathered around Henri IV, the first Bourbon king of France and one of the great figures in early modern history. They had come of age in a cruel period when their country suffered through eight civil wars, which were also wars of religion with many atrocities and heavy loss of life. Henri IV and his men sought to end that strife. In 1598, they succeeded in bringing tolerance to France, peace to Europe, and comparative calm to the North Atlantic. Then they turned their attention to the founding of New France in America.

These French leaders around Henri IV were humanists of a new breed, different from the classical humanism of the Italian Renaissance. The sieur de Mons and Champlain were consumed with curiosity about the world and its inhabitants, and driven by a passion for discovery. More than that, their struggle against intolerance in France persuaded them that all people shared a common humanity, and could learn to live in peace with one another. They spoke not only about humanity itself, but also about treating others humanely, *humainement*, a French

adverb that began to spread in their time, as we ourselves can discover in the new empirical evidence of Google n-grams.

This ideal inspired a dream of New France that would be very different from New Spain and other European colonies. The great question was how to make that dream a reality. That was the mission on which Champlain embarked at Saint Croix Island, in a small vessel called a *patache*, which was specially designed for discovery. He sailed south from the St. Croix River along the coast of Maine. Primarily he sought to establish good relations with American Indians.

Champlain approached the Indians without fear or force or guile, usually with an interpreter, and he was welcomed. They found ways to talk. Altogether, Champlain himself would form lasting alliances with more than 50 Indian nations -In 1604 this great effort centered on Saint Croix Island. Even after that settlement failed, the results of this process long endured.

From the eighteenth century to our own time, Saint Croix Island has attracted other missions of exploration and discovery by scientists and scholars. Today yet another generation is very active on projects are reported in this extraordinary volume. It represents a major work of collaborative scholarship, led by Steven Pendery, an archaeologist of high distinction. He has brought together the research of 17 scholars and scientists, who in turn combine their work with the inquiries of many others.

They also are heirs to the great intellectual traditions of humanism. Scholars and scientists in our time share much in common with Champlain, de Mons and Henri IV – the same insatiable curiosity about the world, the same passion for learning, and the same delight in discovery. They too have inherited the humanist idea that all people of the world share a common humanity. Today, Saint Croix Island and its rich remains have become a laboratory for research and discovery in many disciplines. Among the work reported in this volume are studies in geology, climatology, ecology, ethnography, demography, osteology, nutrition, anthropology, architecture, and material culture and many fields of history.

The results of this research have opened the way for other discoveries on Saint Croix Island. As this book is published, Steven Pendery is planning a complete laser scan survey of Saint Croix Island, which in his words is "a relatively recent development in technology that is truly miraculous."

This new work in turn invites you, the reader, to launch your own inquiries. In the spirit of Champlain and the sieur de Mons, and now of Steven Pendery and his colleagues, Saint Croix Island continues to offer fresh opportunities to study large questions in a small place, and to apply new methods of inquiry to old materials. In the future as in the past, Saint Croix will continue to be an island of discovery. It is for you to make it so.

David Hackett Fischer
Mount Desert Island, Maine
October, 2011

Preface

To many Americans, Acadians or ‘Cajuns’ are practitioners of cherished regional traditions in cooking and music. To others, they represent a tradition of resilience and survival in face of recent natural and man-made environmental disasters impacting their Louisiana homeland. Far fewer Americans are aware that in the mid-eighteenth century, Acadians were rounded up by the British and deported from their original homeland of Acadia in what is now northern Maine and the Canadian maritime provinces of New Brunswick, Nova Scotia, and Prince Edward Island. Most Americans are ignorant of the fact that three years before colonial Jamestown was founded, a group of about 120 Frenchmen initiated the settlement of Acadia based on a fatal decision to occupy a six-acre island within the State of Maine now designated the Saint Croix Island International Historic Site.

The purpose of this edited volume is to share information with the public about the history and archaeology of this remarkable island. Individual authors link the island’s rich documentation and material culture with broader themes including colonization and culture contact. The contributors draw from numerous and far-ranging sources that are generally inaccessible to the public including geological data, Passamaquoddy tribal history, archaeological data and site reports, forensic data, documentation from French, Canadian, and American archives and National Park Service management studies. Few of the images of artifacts have been published before.

As volume editor, I thank the contributors including Harold Borns, Jr., David Sanger, Eric Thierry, Donald Soctomah, Eric Johnson, Giovanna Vitelli, James W. Bradley, Stéphane Noël, Arthur Spiess, Thomas Crist, Molly Crist, Marcella Sorg, Robert Larocque, John M. Benson, Virginia A. Reams, Margaret Scheid, Deborah R. Wade and Joyce S. Pendery. Notes on these contributors are found immediately after Chapter 13. Professor David H. Fischer’s interest in Saint Croix Island archaeology has inspired several of us. Gary Dunham served as copy editor for several chapters, and Pauline Matarasso translated Chapter 2. Simon Pressey’s excellent illustrations of metal artifacts are represented in Chapter 7. Many of the ceramics illustrations in Chapter 8 are based on originals by Matthew Palus. Other acknowledgments follow each chapter.

Special thanks are due to the staff of Acadia National Park including Superintendent Sheridan Steele, Deputy Superintendent Len Bobinchock, Chief of Resource Management David Manski and Cultural Resources Manager Rebecca Cole-Will and Museum Technician Bret Achorn. The assistance of former Acadia National Park staff Lee Terzis, Brooke Childrey and John McDade is gratefully acknowledged.

Thanks are extended to State of Maine Senior Archaeologist Arthur Spiess, who is Series Editor for Maine’s Occasional Publications in Maine Archaeology, and to the Maine Archaeological Society. Last, but not least, I thank Elisa and Lily for their enthusiastic support for this project over the past decade both at home and in the field.

SRP
May, 2011