Whitesbog Preservation Trust
NEWSLETTER
4th Quarter www.whitesbog.org 2016
Birthplace of the Highbush Blueberry - Historic Center for Cranberry Innovation

Coville's Serendipitous Association with Blueberries Leading to the Whitesbog Connection

by Charles M. "Mike" Mainland, Ph.D. and Frederick V. "Rick" Coville, M.D.

We close the Blueberry Centennial Year with a brief biography of Frederick Coville, co-authored by Coville's grandson, an orthopedic surgeon living in Englewood, Colorado.

The Era. It was 1911, and William Howard Taft was President. The U.S. Army Signal Corps bought the second and third military planes from the Wright Brothers. Government specifications required a top speed of 40 mph from the planes, but a blazing 42 mph was achieved in trials! The first Indianapolis 500 was held with a winning speed of 74.6 mph. Henry Ford's Model T was in the third year of a 19 year production run.

Less noteworthy in 1911, but of great importance to those of us involved with blueberries, was an article in the February issue of *National Geographic Magazine*. The title was "Taming the Wild Blueberry" and the author was Frederick Vernon Coville. Here in a publication circulated throughout the world was the information required for growing and improving blueberries.

"Taming the Wild Blueberry" was based on the U.S. Dept. of Agriculture's scientific publication, *Experiments in Blueberry Culture*, Bulletin 193, published on November 15, 1910. Prior to these studies, most attempts to move blueberry plants from the wild and maintain them in managed culture had been unsuccessful. In the short span of time from 1906 to 1910, he determined that blueberries: required a moist but not wet soil with low pH, had a low nutrient requirement, and required winter chilling. He developed propagation procedures by cuttings, grafting and budding. In 1909 he recognized that self-sterility could be an issue after few seeds and no plants resulted from selfing 'Brooks' an outstanding wild plant found near Greenfield, N.H. This was the first attempt to improve blueberries through controlled crosses. Elizabeth C. White, a commercial cranberry grower in Whitesbog, N.J., contacted Dr. Coville after reading *Experiments in Blueberry Culture* and offered encouragement and assistance. Cooperation in selecting wild breeding material, growing of seedlings and cultivar selection continued for the next 26 years. 'Pioneer' in 1920, was the first cultivar released from their breeding effort; however, 'Rubel', a selection from the wild that is still grown today, was found in 1912. A total of 15 cultivars were released before Coville's death in 1937. Another 14 of his crosses were released after his death. These 29 cultivars still accounted for 75% of the commercial U.S. acreage in 1992.

This early cultural work and variety development provided the basis for commercial plantings in New Jersey. Interest spread to other states, with the first planting in Michigan in 1924, North Carolina in 1928 and Washington in the 1930s. By 1949 there were 2674 acres in New Jersey, 1731 acres in Michigan, 568 acres in North Carolina and 207 acres in Washington, according to the U.S. Bureau of Census.

Blueberry Domestication

Most of the important fruits of the world have been cultivated for hundreds, if not thousands, of years. DeCandolle (1964) traces grape cultivation in Egypt for more than 4,000 years. Only occasionally can a person's

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name be associated with the original domestication. Strawberries are one of the few examples. Strawberries from the wild were grown in French gardens as early as 1324 according to Hyams (1953). Domestication began in 1715 when the French Naval Officer, Frezier, took *Fragaria chiloensis* Duch. Plants from Chile back to France. There the botanist Duchesne successfully made the cross with *F. virginiana* Duch. that led to the modern, large-fruited cultivated strawberry.

Dates and a name are much easier to document for highbush blueberry domestication. The date was 1906 and the name was Frederick Vernon Coville, born March 23, 1867 at Preston, N.Y. He attended Oxford Academy in Oxford, N.Y. and went on to Cornell University where he was described as the leading scholar in his class and also its leading athlete. Baseball remained a lifelong interest. Graduation from Cornell was in 1887 (Brown and Palmer, 1967). On the 100th anniversary of his birth, Brown and Palmer (1967) go on to describe Coville in the years leading up to and concurrent with the blueberry studies: In 1988 he entered the Department of Agriculture and became the botanist on the Geological Survey of Arkansas. *A List of the Plants of Arkansas*, accepted as a standard work to this day, was published by Coville and John C. Branner in 1891. Also in 1891, he accompanied the Death Valley expedition as the botanist. As a result, there was published in 1893, *Botany of the Death Valley Expedition*, described as one of the classic studies of desert vegetation. Other investigations in the far west included useful plants of the American Indians, and grazing management. Grazing-management policies of the Forest Service became, in large measure, the outcome of these investigations. He was credited with the efforts that lead the Carnegie Institution to establish its Desert Botanical Laboratory at Tucson, Ariz. in 1903. Collaboration with Lester F. Ward brought about the National Herbarium in 1894 which combined the collections of the Department of Agriculture and the Smithsonian Institution. Coville was appointed the first curator and continued in the post until his death. In collaboration with Frederick Law Olmsted and H.P. Kelsey he edited *Standardized Plant Names*, the indispensable text that assigned English names to plants previously known only in Latin or Greek.

The National Arboretum will probably be Frederick V. Coville's most remembered accomplishment. Both George Washington and city designer, Pierre L'Enfant, had envisioned such an institution, but by 1897 only a few small gardens and some plantings in the Mall and on Capitol Hill had materialized. The need was recognized for a scientific institution that might be likened to Kew Gardens in England, with research and educational capabilities, a herbarium, botanical library and photographic files. Disputes over location and jurisdiction and by lethargy in high places, had kept such an institution from being established. Coville's fellow botanists and scientists gave their blessings for him to attempt to overcome the impasses. Brown and Palmer (1967), describe the effort in these words: "Launching the undertaking proved a task formidable enough and consumed more than 30 years of unremitting effort, punctuated with recurring setbacks and disappointments." After enlisting sponsors, convincing Congress, examining hundreds of acres of land on foot, arranging soil surveys and eventually drafting the legislation, the enabling Act was passed in 1927. In 1929, he became the unsalaried acting director.

The National Geographic Society was a life-long interest. He served on the Board of Directors for at least six years before becoming chairman of the Research Committee in 1920, a position he maintained until his death. Close ties were established with Gilbert Hovey Grosvenor, who was director of the National Geographic Society from 1899 to 1919 and president from 1920 to 1954. In addition, Grosvenor was editor-in-chief of National Geographic Magazine from 1903 to 1954. Coville is pictured with Grosvenor, President Theodore Roosevelt and Admiral Robert E. Peary, the arctic explorer, in National Geographic Magazine, October 1963, page 542. This issue commemorated the 75th anniversary of the magazine. The picture was taken during a dinner in 1914 to honor Roosevelt before his National Geographic lecture about South American explorations. Interesting genealogy is associated with the Coville and Grosvenor families. Gilbert Grosvenor's wife, Elsie May Bell Grosvenor, was the daughter of inventor Alexander Graham Bell. Frederick Coville's son, Cabot, married Lilian Waters Grosvenor, daughter of Gilbert and Elsie May. The children of Cabot Coville, Gilbert Grosvenor Coville, born 1928, and Cabot Coville, Jr., born 1932, have Alexander Graham Bell as a great-grandfather and Fredrick V. Coville as a grandfather.

Many honors were bestowed on Frederick V. Coville, but among the most important were the honorary degree of Doctor of Science conferred by George Washington University in 1921, Fellow of the American Association for the Advancement of Science, and the George Robert White Medal of Honor from the Massachusetts Horticultural Society for his outstanding work with blueberries.

Blueberry Studies by Coincidence

Coville was worried that his four children, (Stanley 11, Katherine 9, Cabot 3, Fredrick 1) growing up in Washington D.C. would never learn the rural skills that he had acquired in his childhood in central New York state (Swain, 2006). A geologist friend in Washington, Arthur Keith, told him about a farm for sale in Greenfield, New Hampshire. He bought 40 acres, and an abandoned house and barn for $400 on May 2, 1905. Blueberries, both highbush and lowbush, flourished in the fields no longer grazed by cattle around Greenfield. The highbush were picked by hand or shaken and the lowbush raked for sale in Boston and local cities. Hand-picked berries averaged about $0.11/quart and raked or shaken $0.02/quart. In 1906, less than a year after coming to Greenfield, his interest was attracted to the subject of blueberry culture. He began looking at the diverse blueberry plants in the area.

Convinced that it should be possible to cultivate blueberries instead of simply harvesting wild ones, Coville arranged for George W. Oliver, a colleague at the Bureau of Plant Industry, to germinate some blueberry seed in the fall of 1906. This was Coville's first experiment with blueberries.

Blueberry Cultural Requirements

A popular idea that blueberries could not be transplanted or cultivated existed when the studies were begun in 1906. Experiment stations in Maine, Rhode Island, New York and Michigan had attempted to grow the blueberry as a fruit but none had been commercially successful. However, blueberries from the wild were sold on the Boston market. Shipments began in early June from North Carolina, followed later in the month from Pennsylvania, New Jersey and New York. In late June or early July they came from Massachusetts and New Hampshire, followed by Maine, Nova Scotia and New Brunswick in August and September. If the berries were hand-picked the quality was generally good. Coville (1910) noted "The blueberry withstands the rough treatment incident to shipment so much better than most other berries that with proper handling it should always reach the market in first-class condition." The owners of land with blueberry plants commonly paid pickers two-thirds of the price they received from the sales. If the berries were harvested with rakes, which reduced the harvest cost about 75 per cent compared with hand harvest, the fruit was often partially crushed, and the berries covered with soured juice. He did not consider raked lowbush blueberries suitable for sales on the fresh market. Records from a shipper in southern N.H. indicated that prices and demand for his hand-picked, wild highbush blueberries were good.

Coville's interest was sufficiently attracted to the economic potential that existed if larger berries could be produced, that could be harvested more rapidly from bushes growing in a cultivated plantation. To that end, in the fall of 1906 he began testing methods for germinating seed in cooperation with Mr. George W. Oliver, of the Bureau of Plant Industry. The method developed was to remove the seeds from fully matured and slightly fermented berries, sow them in a shallow wooden flat with fibrous kalmia peat on the bottom to insure good drainage and cover them with a germinating medium of peat, sand and a small amount of loam soil. Germination of seeds sown in August occurred in about five weeks and with proper handling in the greenhouse, robust plants were produced by the beginning of summer. Plants from these experiments were used for determining the soil requirements for growing blueberries.

One of the very definitive soil studies was begun on December 22, 1908. Rose cuttings, alfalfa seeds and blueberry seedlings were planted in a rich garden soil or a peaty soil taken from a location where wild blueberries were thriving. Both the roses and alfalfa grew poorly in the peat while the blueberries grew well. In the rich garden soil, the roses and alfalfa grew well while the blueberries barely remained alive. The results of this experiment seem so incredibly obvious based on the present understanding of the requirements of acid-loving plants. However, horticultural literature of the day made no mention of certain plants requiring an acid soil. The assumption seemed to have been that all plants would produce maximum growth and be most healthy when planted in a well-limed, rich, garden-type soil. The pH meters we take for granted and use so routinely for selecting soils suitable for blueberries had not been developed. Coville first tried litmus paper to measure acidity, but found phenolphthalein indicator the most satisfactory for the weak acids of the blueberry soils. The findings that blueberries required an acid soil and finding a means to accurately measure soil acidity were key to blueberry domestication. Additional studies provided much detailed and practical information about soils properties, nutrient requirements, and root characteristics. Blueberries did not thrive on a heavy clay soil. Aeration conditions satisfactory for blueberries were found in both sandy soils and soils consisting of drained fibrous peat, while soils that often became saturated with water were not satisfactory. Heavily manured soil, favorable to many plants were detrimental to blueberries, but occasional small amounts of liquid from a manure pit during the growing season were beneficial. Blueberry roots were found not to have root hairs. Healthy roots were found to be inhabited by a fungus known as endotropic mycorrhiza. He speculated that the mycorrhiza was involved with nitrogen nutrition since available nitrogen levels were very low in the soils favorable for blueberries.

Propagation tests went from the initial seed germination in 1906 to successful increases of desirable plants by grafting, budding, division, layering, twig cuttings, and root cuttings. Additional recommendations for propagation were published in 1920 (Coville, 1920). Also by 1910, the cycle of flower bud formation and flowering had been determined. The need for a winter chilling period for normal leafing and flowering in the spring was determined. Flower conformation was observed to almost completely prevent self-pollination and the need for insect pollination was recognized.

The first field trial was made in early July of 1908 near Greenfield, N.H. from plants grown from seed in the fall of 1907. Drought followed the planting, but 97% survived and 7% flowered in 1909. In 1910, 70% flowered. Thus by 1910, Coville's goal of being able to asexually propagate blueberries and grow them in a cultivated plantation was almost certain. The remaining step at this point was larger berries.

In Search of Bigger Berries

The first wild blueberry for breeding purposes was selected in July of 1908 in a pasture near Greenfield, N.H. The Coville family spent summers near Greenfield after buying the farm in 1905. Coville began casually observing the native blueberries in the area in 1905, but a diligent search was undertaken in the summer of 1908 (Coville, 1937). In July, the first bush was found on the farm of Fred

Brooks, near the Coville Farm. The selection was aptly named 'Brooks'. Many berries on the bush were more than 1.27cm (½in.) diameter, unusually light blue, firm, juicy, exceptionally flavorful with a good balance between sugars and acids. Yield on the bush that season was about 2840cc (3qt.). Coville (1937) said the following about the selection of 'Brooks': "I regard its selection of fundamental importance to the success of the Department's blueberry-breeding experiments. Every breeder of race horses or of milk cows understands that the choosing of the individuals to be interbred is of the highest importance. Plant breeders usually select carefully the species they intend to interbreed, but often make the mistake of paying too little attention to the choice of superior individual plants within the species."

The first attempt at controlled breeding to improve the wild highbush blueberry was undertaken in 1909 with the self-pollination of flowers from 'Brooks'. This technique, that had proven so successful with field crops such as corn and beans, produced no viable seeds. The pollinations were repeated with similar negative results in 1910. This was the first indication of self-sterility that is common in *Vaccinium* species.

Failures also often occurred when crosses were attempted among species of similar size and habit. An example was the highbush blueberry, *V. corymbosum* L. and bigbush blueberry, *V. atrococcum* (A. Gray) Heller. These resembled each other so closely that Asa Gray considered one a variety of the other. Cytological studies later showed highbush blueberries to have 48 chromosomes and bigbush to have 24 (Coville, 1927). After many attempts at crosses of diverse *Vaccinium* species and plant habits, Coville concluded that species of the most diverse appearance and characteristics, but with the same number of chromosomes, hybridize readily.

The second wild blueberry selected for breeding purposes also came from near Greenfield, N.H. Named 'Russell', for Frank Russell who described it as the best lowbush blueberry on his farm. Selected in 1909, 'Russell' berries reached a diameter of 1.43cm (9/16 in.), were light blue and most importantly, ripened earlier than 'Brooks'. Coville recognized that the earlier berries brought the higher prices. The first crosses between 'Brooks' and 'Russell' were made in the spring of 1911. Plants resulting from this cross were cross-pollinated with each other in 1913. About 3,000 hybrids of the first and second generations were grown to maturity in the field, with remarkable results. A wide range of many traits were expressed in the seedlings.

Elizabeth C. White, the daughter of a cranberry grower near New Lisbon, N.J., read Coville's 1910 publication, Experiments in Blueberry Culture. She was extremely fascinated by the possibility of growing blueberries in a plantation. She offered land and cooperation to Coville's blueberry improvement projects. Her offer was readily accepted and many seedlings were tested in this ideal blueberry environment. Of equal or greater importance was the help she and the pickers of wild berries provided in finding outstanding wild selections. Pickers were given a "blueberry gauge" that consisted of a plate with a hole 5/8 inch in diameter. Pictures of White and Coville show them using a gauge with holes ranging from 0.7cm (0.28 in.) to 2.5cm (1.0 in.). Pickers were asked to mark bushes that had large berries based on the gauge measurement. Elizabeth White or Coville might have been taken to see the bush with large berries, but usually the berry size was verified by samples the pickers saved in a bottle of formalin solution and the bush was transplanted to Whitesbog in the dormant season. 'Sooy', named for Ezekiel Sooy in 1911 was the first New Jersey selection. Crosses with 'Brooks' in 1912 provided some of the best hybrids and included the cultivars Pioneer and Katharine. 'Rubel', named for Rube Leek was selected in 1912, became a cultivar that is still grown today in addition to being used as a breeding parent. 'Grover', named for Russell Grover and 'Chatsworth' named for the town of Chatsworth were other important breeding parents. The cross of 'Rubel' by 'Grover' in 1916, gave 'Jersey', released as a cultivar in 1928 and still a major cultivar grown today. The last Coville release was 'Dixi' in 1936. Dixi, the Latin word meaning, I have spoken, or I am through, was to punctuate his retirement at the end of 1936. However, in addition to the 15 cultivars he released, an additional 14 of his seedlings were released after his retirement at the end of 1936 and untimely death on January 9, 1937 (Table 1 in *'online extras'*). His second objective, to develop blueberries that were large and could be rapidly harvested by hand was certainly met. The size was obtained with constant vigilance to maintaining excellent flavor and other horticultural characteristics.

The value of Dr. Coville's contribution to understanding the cultural requirements of blueberries cannot be measured, but we can estimate the value of fruit from bushes he bred. In 1992, Dr. James N. Moore of the University of Arkansas and one of the distinguished blueberry breeders with the U.S. Department of Agriculture that followed Dr. Coville surveyed the blueberry cultivars being grown in the United States (Moore, 1993). The cultivars released or seedlings he produced that were released later are shown in their order of planted acreage (Table 2 in '*online extras'*). No less than 75% of the acreage and undoubtedly a higher percentage of the production came from Coville's cultivars or seedlings.

A Billion Dollars Worth of Blueberries

In 1992, 180,000,000 lbs. of highbush blueberries were produced and sold from production in the United States. The Coville portion of 75% was 135,000,000 lbs. At the 1992 price of $0.95/kg ($0.43/lb) the value of Coville's portion was $58,000,000. During the 10 year period, 1983-1992, highbush production was 1,400,000,000 lbs. with a conservative 75% attributed to Coville's plants the value at $0.95/kg ($0.43/lb) was $451,000,000 (Mainland, 2001). If the years before 1983 and the years after 1992 were included

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Highlights of the Semi-Annual Membership Meeting November 5, 2016

The Semi-annual meeting began in proper Whitesbog style with **Volunteer Recognition** including the many Blueberry Festival volunteers who donated their time and effort in making the 2016 Festival a success.

Board of Trustees Elections. Four executive trustees were due to complete their terms, and with one resignation, a 5th trustee seat was open. The Membership Committee introduced 5 nominees: Bill Bolger, Brianna Calderone, Ed Mattson, Stephanie Schrader, and Kenny Willitts. Pres. John Joyce asked the membership to approve the slate in whole, which was done. The new Board members will serve for 3 years starting on January 1. Balloting also elected as officers: Rick Prickett, President; Joe Darlington, Vice President; Lise Mainor, Secretary, Terri Chiddenton, Treasurer. We welcome all these folks in their new positions.

In the **Treasurer's Report,** Terri Chiddenton reported that compared to past performance, the Trust had a deficit of nearly $10K in membership dues - a substantial decrease from past years. The cause appears to be a late start on membership renewal activities. The Membership Committee is working on the problem and this deficit is expected to largely resolve in the next few months. Members, please send in your renewals if you have not yet done so!

The good news is that the Annual Blueberry Festival made $16K above its previous record; and $19K more than its projected income for 2016. Hurrah for Blueberry Festival! President John Joyce estimated that the second day of the Festival brought in about 60% of the revenue of the first day.

As part of the Treasure's report, Allison Pierson presented the **2017 Proposed Operations Budget**, which was discussed and approved. Anyone interested in further details can contact the Trust office.

On behalf of the **Building Restoration & Repair Committee**, John Joyce presented a projected budget of ~$124K for the maintenance and renovation of buildings in the village. The budget included approximately $33K to renovate the old General Store which will subsequently be used as a rental unit.

In the **President's Address**, John Joyce declared that overall, the Trust had a good year. In highlights: New events have attracted more new visitors. Two workers cottages (Buildings 10 & 11) have been used for new events. The 20xx grant from Nora Hayes has been apportioned so that $100,000 has been invested which has earned about $8,000 in interest; $50,000 has been placed into an emergency administrative fund, and $100,000 has been made available for Building Restoration & Repair Committee projects.

Allison Pierson presented the **Director's Review**. Among the highlights: New signs and furnishing have been placed outside the General Store to make the village a more welcoming place. Social media (Facebook, Pinterest, Instagram) have been used extensively to advertise events and also get visitor reviews and online likes from viewers. More walks and events are being scheduled as well as more partnering with other organizations on village events.

Committee Report highlights: Events: Caroline Weigle sated that one of the upcoming highlights will be a barn dance in April or May and more open house events. **Archives:** Albertine Senske reported that archives data entry for the Heritage Collection should be finished by year end. Entries for photo collections have begun with cranberry and blueberry entries now complete. Photos of the objects received from the NJ Agricultural Museum are also being worked on. **Landscape:** Mark Szutarski said the major committee project to lay a 30' long cedar log bridge across the ditch from Suningive has begun. The savings incurred by having volunteer help to construct the bridge allowed the remainder of the committees Trails Grant funds to purchase items such as tools and trail signages. **Ag Museum:** Ted Gordon said that the Ag Museum (never formally named to this point) should be called the Cranberry and Blueberry Museum, due to the support that is being given by the Cranberry Growers Association and possibility of major grant funding. ■

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*(**Coville**, continued from page 4)*

along with plants grown abroad, the value would undoubtedly exceed one billion dollars.

Dr. Coville's success with domesticating the highbush blueberry and providing the basis for a major fruit industry can only be described as incredible. It is even more incredible to consider that he was a major force in establishing the National Arboretum in Washington, and was Chairman of the National Geographic Society during this same period. ■

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Literature cited

Brown, F.C. and A.W. Palmer. 1967. Frederick Vernon Coville (1867-1937), Vignette 102D, Cosmos Club Bulletin, Vol. 20:2-5.

Coville, F.V. 1910. Experiments in Blueberry Culture. U.S. Dept. of Agric. Bur.of Plant Industry Bull.193.

Coville, F.V. 1921. Directions for Blueberry Culture. U.S. Dept. of Agric. Bull. 974.

Coville, F.V. 1927. Blueberry chromosomes. Science 66:565-166.

Coville, F.V. 1937. Improving the wild blueberry. U.S. Dept. of Agric. Yearbook.

DeCandolle, A. 1964. Origin of Cultivated Plants. New York: Hafner Publishing.

Hyams, E. 1953. Strawberry Cultivation. London: Faber and Faber Ltd.

Mainland, C.M. 2001.Who was Frederick V. Coville? Proc. 35th Ann. Open House, NC Blueberry Council. 35:1-9.

Moore, J.N. 1993. Blueberry cultivars of North America. HortTechnology 3:370-374.

Swain, R. B. 2006. Blueberry planet, pp.152-159. In: H. Mansfield ed. Where the Mountains Stand Alone, Stories of Places in the Monadnock Region. University Press of New England, Lebanon, NH. ■

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WHITESBOG EVENT SCHEDULE

For more information call (609) 893-4646,
e-mail us at WhitesbogPreservationTrust@gmail.com
or visit us on the web at www.whitesbog.org.

January

3 - Quandrantids Meteor Shower Viewing Party
Join us for a walk out to the bogs to look at the meteor shower at its peak! Advance reservations requested by calling 609-893-4646.

7 - Volunteer Work Day 10 a.m. – 3 p.m.
Join our volunteers in outdoor or indoor projects in the village. You can choose from helping to clear trails and garden paths, lending a hand in the General Store or helping to organize our office cottage supplies for events! Everyone shares lunch in the General Store.

7 - Historic Whitesbog Village Tour 1 p.m.
Stroll the Historic Village, learn about Whitesbog's history, and visit Suningive, Elizabeth White's historic home, the worker's cottages and other buildings of Whitesbog's heritage. $5 donation/person, advance reservations requested but not required - 609-893-4646.

8 - Blueberry Music Jam 11 a.m. - 2 p.m.
Calling all music lovers and musicians! Join experienced musicians in an open jam session on the porch of the General Store. All acoustic musicians are welcome from every music genre. FREE activity.

10 - Shinrin Yoku Wellness Walk 10 a.m.
A guided nature walk beginning in front of the General Store. Advance reservations requested 609-893-4646. FREE event.

13 - Family Hike 10 a.m.
Meet at the General Store to explore the sights and sounds of our trails with an experienced leader. Reservations are encouraged; call 609-893-4646. $5/ family donation request.

14 - Moonlight Walk at Whitesbog 7 p.m.
Hunters Moon. Listen to the night sounds of the Pines, learn about Whitesbog and experience the seasonal changes of the Pinelands. Walks are 3-5 mi. long, and led by experienced leaders. $5 donation/person, reservations requested.

16 - MLK Day of Service
Check our website for further details.

20 - Geocache Meet-up 1 p.m.
Series continues, Meet in the General Store Classroom to learn about this month's challenge. The event is FREE, Registration is requested 609-893-4646.

22 - Crafting in the Art Gallery! 1 p.m.
Come explore Whitesbog's artistic side and bring your children for FREE craft time!

22 - Blueberry Music Jam 11 a.m. – 2 p.m.
(See Jan. 8 for details.)

27 - January 27 – Family Games Night 6 p.m.
Come into Whitesbog for some family time in the General Store. The event is FREE, Registration is requested 609-893-4646.

February

4 - Winter Bird Exploration 8:30 a.m.
Join an experienced leader and look and listen to all the many types of birds that call Whitesbog home. Meet at the General Store at 8:15 am, no reservation required. This is a FREE activity for all ages.

4 - Volunteer Work Day 10 a.m. – 3 p.m.
(See Jan. 7 for details)

4 - Village Tour (See Jan. 7 for details) **1 p.m.**

5 - Tundra Swan Workshop 1 p.m.
A workshop led by Len Little, educator, and a hike into the bogs to get close to these beautiful birds. $8/pp, advance reservations requested.

11 - Moonlight Walk (See Jan. 14 for details.) **7 p.m.**

11 - Family Hike (See Jan. 13 for details) **10 a.m.**

12 - Blueberry Music Jam 11 a.m. - 2 p.m.
(See Jan. 8 for details.)

14 - Shinrin Yoku Wellness Walk 10 a.m.
(See Jan. 10 for details)

14 - Valentine's Day Wedding
Take your vows in the historic home of Elizabeth White. Ceremony expense begins at $50/couple. Advance reservations required.

24 - Family Games Night 6 p.m.
(See Jan. 27 for details.)

26 - Crafting in the Art Gallery! 1 p.m.
(See Oct. 23 for details).

26 - Blueberry Music Jam 11 a.m. - 2 p.m.
(See Jan. 8 for details.)

March

4 - Volunteer Work Day (See Jan. 7) **10 a.m. – 3 p.m.**

4 - Village History Tour (See Jan. 7 for details) **1 p.m.**

10 - Family Hike (See Jan. 13) **10 a.m.**

11 - Moonlight Walk 7 p.m.
(Wolf Moon. See Jan. 14 for details).

11 - Pinelands Short Course Stockton College
(See Stockton website for details) **9 a.m. - 3:45 p.m.**

12 - Blueberry Music Jam 11 a.m. - 2 p.m.
(See Jan. 8 for details.)

12 - 12th Ann. Lines on the Pines 11 a.m. - 4 p.m.

14 - Shinrin Yoku Wellness Walk 10 a.m.
(See Jan. 10 for details)

19 - Kids Paint Party 1 p.m.

25 - NJ Maker's Day Activities & Family Workshops

26 - Blueberry Music Jam 11 a.m. - 2 p.m.
(See Jan. 8 for details.)

26 - Children's Craft in The Gallery 1 p.m.

31 - Family Game Night 6 p.m.
(See Jan. 27 for details.)

2017 Whitesbog Board of Trustees

Richard Prickett, Pres.	Joseph Darlington, V.P.	Lise Mainor, Sec.
Terri Chiddenton, Treas.	Thomas Besselman	Roni Detrick
Bill Bolger	Brianna Calderone	Ed Mattson
Stephanie Schrader	Kenny Willitts	

Board Meetings, Mondays at 6:30 p.m.,
General Store (GS) or Suningive (SN)
Jan. 23 (SN), Feb. 27 (SN), Mar. 27 (SN)
April 2, Gen. Membr., Mtg.Barrel Factory 12:00 noon.
April 24 (GS), May 22 (GS).

Staff

Allison Pierson, Director
Jennifer Rubeo, Bookkeeper/ Assistant

Newsletter

Mark Ehlenfeldt & Allison Pierson – Editors

Committees – 2017

ADA –Sharon Goodman
Agricultural Museum – Ted Gordon
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Education – Lise Mainor
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Membership – Roni Detrick
Nominating & Personnel – John Joyce

Whitesbog is administered by the State of New Jersey, Department of Environmental Protection, Division of Parks and Forestry as part of the Brendan T. Byrne State Forest.

The Whitesbog Preservation Trust has received a General Operating Support Grant for the fiscal year 2017 from the New Jersey Historical Commission, a division of the Department of State.

Funding is made possible in part by the New Jersey State Council on the Arts/Department of State, a Partner Agency of the National Endowment for the Arts through a grant to the Burlington County Board of Chosen Freeholders.

The Whitesbog Preservation Trust has received a Recreational Trail Grant from the Department of Environmental Protection and the Federal Highway Administration for Trail Restoration & Enhancement during 2015 & 2016.

The 1772 Foundation, in cooperation with the New Jersey Historic Trust, has provided Whitesbog Preservation Trust with a Capital Preservation Grant for the repair and restoration of a worker's cottage.

The Mission of the Trust is to restore, protect and enhance historic Whitesbog Village, in order to preserve the White family legacy and to inspire audiences of all ages to experience:
- the origins and innovations of cranberry and blueberry cultivation
- the rich culture and unique ecology of the New Jersey Pine Barrens.

Whitesbog Preservation Trust
120-34 Whitesbog Road
Browns Mills, NJ 08015

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Table 1. Cultivars released by F.V. Coville and cultivars originating from Coville's crosses that were released as cultivars after his death in 1937.

Cultivars released	Year	After 1937	Year
Rubel [z]		Atlantic	1939
Pioneer	1920	Burlington	1939
Katharine	1920	Pemberton	1939
Greenfield	1926	Berkeley	1949
Rancocas	1926	Coville	1949
Jersey	1928	Murphy	1950
Concord	1928	Wolcott	1950
June	1930	Angola	1951
Stanley	1930	Ivanhoe	1951
Scammell	1931	Bluecrop	1952
Redskin	1932	Earliblue	1952
Catawba	1932	Croatan	1954
Wareham	1936	Blueray	1955
Weymouth	1936	Collins	1959
Dixi	1936		

[z] Rubel was selected from the wild in 1912.

Table 2. Ranking by planted hectares in the United States in 1992 of cultivars originating from crosses made by F.V. Coville (from Moore, 1993).

Ranking	Cultivar	Hectares	Acres	U.S. acreage (%)
1	Bluecrop	6173	15,253	35
2	Jersey	3030	7,487	17
3	Weymouth	996	2,461	6
4	Croatan	948	2,342	5
5	Blueray	740	1,829	4
7	Rubel	551	1,362	3
8	Berkeley	420	1,038	2
11	Earliblue	189	467	1
14	Collins	106	262	1
15	Murphy	95	235	0.5
16	Coville	85	210	0.5
	Total	13,333	32,945	75%