

# Whitesbog Preservation Trust

## NEWSLETTER

3rd Quarter

2009

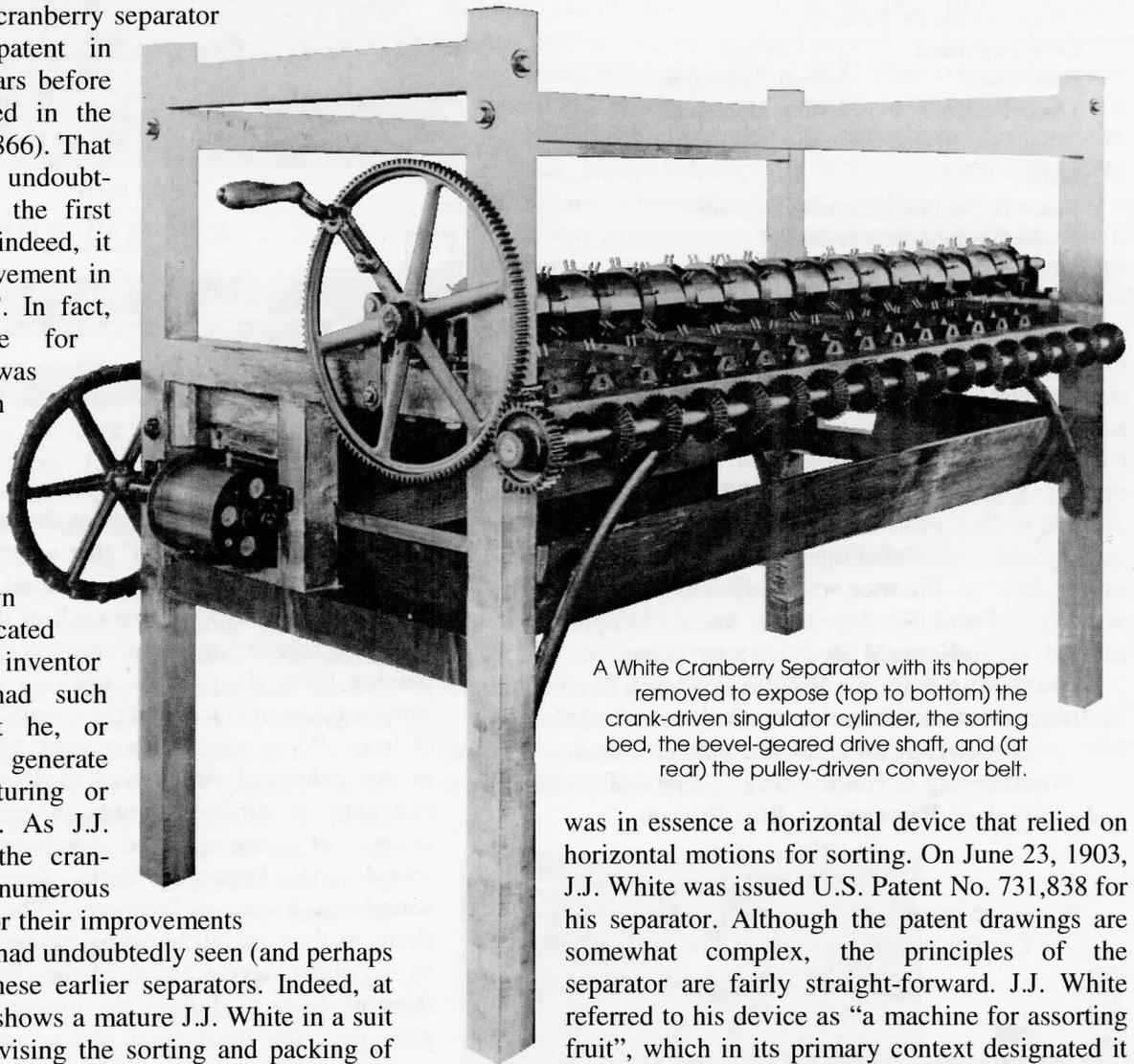
Birthplace of the Highbush Blueberry - Historic Center for Cranberry Innovation

### The White Cranberry Separator - A "Machine for Assorting Fruit"

By Mark Ehlenfeldt

The first patented cranberry separator

was issued a patent in 1854<sup>1</sup>, at least 12 years before J.J. White got started in the cranberry business (1866). That 1854 separator was undoubtedly far from being the first cranberry separator; indeed, it was titled an "Improvement in cranberry-winnowers". In fact, the basic principle for cranberry separators was well-known; firm berries bounced; soft berries, not so well. Farmers, being inveterate tinkers, often designed machines for their own use, and a patent indicated mainly that the inventor believed his idea had such merit or value that he, or someone else, might generate income by manufacturing or selling his invention. As J.J. White advanced in the cranberry business, numerous cranberry separators or their improvements were patented. White had undoubtedly seen (and perhaps used) a number of these earlier separators. Indeed, at least one early photo shows a mature J.J. White in a suit and bowler hat supervising the sorting and packing of cranberries in front of a tar-paper-sheathed barn with men using what looks much like the cranberry separator patented in 1902 by Alvin E. Nightingale of Plymouth, Massachusetts<sup>2</sup> (but may also have been an unpatented or home-built machine). White himself, was trained as an engineer, and beginning in 1875, worked for Hezekiah Smith of the H.B. Smith Company. By 1898, J.J. White held 14 patents, at least 12 of which were issued while he was working for the Smith Co. For his device, J.J. White applied what he had learned over many years and ultimately designed a cranberry separator unlike any other in existence. Unlike most previous separators that relied on sets of cascading, vertically-arrayed plates for sorting, White's machine



A White Cranberry Separator with its hopper removed to expose (top to bottom) the crank-driven singulator cylinder, the sorting bed, the bevel-gear drive shaft, and (at rear) the pulley-driven conveyor belt.

was in essence a horizontal device that relied on horizontal motions for sorting. On June 23, 1903, J.J. White was issued U.S. Patent No. 731,838 for his separator. Although the patent drawings are somewhat complex, the principles of the separator are fairly straight-forward. J.J. White referred to his device as "a machine for assorting fruit", which in its primary context designated it as a means to separate sound from unsound berries. In its more detailed sense, the separator was also a machine that allowed berries to be graded by size (a factor whose value was reflected by the numerous grade designations and labels applied to cranberries marketed under the Eat-mor Brand<sup>2</sup>).

In White's separator, berries entered the separator via a hopper that supplied a horizontal, rotating, singulator column (figure on page 2). This column used pairs of finger-like prongs to lift individual berries from the hopper and drop them into a V-shaped sorting channel that had a large horizontal screw drive across its open bottom. Once a berry fell into the channel, the screw-thread would carry the berry along the length of the groove toward the sorter plates. Each

*(continued on page 2)*

## 2009-10 Board of Trustees Meetings

Wednesdays at 6:30 p.m.

Oct. 28, Nov. 18, Jan. 27, Feb. 24, March 24

Annual Membership Meeting, April 25

Holiday Party, Dec. 19

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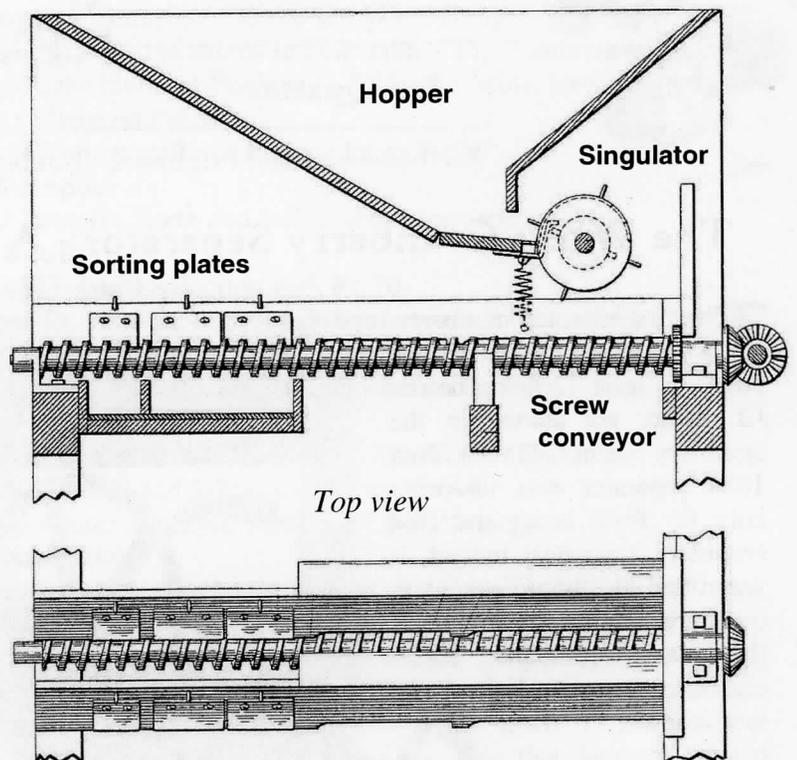
**Personnel** – Rick Prickett

**Events** – vacant

If you are interested in attending the meeting of any Committee, please call the Trust office for the scheduled meeting time.

The Mission of the Trust is to restore, protect and enhance the land, sites, and buildings at Whitesbog, and to provide educational and interpretive programs and materials about the history, culture, and natural environment of Whitesbog.

Side view

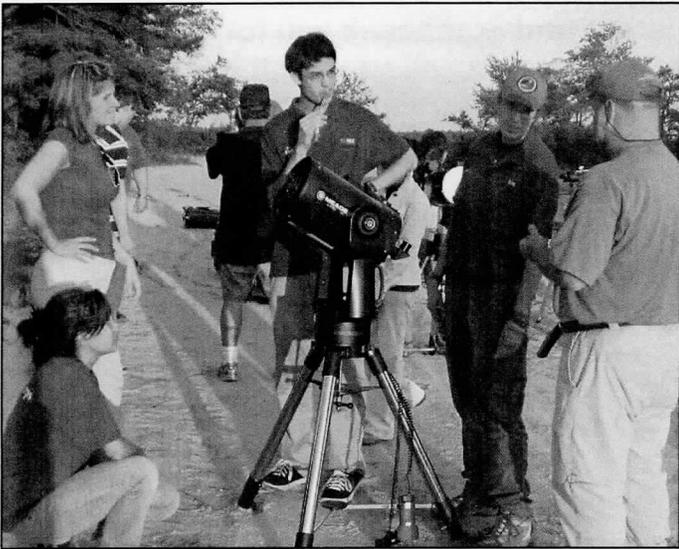


(Separator, from page 1)

channel had three sorting plates that were comprised of thin pieces of “sounding board” that were mounted contiguously as part of the wall of the channel. A small tapper was mounted on the rear side of each of these sorting plates that could be adjusted to apply variable amounts of force to the passing berry. In practice, the first two plates applied the same amount of force, and the second plate a greater amount of force. White wrote in the patent: “By adjusting the screws in this manner, I am enabled to discharge berries from the conveyor at different points, according to their various degrees of soundness, and thereby separate from the very sound berries known as “firsts”, those of a lesser degree of soundness, known as “seconds”. The very sound berries, or firsts, as they are advanced by the conveyor respond quickly to the slight jarring action of the (first two) plates and are thereby discharged from the conveyor, while the seconds pass (by) the (first two) plates, unaffected thereby, and respond to the greater jarring action of the (third) plate which in turn discharges them from the conveyor”.

The separator also employed “a mechanism at the delivery end to separate larger berries from smaller berries of a predetermined size.” This sizing was accomplished by an additional screw mechanism running almost parallel along a retaining ledge, but set at a slightly increasing angle approximately parallel to the direction of motion of the discharge belt. As a group of berries moved along the screw mechanism they would encounter a progressively wider gap

(continued on page 5)



## Star-Gazing Nights . . . Amazing Sights!

Volunteer work days at Whitesbog generate a lot of activity at the village, but Saturday, June 6 was special. In addition to our work day, the General Store was busy, as storekeeper Ken Mayberg entertained visitors with dulcimer music, and equestrians took their horses out on the trails. And of course, there was the monthly Moonlight Walk. The Moonlight Walk, with forty-two paying hikers, was most ably led by Ken Mayberg and Martha Windisch. Veteran sweeps (i.e. designated "followers"), Deb Hartshorne and sisters Janet DeMauro and Joan Harden insured that none of our straggling hikers took a wrong turn or strayed off course. But what made June 6 truly special, however, was the presence of Burlington County College (BCC) telescopes at Whitesbog's former airstrip. Our moonlight hikers ended their walk with a stop at the star gazing station and were joined there by other members of the public transported by shuttle bus service from the General Store. The star-gazing event was free.

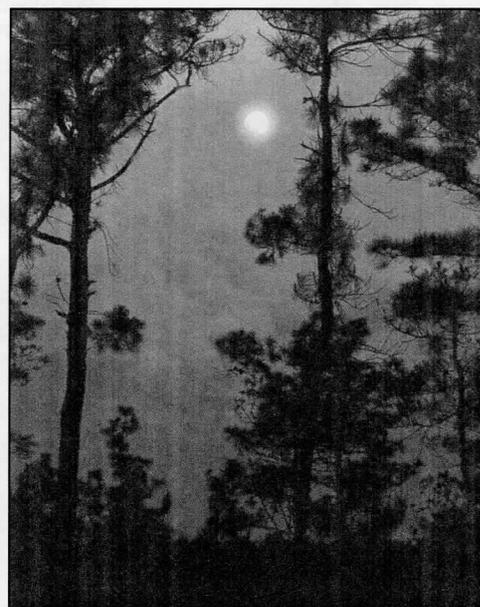
About two years ago, BCC received a grant from NASA that helped finance the purchase of several sophisticated telescopes. BCC is now on its second grant. According to Tony Dilemme, BCC Project Director of the NASA grant initiative, NASA grants require recipient organizations facilitate the exposure of science to the public. Mr. Dilemme said that BCC sponsors school presentations, camps, teacher workshops, and programs for the general public, and that 5,000 kids and adults have participated in these activities since last October. The grants also fund the hiring of students to assist in this effort. At BCC, these students constitute the "BCC Science Corps". BCC Science Corps members stood out with their distinctive blue polo

shirts. June 6 was the second time that BCC has set up its telescopes at Whitesbog as part of its community outreach. BCC was assisted by members of the Willingboro Astronomical Club who helped explain the views observed through the telescopes. Club vice-president, Lloyd Black, a Rowan University Adjunct Professor and advisor to the BCC NASA grant effort, said that they had six telescopes on the airstrip and several sets of high-powered binoculars. Club president, Steve Mattan, said that many of his 70+ club members help to staff this and other viewings for the public, including frequent viewings at Batsto. BCC Science Corps member Janice Bovankovich noted that BCC's outreach efforts extend beyond astronomy and include "alternative energy sources," and noted that BCC often takes solar panels to school classrooms to explain how it is possible to make electricity from sunlight. BCC Science Corps' first member, Deep Kaur, enjoys helping with BCC's outreach efforts. She said she plans to become a biology teacher.

The star-gazing event was an unquestionable hit. Cindy of Marlton was there with four kids as part of a scout outing. They were impressed by seeing Saturn. Beth Rushing, of Medford Lakes, attended with her husband and two children, Peter and Sam, aged seven and eleven, respectively. They had seen the moon, Saturn, and the star Atari. The boys said they wanted to be scientists when they grow up. Another visitor, Toni Pellerin of Burlington City was there with her son Christian. She noted that he is working on his Astronomy Scouting Merit Badge and does well in science, but he is too young to know what field he might later pursue. Let's hope that June's star gazing event, as well as the efforts of BCC and the Astronomy Club, exert positive influences that will help some of these kids to become America's next generations of scientists.

For information of future astronomy events call Burlington County College at 609-894-9311 extension 1680 or extension 2071. ■

- Richard Rolle -



**Moonlight  
Highlights**

## Whitesbog Preservation Trust Membership, 2008 - 2009

The Whitesbog Preservation Trust Board of Trustees and Staff thank you for your support. Your membership is vital to the success and ongoing mission of the Trust, supporting the full range of programs and operating costs. The Membership Year runs from September 1st to August 31st.

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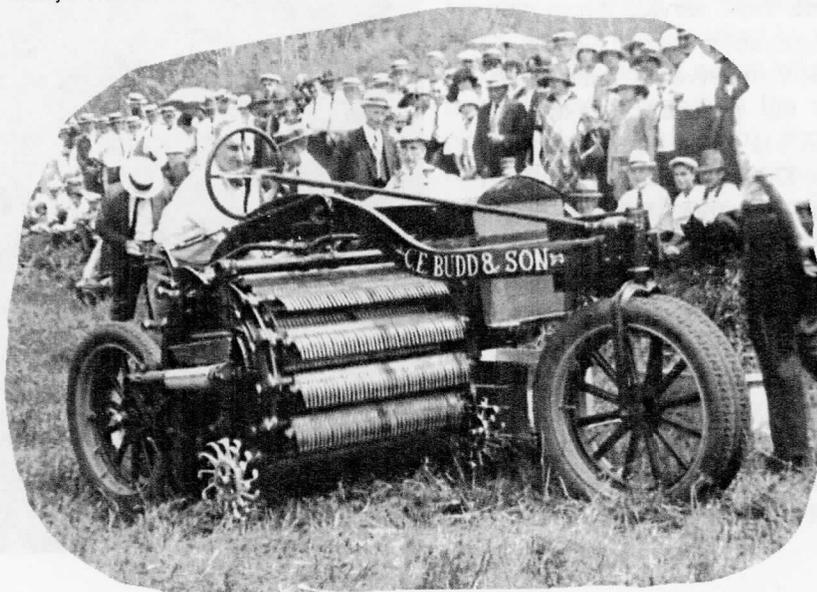
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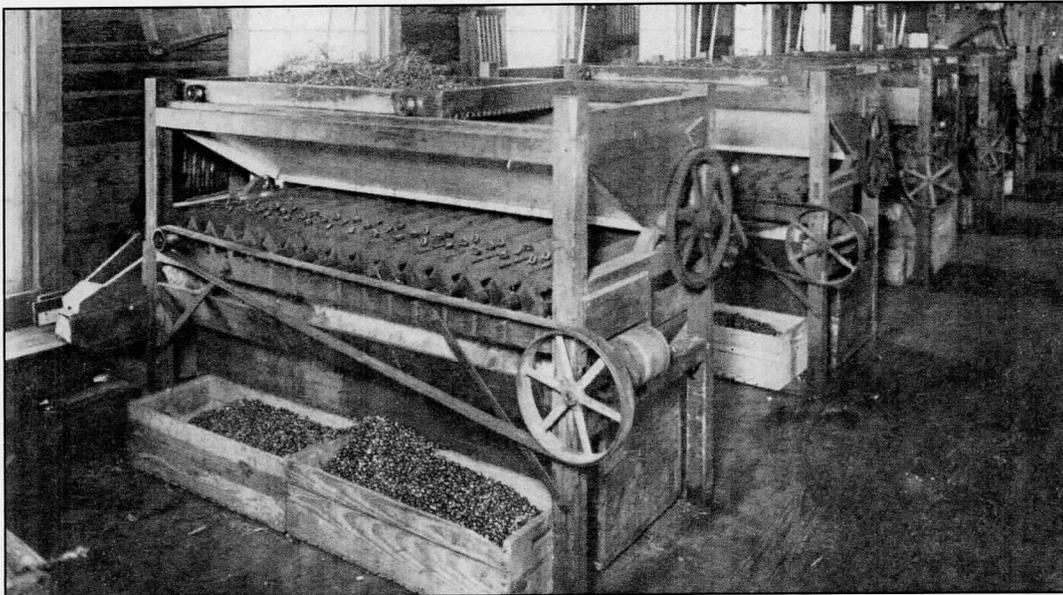
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An opposite view of several White Cranberry Separators, with vine screens, hoppers, and sorting beds, and adjusting screws visible. First quality cranberries were deposited to the left of the separator by the conveyor belt partially visible below the sorting bed. These machines, located in the Cranberry Storage Warehouse, were powered by an overhead drive-belt and pulley system along the side wall.

*(Separator, continued from page 2)*

and smaller berries would fall through the gap earlier, with the largest berries being carried furthest toward the end of the screw mechanism. White's patent also described a cushioning mechanism to soften the impact of the drop of the berries into the receiving container or barrel. This mechanism was tied to the drive mechanism of the separator so that it would slowly rise as the level of berries in the receiving container increased.

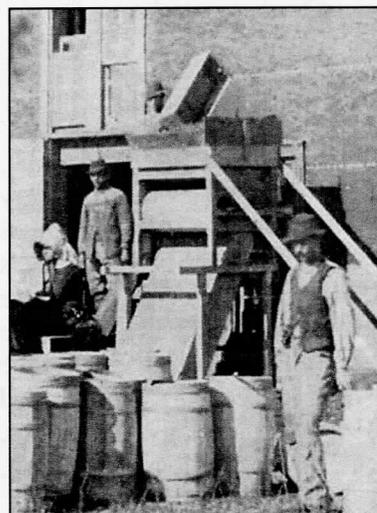
Tom Darlington offered two comments about White separators. The first, that they constantly needed someone adjusting them to achieve optimal operation. When one considers that each separator had sixteen sorting channels, and each channel had three taper plates, the possible adjustments on one separator were considerable. Tom's second comment was that White separators produced a terrible din when operating. Considering the plates previously mentioned and the fact that each taper struck twice with each revolution of its respective drive shaft, and considering that the sorting hall of the Cranberry Storage Warehouse once employed twenty-four such separators running continuously, one can only imagine the infernal noise they must have produced. On the positive side, the White separator, because of its horizontal design and its infinitely variable adjustments of tapping force, was undoubtedly gentler on the fruit than many of the other machines.

The White separator, while innovative, was complex and difficult to build. It was never widely used, and **perhaps** never used outside of New Jersey. The Hayden separator<sup>4</sup> invented in Massachusetts in 1900, which relied on the ability of sound berries to bounce, was more reliable and carefree than the White separator, and achieved wider use than the White separator. The Bailey separator<sup>5</sup> (1923), another bounce-based machine became popular in later years. Both can still be found in

use on dry-harvested berries today. One would imagine that White himself used only his separators, but did Whitesbog continue to use these separators after his death in 1924? If so, for how long? Tom Darlington believed the last White separators in use were those operated by the Thompson family at their farm "The Birches" and were used until about 1960. ■

- <sup>1</sup> Flanders, Phaniel, inventor; Improvement in cranberry-winnowers. U.S. Patent # 10,736. April 4, 1854.
- <sup>2</sup> Ehlenfeldt, M.K. 2007. A Few Words About This Picture. Whitesbog Preservation Trust Newsletter, 3<sup>rd</sup> Quarter 2007:1-2.
- <sup>3</sup> Nightingale, Alvin E., inventor. Cranberry-assorting apparatus. U.S. Patent # 702,583. June 17, 1902.
- <sup>4</sup> Hayden, Lothrop A., inventor. Cranberry-separator. U.S. Patent # 661,801. Nov. 13, 1900.  
Hayden, Lothrop A., inventor. Feed attachment for cranberry-separators. U.S. Patent # 805,542. Nov. 28, 1905.  
Hayden, Lothrop A., inventor. Cranberry-separator. U.S. Patent # 864,164. Aug. 27, 1907.
- <sup>5</sup> Bailey, Hugh R., inventor. Cranberry separator. U.S. Patent # 1,448,479. March 13, 1923.

*A scan of the entire J.J. White patent can be seen in the online extras of this newsletter at [www.whitesbog.org](http://www.whitesbog.org).*



A separator used by J.J. White prior (?) to the development of the White separator. This separator is similar to a cranberry separator patented in 1902 by Alvin E. Nightingale of Plymouth, Massachusetts.



## Irvane Spracklin Artwork

A lasting memory of Whitesbog's legendary Cranberry Storage Warehouse is captured in a Chinese watercolor by Irvane Spracklin, which hangs at the top of the stairs at Suningive. Irvane presented the painting to Stephanie Schrader, Janet Robbins, and Susan Phillips, who accepted her generous gift on behalf of the Trust.

Spracklin is the winner of numerous awards including: Four purchase prizes by the Burlington County Cultural and Heritage Commission, where her work travels the county as part of their permanent collection. Her work is also displayed at the Pemberton County Library and in galleries throughout the region.

A solo show of Spracklin's work, "The Beauty and Mystery of the Pine Barrens", opens October 1st at the Mt. Laurel Library, Whitman Road, Mt. Laurel, NJ. This one-woman show will feature twenty of Irvane's Pine Barren's creations and runs through November 28, 2009. ■

## Cranberry Substation Exhibits

Director Charles S. Beckwith (aka WPT President, Rick Prickett) invites you to visit the Cranberry Substation at Whitesbog to see the newly restored Sears sectional house and view the "The cost of POISON is trifling" window exhibit. Back in the 1920s when the Substation helped cranberry growers face invasive weeds, destructive insects, and fungal diseases, the control chemicals they recommended were called Poison. Today we call these chemicals herbicides, insecticides, and fungicides, but we no longer use lead, arsenic, and cyanide in these preparations. ■

## A Thank You to Whitesbog's Wonderful Volunteer Team!

What a spectacular day! The 26<sup>th</sup> Annual Blueberry Festival had beautiful weather, record attendance and fabulous reviews from everyone and everywhere.

To everyone who welcomed visitors, parked cars, dipped ice cream, cut pies, sold books, blueberries, baked goods, plants, t-shirts, tickets and soda, painted faces, took pictures, guided visitors, drove wagons, delivered lunches, answered phones, and solved problems – THANK YOU again for a Blue Ribbon Day!

The Whitesbog Preservation Trust Board of Trustees, staff and volunteers also want to thank the many organizations that helped us to plan and produce the 26<sup>th</sup> Annual Blueberry Festival, provided goods, services and equipment for the day, and that helped to make this year's festival such a success, including: Brendan T. Byrne State Forest (Department of Environmental Protection, Division of Parks and Forestry), Pinelands Institute of Natural & Environmental Studies (Burlington County College), Pinelands Antique Engine Association, Pinelands Preservation Alliance, Burlington County Historical Society, Country Lakes Emergency Squad, Country Lakes Fire Company, Pemberton Township, White Dotte Dairy Bar, Burger King (Browns Mills), and the United States Post Office (Browns Mills). Without the generous support of our festival partners, the unique history of Historic Whitesbog Village might be lost to the pages of history. Many, many thanks for your ongoing commitment and dedication.

## The Whitesbog Preservation Trust also thanks our very special 2009 Blueberry Festival Sponsors:

### Silver Sponsors

David Lerner Associates, Joseph J. White, Inc., Pine Island Cranberry Company, Inc., and Sun National Bank

### Bronze Sponsors

Burlington County College, Deborah Heart & Lung Center, Dietz & Watson, Inc., Fredrick W. Gibbs, Esquire, Giordano's Construction, The New Jersey Conservation Foundation, and the Red Lion Diner

### Copper Sponsors

The American Red Cross (Burlington Co. Chapter), Personalized Dog Training, LLC, and Project Porchlight – New Jersey ■

# WPT Event Schedule

Reservations can be left on the main voice mail at (609) 893-4646 or  
WhitesbogPreservationTrust@comcast.net

## October

### Cranberry Industry Car Caravans and Lectures Call for dates and times

\$10 donation/person, *reservations required*  
View a modern wet-harvest and learn about the history and cultivation of cranberries in NJ.

- 3 WPT Volunteer Workday** 10 a.m. - 3 p.m.
- 3 Whitesbog Village Tour\*** 1 p.m.  
\$5 donation/person
- 3 Moonlight Walk\*\*** 7 p.m.  
\$5 donation/person, *reservations requested*
- 4 Discovery Festival** 10 a.m. - 4 p.m.  
Discover the nature and history in the Pinelands. \$7 per carload. Sponsored by the Pinelands Institute for Natural & Environmental Studies.
- 24 Harvest HeyDays** 3 p.m. - 7 p.m.  
\$10/carload, *reservations requested*  
Celebrate the Cranberry Harvest with lectures & demonstrations on cranberry cultivation, children's activities, pumpkin painting, a sunset hayride, a bonfire and storytelling.

## November

- 7 WPT Volunteer Workday** 10 a.m. - 3 p.m.
- 7 Whitesbog Village Tour\*** 1 p.m.  
\$5 donation/person
- 8 Quarterly Lecture Series** 1 p.m.  
\$5 members, \$7 non-members, *reservations*  
"Hanover Furnace", presenter: Ted Gordon  
Learn about Hanover Furnace and the Mary Ann Forge. The ironworks' role in history and their lasting legacy on the Pinelands.
- 11 Moonlight Walk\*\*** 7 p.m.  
\$5 donation/person, *reservations requested*
- 15 Pinelands Wildlife Walk** 1 p.m.  
\$5 donation/person, *reservations requested*

## December

- 5 WPT Volunteer Workday** 10 a.m. - 3 p.m.
- 5 Whitesbog Village Tour\*** 1 p.m.  
\$5 donation/person

- 5 Moonlight Walk\*\*** 7 p.m.  
\$5 donation/person, *reservations requested*
- 12 Whitesbog's Winter Celebration** 1 p.m.  
\$5 members, \$7 non-members, *reservations*  
For the Children- Nature walk and candy-cane with Santa's helper, holiday arts & crafts and a special photograph with Santa.
- 19 Whitesbog's Holiday Party** 4 p.m.  
Members only, *reservations requested*  
Celebrate the season and tour the Village homes.
- 19 General Store Open House** 10 p.m.

**Volunteer Workdays** - Have fun with friends, working in the gardens, repairing trails, restocking the General Store and working around the Village.

**\*Whitesbog Village Tours** - Stroll the Historic Village, learn about Whitesbog's role in history and visit Suningive, Elizabeth White's historic home, the worker's cottages and other buildings that speak to Whitesbog's heritage.

**\*\*Moon Light Walks** - Listen to the night sounds of the Pines, learn about Whitesbog and experience the seasonal changes of the Pinelands. All walks are 3-5 miles in length and lead by experiences.



### Quarterly Lecture Series Sunday Nov. 8 at 1 p.m.

*The Hanover Furnace*

Speaker - Ted Gordon

Learn about Hanover Furnace and the Mary Ann Forge.

The ironworks were pioneering industries that left a lasting legacy in the Pinelands.

\$5 members, \$7 non-members  
reservations requested

