

Castle Chronicle



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URI Scientists Study Cocumscussoc Brook

James McKenna, PhD

If you visited the Castle last summer you may have seen me on a number of occasions. I was the one dressed in hip waders, burdened with various poles, meters, nets, and other water sampling gear, walking across the Castle lawn and over to Cocumscussoc Brook. I was part of a team from URI's Graduate School of Oceanography that spent last summer studying the water quality of Cocumscussoc Brook and four other coastal streams in Rhode Island. I have to admit, it's a pretty good summer job—working outside, splashing around in the water, visiting various streams around the state. While it is a fun job, it is also an important one that I hope will advance our understanding of the ecological threats to our nation's coastal waters.

We were fortunate to find Cocumscussoc. This is a wonderful little brook that has been well protected from encroaching human development. The watershed for Cocumscussoc extends roughly from Stony Lane to the north, Route 1 to the east, Ten Rod Road to the south, and Old Baptist Road to the west. Most of this area is undeveloped with a good portion of it occupied by Cocumscussoc State Park. While the brook may not be as pristine as Richard Smith first found it, by today's standards it is actually a very healthy stream with relatively minimal human impacts. It was a great resource for us and served as the important reference we needed to tell us how a "healthy, unaltered" waterway should look.

Our work was part of *Coastal 2000*, a larger U.S. Environmental Protection Agency sponsored



Photo: Bill Carey

project. The project is measuring the current ecological condition of the nation's coastal water resources and establishing reference conditions for monitoring future ecological change. We had two goals in our work, which focused on the

transition of freshwater streams to saltwater environments. First was simply to measure objectively these streams' ecological status. Our second goal was to develop a set of ecological indicators (physical, chemical, and biological parameters and

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E-mail: smithscastle@earthlink.net
Web site: www.smithscastle.org

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The viewpoints expressed by contributors to *Castle Chronicle* are not necessarily those of the Cocumscussoc Association.

Note from the President

I thoroughly enjoy, as do all of you, the volunteer time I give to Smith's Castle. My term as president has been especially rewarding. Recently, I was offered an extremely attractive and challenging employment opportunity that I have decided to accept. Regrettably, it will affect my time commitment to Smith's Castle.

The new position is in Massachusetts, about a 90-minute commute (one-way, non-rush) from North Kingstown. During the first several months of the job, I expect to work substantial overtime. Therefore, it will be necessary to live in Massachusetts during the week and return home to Rhode Island for the weekend.

This arrangement will preclude my participating in weekday Castle meetings and events, including the important executive committee meetings and managerial sessions with Barbara Carey, resident director, and Chris Kalina, vice president. After consulting with Barbara and Chris, I have decided to take a leave of absence. Ideally, after a three- or four-month period, my work situation will

become more flexible, and I will be able to resume my duties as president. The Castle's executive committee voted on May 13 to accept this arrangement.

Of course, I will be leaving the Castle in very capable hands. Chris Kalina has graciously agreed to serve as acting president during my absence. I am extremely grateful to her, since these additional duties will further strain her already substantial volunteer commitment. Barbara Carey, too, will be increasing her efforts as she and Chris take on a work load previously divided among the three of us. I urge all of you to do whatever you can to help Chris and Barbara during this period, I know they will be grateful.

I am sure you all can appreciate that this has been a difficult decision for me. Hopefully, the next few months will pass quickly and I will return to my duties in the fall. Of course, I will remain in touch, and look forward to seeing you at this summer's (weekend) Castle events.

Neil
—Neil Dunay

I am certain we all wish Neil great success in this new position and of course hope that come late fall his schedule will allow him to return to the presidency. His leadership has guided the Association to new heights; the impressive exhibit installation to greet our visitors and the award winning companion catalogue are but two examples of his exemplary contributions.

In an all-volunteer organization change is inevitable. New job opportunities, changing family obligations, cross country moves all result in the loss of valuable volunteers. All these situations also bring us the gifts of new volunteers as well. We are so thankful for the dedicated individuals who freely donate their talents, skills, and time to Smith's

Castle and the Cocumscussoc Association. They are the heart and soul of this organization. We thank everyone who has contributed to our growth and achievements. Our membership might be interested to hear how often visitors express surprise to learn that Smith's Castle is a volunteer organization. Our reputation for excellent training and interpretation continues to grow because of our wonderful volunteers. We thank each and every volunteer who has come, has stayed, or has moved on. Each one of you is part of the history of the Cocumscussoc Association.

Chris
—Christine Kalina

Carved in Wood. A wood block replica of Smith's Castle is for sale in the Castle gift shop and at the Wood Loft, 7706 Post Road, North Kingstown. The price is \$18.95.

The block was produced by the Cat's Meow. Thanks to Penny Matthews at the Wood Loft for making Smith's Castle part of this popular series of local landmarks. ▶

Welcome New Members

Ms. Florence Gaylin, Mr. & Mrs. Phil Paquette,
and Mr. & Mrs. Bruce A. Renner

—as of 5/15/04



Note to the Editor

Imagine my surprise when I read in the spring issue of the *Castle Chronicle* the headline, "Looking for Mary Talbot Pitman." Considering that Mary Talbot was born in 1787, we all know where she is, so I wasn't quite sure why we should still be looking for her. I was particularly intrigued because I know Mary Talbot Pitman. She is my great, great, great grandmother.

For many years, my father, William Talbot Richmond, kept Mary's quilt in our winter home on Long Island, New York. I remember one year he decided to take the quilt to the Metropolitan Museum of Art in New York City to offer it to them. Wanting to be sure the quilt was to have a good home, my father asked where it would be exhibited. The answer he received caused him to bring the quilt back to its native Rhode Island.

The curator had explained that, although the quilt was an extremely fine specimen, there was no place for it to be displayed, and that it would be stored in their attic until space became available. My father was not at all pleased with that answer and thought he could just as easily store it in his own attic. Since my father was a native of Wickford and a summer resident there all his life, he brought it to Wickford the following summer and offered it to the newly-opened Smith's Castle, which, as it turned out, was a much more appropriate resting place for Mary's quilt.

Although Mary and her husband, Judge John Pitman, resided in Providence, the Judge purchased property in North Kingstown overlooking Duck Cove for a country hideaway for himself and his family. He, along with some of the other gentlemen of the area, were instrumental in having the Hamilton [Hussey] Bridge built to ease their travel.

—Natalie Richmond Hamlin



The house in which the Pitmans lived at Duck Cove remains, albeit in an enlarged and modernized condition. Photo courtesy of Natalie Richmond Hamlin.

Garden Club Donates \$500



Thanks to the Plum Beach Garden Club, Smith's Castle has \$500 to spruce up its grounds and historic gardens. At a check presentation on April 13 were (l-r) Jules Cohen, chairman of the grounds committee and a URI Master Gardener, Neil Dunay, president of the Cocumscussoc Association, and Betty Sue Reed, president of the garden club. Photo: George E. Trafford

Trustees' Action

Collections to Benefit from 2004 Fund Drive

At its April 26 meeting, the board of trustees approved a recommendation that funds generated by the 2004 annual appeal benefit Smith Castle's collections. Several projects are under consideration, including improving storage facilities and upgrading environmental controls for artifacts and archives, improving access to the collections, and restoring and appropriately exhibiting textile objects. ■

Smith's Castle Receives \$5000 Grant

Pamela Tesler Howitt, philanthropic services advisor for the Rhode Island Foundation, has notified the Cocumscussoc Association that the Foundation's board of directors has approved a grant of \$5,000 to Smith's Castle. The grant, from one of the Foundation's anonymous funds, is nonrestrictive and can be applied to any aspect of Castle operations. Smith's Castle is indeed grateful to be the recipient of such generous support. ■

Castle Awarded Conservation Assessment Program Grant

The Cocumscussoc Association is proud to announce that Smith's Castle has just been awarded a Collections Assessment Program (CAP) grant of \$7,890.

Administered by Heritage Preservation and funded by the National Museum Services Board of the Institute of Museum and Library Services (IMLS), the CAP provides grants for general conservation surveys for museums with small- to medium-size collections. Conservation priorities are identified by professional conservators who spend two days on site and three days writing a report. The reports help museums develop strategies for improved collections care and provide a tool for long-range planning and fund-raising.

The CAP has three components: First, the Castle will undertake a

self-study of collections policies. The collections committee, chaired by Linda Eppich, and the buildings committee, chaired by John Weaver, will be most involved in this process.

Next, two professionals—a collections specialist and a preservation architect—will conduct a visit to our site. The Castle has engaged the services of two consultants with distinguished resumes: Alexandra Allardt O'Donnell, principal and managing director of ArtCare Resources of Newport, and preservation consultant Sara B. Chase, of Lexington, Massachusetts. The site visit is scheduled for September 10 and 11.

In the last phase, the Castle will assimilate findings from the self-study and the expert recommendations into a final analysis of the

Castle's collections and develop an action plan. To implement the plan, the Association's board of trustees has directed that donations from the 2004 annual fund drive be used to support collections conservation.

The Castle already has a head start on the CAP process. In 2001, the Castle completed the Museum Assessment Program (MAP), also funded by the IMLS, which included an analysis of collections policies, and, in 2002–2003, we identified collections priorities as part of the Association's strategic plan.

Ensuring the preservation of our collections is a first step. The CAP process will position the Castle to seek other grants to help organize our collections and furnish our rooms more appropriately to the periods they are intended to represent. ■

Exhibition Catalog Garners NEMA Publication Design Award

Smith's Castle at Cocumscussoc: Four Hundred Years of Rhode Island History has been awarded third place in the "Illustrated Catalogues, under \$10" category of the New England Museum Association's (NEMA) 2004 publication design competition. It is a joint award shared with Harvard University Art Museums.

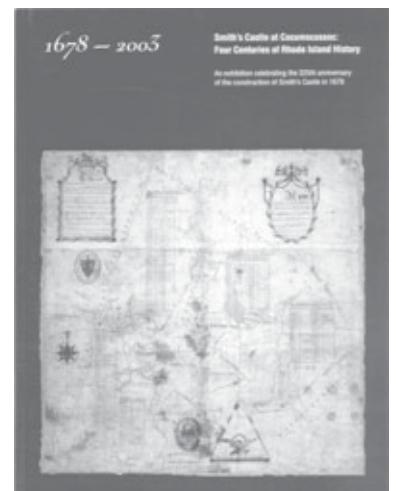
The catalog was prepared to accompany the permanent exhibition that opened last year in celebration of the 325th anniversary of the construction of Smith's Castle by Richard Smith Jr. in 1678. It was written and edited by Neil Dunay, Norma LaSalle, and Darrell McIntire—who was also the designer—and was printed by Merid-

ian Printing of East Greenwich.

Winning entries will be announced in the summer issue of *NemaNews*, and will be exhibited at the organization's annual conference in Burlington, Vermont, October 27–29, 2004.

This marks the second time in recent years that Smith's Castle has been recognized by NEMA for design excellence. In 2002, the Castle visitor orientation brochure and the 18th century garden brochure—also designed by McIntire—won third place in the "Rack Cards and Promotional Brochures" category.

The catalog is for sale in the gift shop or by phone, 294-3521. Price is \$9 for members and \$10 for nonmembers. ■



The 40-page exhibition catalog, *Smith's Castle at Cocumscussoc, Four Hundred Years of Rhode Island History*, placed third in the recent NEMA competition.

Smith's Castle Welcomes Ayrshire Breeders

The Rhode Island Ayrshire Club will host the 2004 National Ayrshire Breed Convention and Sale June 15 through 19 at the Holiday Inn in South Kingstown. The sale of animals will be held at the Washington County Fairgrounds in Richmond. One of the highlights for the attendees will be a visit to Smith's Castle, once the home of the famous Cocumcussoc Farm, on Wednesday, June 16 at 1:00 p.m.

Ayrshires played a significant role in the 20th century history of Smith's Castle. In 1921, after inheriting the Babbitt farm, as Smith's Castle was then known, Austin G. Fox and his wife Alice Hoppin Babbitt Fox invested in a herd of purebred Ayrshire cattle imported from Scotland. They registered their herd

as Cocumcussoc* Ayrshires. The average milk production per cow was the highest in New England and the third highest in the entire nation. Their champion milker, *Cocumcussoc Jean Star*, was regularly delivering a record-breaking 60 pounds of milk each day. The Foxes kept their herd at about 145 head and, as its fame spread across the region, sold their excess cattle for a tidy profit.

The Foxes were members of the Rhode Island Ayrshire Breeders' Association and, between 1926 and 1935, the Summer Field Day at Cocumcussoc was a highlight of the Association's calendar. Visitors came from all over New England to see the prize animals, including the great herd sire, *Cocumcussoc Sunset Star*.



The Ideal Ayrshire cow. Drawing by Bonnie Mohr, 1990, courtesy of the Ayrshire Breeders Association.

After Fox's death in 1937, the herd was auctioned in 1939 and dispersed throughout New England. Descendants of the Foxes' herd are found in dairy herds throughout the country today. ■

*The Foxes' spelled Cocumcussoc without the s in the middle.



Another bit of Cocumcussoc Dairy ephemera came home recently when this milk bottle cap was purchased via the Internet.

Sunshine and Silhouettes Mark Castle's Opening Day

Brilliant blue skies and lots of sunshine greeted Smith's Castle's opening day on May 1, hopefully setting a tone for the rest of the Castle's outdoor events in 2004. As in recent years, opening day admission was free to the public with a donation of food for the North Kingstown Food Pantry. The Castle received several cartons of food and \$56 in cash donations for the food pantry.

As always, volunteers made it happen. Fifty-three Castle volunteers either worked that day or helped in preparations for the event. More than 200 visitors strolled the grounds, learned



Christine Kalina, vice-president of the Cocumcussoc Association, was one of many whose silhouette was cut by Deborah O'Connor on opening day, May 1.

about colonial activities, danced around the May pole to the tunes of Updyke's Rose, and toured the Castle.

A new attraction this year was Deborah O'Connor's Silhouettes. O'Connor has been creating silhouette portraits for more than three decades. Cutting entirely freehand from black paper, Ms. O'Connor produces detailed miniature profile silhouette portraits in just a few minutes. The silhouettes were especially popular as Mother's Day gifts. Net proceeds to the Castle were \$400.

Many thanks to all those who helped. ■

Sheep to Shawl, Flax to Frock

Mary Nunes

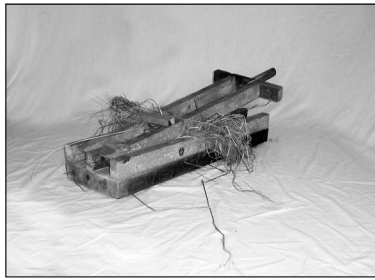
The North Chamber of Smith's Castle is a treasure trove of texture, color, and craftsmanship. We use this space to display the fibers and tools used in the production of cloth throughout the 17th and 18th centuries. This is an appropriate use of the space based on the *Inventory of the Estate of Major Richard Smith*, May 1692, which lists "In ye Leanto Chamber about 40 of Sheeps Woole and Lumber," referring to fleece shorn from the flock and lumber meaning assorted other items. The Leanto Chamber became the North Chamber as rooms on the north side of the house were added in the c. 1738 remodeling by Daniel Udike.

The Narragansett country was well suited to the raising of sheep (for wool and meat) and the cultivation of flax (for linen textiles). The colony of Rhode Island was a leader in sheep raising. Wool was used for local homespun and was exported to Europe and

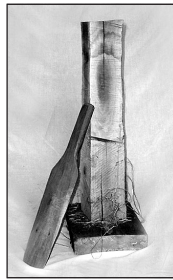
out to dry. From there, the brittle plants are passed through a flax break which begins to break up the outer covering. Then the flax is held over a scutching board and beaten with a scutching sword that removes more of the outer stem. Finally it is passed through hatchels, a series of closely set metal spikes, until the fine, soft fibers used in quality linen fabric appear. We have a **flax break** (fig. 1) and a **scutching board and sword** (fig. 2) in our collection.

A good sheep shearer removes the entire fleece of the sheep in one piece. We have **cards** (fig. 3) that comb out the fleece in small sections, align the fibers, and help clean out some of the vegetable matter. We also have a pair of early **combs** (fig. 4). These are tools used for the same purpose as the cards but for larger-scale production.

Our collection of spinning wheels contains both wool and flax wheels. The great wheel or **walking**



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the West Indies. The home production of woollen and linen textiles continued year round. Lambing and shearing took place in the spring, as did the planting of flax. The growing season for flax went to late summer or fall, and this was also the time to wash, dry, and card the wool fleece. The summer and fall months provided an abundance of plant material for dyeing these fibers. Spinning the fibers into yarn and weaving the yarn into cloth were done year round, but the winter months, when agricultural endeavors slowed, provided more time for these chores.

After flax is harvested by pulling it up out of the ground, numerous steps are required to produce linen. The fibers are inside the plant stem and the first step to obtain them is called retting. Bundles of flax plants are put into gently moving water for a week or so until the outer coating begins to rot. The bundles are harvested from the water source and laid

wheel (fig. 5) is for spinning wool. It requires the spinner to stand and turn the wheel manually with one hand and regulate the fibers being spun off the tip of the spindle with the other. The wheel gets its name from the back and forth walking that takes place as the spun wool yarn grows in length and the spinner walks back and then forward to wind the yarn onto the spindle, turning the wheel in the opposite direction.

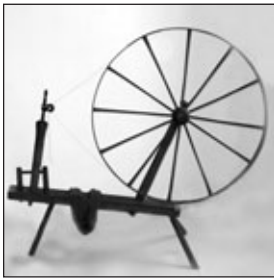
The treadle wheel is an improvement upon the walking wheel. It allows the spinner to sit and rotate the wheel with foot power while regulating the fiber by hand. The twist is then imparted to the fiber by the rotation of the flyer and is simultaneously wrapped onto the bobbin. We can thank Leonardo da Vinci for first designing the flyer and bobbin mechanism. In 1530, Johann Jurgen modified Leonardo's design by adding small hooks onto the flyer so that the spinner could regulate the even filling of the bobbin.

Another wool wheel in the collection is the very unusual **double flyer** (fig. 6). Although the original intent of this wheel was to enable one spinner to produce twice as much yarn, our wheel allows two people to sit and spin at the same wheel. A 1681 English pamphlet written by John Firmin entitled *Some Proposals for the Employment of the Poor* suggests that children be taught on wheels with single flyers until they became proficient and could be taught to spin with one hand for each flyer. As any spinner will tell you, regulating the wool or flax fiber with two hands is tricky work, so it is not surprising that the double flyer wheel has been used by two spinners, rather than one, and called such lovely names as the lover's wheel, the mother-daughter wheel, and the gossip wheel.

The flax wheels in our collection are examples of the **Saxony wheel** (fig. 7) with the flyer set up ahead of, and a little higher than, the axle of the wheel, thus

a 76-inch length of yarn, and the clock reel has a four-armed winder attached to a stool-like base that also measures a 76-inch length. The clock reel has a 40-notch gear and a peg that clicks or pops as it passes through the ending gate. Forty continuously wrapped strands of 76-inch-long yarn equalled one hank or knot. Seven knots made a skein of wool. A skein of linen was 20 knots.

The craftsmanship needed to process the raw materials of the plantation into finished products is indeed impressive. When we set our table with a linen cloth, make up our beds with sheets and pillow cases, wrap ourselves in a warm wool blanket, pull up our socks, button up a work shirt, or diaper a baby, we forget the technology that gave us these textiles. Come back to the North Chamber for a visit and let our collection remind you of the enterprising activities that the colonists practiced year round. ■



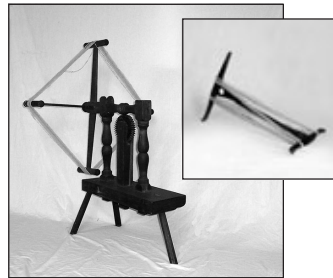
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necessitating the recognizable diagonal base for the stand of the wheel. The diameters of the bobbin and the spindle pulleys are smaller than on a wool wheel, meaning the mechanism turns slightly faster, creating a more tightly spun yarn. Also, flax requires the spinner to keep his fingers moist and to run the moisture along the fibers as they are spun. This creates a fine, smooth, extremely strong yarn. Wool, on the other hand, requires less twisting so the yarn maintains the soft loft for which it is known. The naturally occurring lanolin in the fiber keeps the yarn supple.

Tools for measuring the spun yarn were important for standardizing the size of a skein. A weaver needed to know the yardage available in each skein so that the correct amount of yarn could be supplied for a project. Our collection contains a number of these devices, including a **clock reel** (fig. 8) and a **niddy-noddy** (fig. 8, inset). The niddy-noddy is a hand held, double T-shaped tool that measures

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Mary Nunes is a docent at Smith's Castle and has a degree in textiles, clothing, and arts from the University of Rhode Island. She has been spinning, weaving, and dyeing for more than 25 years.

Cocumscussoc Brook (from page 1)

Cocumscussoc was the only stream of the five studied that supported a sensitive species. In fact, it supported two: brook trout, *Salvelinus fontinalis* and red pickerel, *Esox americanus*.

monitoring methods) that could be used to compare impacts on streams subjected to variable levels of watershed development. Ultimately, we'll develop a set of sampling and analysis procedures by which we can quickly and easily compare ecological status of streams, like the Cocumscussoc, to one another and how this is changing, for better or worse, over time.

Why are we interested in Cocumscussoc Brook? As I said above, part of our objective is to compare impacts associated with different levels of watershed development. As part of our experimental design, the five coastal Rhode Island streams we studied represent a wide range of watershed development. Two of the streams, Xavier (feeds Passeonkquis Cove) and Tuscatucket (feeds Brush Neck Cove), are high impact sites. These watersheds are highly developed (commercially, residentially, or both) with the development directly abutting and altering the immediate stream environment. Two of the streams, Buckeye (feeds Old Mill Cove) and Hardig (feeds Apponaug Cove), are intermediate impact sites. There may be significant development (of either kind) in the watershed, but the immediate area adjacent to each stream is still a diverse natural ecosystem and is relatively undeveloped. Cocumscussoc was our fifth stream and acted as our refer-

ence, low impact stream. The watershed is largely undeveloped, and a natural and diverse habitat abuts the stream.

By comparing and contrasting a variety of biological, chemical, and physical parameters at each of these streams we are determining if certain parameters could act as good indicators of the degree of impact development has on the streams. Is there some parameter which varies in accordance with the amount of developmental impact in each stream's watershed? If so, could this parameter indicate stream ecological health and whether this changes over time? One of the fundamental challenges we faced in this study was finding a good low-impact reference site. Perhaps it is not too surprising to read that most of Rhode Island's coastal streams have been affected by increasing industrial, commercial, and residential development. After all, Rhode Island is the second most densely populated state in the nation. Fortunately, Cocumscussoc has been largely protected from encroaching development and provided the reference site we needed.

Over the summer, we visited each of our streams a minimum of five times and sampled three different sites at each stream spanning the transition from freshwater to saltwater. We sampled and mea-



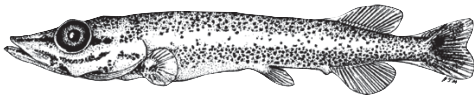
Brook Trout, *Salvelinus fontinalis*

sured a wide variety of stream ecological parameters, including the number and species of fish and invertebrates; nutrient, dissolved oxygen, and organic carbon concentrations; temperature; pH; turbidity (a measure of the amount of suspended solids in the water); streamflow; adjacent terrestrial vegetation diversity; and a variety of other parameters. In hindsight, it was an ambitious undertaking, and, as always seems to be the case with field work, much more time intensive than we had originally thought. We are still in the process of analyzing and interpreting our data and are far from finished with the study, but some preliminary findings suggest that our goal—development of a parameter to measure ecosystem health and its change—is likely.

Our first insight came from our fish data which told us that things were not as straightforward as we had thought. One of our original hypotheses was that ecologically "healthier" streams—those streams subject to lower impacts—would have greater fish species diversity. This seemed logical because in many ecological systems, envi-

Table 1: Fish diversity and abundance at freshwater and saltwater ends of five study sites

Stream	Impact Level	Freshwater End		Saltwater End	
		Number of species	Number of individuals	Number of species	Number of individuals
Cocumscussoc	low	5	59	8	1591
Hardig	medium	16	260	10	261
Buckeye	medium	9	174	6	2716
Tuscatucket	high	5	68	9	321
Xavier	high	3	75	5	874



Red Pickerel, *Esox americanus*

ronmental impact often leads to low species diversity. Under stressful conditions only the hardiest species survive. So, one thing we initially looked at was the number of fish species collected at each stream (Table 1). We were surprised to find that the intermediate impact sites showed greater fish diversity than the low impact site. In hindsight, we now believe this difference may reflect differences in stream and watershed sizes. Although we strove to choose streams of similar sizes, this was difficult to do, and both Hardig and Buckeye are significantly larger than the other three streams, including Cocumscussoc. The difference in fish diversity may reflect variation in habitat size more than development impact. For our project, the important thing to note is that fish diversity does not appear to be a good predictor for watershed development impacts.

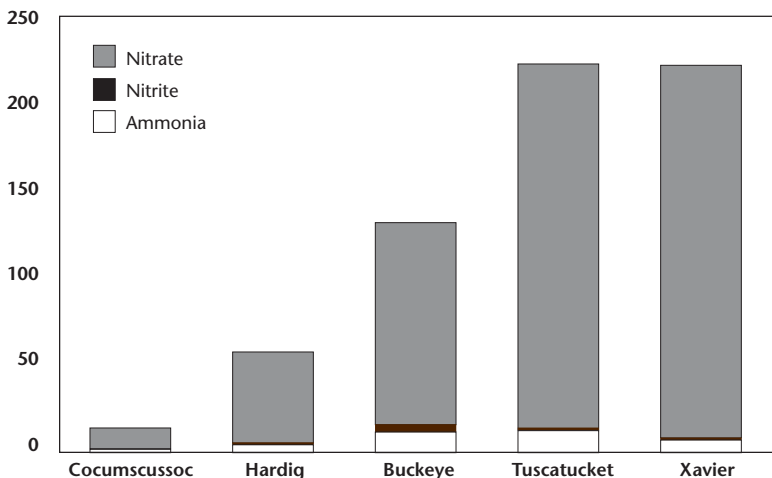
Our fish collections did provide some useful information regarding developmental impacts. A number of fish species are known to be sensitive to ecological disturbance. Cocumscussoc was the only stream of the five which supported a sensitive species, and, in fact, it supported two: brook trout (*Salvelinus fontinalis*) and red pickerel (*Esox americanus*). Thus identification and enumeration of these sensitive fish species may be a good qualitative indicator of ecological disturbance due to watershed development.

Fish are only a partial, if easily understood, answer to our quest. The amount of nitrogen dissolved in the water also appears to be a good indicator of watershed health. Dissolved inorganic nitrogen includes the biologically important compounds ammonia, nitrate, and nitrite. These naturally occurring compounds are intricately involved in the production and decay of plant and animal biomass. While the concentrations of these products vary naturally, they are

often elevated in developed areas due to inputs from things like septic systems, lawn fertilizers, road runoff, leaky sewer lines, etc. Our data showed a very nice correlation between the dissolved inorganic nitrogen concentration and stream impact level (Figure 1). Cocumscussoc had the lowest nitrogen concentration. It increased three to eightfold for the intermediate streams, and was about fifteen times greater in the high impact streams. Nitrogen concentration is a good candidate parameter to measure for watershed development impacts.

We are still analyzing the data we collected last summer and hope to identify other good indicator parameters. We will continue with more sampling this summer and hope to expand our fish studies in particular. Unfortunately, I won't be out in the field this year—it looks like I'll have a desk job. If you are visiting the Castle this summer and see a couple of folks with big rubber boots and lots of sampling gear wading in the brook, feel free to stop by, say hello, and take a look at what we are doing. We may have some interesting fish to look at or some updates on our progress. We do get busy out there but are always happy to talk about our work! ■

Figure 1: Dissolved inorganic nitrogen concentration



Average dissolved inorganic nitrogen concentration in five Rhode Island coastal tidal streams. Data represents the mean freshwater concentration from samples collected between May and August, 2003.

Jim McKenna earned his PhD in oceanography from the University of Rhode Island. He was a Williams College assistant professor and associate director of the Williams College-Mystic Seaport Maritime Studies Program. More recently, he was a visiting assistant professor at Wesleyan University and is currently a marine environmental consultant. His research interests include ecosystem processes at the land-sea interface, with particular attention to nutrient and carbon cycling in estuarine systems.

Our Wonderful Clock

Peter Nunes

During my first visit to Smith's Castle—just a couple of years ago—I overheard a man in an adjacent room exclaim, "What a wonderful clock!". As I've been collecting and restoring antique clocks since 1968, my interest was naturally piqued, and I went into the Updike dining room to view the object of his comment. I was amazed to see an example of one of the most unusual forms of New England-made clocks, a dwarf tall-case clock—commonly known as a grandmother clock. (The origin of the term grandmother clock for short grandfather clocks is uncertain, but it is comparatively modern. In Great Britain, grandfather clocks are known as long case clocks; in the United States, they are called tall case clocks. The popular term, grandfather clock, derives from a very well-known folk song turned nursery rhyme, *My Grandfather's Clock*, written by Henry C. Work and published in 1876.)

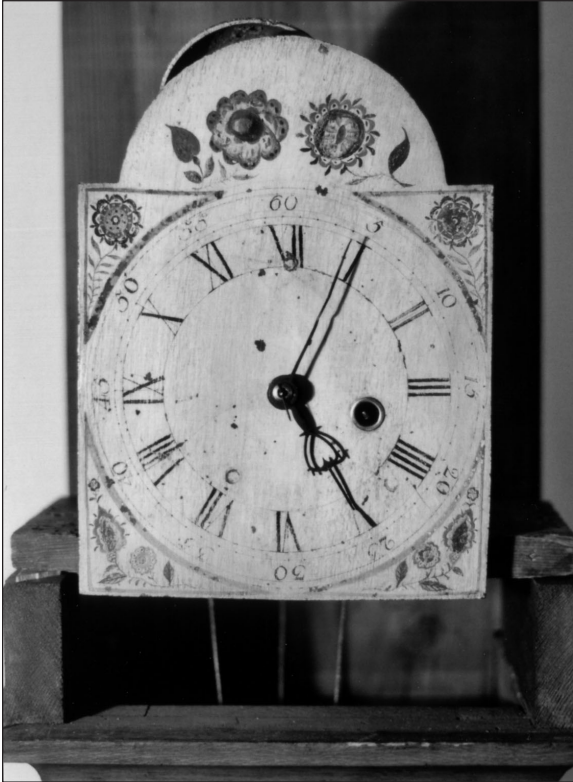
While the maker of the clock did not sign the dial or the movement—thereby most likely relegating himself to permanent anonymity—much can be deduced about its origins by the manner in which it is made. The shaped movement plates, made that way so as to save brass, point to a northern Massachusetts, southern New Hampshire, or southern Maine maker. The simple pine case, which almost certainly would have been painted originally, and the very beautiful dial, done by a not overly sophisticated hand, point to the clock's rural origins. I had hoped that the exquisite heart shaped hour hand might lead me to the maker, but a fairly thorough search of the literature of New England clocks didn't turn up a match. It may be unique.

The weight-driven, week-running clock movement is very well made and competently finished. The clockmaker was clearly experienced and well trained probably by an older master clockmaker. The vertically oriented bell is struck once at each hour by a hammer which is lifted and dropped by a pin mounted on a gear, obviating the need for a much more complex striking mechanism. This system is known as "passing strike." A standard strike train would have doubled the number of gears, arbors, and pinions used in the movement, which would have had to be made larger to accommodate the extra parts. All this would have added significantly to the cost of the clock.

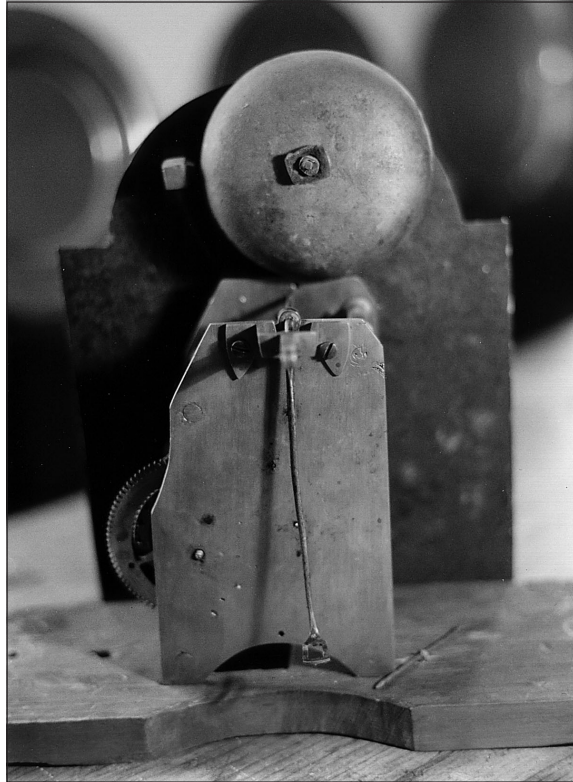


The dwarf tall case (or grandmother) clock is one of the most unusual forms of New England-made clocks. This lovely example in the Smith's Castle collection probably dates from c. 1812. [2000.12.1]





The clock face is decorated with a floral design primarily in shades of red, orange, and yellow that contrast with the crisp black geometric form of the Roman and Arabic numerals. It is well executed in a charming style by an artist working most likely in a rural area. Photo: Peter Nunes



A peek behind the face of the clock reveals the straightforward construction of its mechanism. The vertically oriented bell with its strike hammer to the left is clearly visible. The gear at the left is attached to a brass drum from which the weights that drive the clock are suspended. The stirrup-shaped loop at the end of the wire at the front is the crutch that imparts movement to the pendulum. Photo: Peter Nunes

While it is difficult to ascribe a specific date to the clock, the style of the case, the painted dial, and the existence of other, somewhat similar, clocks with known dates of manufacture, make the first quarter of the 19th century very likely. If I had to guess, I would say that it was made just prior to the War of 1812, during which time brass was very difficult to come by due to the suspension of trade with England.

Although diminished by having once been stripped and refinished, the clock is in generally excellent condition. The condition of the dial and hands is remarkable and, while the movement is in need of cleaning and minor restoration, it too is in fine, entirely original condition.

A clock of this caliber would likely have been purchased by a fairly prosperous, rural family—like the Updikes. Smith's Castle is fortunate to have such a fine clock. And the clock is fortunate to have found an honored place among the collections at Smith's Castle. ■

Peter Nunes has been a member of the National Association of Clock and Watch collectors since 1971. He restores clocks as an avocation. Peter is married to Mary Nunes, a Smith's Castle docent, who is also featured in this issue, (pp. 6 & 7).



Day Camp for Grades 4-6

Experience Colonial Rhode Island First Hand

What was life like for children living in Rhode Island in the 17th and 18th centuries? What did they eat? What did they wear? Where did they get their supplies? Where did they learn? What were their chores? What did they do for fun?

"Both my 10-year-old daughter and my 8-year-old son thoroughly enjoyed their week at the Smith's Castle camp. They want to come back this year! They still sing the sea shanties they learned from the 'pirate' they met. My daughter loved the journal-making portion of the camp, and this spring she picked pansies and phlox and hammered them onto paper to add to her journal. It is an experience they will not soon forget."

—Mary Kaminski

Children who participate in the summer camp at Smith's Castle will discover the answers through living history activities. Daniel Updike's plantation house, its beautiful gardens, and its peaceful seashore will serve as their community for the week. They will wear colonial clothing, cook their meals over an open fire, and make a handbound journal in which they will record their reflections with a quill pen.

They will visit historic Wickford and the Old Narragansett Church, and will investigate the area's early residents and explore a historic cem-



Last year, campgoers learned drop spinning, wool carding, and weaving—all activities well known to their 18th-century counterparts. Photos: Chris Kalina and Maureen Danforth

etry. Special guests will be on hand to entertain campers with songs of the sea and tales of pirates, and to demonstrate 18th century medicine and early mapmaking.

The colonial-era crafts the children create will be theirs to keep and will serve as souvenirs of their truly unique summer experience at Smith's Castle. ■

The day camp for children (currently in grades 4-6) runs from Monday, July 26 to Friday, July 30.

Hours: 9 am to 11:30 am Mon.-Thurs.
9 am to noon Fri.

Fee: \$100 per child, \$75 for members.

Information and registration:
294-3521. Enrollment is limited.

Smith's Castle gratefully acknowledges the support of its business members.



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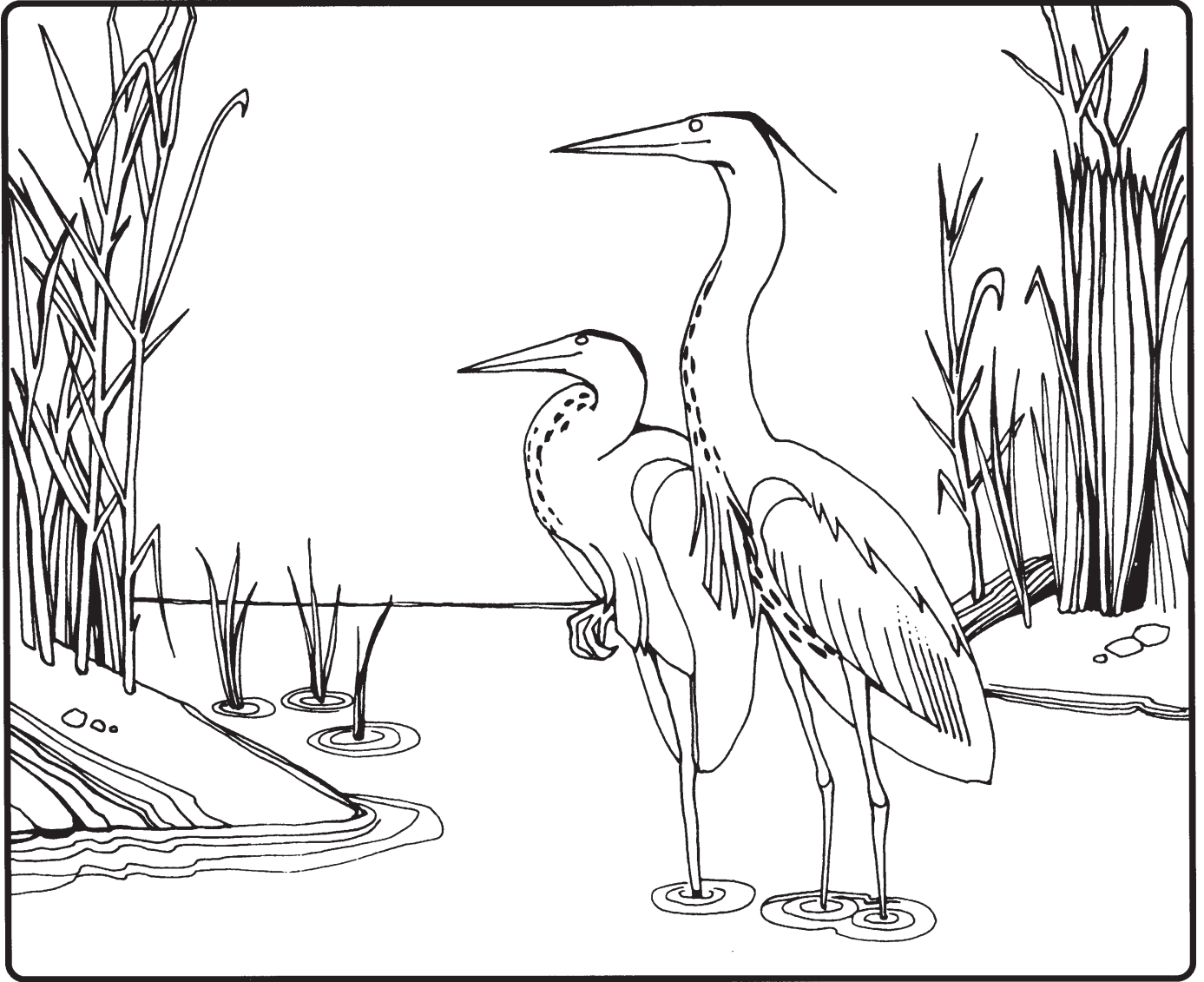
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MARY SHERMAN

Kids' Corner

Great Blue Herons Fish in Cocumscusoc Brook



Great blue herons can often be seen near the mouth of Cocumscusoc Brook. These are large grayish-blue wading birds with wingspans reaching 72 inches. They have long necks with black streaks and yellow bills. They live in marshes, wetlands, shore areas, and tidal flats. Their long slender legs make it easy for them to wade in these areas where they fish with their sharp bills. If you're at the Castle early in the morning or late in the day, stand quietly near the strawberry patch and look toward the brook. You just might be lucky enough to see one. Bring your binoculars for a close up view.

Illustration by Henrietta Crandall from *Down Where the Water Is: A Coastal Awareness Activity Book*. Office of Marine Programs, Graduate School of Oceanography and Rhode Island Coastal Resources Management Council, 2003.

Kids' Corner

Smith's Castle Word Search

Send your completed word search to:

Smith's Castle
55 Richard Smith Dr.
Wickford, RI 02852

A winner will be chosen from the entries, and will be announced in the next *Chronicle*. The winner will receive a quill pen and ink. Have fun!

A	Q	U	I	F	E	R	B	C	E	H	S
E	T	X	W	I	C	K	F	O	R	D	Z
A	R	P	V	O	D	Q	K	V	H	L	M
B	I	S	D	A	V	T	Z	E	Y	U	O
P	V	O	L	T	M	J	H	U	R	C	S
W	E	Y	V	W	S	H	U	P	O	I	K
G	R	F	B	R	O	O	K	T	B	F	D
A	E	W	E	T	L	A	N	D	V	R	E
U	J	B	R	S	T	R	E	A	M	B	E
W	X	O	W	T	M	A	R	S	H	H	G
Z	I	C	A	C	F	G	Y	U	O	P	F
R	D	E	T	S	E	A	W	E	E	D	D
P	Q	A	E	C	C	Y	C	L	E	K	E
V	I	N	R	S	M	I	T	H	U	K	E
C	S	S	T	L	F	L	O	O	D	L	E
P	W	A	T	E	R	S	H	E	D	L	F

Can you find the words below in the puzzle? When you locate the word draw a circle around it.

AQUIFER

BROOK

COVE

RIVER

FLOOD

MARSH

OCEAN

WATERSHED

SEAWEED

STREAM

WATER

SMITH

WICKFORD

WETLAND

CYCLE

This Summer at Smith's Castle

June

Day	Time	Event
Thursday, 10	5:00 pm	Executive Committee
Saturday, 12	Noon–4:00 pm	Strawberry Festival
Sunday, 13	Noon–4:00 pm	Strawberry Festival rain date
Saturday, 19	12:15–4:00 pm	Thematic tour: Slavery on a Rhode Island Plantation
Saturday, 26	10:00 am	Container Gardening with Heirloom Plants URI Master Gardeners and Smith's Castle Register 294-3521

July

Day	Time	Event
Thursday, 8	5:00 pm	Executive Committee
Saturday, 10	10:30 am–4:00 pm	18th Century Day Camp for Women Register 294-3521
Sunday, 18	10:00 am–4:00 pm	Antique Auto Show Admission: \$2.00 donation
Saturday, 24	10:00 am	Families Recorded are Families Remembered Ruth Metzler North Kingstown Free Library Register 294-3306 or 294-3521
Monday, 26	7:00 pm	Trustee meeting
Monday, 26–Friday, 30	9:00 am–11:30 pm (Noon on Friday)	Day camp for grades 4–6 Register 294-3521

August

Day	Time	Event
Saturday, 1	12:15–4:00 pm	Thematic tour: 18th Century Women of All Ages
Thursday, 12	5:00 pm	Executive Committee
Saturday, 14	12:15–4:00 pm	Thematic tour: Keys to Survival: Colonial Foods and Fibers
Saturday, 21	10:00 am	Healthy Landscapes Keep Water Clean Holly Burdett, URI Cooperative Extension Water Quality Program Register 294-3521

September

Day	Time	Event
Saturday, 11	Noon–4:00 pm	Thematic tour: Trade and Commerce at Smith's Castle
Sunday, 19	12:30–4:30 pm	Historic Wickford Walking Tour
Sunday, 26	4:00 pm	Native Plants and Edibles at Smith's Castle Lisa Gould URI Master Gardeners and Smith's Castle Register 294-3521

Antique Auto Show

A new event this year for Smith's Castle will be an exciting Antique Auto and Truck Show, a great attraction for young and old. It will be held Sunday, July 18, from 10 a.m. to 4 p.m., rain or shine.

Classic vehicles dating from 1900 to 1965 will be on display on the Castle grounds. Entry fee per

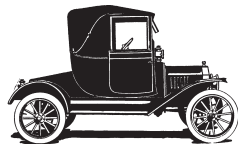
vehicle is \$10—no preregistration is necessary.

Judged classes will be: brass (earliest automobiles) to 1915, 1916 to 1929, 1930 to 1939, 1940 to 1949, and 1950 to 1965. Also on view will be the Castle's own 1949 Ford tractor.

Trophies for the winners in each

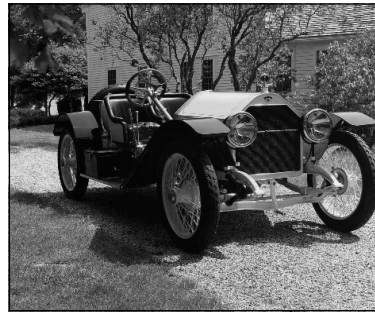
category will be awarded at 2 p.m. The master of ceremonies will be the well-known cartoonist and South County favorite, Don Bousquet.

Admission is by a donation. The Castle will be open to the public for a walk through on the first floor. ■



Right: A yellow Stutz Bearcat is just one of the antique cars that will be displayed on the Castle grounds, July 18.

Far Right: Robert Reed (left) and Bob Smith, organizers of the July 18 event, pose with Bob Smith's 1910 White. Photo: Betty Sue Reed



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