



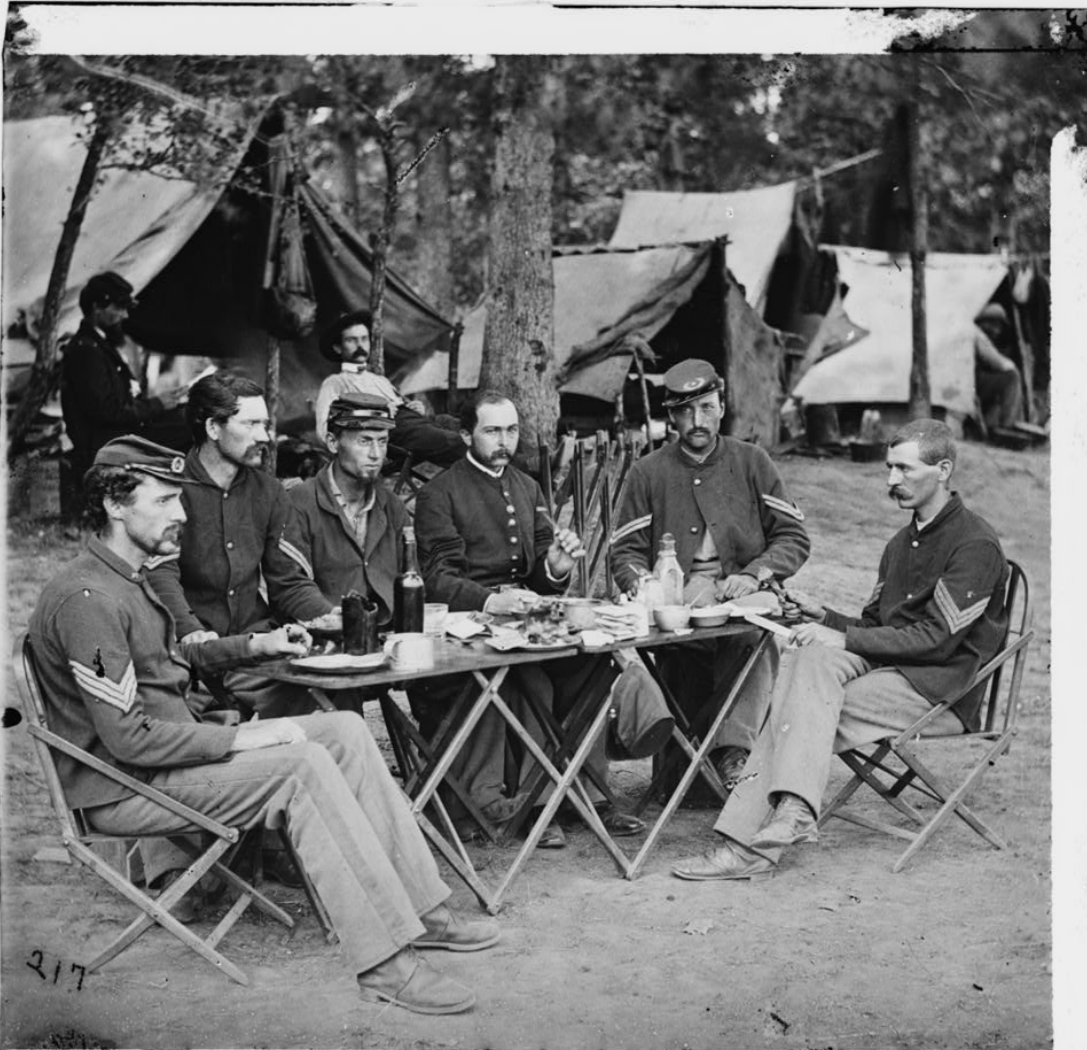
VOLUME XXVII, NUMBER 3 SUMMER 2011

Repast

Quarterly Publication of the Culinary Historians of Ann Arbor

Dealing with Deprivation

Responses to Foodstuff Scarcities in the Civil War



Noncommissioned officers' mess of Company D, 93rd New York Infantry, in Bealeton, VA, August 1863.

Photograph by Timothy H. O'Sullivan in the main eastern theater of war.

Library of Congress photo, digital ID cwpb 00815.

MORE LOCAL FOOD ON FILM

Food-related images from the greater Detroit region have continued to be captured for the big and small screen. In the “Morsels and Tidbits” column of our Winter 2010 issue, we remarked on “The Christmas Cookie Club”, filmed in Ann Arbor, and the milking scene in “Cedar Rapids”, filmed at the Rentschler Farm Museum in Saline. Now, local film buffs can scope out these scenes:

- In early May, a crew for Universal Pictures’ upcoming comedy “The Five Year Engagement” (2012) shot footage inside Zingerman’s Bakehouse in Ann Arbor. The film is directed by Nicholas Stoller and stars Emily Blunt and Jason Segel.
- “Jay and Gino” (Canadian Film Board, 2009-10) is a three-episode Web documentary about Motor Burger in Windsor, Ontario, just across the river from the Motor City. The series, which can be viewed at <http://gdp.nfb.ca/story/111/jay-gino> or <http://www.motorburger.ca>, depicts how, as the economy faltered, chef-owners Jay Souilliere and Gino Gesuale transformed the place from an expensive Italian restaurant called Noi into an upscale sandwich shop, selling such items as the Lamb-orghini (ground fresh lamb, sun-dried tomato tapenade, goat cheese, and arugula). The documentary is part of a bilingual CFB project,

“GDP: Measuring the Human Side of the Canadian Economic Crisis”. Directed by Hélène Choquette with participation from over 30 filmmakers and photographers from across Canada, the 12-month GDP campaign created over 200 short films and photo-essays for the Web.

- The documentary “Urban Roots” (2010, and now out on DVD), produced by Tree Media and directed by Mark MacInnis, tells the inspiring story of inner-city Detroit residents growing food on vacant lots without seeking permission from the absentee owners. The film, with its tag-line, “When Everything Collapses, Plant Your Field of Dreams”, shows the potential of urban farming to help save cities in decline. Whole Foods Market included the work as part of its “Do Something Reel” environmentally-themed film festival, which ran at stores in 70 cities in April and May.
- Farmland along the Saline-Milan Road was used last July for battle scenes to appear in the Civil War drama “War Flowers” (2011), directed by Serge Rodnunsky and produced by Unity Studios of Allen Park, MI. It tells the story of a North Carolina woman (played by Christina Ricci) whose farm becomes a battleground in the War Between the States while her husband is off fighting elsewhere. In the secrecy of her cellar, the Confederate farm wife nurses a wounded Union officer back to health. ■

Repast

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CONFEDERATE COFFEE *continued from p. 10*

substitutes for coffee have been named. The acorn need only be tried once to be discarded. Corn meal and grits can be easily detected by the taste. Rye is only tolerable. Oakra (okra) seed is excellent, but costs about a dollar a pound, which puts it entirely out of the question.”

In the end, perhaps it’s a sense of humor that gets one through real hardships. More than one tongue-in-cheek recipe suggested throwing in the occasional cockroach. Another suggested that popcorn kernels, mixed in equal parts, were the best stretcher for coffee, since the corn would pop out when roasted, leaving unadulterated coffee behind.

And, finally, from the *Arkansas True Democrat* comes this “Recipe for the Times.—To Make Coffee.—Take tan bark, three parts; three old cigar stumps and a quart of water, mix well, and boil fifteen minutes in a dirty coffee pot and the best judges cannot tell it from the finest Mocha.”

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STARVING THE SOUTH

by Andrew F. Smith

Andy Smith is one of this country's leading food historians, and a prolific writer, lecturer, and consultant. He lives in Brooklyn, NY, and teaches culinary history and food writing at New School University in Manhattan. Dr. Smith was Editor-in-Chief of the Oxford Encyclopedia of Food and Drink in America, and he serves as general editor for the Food Series published by the University of Illinois Press and for the Edible Series published by Reaktion Books. He has written some 30 works on food history, including books on the turkey, the peanut, the potato, the tomato, catsup, popcorn, junk food, and most recently, Starving the South: How the North Won the Civil War. Andy's last article for Repast was "The Fall and Rise of the Wild Turkey" (Summer 2006).

Prior to the Civil War, the prairies of the Midwest were opened for settlement, and Americans began to convert vast new areas into agricultural land. The Mississippi River system provided Midwesterners with an easy route to send their agricultural goods to the South. As a result, it became less costly and more efficient for Southern plantation owners to purchase food from Midwestern farmers than to grow it themselves.¹ When the Civil War began, the Federal government imposed a blockade on the Confederacy to stop the export of cotton and the import of military equipment and supplies into states that had seceded. The blockade had a crucial unintended consequence: it greatly reduced the quantity of foodstuffs going into the Confederacy.

Confederate leaders were well aware of the South's reliance on imported food, and from the beginning of the war, they encouraged Southerners to increase the production of staples. Plantations, powered by slaves, answered the call by decreasing cotton production and increasing food crops. As a result, food production on southern plantations soared during the first year of the conflict. It was a different story on smaller farms, however. With a large percentage of southern men under arms, there were far fewer farm laborers to work the land. As agricultural historian Charles Ramsdell wrote of Southern agriculture, "There were large sections of the country—the small farm sections, primarily—almost bare of agricultural labor. The result was a marked decline in production."²

As Federal armies steadily gained control of Confederate territory, many food-producing areas were cut off, contributing to an even greater decline in total food production. The war also devastated agricultural areas still within the Confederacy—such as northern Virginia, much of Louisiana, and northern Mississippi—and this, too, reduced Southern food production. To avoid the fighting, plantation owners near Union lines moved

their households and slaves further into the interior, which removed yet productive agricultural land from cultivation and also brought more hungry mouths deeper into the South. Meanwhile, slaves who remained on plantations became less willing to work, especially if plantation owners and their overseers were away fighting the war. Other slaves headed for Union lines, seeking whatever opportunities were available. By the war's end, the total number of former slaves behind Union lines numbered one million, many of whom joined the Union army or worked on Union-controlled plantations.³

Beginning in the second year of the war, the loss of agricultural areas and the loss of farm laborers began to affect agricultural production. Bad weather added to the Confederacy's subsistence problems by significantly decreasing grain production in the South. Less grain meant less feed for animals, which caused a decrease in meat production.

Weather, refugees, and loss of agricultural land weren't the only reasons for the Confederacy's growing food crisis. Confederate policies also contributed to decreased food production. Impressment (confiscating agricultural goods to feed the troops), for instance, discouraged Southern farmers from growing surplus food. Meanwhile, Southern economic policies produced hyperinflation, which made food hoarding and speculation inevitable. The most rational economic behavior was to buy and store commodities, whose values at least kept pace with inflation. Financially, it was in the best interest of those with Confederate currency to exchange it as quickly as possible for commodities, which could be stored and sold at a later time for more money.

Because the Union blockade prevented coastal shipping and Union gunboats patrolled rivers, railroads took on a crucial role for transporting goods, troops, and military equipment. Before the war, the South had imported virtually all of its railroad equipment. When the war began the Confederacy thus had few factories that could build train engines, rolling stock, rail track, or the machinery and equipment needed to sustain the region's transportation needs. Moreover, the Confederate government made no effort to launch such production nor did it encourage private enterprise to do so. Early in the conflict the South also failed to centralize its railroads so that they might run more efficiently, and it did not encourage blockade runners to bring in heavy equipment for railroads, when doing so might have made a difference.

As a result, Southern railroads deteriorated, making food distribution increasingly difficult. When the main railroad lines began to give out, Southerners cannibalized smaller trunk lines, decreasing the total number of miles served by the railroads, thus weakening the overall system. Even when not interdicted by Union soldiers, the railroads could not transport enough food to feed civilians, the military, cavalry horses, and draft animals. Moreover, when food was available, inefficiencies in transportation prevented adequate distribution. Civil War railroad historian George Edgar Turner concluded that "Tons of bacon, rice, sugar and other perishable foods spoiled in accumulated masses while soldiers in near-by Virginia famished for want of them."⁴ Historian Charles W. Ramsdell pointed out that Lee's army starved, "not because there was no food in the

continued on next page

STARVING THE SOUTH *continued from p. 3*

Confederacy, for it was plentiful in many portions of Georgia, Alabama, and Florida, but because the railroads simply could not carry enough of it." When Petersburg and Richmond were cut off, and "the remnant of the feeble roads wrecked by Sherman's destructive march through Georgia and the Carolinas," Ramsdell continued, "the stoppage of all supplies followed, and the long struggle was over."⁵

The South also had problems with its roads and wagon transportation. Southern roads were mainly unimproved, which meant that when it rained, they filled with mud and became impassable. Even in good weather, the Confederacy's wagon transportation was inadequate, largely because of the scarcity of draft animals, thousands of which had annually come from the Midwest before the war.⁶ Southern armies purchased or expropriated large numbers of mules, oxen, and horses, and these animals had to be replaced regularly. The animals also had to be fed as they traveled, but transporting bulky and heavy forage required even more draft animals. The military often commandeered or impressed animals from farmers as needed, which caused yet more problems: Without draft animals, farmers could not plant, harvest, or transport their crops, further contributing to food shortages.⁷

The failure to solve the Confederate food problems led to a series of bread riots that shook much of the eastern Confederacy beginning in 1863. With the exception of such events in Richmond and Mobile, the Southern bread riots were relatively small affairs, and authorities dealt with them easily. Nevertheless, the riots reflected real problems in the South and provided additional wake-up calls for Confederate leaders to address crucial problems with the Southern food system. But Southern leaders responded largely with proclamations and band-aid remedies. As a result, food problems that the Confederacy might have solved in 1863 became almost insoluble within a year.

By mid-1864, the Confederate army needed to acquire large quantities of imported meat and the government responded by offering exorbitant profits to those who could import meat through the blockade and between the lines. The foodstuffs generated by this trade were intended for Southern armies, but much of it never reached the soldiers. Some of the supplies rotted in warehouses while awaiting railroad transportation. Other foodstuffs ended up in the stomachs of railroad workers and their families. Additional heisted meat ended up in the hands of speculators who sold it to the highest bidder. While the Southern troops faced food shortages, the well-to-do in the Confederacy ate well, and many did so right up to the end of the war.

Changing Union Strategies

Food played an important role in a number of military campaigns during the Civil War. The most obvious were the Union sieges of the Mississippi River towns of Vicksburg and Port Hudson in 1863. As a military tactic, these sieges prevented food from entering the two towns, which contributed directly to their surrender. Strategically, the sieges at Vicksburg and Port Hudson also prevented food and supplies from Texas from reaching other Southern states. Because of the loss of Texas

beef, the South had to reduce meat rations for Confederate soldiers east of the Mississippi River.⁸

Most important, the Vicksburg campaign represented a sea change in the Union strategy to end the war. During the first two years of the conflict, Northerners believed that there was strong support for the Union in the South, and that Southerners would eventually come to their senses, reject the firebrand secessionists, and rejoin the Union willingly. However, after Northern armies occupied large areas of the Confederacy in Arkansas, Tennessee, Mississippi, and Virginia, it became clear that whatever support existed for the Union in the South before the war had largely vanished once the conflict began. A new strategy needed to be developed to win the war. The Union strategy thus shifted from attempts to woo Southerners back into the United States to the idea of "uncivilized war", "total war", "scorched earth", or "hard war".

The 1864 Shenandoah Valley campaign in Virginia was one example of this new policy. They destroyed most of the crops slated for harvest in the Summer and Fall. General Philip Sheridan, the successful commander of Union forces in the valley, boasted in a report that "I have destroyed over 2,000 barns, filled with wheat, hay, and farming implements; over 70 mills, filled with flour and wheat; have driven in front of the army over 4,000 head of stock, and have killed and issued to the troops not less than 3,000 sheep.... [T]he Valley, from Winchester up to Staunton, ninety-two miles, will have but little in it for man or beast."⁹

Another example of the changed Union strategy was Major General William T. Sherman's conquest of Atlanta and his march to the ocean. Georgia suffered a swath of devastation 30-60 miles wide and 265 miles long. Best estimates of the destruction by Sherman's armies include 10,000 horses and mules, 13,000 cattle, a half million tons of fodder, and 13 million tons of corn, plus untold numbers of hogs, sheep, chickens, and vast quantities of sweet potatoes and other produce. Sherman's troops also demolished an estimated three hundred miles of railroad tracks.¹⁰

Sherman's subsequent campaign in the Carolinas further disrupted the Confederate supply system and also reduced civilian food caches. One South Carolinian reported that along a 60-mile front, tracks were "twisted into grotesque shapes, showed where the railroads had been; and the absence of the voices of poultry, sheep, or kine from the desolated fields and ruins along the roadside proclaimed the reign of famine and despair. The country was swept as clean of food as is a man's face of his beard by a well-plied razor."¹¹

After New Year's Day 1865, Confederate desertions grew into a flood. They deserted for many reasons, but at the top of the list was hunger. During January 1865, one captured Confederate deserter estimated that 200 men were leaving Lee's army every day, partly due to poor and irregular rations. Confederate commander J. H. Duncan reported on January 21 that "desertions are becoming amazingly numerous, and ... the main cause of this dissatisfaction" is "the controlling influence that prompts our men thus to desert— it is the insufficiency of rations. Our men do not get enough to eat."¹²



Postal envelopes with propagandistic illustrations circulated both in the North and the South. Those in the North, such as these, often focused on Union advantages in food availability.

[Civil War Treasures from the New-York Historical Society, images aj90038 and aj91077,

<http://memory.loc.gov/ammem/ndlpcoop/nhihtml/cwnyhshome.html>]

Other soldiers deserted because of hunger back home. According to Confederate general Joseph E. Johnston, "it was not uncommon for a soldier to be written to by his wife, that so much of the food he had provided for herself and his children had been impressed, that it was necessary that he should return to save them from suffering or starvation. Such a summons, it may well be supposed, was never unheeded." Johnston warned that this "increased desertion from the army, further increasing the likelihood of military defeat."¹³

When Lee surrendered at Appomattox on April 9, 1865, the Army of Northern Virginia had an estimated 27,500 men. Yet only a few days earlier, on April 1, this Confederate army reportedly had 150,000 men on its rolls. Some soldiers were on leave; others were hospitalized, and still others were captured or had died along the way to Appomattox. But tens of thousands of soldiers, many of whom had supported the Confederate cause for four long years, voted with their stomachs and deserted in the final months of the war.¹⁴ With so many desertions, the Army of Northern Virginia dissolved, and within a matter of weeks the Civil War was over. ■

Endnotes

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COFFEE CRAVINGS AMONG THE TROOPS

by Philip M. Zaret

CHAA member Phil Zaret has worked for many years as a volunteer at the University of Michigan Libraries—chiefly, developing an index of culinary references found in manuscripts at the Clements Library. He used that index in compiling the article below as well as his article in our last issue, “Fresh and Preserved”.

What follows is assembled from examples drawn from the Manuscript Food & Society Index at the University of Michigan’s William L. Clements Library of American History. These excerpts give a sense of how coffee had the status of a virtual necessity among military forces on both sides of the Civil War. It was an item that soldiers highly appreciated and relied upon, but of which they suffered dire shortages.

Most of the entries are quotations from soldier’s letters, and others are from journals or memoirs. I have not included background material on the writers, nor given specific dates and locations, as I feel the statements are universal and self-explanatory.

Coffee— The Soldier’s Best Friend

Henry Clarke Gilbert: You must understand that it is no small job to break camp and march. In the first place we must all have our breakfasts, although it is always expected when we are to go in the morning that food will be cooked over night, all except that indispensable requisite of a soldier’s meal, coffee.

Henry Pippitt: Our grub is the same as usual— soft bread every other day, bean soup every day, a good ration of sugar and coffee, when you go out on picket, so you can make a good cup of coffee about 12 o’clock, when you feel a little cold.

John A. Bodamer: Had a good cup of coffee with Manly Bannister. The coffee went good after being almost froze.

Henry G. Marshall: The only pots & kettles I brought along was my 2-quart pail in which I cook coffee every day & my cup made by John Ackerman; the rest of the tinware I left or gave away. At least once a day I drink the cup full of coffee.

Uriah Lee: I wish you a merry Christmas! I stayed in my tent, didn’t want to chase all over New Bern. Rebel prisoners tell of prices. How can they stand it much longer? Plenty of army food— drinking 3 quarts of coffee a day.

Coffee— One Third of the Basic Diet

David McKinney: Our eating arrangements are not any of the best just now— salt meat, hard crackers and coffee constituting our daily and only eating.

William Boston: Since then have had dinner consisting of a cup of coffee, a piece of fried pork, and some hard tack, which is our general living.

Nathaniel W. Bunker: Another great inconvenience and cause of suffering on that night was, being so near the enemy, we were not allowed to build any fire to keep us warm or to cook supper. We had for supper and for breakfast the next morning raw salt pork and hard tack without our usual hot coffee which is a soldier’s main stay.

George & Solomon Starbird: Just finished supper of coffee and bread. How do you think it would go with you to take a hunk of bread in one hand and pint of coffee without milk in it in the other and make a supper of it and say you relish it? I can do it now but could not till I had been here some time. When we go on scout, we have hard bread, meat and coffee!

Clement Abner Boughton: Got up and went thru the usual preamble of Christmas. Had something extra (the butter). Got up the best we could: that was rice with butter and sugar, coffee and hard bread was Christmas dinner— and we thought it a good one too.

Thomas D. Willis: We have just been drawing our rations. Perhaps you would like to know what we get. Well, we draw a quart of browned [roasted] coffee which is to last 9 of us 3 days and also a quart of beans and of sugar, 54 hard crackers and about 5 pounds of salt bacon. These are but half rations and are not near enough.

Numa Barned: Can a vegetarian make a good soldier? If he wants to starve. If crackers and coffee are not enough for him to live on.

Joseph B. Husted: Arrived in Washington this morning about three o’clock, put up in a barrack, got our breakfasts at ten o’clock & then had our guns inspected about five o’clock, marched through the mud down to the Arsenal to have our guns exchanged, was too late & had to come back without them, had nothing but coffee for supper.

Coffee— The Good, the Bad & the Ugly

Thomas D. Willis: We then put our bundles on our back and marched into Carlisle and there we had to stand in the snow until 7 o’clock in the evening. We then started and Walter’s father went with us as far as Harrisburg. There we got some hot coffee, which, I tell you what, tasted good, for I had had nothing to eat since 6 o’clock in the morning.

George & Solomon Starbird: Oh, I must tell you of our dairy. When we were down in the swamp we caught two fine cows and brought them into camp. We have milk in our coffee night and morning— something you can’t get at a eating house in town. Isn’t that good?

Got some tea this time— first we have had since I came here and first I ever had in the service— so much better than coffee. The coffee that we get is vile stuff at best— taking it without milk, it is awful.

Samuel C. Taylor: The coffee tasted like a decoction of burnt wood, sweetened with common brown sugar.

Philip & Rohloff Hacker: The coffee was cooked in an iron kettle, which had meat cooked in the night before. A blue surface floats on the upper portion of said drink— meat smell & bad taste!

Finding Water for Coffee

Henry G. Marshall: Marching along a tow path, the water is the color of good strong tea, impregnated as it is with juniper or cypress root. It is like all the water in the Dismal Swamp. It did not taste bad and we made coffee of it and drank all the way down.

George W. Barr: We are in a position where we cannot get water that is not thick with sand & of the most mawkish taste, even when flavored with tea or coffee.

Henry S. Chase: In the heat of the day, it is comfortably warm enough to go in your shirt sleeves. Our battalion has got back to Deep Creek. Today all that the cooks had to do to make coffee was to fill their kettles out of the canal, put in their little coffee and their mite of sugar, set it in the shade to cool. This may be a hard story for you to believe.

Edward Marshall Brooks: The only water we could get was from the bayou where it had been stagnating in the sun all

summer. The Yazoo being higher than the bayous there could not be a current, hence the water was bitter, smelt bad, and was full of bugs. The mules would not drink the water, but we could make coffee of it. We could not make coffee strong enough to destroy the bad taste of that buggy water. Many times I let a quart cup of water stand over night to settle, then measured the mud, from one fourth of an inch to one inch of mud in the bottom.

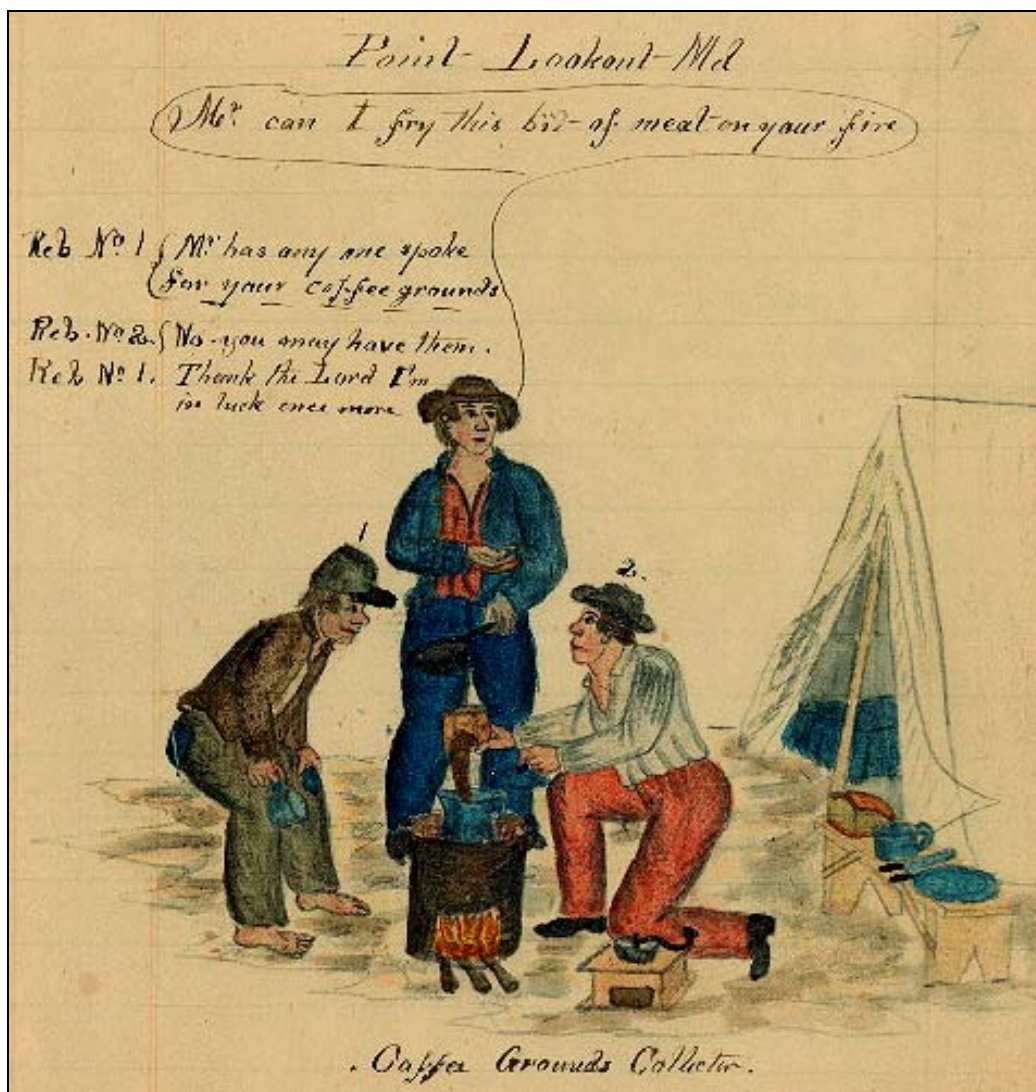
Edward P. Bridgman: When Fredericksburg was reached, my inner man complained of goneness, and nothing short of a cup of coffee would answer. I started for the river for water, but met a man who said it was not safe, as sharp shooters were within range. As discretion is the better part of valor, I went to the rear. All the water I could find was in the road in holes made by mules' feet, and the only redeeming feature the water had was its color, which it took from the clay, and was like prepared coffee all creamed— to the sight if not to the taste. But coffee I needed and must have and did have, even if it was less palatable than at other times!

Coffee— A Restorative, a Medicine Even

Henry C. Gilbert: Coffee is the great sine qua non here in the army. 'Tis the tired soldier's sweet restorative. Yesterday when

continued on next page

“Coffee Grounds Collector” is from one of the watercolor sketchbooks created by Confederate soldier John Jacob Omenhausser while he was interned in the Federal Civil War Prison at Point Lookout, MD between June 1864 and April 1865. One rebel prisoner asks, “Mister has anyone spoke for your coffee grounds?” A second prisoner, kneeling beside a coffee grinder and brewing coffee over an open fire, replies, “No you may have them”. The first exclaims, “Thank the Lord I’m in luck once more.” Meanwhile, a third prisoner standing in the middle asks, “Mister can I fry this bit of meat on your fire?”



Civil War Treasures from the
New-York Historical Society,
Image ae00022,

<http://memory.loc.gov/ammem/ndlpcoop/nhihtml/cwnyhshome.html>

COFFEE CRAVINGS *continued from p. 7*

we came in, I was pretty nearly used up, but had 3 or 4 cups of strong coffee & was ready to make a speech, write an editorial, work on the barricades or anything else that might turn up all night long.

Cornelia Hancock: On going ashore at Belle Plain we were met with hordes of wounded soldiers who had been able to walk from the Wilderness battlefield [in Virginia] to this point. They were famished for food and, as I opened the remains of my lunch basket, the soldiers behaved more like ravenous wolves than human beings, so I felt the very first thing to be done was to prepare food in unlimited quantities. So with my past experience in arranging a fire where there seemed no possibility of one, I soon had a long pole hanging full of kettles of steaming hot coffee, and this, with soft bread, was dispensed all night to the

A Treasure Trove Straight from People's Lives

The Food Index at the Clements Library, which I used for this article, is a computerized database of food-related passages drawn from the library's manuscript collections. The Clements contains on the order of 500,000 individual manuscript items: letters, diaries, and other bits and pieces from the lives of real people, mostly from 19th-Century America. The bulk of the descriptive material in the Index is non-food-related, but is included for context; the food-related words, however, are capitalized. Everything has been done to appeal to the real and immediate needs of the history professional. The Food Index is the only database of its kind in the world.

How easy is it to use the Index? A scholar who visits the library's reading room can use one of the laptop computers there to access the Index and locate significant quantities of specifics in a relatively short time. For example, in order to find items for this article, I entered "4/12/1861...4/9/1865" in the dates field, and I put the markers "soldier/" and "coffee/" in the description of record. I wound up with over 100 hits, and I examined each of these passages in full text on the computer screen to make my selections.

The Index includes nearly 10,000 records on the Civil War alone. This trove of items is so rich in content that there is enough to carry out research on any of a number of topics such as these:

- how common soldiers prepared their own meals
- canned, condensed, and dried foods in the soldier's diet
- hardtack, the jaw-breaking cracker that was one third of the soldier's ration
- how soldiers often foraged for their food
- what life was like for soldiers without enough food, including P.O.W.'s
- gift boxes from home that were a godsend to the hungry soldier
- sutlers, i.e., the itinerant merchants who followed the armies
- women who fed the troops
- alcohol consumption among the troops
- Civil War holiday meals.

— PMZ

tramping soldiers who were filling the steam boats on their return trip to Washington.

Edward P. Bridgman: The woods all about us had been fought over back and forth, and all over the ground lay the dead, wounded and dying. Some were in standing posture between two trees or saplings that grew close together. I made my quart cup (the one you sent me— made by Eams and Sprague) full of coffee and took it to some of the wounded. Gave a swallow to this one in blue and to that one in gray; changed the position of one and another, and did what I could to add comfort and alleviate pain until late at night.

George Alexander Hussey: General George B. McClellan orders that soldiers drink coffee in order to prevent malaria; soldiers obey orders only for a week.

An Old Soldier [from a newspaper clipping]: Keep your entire person clean, this prevents fevers and bowel complaints in warm climates. Wash your body each day if possible. Avoid strong coffee and oily meat. General Scott said that too free use of these (together with neglect in keeping the skin clean) cost many a soldier his life in Mexico.

When They Couldn't Get the Real Thing

John S. Hodges: All that was given us today for dinner was bread alone. If it was not so that we could buy something to eat, we would fare rather poorly. Sid Barlacon of our mess is making some [parched] corn coffee for tea tonight.

John A. Bodamer: Had coffee made of burnt crusts of corn bread and it was very good.

Anonymous Rebel: Coffee is pretty high and scarce, but we can reduce the price of that by using half rye, which makes a very good substitute. You brown the rye as you do the coffee and taking half each, grind them together and make your coffee in the usual way. I don't think anyone can tell there is rye in it, if they do not know it has been put in.

David Ballenger: Do not know whether I could drink a quart of whiskey or not, but I reckon I could, for I can drink a quart of coffee made of rice.

Daniel Montague: On rice plantations, cows failed of milk, but they have rice milk for their coffee.

Scarce and Expensive, Especially for the Confederates

Philip & Rohloff Hacker: We received a deserter from the rebels. He says they suffer much. Other rebels say they have plenty of everything except coffee.

John S. Hedges: After we came off picket in the morning, I went down in the cove with a squad for berries. We picked about 12 quarts of fine blackberries. None of the people there had seen any coffee since Buell's army was there a year ago.

Robert Sherry: The old lady owns a large farm, but the soldiers killed every bit of her stock. They did not leave her one cow. She has had no butter or milk for six weeks. They have took all of her slaves away but one about 12 years old. There is hundreds

of wealthy families that actually suffer. They have neither sugar, tea, coffee, salt or pepper.

Near the Rapidan River, Virginia— a filthy hole such as you never saw. We could get coffee at \$1 per cup, water 50 cents per cup. Last day we had nothing to eat, nor did they give us any when we got to Alexandria.

William & Frederic Speed: The plantation on which we have camped for the last few days is owned by a very aristocratic family. We have taken nearly all of their corn— and that is all the people down here have to live on, except their cattle— and in this case we have used up nearly all of them. How humiliating for the rebels to ask aid. They all complain that we have coffee and flour, and dress better than they can.

Marianne Starbird: You cannot imagine the high prices I have to pay for everything in New York. We hear that Richmond coffee is four dollars a pound and no tea to be found etc.

Daniel Ruggles [Confederate]: You are hereby authorized to import within the Confederate lines ten thousand sacks of salt, or coffee, or medicine. When delivered, you will be entitled to receive one thousand bales of cotton for export to Great Britain, France or Spain.

Coffee as Currency

Henry C. Gilbert: We have excellent coffee, & have cream in it too, and I really enjoy our living. Today a man brought me some very nice butter & some sausages. I gave him 3 pounds of coffee for 10 pounds of sausages.

The Chaplain Major & myself are messing together. We got out our stores today & looked them over. We have a good stock on hand— ham, fresh beef, cod fish, butter, soft bread, flour for griddle cakes, white sugar, a bushel of good beets, a few onions & potatoes &c. &c. We traded a pound of coffee for a bushel of beets, & another pound for 5 pounds of butter. The citizens about here will give anything they have for coffee & salt.

Philip & Rohloff Hacker: Our appetites are sharp, as we are having short rations. I only have enough coffee and hard bread. We are near the rebels and are continually talking to each other. Our men trade coffee for tobacco with them.

H. H. Masten: Getting mail on picket— a letter from Lyd, one from Oscar Boyne and one from my little girl from Michigan. Cold night, ice two inches thick. One of the boys brought out a small bag of coffee he had saved. He took it in the little town and swapped it for three pies, one mince, two called pumpkin, but they were carrots. All they lacked was seasoning. What did you have Thanksgiving, a feast I presume.

Thomas D. Willis: Chicken, Irish potatoes and sweet ones, scrapple that can't be beat— and my own make at that— warm biscuit and butter and sorghum syrups. What do you think of it? I suppose you will wonder where we get all these things. Well, I will tell you. We do without sugar and drink very little coffee, and exchange these for them to the citizens, and, as they have had no genuine coffee or sugar since Jeff Davis' reign, they are eager to trade and we get good bargains.

William Boston: Truces were made by the men in the trenches in the first line, the rear lines not participating. It generally would begin by one side or the other putting a newspaper on the bayonet of a gun and waving it and the other side would respond the same way, then Federal and Confederate would meet between the lines to exchange newspapers and trade coffee for tobacco. They had plenty tobacco, but no coffee, for coffee in Petersburg at that time was \$30 a pound.

Solomon Starbird: On picket duty. The rebels are on the opposite side of the creek. The officers exchange newspapers, coffee, tobacco, sweet potatoes etc.— this always by our officers disguised as privates.

William J. Seymour [Confederate]: Our picket lines extended along the bank of the River, while the Yankee sentinels held the opposite shore only one hundred yards distant; notwithstanding this close proximity, the hostile lines did not fire upon each other, there being a mutual understanding that there should be no firing between pickets so long as the armies maintained their present positions. At times quite a brisk traffic was carried on between the opposing lines; logs were dug out and converted into miniature boats, to which ingeniously contrived sails were fitted; these little crafts were filled with tobacco and Richmond newspapers— the only articles of traffic that our poor fellows possessed— their sails were properly trimmed to catch a favoring breeze and they sped across the River with their precious freight. The Yankees would send return cargoes of many acceptable articles, but the most eagerly sought after and highly prized were coffee and sugar, which the Confederate States Government was too poor to supply its soldiers with.

Alternate Uses for Coffee

Edward Marshall Brooks: Toward the last of October 1862 we were ordered to go south. The quartermaster got drunk and took no rations. The Board of Trade gave each company a barrel of decaying corned beef. Friends came to bid us goodbye and brought boxes of cooked food. The beef we could not eat. A barrel of crackers to one hundred men was hardly a meal. The quartermaster had a few hard crackers full of big fat bugs about the size of full grown bedbugs and I presume about as nourishing. We had no way to cook on the boat. We caught hot water from the escape pipe of the engine. We put crackers, bugs and coffee into a camp kettle of this water, then covered it with blankets to keep the steam in, and let it soak about an hour. Thus we had a meal of bread and meat [the bugs] and coffee.

Edward P. Bridgman: After leaving New York, we retraced the route of Bull Run. On this march I remember that poor rations were issued. Wormy! I got the better of my hard tack by drowning the varmints and then scalding them. Got my coffee going, then chucked in the three hard breads, and the rascals came to the top for deliverance; and with a spoon I delivered them all— all I could find, then proceeded to have a square meal.

Daniel Teague: Will says he has to quit eating often before he is satisfied, something he's not accustomed to. He wants his small hammer to break the hard tack. He will get fat, as they get fresh meat [bugs] by times in the hard tack. They squeal when he pours hot coffee on them. ■

COFFEE AND ITS SUBSTITUTES IN THE CONFEDERACY

by Damon Lee Fowler

Damon Lee Fowler of Savannah, GA is a food writer, a culinary historian, and a member of the Southern Foodways Alliance. He is the author of several cookbooks, including Classical Southern Cooking: A Celebration of the Cuisine of the Old South (1995) and The Savannah Cookbook (2008). His previous article for Repast was, "Edna Lewis, Southern Culinary Giant, Leaves a Legacy as Lovely as She Was" (Fall 2007).

Iced tea has become so beloved and iconic in the South that few people think of coffee as an especially Southern beverage. Consequently, they're usually surprised to discover how important it was in the antebellum South.

"In 1860," reported Little Rock's *Arkansas True Democrat* on January 30, 1862, "the importation of coffee in the then United States was the enormous amount of two hundred millions of pounds, at a cost of fifteen million dollars. The people of the South use doubly as much coffee as the people of the North. Nearly one-half of this vast sum was expended by the people of the Confederacy. If a substitute could be found, it would save us seven millions of dollars a year."

By then, the pinch of the Union blockades on Southern ports was beginning to be keen. In those days, most coffee beans were sold green and were roasted by housekeepers at home. Since green coffee beans will keep for a long time (there are even claims that aging improves them), many households and merchants had a good store of coffee laid by when the war began. In the first days of the conflict, when optimistic Southerners looked for an early victory and peace, frugal housewives simply cut back on their households' consumption.

The earliest coffee imitations, then, were probably intended as economical supplements for making real coffee go further. Suggestions and recipes for these substitutes began to appear as early as August of 1861. But by October, coffee prices had begun to skyrocket, with Rio* selling for upwards of 38-40 cents per pound. By December, the cost had climbed to more than a dollar a pound.

As the war dragged on, real coffee beans became so rare and costly that, by 1862, imitations were no longer supplements but replacements. On September 23, 1863, an article in *The Montgomery Weekly Advertiser* touting the virtues of the okra

* Coffee beans were generically named for their port of origin; Rio was mostly Brazilian coffee, but might have come from other parts of South America. The salient point here is that it was generally cheaper than coffees shipped from Java, Mocha, or Laguayra.

seed substitute implied that real coffee was selling for at least seven and up to ten dollars a pound. Historian Mary Elizabeth Massey, in *Ersatz in the Confederacy*, recounts a rumor that spread through Atlanta that local jewelers had bought up the remaining coffee beans to use as gemstones.

Coffee was not the only imported foodstuff that was cut off by the blockades, of course: tea, sugar, citrus fruit, and wheat were also in short supply. Moreover the Confederate army's commissary was putting a terrible strain on the food supply in general, creating shortages even of foods produced within the country. Of them all, however, nothing seems to have commanded the South's attention like the dearth of coffee.

Throughout the war, newspapers were filled with recipes and advertisements for the best substitutes, each sparking its own lively debate about its superiority and even safety. Southerners at first looked to Europe, where substitutes and supplements had long been used to extend or replace coffee by the honest poor and unscrupulous vendor alike.

Perhaps the most famous of these was chicory root, as it became so popular in New Orleans that it is to this day the characterizing flavor of that city's brew. Another popular substitute, especially in Germany, was acorns. The nut of the oak had long been used for food in lean times, and when toasted, its tannic bitterness made it a plausible and cheap stand-in for coffee. Recipes like this one were common in Southern newspapers:

SUBSTITUTE FOR COFFEE. Take sound ripe acorns, wash them while in the shell, dry them, and parch until they open, take the shell off, roast with a little bacon fat, and you will have a splendid cup of coffee.

— *Confederate Receipt Book* (Richmond, VA, 1863)

Such recipes were often accompanied by lofty claims about the brew's superiority to real coffee, and generally sparked a lively debate as to which variety of acorn was best. Proponents extolled acorn coffee as safer for children, and they even claimed it to have medicinal benefits.

There were other domestic substitutes— whole corn, grits, groundnuts (peanuts), rice, and rye, as well as cotton, okra, and persimmon seeds, and diced, oven- or sun-dried, and roasted root vegetables (beets, turnips, and especially sweet potatoes). Molasses and sorghum syrup were also boiled to a bitter caramel and mixed with parched cornmeal, grits, or peanuts. But of all these, parched rye proved the most popular and commonplace.

For every supporter claiming the superiority of each substitute, there were of course detractors. A physician in LaGrange, GA, sparked a lively debate when he wrote to the *LaGrange Reporter* that the high phosphoric acid content of parched rye compromised bone structure, prevented bone development in the young, caused "dry gangrene" in the elderly, and was a major factor in miscarriages. There was even a scare about an entire family in Brooklyn that was purportedly poisoned by rye coffee.

Others looked on the substitutes with a more jaundiced than alarmist eye. *The Albany Patriot* (Albany, GA), extolling the virtues of sweet potato coffee, pointed out that "Many worthless

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MAKING SALT FROM SEA WATER AT CAPE FEAR

by Charles W. Watson

Now residing in Wilmington, NC, Charles Watson retired from the U.S. Department of Defense after 43 years, including 16 years in Europe. History has always been a major interest of his, and he works as a docent and researcher for Bellamy Mansion and Poplar Grove Plantation in Wilmington. Currently he is updating the tours that he conducts at Poplar Grove, using information gleaned from his research into salt, peanuts, women in the Civil War, African-Americans in North Carolina, Victorian and Civil War weddings, naval stores, transportation in NC via plank roads and railroads, Victorian Christmas and Jonkonnu traditions, Indians in Eastern North Carolina, education in early NC, and the War of 1812.

The Confederacy required six million bushels of salt a year. Salt was used for preserving food, tanning hides, dying fabric, and as a necessary dietary component for humans and animals (Williams and McEachern, 1973). The Confederate Government needed salt to preserve food for its armies, and this was particularly true for pork. Some 500,000 hogs were needed annually for feeding Southern troops (Lonn, 1965), and this meat had to be salted to retard spoilage.

However, because of the Union blockade, salt was in very short supply in the South during the Civil War. The price of salt rose throughout the conflict. In 1860, it was \$.50 for three bushels; by September 1861, \$8 for three bushels; by 1862, \$50 a bushel. By the end of the Civil War, salt was selling for \$5 a pound (on the order of \$250 a bushel) in Georgia (Lonn, 1965).

During this critical time, salt makers in the Lower Cape Fear region of North Carolina played an important role. In 1863, at the height of production, possibly over 100 salt works were in operation in the area, extracting salt from sea water by boiling. As long as wood and labor were available, the salt makers were able to make a profit in this enterprise. Unfortunately, wood was in short supply, and the repeal of the Exemption Act cut the number of workers in the salt works by the end of 1863 (Williams and McEachern, 1973).

A Lucrative Enterprise

Salt had been produced in the Cape Fear area, including by Indians, even before written records were kept (Hawks, 1858). William Brownrigg, a Member of the British Royal Society, wrote a book, *The Art of Making Common Salt* (London, 1748), that became the handbook of North Carolina salt makers (Williams and McEachern, 1973). During normal times, many local salt producers ceased operations because salt became plentiful and its price fell too low to make a profit. However,

production would spike in times of salt shortage, notably during the Revolutionary War and the War of 1812.

In the decades leading up to the Civil War, a number of producers in the Cape Fear area had continued to make salt, mostly for their own use and for local use. Among these producers was the Poplar Grove Plantation, which had been established by a colonial land grant in 1729. The plantation made salt before, during, and after the Civil War. Between the War of 1812 and the Civil War, Poplar Grove was producing salt for its own use and for use by the local Scott's Hill people. (Following the War, Poplar Grove was one of the two plantations that began producing peanuts as a cash crop in NC, and it would continue growing peanuts, produce, and other food for Wilmington until 1976.)

The following comments indicate that during the Civil War, salt production in coastal North Carolina became a lucrative enterprise that was engaged in by wealthy landowners:

The Boiling Salt Makers are in operation from Onslow County North Carolina to the South Carolina line. On Wrightsville Sound, the nearest to Wilmington, some of the boiling salt works are owned by the following: Dr. Bellamy, Dr. DeRosset, Dr. Cutlar, Mr. Ashe, Mr. MacRae, Mr. Moore, Mr. Orton, and many more of the upper crust of Wilmington. It is estimated that at a conservative two thousand bushel per day production the Cape Fear salt business grossed over eight million dollars during 1863. (Williams and McEachern, 1973)

Meat can be salt-cured by either brining or dry-salting; during the Civil War, dry-salting was the preferred method since it required less salt and retarded spoilage better. The butchering and curing time for pork and other meat generally ran from November through February. The best time to make salt from sea water was in the remaining months, when the warm weather assisted evaporation, as described below.

Salt produced by boiling sea water contains impurities, notably sulphate of lime and sulphate of magnesia (Epsom Salt). The latter was actually a desirable component in salting fish, as it tends to keep the fish moist (LeConte, 1862). From Colonial times until the Civil War, the quantities that were involved in salting were as follows (Lonn, 1965; Williams and McEachern, 1973):

- 2 bushels of salt for 1000 pounds of pork
- 1¼ bushels of salt for 500 pounds of beef
- 1 bushel of salt for 300 pounds of fish.

These quantities assume a dry bushel of salt weighing 56 pounds. During the Civil War, salt makers cut the bushel to 50 pounds and added water to increase the weight and make more money (Lonn, 1965), so the salt quantities given above had to be doubled.

Techniques for Making Salt

In 1862, the government in South Carolina had Professor John LeConte compile the methods of extracting salt from sea

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SALT AT CAPE FEAR *continued from page 11*

water. His book (LeConte, 1862) provides a baseline for understanding how the salt works in the Carolinas were set up. I quote here the outline of the book.

First method. By the spontaneous evaporation of sea-water in large shallow basins, called "salt gardens", or "salines".

Second method. By "salines" and artificial evaporation combined.

Third method. By spontaneous evaporation in graduation-houses and boiling combined.

The advantages of this method are: 1. That all the processes are conducted *under shelter*, so that the operations are independent of *rainy weather*. 2. That the *space* required for the works is comparatively *small*. 3. That the arrangements are *not costly*, and may be put up on any desired scale.

COST OF BOILING.--This will, of course, depend on the extent to which the brine has been concentrated by the process of natural evaporation in the basins. If practicable, the brine should mark about 20° of Baumé before it is introduced into the boilers. To do this, ordinary sea-water must be evaporated to about *one-eighth* of its bulk. Calculation shows that 10,000 gallons (of 231 cubic inches *each*) of this concentrated brine contains 305 1/2 bushels (of 56 pounds) of salt. Assuming that only *eighty-five per cent* of it can be conveniently extracted, this quantity of brine should yield nearly 260 bushels of salt. With tolerably good arrangements for boiling, *each pound of wood should evaporate 3 1/2 pounds of water*. Taking the weight of a cord of *dry pine* to be equal to 3,200 pounds (a *low estimate*), it will require about 7 1/3 cords to boil down the 10,000 gallons so as to extract the 260 bushels of salt; that is, it will require the burning of *one cord* of wood to every 35 1/2 bushels of salt manufactured.

Fourth method. By lixiviating saline sand and then boiling. [I.e., by washing or soaking the sand to dissolve the salt from it, then boiling the resulting brine to evaporate the water.]

Fifth method. By boiling sea-water.

This method cannot be made *economical* except where fuel is very cheap. The pans are rather more than half filled with clear concentrated brine, which is brought rapidly to a state of violent boiling, the evaporated portion being replaced from time to time by *fresh brine*. The surface soon becomes covered with a dirty brown scum, which, with the salts precipitated at the same time, collects as a thick mud. As far as possible, this must be removed by means of rakes, but some attaches itself to the bottom of the pans, forming the *pan scale*. After twelve or fifteen boilings, it often increases to the thickness of an inch, and must then be broken up by the chisel and removed. In the meantime the solution of salt becomes more concentrated by the constant evaporation and renewal of the brine, until at last it

begins to *crystallize*. This process lasts from 20 to 24 hours. When the scum of crystals begins to form on the surface, the fire is *lessened*, until the temperature of the brine falls to 194° or 167° Fahrenheit, when, with *slow evaporation*, the *soccage* begins, and lasts *several days*.

COST OF BOILING.--Ordinary sea-water contains about 2 1/2 per cent of its weight of pure salt. Hence, it follows that 10,000 gallons contain a little more than 38 bushels of salt, of 56 pounds each. Assuming that 85 per cent of this can be extracted by boiling, 10,000 gallons of sea-water will yield nearly 32 1/2 bushels of salt. To boil down this quantity of sea-water will require the combustion of 7 1/3 cords of wood; that is, not quite 4 1/2 bushels of salt to each cord of wood burnt. When the brine is *weaker* than ordinary sea-water, of course the yield will be proportionally *smaller*, and the operations more expensive.

The Confederate Government used all of the above methods, but because of time and need, they used the fifth method the most. This was not the most efficient method, for it required huge amounts of wood and labor, with the boiling-pots in 24-hour operation. In addition, such salt works were located on the beach out in the open, and green wood was typically used to heat the boilers, a wood that smoked. The smoke during the day and the fires at night were visible from Union ships. Consequently, such Confederate salt works on the beach were often raided by Union forces.

Salt Production at Poplar Grove

The salt work at Poplar Grove Plantation was located away from the beach and used dry wood, and therefore was not raided by Union forces. Poplar Grove used the third method listed above by Professor LeConte, which was called the three-pan system.

The operation of a three-pan system is as follows. Three rectangular, trough-like brine pans are used, protected by a roof or other cover to keep rain water from them. Pan 1 is the largest of them, pan 2 is half its size, and pan 3 in turn is half of that. The three pans are also situated at different heights, pan 1 being highest and pan 3 lowest. Barrels of salt water are brought by wagon to a platform the same height as the wagon bed. From the platform, the barrels are dumped into flumes that feed into pan 1. By the action of the sun and wind, water is gradually evaporated. When pan 1 is down to less than half full, more salt water is added. When the brine reaches 18 degrees on Baumé's hydrometer scale, and deposits a portion of the lime in the form of sulphate of lime, then the brine is passed by flume to pan 2. When the brine there reaches 25 degrees on Baumé's scale, all of the lime has been deposited; the brine has become saturated brine and its volume greatly reduced. The brine is then passed by flume to pan 3, also called the "salting table". The brine, heated to 194-200° F., begins to deposit salt in the form of crystalline crusts. The crystals are raked out and placed into molds on a sloping trough, where the salt is allowed to dry. At a point between 25 and 26 degrees on Baumé's scale, about 25% of the salt is deposited, and this is the prime-quality salt. Between 26 and 28.5 degrees, another 60% of the salt is deposited, and this is

A Struggle for Salt in the South

CHAA members **Kay and Steve Oldstrom** of Brighton, MI, spend each Summer in Greenville, South Carolina. On the 150th anniversary of the beginning of the Civil War this past April 12, Steve wrote to *Repast* describing how the Sesquicentennial has become the talk of the state. After all, the war began in South Carolina with the federal attack on Fort Sumter, in the bay at Charleston.

Steve asked some acquaintances in the area about cooking lore associated with the war, and his inquiry was passed from person to person by e-mail. What became clear is that in people's collective memory of life during the conflict, salt deprivations loom large. One woman that Steve heard from, **Mary Anne Campbell**, shared this tidbit:

I recall a story that my mother told me when I was a little girl. She was Anne Patton Cunningham who grew up in Fountain Inn, SC [just south of Greenville]. Born in 1902, she was the daughter of Elihu Watts Patton and Theresa Cook Patton. The old family stories from the War tell of going to the smoke house and digging the dirt from the floor and boiling it to get salt. This was the only story Mother told me that dated from that time.

Steve commented, "There are undoubtedly many stories like this. Conditions were terrible in South Carolina during the Civil War."

Another of his correspondents, **Jim Way**, sent him two interesting links related to salt in the Confederacy. The first, a page of information on the *Genealogy Today* website, <http://www.genealogytoday.com/guide/civil-war-salt-lists.html>, concerns the Salt Lists used for rationing salt in much of the Confederacy. The county courts of Georgia, Alabama, and certain other states were charged with creating these lists of families eligible for purchasing salt, limited to a quota of half a bushel. The Salt Lists are an excellent source of genealogical information, since they list the heads of households, the number of children, and how much salt was given to each family. Which men fought in the war, which ones died under arms, and whom they left behind, can also be gleaned from the lists, since salt discounts were given to families of serving soldiers and to widowed mothers of soldiers, and the salt was free of charge to widowed wives of soldiers.

The other link that Jim Way sent to Steve is a web page called "Salt, Saltville, and the American Civil War", <http://thomaslegion.net/saltsaltvilleandtheamericancivilwar.html>, which delves into the crucial role of Saltville, a town in mountainous southwestern Virginia. This web page has a text-only version of a scholarly article by Robert C. Whisonant, which was originally published in *Virginia Minerals* (vol. 42, August 1996). The article details that the rock-salt mining in Saltville was a huge operation that produced, in the peak year of 1864, some four million bushels (200 million lbs.) of salt, satisfying about two thirds of the needs of the entire Confederacy. It was by far the single most important source of salt in the South, which is why Union and rebel forces fought pitched battles over it in September and December 1864.

the secondary-quality salt. Finally, between 28.5 and 32 degrees, the remaining 15% is deposited; this salt is heavy with minerals and not usable by humans (LeConte, 1862). This production would be continuous: as pan 1 was emptied, it would be re-filled with sea water to keep the process going.

Still found at Poplar Grove is an iron salt pan three feet by five feet, and two feet deep. This is probably salt pan 3 (the actual salt table), the smallest of the three pans. The first two pans did not have to be made of iron; they might well have been clay pans set on solid brick bases with brick side supports, as Poplar Grove had a brick yard and a clay deposit.

Using the size of Poplar Grove's salt pan and using LeConte's book, we can estimate the amount of salt produced under the best conditions. The laborers could have begun each run with 1800 gallons of sea water, and after evaporation end with 225 gallons of brine to be put over heat. There are 562.5 pounds of salt in 1800 gallons of sea water. According to LeConte the most salt that one can extract is 85%, which amounts to 478 pounds of salt per run. A run would take two to four weeks, depending on the weather, and since the season ran from March to November, Poplar Grove could do at most 10 runs, giving them about 4,780 pounds of salt per year.

The above estimate is based on reducing the sea water to 1/8th volume at 20 degrees on the Baumé scale. An alternative is to reduce to 1/12th volume at 25 degrees Baumé, which leaves all the lime in pan 2 and increases the amount of salt per run. I believe that Poplar Grove used this alternative, as they had a use for the lime in making whitewash. They would have begun each run with 2700 gallons of sea water and end with 717.25 pounds of salt per run, meaning about 7000 pounds of salt per year. ■

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OF STRIFE & SWEETNESS



THE CIVIL WAR AND THE RISE OF SORGHUM

by David S. Shields

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While the American Civil War caused staple scarcities that led to many replacement crops—chicory root for coffee, field pea mash for flour—only one substitute became a significant and enduring component of American agriculture and cookery: sorghum.¹ The war's disruption of Louisiana cane sugar production occasioned sorghum's widespread adoption in both the Union and the Confederacy. An experimental crop grown by progressive farmers in the late 1850's became by 1862 a staple.

Sorghum's extraordinary transit from the margins to the center of American agriculture from 1855 to 1865 inspired Henry Clough to observe after the armistice, "Sorghum is now a household word in all the great Middle and Western States of the Union. It came to us unannounced, was introduced into the country without parade or eclat, was treated at first with distrust and ridicule, was cultivated and worked without skill, and yet in the short space of ten years it has acquired a position among the permanent staples of the country, exhibiting a career of success without a parallel in the annals of husbandry."² Clough, a Yankee editor and farmer who celebrated sorghum as a Union commodity, could have been speaking for Southern farmers as well.

A traditional cereal grass grown throughout Asia and Africa, *Sorghum bicolor*, like most ancient staples, had given rise over the centuries to a host of employments: its leaves used as cattle fodder, its seeds ground into flour for millet breads, its stalks crushed, boiled, and fermented for alcoholic beverages or used as building material. Though grown in colonial America on a small scale as a millet, sorghum seized the attention of agricultural experimentalists in the 1850's when its saccharine content suggested that it might be used like sugar beets as a cheap alternative to cane sugar.³ What had been employed elsewhere in the world for centuries as cereal and fodder in the United States became a sweetener.

Liquid sorghum tastes like the coppery evening sun: more mellow and malty than blackstrap molasses, less brilliant and

wholesome than cane syrup, less piquant and poetic than maple. For half a century, from 1870 to 1920, the sorghum jug sat next to the biscuit basket on many Southern and Midwestern tables.

In the 1870's, a woman in Louisiana recalled sorghum's staple role during the war:

Sorghum, however, was the sweetening best known and cheapest in Confederate times. Every planter cultivated it; every owner of even a few acres had at least one of these acres set in sorghum cane. Housekeepers rang the changes on it in every possible form. Sorghum cake, sorghum pudding with sorghum sauce, sorghum pies—all these and more were on their bills of fare. Preserves were put up with it, and the syrup itself was a standard article of food on most southern tables. Indeed, it is scarcely too much to say that the hardy Chinese sugarcane was one of the pillars of the Confederacy, inasmuch as it became a staple article of food at a time when food was scarce and famine seemed to draw near.⁴

A homemaker from the Upper South confirmed that sorghum had been, there too, the leading substitute for sugar as a sweetener in the kitchen:

Since we had no sugar in Virginia, sorghum, an Asiatic plant with succulent stalks ... recently introduced into the country, and from which we made a syrup, had to serve all its purposes, and somehow we ingeniously managed to concoct a great many things out of it that tasted very good to us then, in those war-starving times. With the aid of our native fruits, dried currants, cherries, apples, pears, peaches, figs, wortle berries and citron, we succeeded in making a very delicious fruit cake. The shelves in the old tin safe now were filled with sorghum puddings, sorghum pies, and sorghum candies, made into all manner of shapes, some plain and others filled with walnuts, peanuts, and hickory nuts.⁵

Raising Cane

Sweet Sorghum insinuated itself into American consciousness in the 1850's when seed entered the U.S. from France and South Africa. Pomologist William Prince in 1853 and D. J. Browne, agricultural agent for the U.S. Patent Office, secured seed in France of the "Chinese Sugar Cane". They distributed their stock through the northern states by members of Prince's seed network and U.S. Congressmen. Leonard Wray, a British merchant-planter who became fascinated by the uses of Imphee Grass in Natal, South Africa, experimented with methods of turning its sap to sugar, and conveyed a substantial quantity of seed to Southern planters, particularly Gov. Hammond of South Carolina.

It took a decade for botanists to agree that Chinese Sugar Cane and Imphee were varieties of the same species, *Sorghum bicolor*; it took no time at all for them to realize that these tall, corn-like grasses promised to be a wonder plant. Agriculturalists adopted it from Minnesota to Georgia. By 1857, 20,000 acres were under cultivation—a noteworthy, but hardly major field allocation. Gov. Hammond of South Carolina numbered

foremost among its many champions, becoming Leonard Wray's leading champion in the U.S. Sorghum engaged American imaginations for political as well as agricultural reasons. It tolerated cold better than sugar cane, so could grow well north of the coastal counties of South Carolina that marked the limit of sugar cane's cultivation. Northerners who bridled at tasting the sweat of African slaves in Southern sugar and molasses, saw sorghum as an ethical alternative that might enrich Northern agriculture. The U.S. Patent Office distributed free packets to anyone who made the effort to write for a sample. Hundreds of Northern farmers did.

Another intangible feature of sorghum led to its quick spread through the land. Farmers felt on an intuitive level that it was a cousin of the cane, shaped like it, and could be processed in ways remarkably similar— stalks being cracked and pressed in a mill, and the sap boiled. This resemblance made numbers of farmers prefer it to the sugar beet, particularly in that era (pre-1893) when beet sugar was incapable of being refined as white as premium-loaf cane sugar.

Events catapulted sorghum from a promising experimental crop to a staple in both the North and the South. The Civil War disrupted the flow of Louisiana and Florida sugar to the North in 1861, and after the Battle of Vicksburg, to the South. Sorghum served in its stead:

At home and abroad sorghum came to take the place of the vanished sugar. The children at home ate it in their ginger cakes, and the soldiers in camp drank it in their rye-coffee. The molasses and sugar of Louisiana were procurable in degree till the fall of Vicksburg; but the spirit of independence was rife, and each State desired and determined to rely as much as possible on its own products. The theory of State sovereignty was extended even to sorghum; and its introduction was hailed everywhere as one of the greatest boons of a beneficent Providence. The juice of the cane, extracted in a primitive fashion by crushing the stalks between wooden rollers revolving upon wooden cogs and impelled by horse- and little-darkey power, was caught in an ordinary trough, boiled down into proper consistency in preserving kettles, kitchen pots, or whatever might be utilized for the purpose, and barreled for use as sorghum molasses. The syrup thus produced was quite a palatable one, with a slightly acidulous and not disagreeable flavor, but with an unpleasant tendency to make the mouth sore. It was known as "long-sweetening", in contradistinction to its predecessor, "short-sweetening", the sugar that was scarce.

From its use in the place of sugar sorghum soon leaped into high repute as an almost universal food staple. It was warranted to cure any case of hunger in man or beast. Writers in the suggestive daily press undertook in elaborate and exhaustive essays to show that sorghum syrup was nearly as nutritious as meat and an exceedingly good substitute for it, while the seed of the sorghum cane was capable of being ground into a meal that made a most excellent and wholesome brown bread. They claimed that the problem of blockaded existence had been solved in the discovery of a plant

which produced in itself meat and bread for the human family and provender for cattle.⁶

While the above report from *The Century* stresses the continental embrace of sorghum during the war, other magazine commentators stressed the particular fascination with sorghum in the Confederacy:

Sugar, after the fall of Vicksburg, was almost as scarce as coffee. But in sorghum the people found a substitute which came perhaps nearer a success than any of the numberless makeshifts of the period. Sorghum, or Chinese sugar-cane, as it was then known, had been raised to some small extent in the State as early as 1857. It began to be largely planted in 1862, and during the two succeeding years its cultivation became general; sorghum-boiling adding another to the great Southern festivals of corn-shucking and hog-killing. It was about the sole thing of which there was no stint in the Confederacy. Verily the land was "submerged in sorghum". It sweetened the coffee, tea, and all the desserts of the time; sorghum candy was the national confection, sorghum "stews" the national festival. The strange creaking hum of the cane-mills pervaded the land. Every place was redolent of it; everything was sticking with it.⁷

Because it was an entire novelty, errors in growing and processing sorghum deviled its early adopters. Preparing syrup proved particularly fraught, with some undercooking it, others scorching it. "As the sorghum was in most cases unavoidably boiled in iron vessels, the habitual users of it were easily to be distinguished by their abnormally black teeth."⁸ So it was in no way an unproblematic ambrosia, whose quality and salubrity were granted universally. For every admirer of its dulcet taste, there existed a consumer with fouled teeth, sore mouth, or complaints about its flavor.

Sorghum bread, made from the brownish-pink flour of ground Imphee seeds (many likened the appearance and texture to buckwheat), proved a rustic loaf lacking homely associations or high table refinement. Because sorghum flour does not have gluten, the dough does not rise even with leavening, so it was often admixed to wheat flour to make brown loaves that some said tasted like rye. When prepared from pure sorghum flour without a chemical rising agent, it came from the oven dense and black, particularly if made with Black Seed Sorghum. In South Africa the bread is traditionally thin and crusty, without much crumb. In the U.S., all-sorghum bread usually combined sorghum meal, sorghum molasses, baking soda, lard, salt, hot water and, when available, a spice such as ginger.⁹ It was, perhaps, unfortunate that the most systematic institutional promoters of sorghum bread were the Union and Confederate prisons. When wheat supplies grew scarce, the resort to sorghum took place. "This was as black as a stove-pipe and sour when it came from the oven."¹⁰

Sorghum bread's associations with the time of privation and the experience of captivity had consequences once peace and commerce returned. Just as rye coffee (or okra seed coffee for that matter) vanished from the pantries of all but the poorest

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when roasting-beans became available from South America, so sorghum bread ceased to appear at the table when wheat began pouring into the South from Pennsylvania and California in the 1860's. The brief heyday of sorghum beer also ceased, and would not be taken up again until the Volstead Act of 1919 made the cheap illegal production of alcohol a very profitable enterprise.¹¹

Privation sometimes soured public perception of sorghum in another way. Some during the war believed the claims that sorghum was a universal food and, during the periods of general scarcity, grew and consumed sorghum as their chief staple. Sorghum "sore mouth" resulted. Ulceration of the cheeks is a symptom of pellagra, a dietary disease caused by the high concentrations of leucine in sorghum preventing the conversion of tryptophan into niacin.¹² Sore mouth thus indicated a niacin deficiency in the diet. After the war, pellagra troubled those portions of the South where niacin-poor corn became the basis of diet. Eating sorghum with corn exacerbated the pellagra problem. Where sorghum operated simply as sweetener in a more varied diet, sore mouth did not afflict. One population that suffered sorghum-related pellagra disproportionately during the war was prisoners of war. Union captives held in Columbia, SC, languished in "Camp Sorghum", so named for its prison diet: sorghum and corn bread.¹³

Sorghum remained important during the Reconstruction era for two purposes: as cattle fodder and as a sweetener. Its most pronounced benefit, its ability to be grown in areas north of the semi-tropical southern coast, remained in force. If one wished a locally-sourced and processed sweetener that could also serve as livestock feed, one had to answer two simple questions: would sorghum or sugar beets give you more of what you need at less cost? Did you like the flavor of sorghum more than beet sugar?

The question of flavor was complicated by the problem of "green taste". H. W. Wiley of Indiana discussed this fault's role in the abandonment of sorghum culture in parts of the Midwest after the Civil War. "The Sorghum syrup made at that time contained an unpleasant flavor, known as the sorghum taste or green taste, which was very unpleasant to many persons. This led to the gradual exclusion of sorghum syrup from our markets."¹⁴ If Midwestern farmers had read agricultural journals from other sections of the country, they would have learned how to avoid the problem. In a report on Midwestern sorghum culture contained in an 1860 issue of *The Southern Cultivator*, H. Hinkley noted that green taste arose from the processing of immature canes. "Well matured cane has not this taste, nor has its syrup."¹⁵ The widespread harvesting of immature cane can only be attributed to a lack of experience, a problem not uncommon with agricultural novelties.

Those who correctly grew sorghum developed decided taste preferences among varieties. In Northern states, numbers insisted that the Chinese sugar cane had a richer taste. (They also esteemed its great cold tolerance in the field.) Certain of the Imphee canes developed enthusiasts in the South. Yet the descriptions of the samples of processed sorghum tested by the Illinois State Agricultural Society in 1859 make plain that extraordinarily variable boiling and fining gave rise to syrup and sugar that ranged from "very dark, exceedingly bitter and unpleasant" to "taste almost equal to honey".¹⁶ Singularly

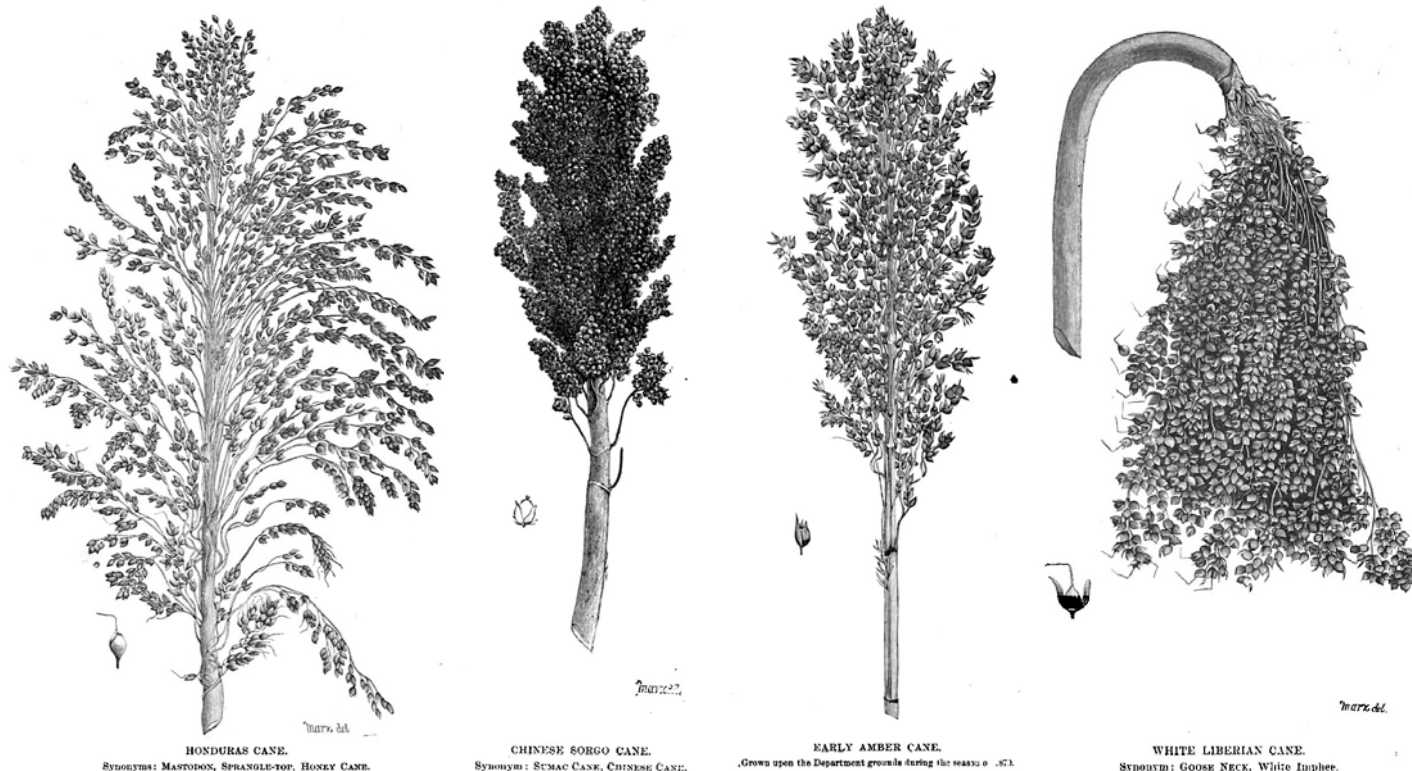
unfortunate things happened to those who attempted to derive crystallized sugar. So mistakes in processing ruined the taste of perfectly good sorghum as frequently as using immature cane. Knowledge of how to process syrup without scorching and without impurities arose in the Union in late 1863 and 1864. In parts of the South this knowledge did not come until Reconstruction. The creation of fine sorghum sugar took place only after breeding refinements of Omseana Imphee cane produced plants with enough natural sugar to crystallize. This was largely a development of the 1880's.

The selection of cane varieties varied according to local conditions. In more northerly states, sorghum sometimes failed to produce seed-heads. Soil mattered greatly in terms of crop yield, and some strains of sorghum developed an unaccountable variability in yield from year to year despite commensurate climate conditions. What sorghum had going for it was the fact that during the war everyone had eaten it, knew it, and liked it to a degree. A second consideration was labor. The sugar beet was a "back-bending crop", sorghum a standing crop like corn.¹⁷ Not everyone had consumed beet sugar, and familiarity spoke in sorghum's favor. Meanwhile, breeders sought to perfect varieties of the grain suited to various growing situations.

Antebellum Varieties

A hallmark of the age of experiment in American agriculture (roughly 1820 to 1885) was the widespread tweaking of vegetable and grain varieties— seed selection, hybridization by cross-breeding varieties, and the careful development of natural mutations (sports) led to the quick proliferation of varieties. Seed companies attempted to secure the best of these improved varieties as proprietary cultivars. Each new variation bore a new name. Yet truth be known, the most significant crosses were made by multiple people with similar results in different locales, so a multiplicity of names designated a rather limited number of plant types.

The Chinese Sugar Cane, a Black Seed Sorghum imported from India, and Wray's 16 Imphee grasses from Natal constituted the basic breeding stock from which all the marketable varieties of sorghum originated. Only 10 of Wray's Imphee grasses mattered greatly in the development of American sorghum. Because of the time differentials for growing to maturation, the grasses were immediately categorized into northern short season and southern long season varieties, although all of the northern types could be grown in the south: The northern varieties were: Nee-a-za-na, Oom-see-a-na, Boom-ve-ya-na, Shla-goo-va. The Southern varieties: Shla-goon-dee, Zim-moo-ma-na, E-a-na-moo-dee, Vim-bis-chu-a-pa, Zim-ba-za-na, E-both-la, E-thlo-sa, Boo-es-a-na, En-ya-ma, Koom-ba-na, See-en-gla-na, and E-en-gha.¹⁸ Widespread notice of these varieties came through publication of Henry S. Olcott's 1857 treatise, *Sorgho and Imphee, the Chinese and African Sugar Canes*, by the country's leading agricultural book publisher, A. O. Moore of New York.¹⁹ The book contained Wray's introduction to the South African varieties and translations of the French experiments at extracting sugar from the Chinese Sugar Cane. The volume prompted such interest that a separate appendix was issued within the year, detailing aspects of sorghum's cultivation and surmising best practices for syrup and "wet sugar" manufacture.



Left to right: Honduras Cane, Chinese Sorgho Cane, Early Amber Cane, and White Liberian Cane

Because land-race grains and oil seeds inherently possess a fair amount of genetic variability, numbers of the nominal varieties of the 1870's through 1890's were recognized by university field testers as re-branded versions of one of the original strains. Below I have supplied the predominant market name, probable parent strain, and a description of its salient features.

Honduras Cane: Seedsman Peter Henderson promoted this sorghum actively in the 1870's and '80's. According to Henderson, "Its seed-top is reddish-brown and spreading; hence the synonym 'Sprangle Top'. It is also called 'Mastodon' and 'Honey Cane'."²⁰ Peter Collier identified "Honduras Cane" as a development of Wray's *E-engha*, of which Wray had written, "This is a fine, tall kind, being from ten to twelve feet high when full grown, but it is more slender than either of the foregoing, and exceedingly graceful in appearance. It begins flowering in ninety days, and is fully ripe three weeks after. ... The seed head of the E-engha is large and very pretty, the seed being upon long slender foot stalks, which are bent down by the weight of the seed, forming a graceful drooping. The seeds, which are of a dull, yellow color, are rather long and flat than round and plump."²¹ Wray himself thought that the Honduras Cane was his *Vim-bis-chu-a-pa*.

Chinese Sugar Cane retained its name throughout the 19th Century, and collected "Sorgho" as an additional designation. Its cold tolerance made it the preferred variety in the most northerly states and Canada. Its productivity never matched the Imphee varieties, but the flavor of its syrup attracted strong adherents. It was employed in numbers of hybridizing schemes, crossing the cane with Imphee varieties. The French, who had supplied the original seeds, abandoned cultivation of the variety in the

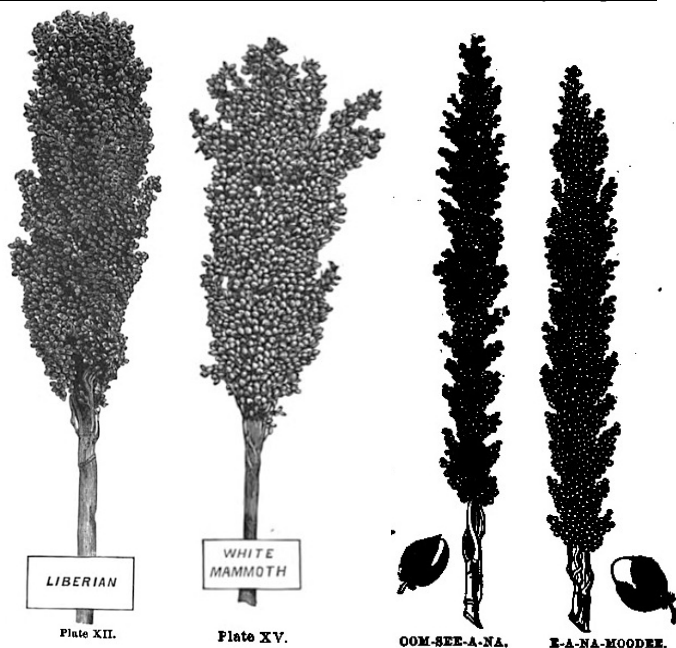
1870's. Collier notes that Chinese Sugar Cane "is characterized by a rachia or central spindle, with a loose, spreading panicle; the branches are slender, drooping, bearing brownish colored seeds, enclosed in blackish, shining glumes."²²

Early Amber Sorghum: This most popular of the 19th-Century sorghum varieties also went by the names "Early Golden" and "Golden Syrup". By the 1870's it had become the variety cultivated most widely, favored because of the high sugar content of the stalks and the flavor of its syrup. It was a form of Wray's Imphee *Boom-vwa-na* (literally "small red" in Kaffir). Wray commended the cane, testifying, "I have eaten single pieces, containing certainly two or three per cent. more sugar than the average juice obtained from large bundles of stalks, taken as they come. ... [T]here is a clearness, a brightness, and a genuine sugarcane sweetness in the juice of this variety, and of the Oom-see-a-na, that I very much admire. In its growth and general appearance, it is very much like the E-engha [Honduras Cane] but its stalks are brighter and more slender: its leaves are not so broad, and its seed vessels are upon shorter and stiffer foot stalks."²³

White Liberian Cane: Known also as "White Imphee", "Early Orange", "Orange", "Wolf Tail", and "Gray Top", had an easily recognizable short panicle, with branches that bent to one side. A small plant, its seeds were nearly white. First introduced into the United States by Wray as *Nee-a-za-na*, it had the reputation among Zulu-Kaffir farmers of being the sweetest of the Imphee grasses. It could ripen in as few as 75 days, a great recommendation in the eyes of cultivators from regions with short growing seasons.

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Left to right: Liberian Sorghum, White Mammoth, Oom-see-a-na (Purple Imphee), and E-a-na-moodee

Liberian Sorghum: Was also named “Imphee” and “Sumac” by seed dealers of the 19th Century. Admired for its vitality and robust tolerance of extreme weather, Liberian was the latest ripening of the Imphee canes. It was characterized by its short, very stout, close-jointed stem, its small, compact panicle and diminutive reddish-yellow seeds. This was a development from Wray’s *Koom-ba-na*, which he characterized as “one of the very sweetest and best I had.”²⁴

White Mammoth (White African Cane): One of the tallest of the Imphee canes, it produced seeds as white as rice in black glumes. It had an erect habit, a long growing season, and a high sugar content in the stalks that commended it to early growers for distilling. This was Wray’s *En-ya-ma* Imphee. He noted in particular its height and its quality as a millet. Baker’s Heirloom Seeds sells this original Imphee variety as one of its heritage sorghums.

Purple Imphee: In the 1870’s a commentator wrote, “This tall, reed-like cane, with its trim, spear-shaped head, is the most remarkable of its race in being in some of its modified forms almost the only sort from which any sugar has heretofore been made.”²⁵ This was Wray’s *Oom-see-a-na*.

E-a-na-moo-dee Imphee: One of the tallest of the Imphee grasses, topping 10 feet, this was a greatly valuable forage plant. Wray reckoned it a soft and juicy cane, with 14% sugar. The seed-heads grew large, erectly stiff, bearing round plump seeds “of a clear yellow color”.

Red Imphee: Tall, long-jointed, early ripening, and noted especially for its highly acidulous juice and its beautiful, wide-spreading, rust-colored panicle when the seeds are ripe. An evolution of Wray’s *Shla-goo-va*.

Black Imphee: An early, not very productive variety, with a short stem and rather small and close panicle of a brilliant glossy black color— that of the glumes— which entirely enclose the seed. The juice of this sort possesses very strongly the peculiar flavor generally characterizing more or less all the Imphee race.

All of these varieties were stripped of leaves twice during the growing season for fodder. The seed-heads were picked and milled for flour upon maturation. The stalks were cut, carted to a mill, and processed for syrup.

Making Sorghum Molasses

The demand for sweeteners during the Civil War accelerated the development of commercial-scale processing of sorghum for syrup. By the end of the war every step had generated machines suited for the most efficient handling of the material. In 1865 the U.S. Commissioner of Agriculture summarized the accumulated knowledge in “Sorghum, or Northern Sugar Cane” in the USDA’s annual report.²⁶ A digest of the method follows.

After the leaves had been stripped for fodder for the final time, and the crop had either come to maturity or suffered a killing frost, workers cut the stalks with a corn knife. For large plantings, horse-driven carts outfitted with a long blade saved man-hours of labor. If no frost had occurred, the stalks would be left on the ground for up to two weeks to cure. If a sharp frost had taken place, the stalks were immediately put into shocks. Cane would be gathered in large piles, covered with straw. Cane that freezes and then returns to warmth risks undergoing acetous fermentation, so insulation of the piles was paramount.

At a convenient time, farmers carted the cured canes to a mill for crushing. Mills tended to be comprised of three iron rollers arranged either vertically, for animal-powered operations, or horizontally, for water- or steam-powered mills. Flanges on the sides kept stalks from spreading beyond the sides of the rollers. A juice-collecting pan sat beneath the rollers.

Because a substantial amount of vegetable matter gets mashed into the juice, the green sorghum sap had to be filtered before further processing; otherwise, the syrup would look dirty and contain a constellation of particles. So quality-conscious producers ran the juice through fine-mesh screens or casks filled with straw.

Cane juice must be subjected to a process of evaporation to produce syrup. Since fuel costs could be exorbitant, much anguish attended the design of boilers to heat the raw sorghum juice. Experimenters invented steam evaporators, steam coil evaporators, and chimney systems to limit the fuel requirements. Several rules of thumb governed the cook-down of the juice: “prolonged exposure of cane juice to intense heat is injurious”, and the time of exposure to heat must be proportional to the amount of juice in a batch. The southern tendency to subject juice to protracted boiling over open fires resulted in “a dark, tarry, offensive mass”. A short, rapid boil in shallow tilted pans in small batches became the standard, with the green juice being poured in the higher end of the pan and syrup running out the lower end in a constant stream.

Once the juice commenced boiling, certain starches and acid in the sap began separating out. First a green scum appeared on the surface of the liquid that had to be skimmed off. Next an amorphous white or yellow gum formed that also had to be separated out. A chemical admixture of slaked lime was added to aid in this segregation of the sugars from other components, but this process of “defecation” had mixed results. The chemical separation of pure saccharine liquid from the other chemical components of the sap proved the most troublesome problem facing sorghum processors in the 19th Century. The lime had the additional benefit of counteracting the acidity of some sorghum batches.

The syrup had to cool to 175° F. before it could be bottled. This proved difficult with large batches, since the hot sugar retained heat. Sometimes bottlers ran a stream of syrup down a long open sluice to a funnel into the mouth of a gallon jug to cool the liquid. For producers desiring further refine, a second boiling run and bag filtering, or heating it with bone coal, removed all extraneous odors and matter.

Finished syrup had to possess several qualities: purity, clarity of color, hardy viscosity, a subdued odor, and mellow taste with perhaps a touch of acidic sharpness, depending on local preferences. During the Reconstruction era a method existed for producing attractive syrup on a home or commercial scale. Quality begot demand. The table at the right, charting the expansion of sorghum syrup production by decade, tells the tale.²⁷

Cost issues greatly complicated efforts to create a loaf-quality white sorghum sugar. During the war, producers met with little success perfecting the crystallization of saccharine in sorghum syrup. The best product was a sticky brown “muscovado” sorghum that did little to drive the visions of pure granulated Louisiana green stripe cane sugar from one’s imagination. By 1868 the Louisiana cane fields were producing again in quantity. So when, in the late 1870’s, scientists and factors refined marketable sorghum sugar, the energy costs to do so inflated sale price to a level where it was more expensive than the finer Louisiana cane sugar.

Sorghum never would become a significant alternative to sugar cane or sugar beets as a source for granulated sugar. As a sweetener it prospered only in the syrup form, competing with maple syrup and corn-derived Karo syrup. Artisanal mills have revitalized the craft of making syrup from sorghum. But sorghum’s value as food in America became subordinate half a century ago to its worth as silage for livestock, and today as raw material in the manufacture of ethanol.

Historical Recipes

Mrs. Thorn's Sorghum Cake— One pint of sour cream or buttermilk, one half teacupfull of butter or sweet lard, one pint of sorghum molasses, one egg, one teaspoonfull of soda, two of cream tartar, or two table spoonfuls of good cider vinegar; mix in a batter, pour into pans, and bake in a quick oven. *Ohio Cultivator* 18:1 (1862), p. 93.

Sorghum Candy— Place a quart or two of sorghum molasses, or any less quantity, in a common dripping pan, and apply heat so it will boil moderately, swelling up to double or more its original bulk, until reduced to a proper consistency, which may be known by dropping a small portion into cold water. If boiled enough it will crack— when it should [be] removed from the fire and poured into tin pans or basins, thinly coated with butter. When the outer edge hardens, it will be in fit condition for working; which is done with hands annointed [sic] with butter, by pulling and twisting, as in making other candy, and then cutting in desired lengths. The final process consists in sucking and eating, the details of which “Hungry Schoolboy” is doubtless well acquainted with. *The Cultivator & Country Gentleman* 28 (Albany, NY, 1866), p. 414.

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Production of Sorghum Syrup in the United States According to the Census of 1860-70-80			
States and Territories	Number of gallons		
	1860	1870	1880
Massachusetts	—	—	18
Rhode Island	20	20	—
Connecticut	395	6,832	1,163
New York	516	7,832	1,134
New Jersey	396	17,424	1,261
Pennsylvania	22,249	213,373	69,767
Delaware	1,613	65,908	25,136
Maryland	907	28,563	19,837
Virginia	221,270	329,155	564,558
North Carolina	263,475	621,855	964,662
South Carolina	51,041	183,585	281,242
Georgia	103,490	374,027	981,152
Florida	—	—	10,199
Alabama	55,653	267,269	1,163,451
Mississippi	1,427	67,509	1,062,140
Louisiana	—	180	33,777
Texas	112,412	174,509	432,059
Arkansas	115,604	147,203	1,118,364
Tennessee	706,663	1,254,701	3,776,212
West Virginia	—	780,829	817,168
Kentucky	356,705	1,740,453	2,962,965
Ohio	779,076	2,023,427	1,229,852
Michigan	86,953	94,686	102,500
Indiana	881,049	2,026,212	1,741,853
Illinois	806,589	1,960,473	2,265,993
Wisconsin	19,854	74,478	314,150
Minnesota	14,178	38,725	543,369
Iowa	1,211,512	1,218,636	2,064,020
Missouri	796,111	1,730,171	4,129,595
Kansas	87,656	449,409	1,429,476
Nebraska	23,497	77,598	246,047
California	552	333	2,459
Oregon	315	—	2,283
Nevada	—	3,651	350
Colorado	—	—	3,227
Arizona	—	—	5,771
Dakota	20	1,230	17,012
Idaho	—	—	36
New Mexico	1,950	1,765	251
Utah	25,475	67,446	58,221
Washington	—	612	1,472
Total	6,749,123	16,050,089	28,444,202

THE RISE OF SORGHUM *continued from p. 19*

Molasses Pie: Three eggs, yolks and whites beaten separately, half cup New Orleans or sorghum molasses, cup white sugar, butter size of a walnut, cup sour cream, teaspoon soda stirred into molasses, whites mixed in last; or reserve two whites for meringue. Bake slowly in moderate oven. Nutmeg gives a nice flavor. Another half cup molasses may be added with teaspoon corn-starch, making sufficient for two pies. They may also be baked with two crusts. *The New Practical Housekeeping* (Minneapolis: Home Publishing, 1890), p. 492.

Preserves Using Sorghum: For sweet meats or fruit preserves of any kind Sorghum syrup is preferable to sugar, as it adds not only to the flavor but to the consistency of the preserves, &c. being of itself in fact preserved cane juice. When syrup is used for preserving fruit the juice should be boiled down to the original consistency of the syrup in order to avoid fermentation. This precaution, however, is equally essential to sugared preserves. Mrs. D. D. Tooker, "Sorghum Recipes", *Michigan Farmer* 5 (1861), p. 514.

Sorghum Vinegar: An excellent article of vinegar is easily made by adding three quarts of rain water to one of Sorghum syrup and placing it where it will ferment, which it will do on short notice, in the sun, or near a fire. Mrs. D. D. Tooker, "Sorghum Recipes", *Michigan Farmer* 5 (1861), p. 514.

Sorghum Curing Pork: For curing Hams or bacon, take one gallon of Sorghum syrup—a very poor article will answer— add one gallon of fine salt and 6 gallons of water. Pack the meat in a tight Cask and pour this pickle upon it till it entirely covers the meat; let it remain about a fortnight, then take out the meat, wash it clean and smoke it in the usual way. Hams thus cured are said to be equal to the best 'sugar-cured hams' in market. Mrs. D. D. Tooker, "Sorghum Recipes", *Michigan Farmer* 5 (1861), p. 514.

Ginger Snaps: One-half gallon of sorghum, two tablespoonfuls of ginger, two tablespoonfuls of salt, one teaspoonful of black pepper, one tablespoonful of cinnamon, two large cupfuls of lard, two tablespoonfuls of soda, flour to make a very stiff dough. Bake quickly. *Good Housekeeping* 18 (1894), p. 86. ■

Endnotes

1. A survey of the substitutes is provided in Mary Elizabeth Massey, *Ersatz in the Confederacy: Shortages and Substitutes on the Southern Homefront* (Columbia, SC: University of South Carolina Press, 1993).
2. Henry Clough, "Sorghum or Northern Sugar Cane", *American Agricultural Annual* (New York: Orange Judd, 1867), p. 109.
3. The American 1840's and 1850's were the pharmacological era in botanical experiment, when the traditional uses of a cultivar might be ignored by analysts in favor of extracting a chemical derivative.
4. Mrs. M. P. Handy, "Confederate Coffee", *Ouachita Telegraph* (Monroe, LA), Dec. 7, 1877.

5. "Wuz Santa Claus Jes' a Nigger?", *The Princeton [Minnesota] Union*, Dec. 19, 1895, p. 3.
6. *The Century* 14:36 (1888), p. 766.
7. David Dodge, "Domestic Economy in the Confederacy", *The Atlantic Monthly* 58 (1886), p. 235.
8. Ibid.
9. A version of this recipe was employed in the 1920 USDA experiments on "The Digestibility of Grain Sorghums", *Bulletin of the U.S. Department of Agriculture* 451 (Washington, DC: Government Printing Office, 1920), p. 5.
10. David Henry Hanaburgh, "Salisbury Prison-Fare", *History of the One Hundred and Twenty-Eighth Regiment New York Volunteers (U.S. Infantry) in the Late Civil War* (Pokeepsie [sic], NY: Enterprise Pub. Co., 1894), p. 189.
11. Prohibition made sorghum-based intoxicating beverages popular again for a decade. After repeal it underwent a second quiescence until the last several years, when Anheuser-Busch and several microbrewers have begun to produce gluten-free sorghum-based beers designed for those suffering from Celiac disease.
12. Tom Sanders and Peter Emery, *Molecular Basis of Human Nutrition* (London: Taylor & Francis, 2003), p. 199.
13. Lynn Salsi and Margaret Sims, *Columbia: History of a Southern Capital* (Charleston, SC: Arcadia Publishing, 2003), p. 70.
14. Harvey Washington Wiley, "The Growth of Sorghum Cane and the Manufacture of Sugar and Syrup Therefrom", *Annual Report of the Indiana State Board of Agriculture* 23 (Indianapolis: State Board of Agriculture, 1882), p. 494.
15. H. Hinkley, "Sorghum at the West", *Southern Cultivator* 18 (1860), p. 83.
16. "Convention of Chinese Sugar Cane Growers", *Transactions of the Illinois State Agricultural Society* 3 (Springfield: Illinois State Agricultural Society, 1859), pp. 308-309.
17. Herbert Myrick, *Sugar: A New and Profitable Industry in the United States* (New York & Chicago: Orange Judd, 1897), p. 14.
18. Henry Steel Olcott, "Sugar from the Sorgho", *Southern Cultivator* 15 (1857), pp. 142-43.
19. Henry Steel Olcott, *Sorgho and Imphee, the Chinese and African Sugar Canes: A Treatise upon their Origin, Varieties, and Culture ... with a Paper by Leonard Wray ...* (New York: A. O. Moore, 1857).
20. Peter Henderson, *Henderson's Handbook of Plants and General Horticulture* (New York: P. Henderson & Co., 1910), p. 420.
21. Olcott, *Sorgho and Imphee*, p. 206.
22. Peter Collier, *Sorghum: Its Culture and Manufacture Economically Considered as a Source of Sugar, Syrup, and Fodder* (Cincinnati, OH: R. Clarke & Co., 1884), p. 14.
23. Olcott, *Sorgho and Imphee*, pp. 207-8.
24. Letter from Wray to U.S. Commissioner of Agriculture, Sept. 7, 1882, as quoted in Collier, p. 67.
25. F. L. Stewart, *Sugar Made from Maize and Sorghum: A New Discovery* (Washington, DC: The Republic Company, 1878), p. 26.
26. *Report of the Commissioner for Agriculture for the Year 1864* (Washington, D. C.: Government Printing Office, 1864), pp. 60-87.
27. From Collier, p. 416.

MORSELS & TIDBITS

Congratulations are in order for a few CHAA members and friends:

- Founding member **Jan Longone**, a Curator of American Culinary History at the UM Clements Library, has been named to receive the Amelia Award this Fall from the Culinary Historians of New York. The award, named in honor of Amelia Simmons, author of the first cookbook written in America, recognizes outstanding lifetime achievement in culinary history. The past recipients are Karen Hess, Barbara Ketcham Wheaton, Jacqueline Newman, and Betty Fussell. The CHNY Board of Directors commented that Jan's name "easily belongs with these pioneers and grand dames of culinary history ... [W]e can think of no one else who has made more significant contributions to the field."
- **Alex Young**, Executive Chef at Zingerman's Roadhouse in Ann Arbor, won this year's James Beard award for Best Chef in the Great Lakes region. After four consecutive nominations in previous years, he finally received the honor in a ceremony this past April at New York's Lincoln Center. Alex is known for using local and organically grown ingredients and for resurrecting traditional recipes, including in a series of special historical theme meals at the restaurant. He spoke to CHAA in May 2008 on "Double Digging Deep: The Story of Chef Alex's Organic Garden".
- Ann Arbor native and well-known foodie **Hanna Raskin** (née Miller) was honored for maintaining the Best Newspaper Food Column in the U.S. in 2010 by the Association of Food Journalists. During that year, she was Food Editor at *Mountain Xpress* in Asheville, NC, and then, following a relocation, at the *Dallas Observer*. Last April, done in by Texas short ragweed, she received a health-related transfer to become food critic for the *Seattle Weekly*. Her daily dispatches can be read at <http://www.seattleweekly.com/authors/hanna-raskin/>. In Asheville, Hanna and her husband Kenneth had also started a business, American Table Culinary Tours. Hanna was the author of "Gebhardt and La Choy: Making Ethnic Food Safe for Middle America" in our Summer 2007 issue.

An old-fashioned farm picnic supper, based on Michigan traditions from 1840-1900, is being offered at the historic Waterloo Farm Museum in Grass Lake, MI on Sunday, August 21 at 4-8 pm. The \$35 admission is to benefit Slow Food Huron Valley and the Waterloo Area Historical Society. Participants will be able not only to eat dishes based on chefs' research at the Clements Library, but also to shell corn, cut kraut, hand-crank ice

cream, and tour the ice house, bake house, and two working kitchens that use a cook hearth and a woodstove. For further details, including the menu and ticket info, visit <http://www.slowfoodhuronvalley.com/waterloo.html> or contact CHAA member **Kim Bayer** at kimbayer@gmail.com.

Those readers fascinated by the Civil War and its Sesquicentennial will want to check out a traveling exhibit, "Discovering the Civil War", which is staying at The Henry Ford in Dearborn, MI, between May 21 and September 5. The show features a treasure-trove of artifacts and multimedia activities assembled by the **National Archives**. For further information, visit <http://www.thehenryford.org/CivilWar>.

Also from the National Archives in Washington, an exhibit is running there from June 10 to January 3 entitled, "What's Cooking, Uncle Sam? The Government's Effect on the American Diet". Its curator, **Alice Kamps**, has assembled historical documents, colorful posters and labels, photos and films. The show covers everything from federal regulations on food health and safety and the twists and turns of government nutritional advice, to the history of White House dining, patriotic food campaigns during wartime, military rations, and the USDA's overseas expeditions to snag unusual edible plant species. For further information, visit <http://www.archives.gov/exhibits/whats-cooking>.

We sadly note the passing of CHAA member **Marajeau Brooks** (née Pedlow), 86, who died suddenly on April 21 after a long illness. Marajeau had been a member of our organization since Fall 2007. She grew up in Rockford, IL, where she met her future husband Richard "Chad" Brooks in first grade, and the two graduated together from high school there. Her later book *Wartime: Chad's Secret, 1943-1946*, available on lulu.com, describes his months MIA during World War 2. After raising three children with Chad, Marajeau earned BA and MA degrees at Northern Illinois University and taught elementary school in Rockford for 19 years. She moved to Ann Arbor in 1998 following Chad's death. In addition to cooking and gardening, her interests included reading, sewing, and art appreciation. We extend our sympathy to Marajeau's daughter, Christina Whitman of Ann Arbor, and her other children, relatives, and friends.

On the Back Burner: We invite ideas and submissions for *Repast*, including for these planned future theme-issues: Civil War Sesquicentennial, Part 2 (Fall 2011); Foods of India (Winter 2012); and Civil War Sesquicentennial, Parts 3-4 (Spring and Summer 2012). Suggestions for future themes are also welcome. ■

WE HAD A FULL PLATE LAST WINTER

This past Winter, Program Chair **Laura Gillis** set a grand table for the Culinary Historians, arranging seven programs in five months. Some of the talks continued the Culinary Métiers theme that Laura launched last Fall, while others explored issues of food history.

At the January 16 program, Chef **Susan Baier** of the Culinary Studies Institute at Oakland Community College discussed and demonstrated the culinary métier of *garde manger*. Historically, this was a guild-based craft whose leading responsibility was the preservation of meat and fish for the table, she explained. Over the centuries, the profession absorbed additional tasks such as the preparation of salads and dressings, *patés* and *terrines*, and ice and fruit carvings. Today's *garde manger* kitchen is responsible for a range of fresh, cooled foods, notably salads. Chef Baier demonstrated the preparation of several salads, dressings, and plate garnishes. Traditionally, the salad was eaten near the end of a meal as a digestive. Crispness and texture are still of utmost importance. A dressing is essentially a room-temperature emulsion of fat and acid (such as olive oil and vinegar), typically in a 3:1 ratio, and flavored with seasonings. Mayonnaise, the basis for many dressings, is another example of such an emulsion. A salad dressing can be stabilized with Dijon mustard, honey, or sugar. Susan outlined how to select among the various types of lettuces, endives, cresses, oils, vinegars, and seasonings.

On February 20 **Steve Rupp**, a butcher at Hiller's Market, spoke to us about butchering as a métier. Knowing how to cut meat and how to maintain standards of cleanliness and display appearance is becoming a lost art, Mr. Rupp observed. In the face of increasing industrialization of meat cutting, Hiller's, with its chain of six grocery stores in SE Michigan, has maintained a high product quality. The butcher's role there is more "old school", including a very physically-demanding workday, an apprentice period of more than two years, and lots of face-time with customers. Instead of factory pre-cut meat in boxes, they start with 700-pound sides of beef or other carcasses. Consumers today ask more questions and demand a wider variety of foods; they prefer lean and natural meats, and they want to know where the products come from and how to cook them. Mr. Rupp outlined the various grades of beef (choice, natural, prime, *Piemontese*, and *kobe*) and their suppliers, and he described the procedure for measuring the fat content of meats. Hiller's also carries a range of other meats such as poultry, lamb, goat, bison, yak, python, rattlesnake, and other game.

At our March 11 program **Sandra Sherman**, an English professor at Fordham University in New York, discussed her latest work, *Invention of the Modern Cookbook*. She described how cookbooks first exploded in popularity in England in the 18th Century, with hundreds being printed. They were the first mass self-help books, fostering a democratic spirit whereby common citizens might educate themselves and better their stations in life by purchasing and reading these affordable publications. In earlier times, cooking knowledge had been

passed down one-to-one within families, whereas printed cookbooks were written for an abstract, largely urban audience. Works such as Hannah Glasse's *The Art of Cookery Made Plain and Easy* (1747) expanded readers' horizons and helped create a national cuisine, exactly by raising awareness of regional specialties and of the distinctions between domestic and foreign foodways. Democracy also bred "politeness", i.e., the desire of commoners to emulate gentility. Authors learned how to lure such readers with just the right mixture of authority and intimacy. For example, Robert May's *The Accomplisht Cook* (1660) gave the impression that the reader would have the guiding hand of an expert in her kitchen, without the expense of hiring him directly. The "celebrity chef" phenomenon, as well as niche cookbooks and fierce competition among cookbook authors, also arose at this early date.

On March 27, renowned food historian **Andrew Smith** spoke to us about his two recent books, *The Potato: A Global History* and *Starving the South: How the North Won the Civil War*. Regarding the latter, see his article in this issue. Regarding the potato, Andy's discussion focused on its spread around the globe. He told us that this plant, like the tomato, originated on the coastal plains of what is now Peru. One species of potato was later domesticated in Peru and Chile, and there were at least 200 varieties of this species being grown in pre-Columbian times. The potato is generally cultivated by planting not its seeds but its tubers (or just the eyes). It was introduced to Europe mainly through northern Italy. In North America, the plant failed to thrive in places such as New York, New Jersey, and Pennsylvania—early signs of a potato blight that would later strike Europe with such ferocity. The blight traveled quickly, on the order of 15 miles per day, moving in the 1840's through Scandinavia, Prussia, Ireland, England, northern France, Belgium, and the Netherlands. In Ireland, roughly one million people died as a result, and a similar number emigrated to North America and elsewhere.

Dawn Thompson, chocolate maker and manager at Mindo Chocolate Makers, gave an April 17 presentation on "Culinary Métier: Chocolate Making, Bean to Bar". She spoke to us inside the facility, which is a small-scale artisanal shop located in the home of company owners Barbara Wilson and Jose Meza, in a woodsy area on the outskirts of Dexter, MI. The operation is named for the town of Mindo, Ecuador, near where Jose was born and raised and the source of their cacao beans. Dawn explained that cacao grows only at relatively low elevations and within 10° latitude of the Equator. Its cultivation began among the Inca in Amazonia and later the Maya in Mesoamerica, where it was consumed in conjunction with maize and other "grains" such as quinoa. Only later did vanilla and chili peppers cross paths with chocolate, while sugar—an Old World ingredient—joined it much later, after Columbus. Dawn makes chocolate using only three ingredients: cacao beans, cocoa butter, and evaporated organic cane-juice sugar from Peru. They run the operation themselves all the way from bean to bar, which is very rare in the U.S. At first the enterprise used beans from a single estate, but as production grew they enlisted a co-op of about 50 farmers in Mindo, who grow and harvest cacao pods of the Nacional variety indigenous to Ecuador. The beans inside the pods are fermented in vats, dried, roasted, cracked into pieces, and the shells winnowed away to leave "nibs" that are shipped to Michigan. Dawn let us taste the nibs and showed us how she



Dawn Thompson shows us the tempering machine at Mindo Chocolate Makers on April 17.

Photo: Randy Schwartz

presses and grinds them to produce cocoa liqueur. This is smoothed or *conched* in a machine with whirling rollers, then *tempered* to leave fat crystals of uniformly small size. The finished bars of chocolate are sold to stores in the area and across the U.S., as well as retailed via the Internet.

Yet another New World food crop, maize, was the subject of an April 28 illustrated lecture by **Kelly Sisson Lessens**, a Univ. of Michigan doctoral candidate in American Culture. Her presentation, “‘To gladden and bless the nations of the earth’: King Corn in the Kitchen, 1877-1918”, analyzed the activities of American corn boosters to promote corn domestically and in overseas markets. A leading such figure, Charles J. Murphy, was a brewer in New York state who became interested in corn through his breweries’ use of corn glucose as an alternative to sugar. To counter the belief, especially common among foreigners and U.S. immigrants, that corn was fit for animals only, Murphy created “corn kitchens” and similar exhibits at world’s fairs and other expositions, teaching consumers how to appreciate and cook this grain. “Corn palaces”, impressive structures decorated with golden ears, became a sensation after 1888. The corn boosters worked with allies in the pro-farmer Populist movement, the USDA, the railroads, and the produce exchanges. Murphy adopted ideas from such cookbooks as Mary S. Scott’s *Indian Corn as Human Food* (Nevada, IA, 1889) and Elizabeth O. Hiller’s *The Corn Cook Book* (Chicago, IL, 1907). To promote the all-American character of corn, he used idealized

images of Indian and African-American women, including one that evolved into Aunt Jemima. Kelly sees this episode as a cautionary lesson in how commercial, political, and ideological interests can sometimes lead to distorted development in the food and agriculture industries.

Charlie Frank, Candymaker at Zingerman’s Candy Manufactory in Ann Arbor, acted like a “Zingerman’s Kid in a Candy Store” in his talk on May 15. He led in creating the candy business recently after working as a pastry manager for several years at Zingerman’s Bakehouse. It is a small-scale, artisanal operation that now offers six types of Zzang! Bars: Original, Cashew Cow, What the Fudge, Raspberry Wowza, Peanut Butter, and Peanut Nougat. Charlie and his colleagues produce most of the candy in response to retailers’ orders, shipping usually within two days of receiving the order. The sweeteners that they use are primarily cane sugar (they found that beet sugar tastes the same but cooks differently), muscovado (real brown sugar), and honey. Their milk comes from the Guernsey Dairy in Michigan, and their high-fat butter from a family farm in Wisconsin. Gradually, Charlie has introduced larger-scale equipment, such as a chocolate-tempering machine and a chocolate-enrobing machine. To plan new products for his line, he reads up on sugar and candy history, and tries to learn from the traditions of other cultures such as those of Lebanon and Syria. He dreams of purchasing a Tornado cotton candy machine, and a panning machine for sugar-coated candy. ■

CHAA CALENDAR

(Unless otherwise noted, programs are scheduled for 4-6 p.m. and are held at Ann Arbor Senior Center, 1320 Baldwin Ave.)

Sunday, August 14, 2011

4-7 p.m., Earhart Village Clubhouse
(835 Greenhills Drive, Ann Arbor)
CHAA annual participatory theme picnic,
“Dining Along Route 66”

Sunday, September 18, 2011

David Strauss,
Emeritus Prof. of History, Kalamazoo College,
“Beating the Nazis with Truffles and Tripe: The Early
Years of *Gourmet: The Magazine of Good Living*”

Sunday, October 16, 2011

David Hancock,
Associate Prof. of History, Univ. of Michigan,
“Oceans of Wine: Madeira and the Emergence
of American Trade and Taste, 1640 – 1815”

Sunday, November 20, 2011

Roger Brideau, microbiologist and beer expert,
“History of the Microbrewery Beer Industry in
Michigan and Introduction to Home Brewing”

December 2011

Participatory theme meal
(Details to be decided)

Sunday, January 15, 2012

Susan Odom, Proprietress of Hillside Homestead,
an historic farmstay in Sutton’s Bay,
“The Heritage and Preservation
of Fishtown, Michigan”

Sunday, February 19, 2012

3-5 p.m, Ann Arbor District Library
(343 South Fifth Ave.)
Chef Brian Polcyn, charcuterie expert,
Culinary Arts Program, Schoolcraft College,
“Culinary Métier: Italian *Salumi*”

REPAST

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Culinary Historians of Ann Arbor

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