

The Betulaceae Family

The Betulaceae family otherwise known as the Birch family consists of a group of deciduous trees and shrubs. All plants in this family have simple, sharply serrate leaves with pinnate venation. They are monoecious which means that there are unisexual flowers born on the same plant. The staminate or male flowers occur in drooping catkins while the pistillate or female flowers occur in capitate or head like clusters. The catkins can be loose and pendulous or short and erect, even sometimes woody. Each bract of the catkin bears anywhere from one to three flowers. Some species in the Betulaceae family have bracts that enlarge and enclose the fruits. In most cases the perianth is greatly reduced or even absent. The fruits of this family are either nuts, nutlets or samaras, which means an indehiscent winged fruit.

The Betulaceae family has five genera in the state of Pennsylvania. They are the *Alnus*, *Corylus*, *Ostrya*, *Betula* and *Carpinus* genera. Of these five genera only the *Betula* genus was available in the Millersville University herbarium. The *Betula* genus consists of several species that are native to Pennsylvania. They are *B. alleghaniensis*, *B. lenta*, *B. nigra*, *B. papyrifera*, *B. pendula*, *B. populifolia*, and *B. pubescens*. Of these seven species only *B. lenta* and *B. nigra* were available in the Millersville Herbarium.

Betula lenta otherwise known as the black or sweet birch is a tree that can grow up to 25 meters in height. It has dark nonexfoliating bark that becomes rough and platy with age. The twigs of the black birch have a pungent evergreen smell when they are broken. It is commonly found around wooded areas as well as along stream and river

banks. *Betula lenta* is a dominant tree species found in many hardwood forests of the northern Appalachian mountain chain. It is used as a valuable source of lumber and as a source of wintergreen oil (methyl salicylate). The Native Americans used black birch as medicinally as a cure for dysentery, diarrhea, colds and soreness.

Millersville University has a total of 22 specimens of *Betula lenta*. Most of these samples were found along rivers and streams. Many of them were actually found on islands in the Susquehanna River. The majority of the specimens from the herbarium are from Lancaster County, however, several were found in other counties. All of the specimens in the herbarium are from either the Piedmont or Ridge & Valley providences. Figure 1 shows a distribution map of the *Betula lenta* species found in our herbarium.

Figure 1. Distribution map of the *B. lenta* specimens found in Millersville University's Herbarium.

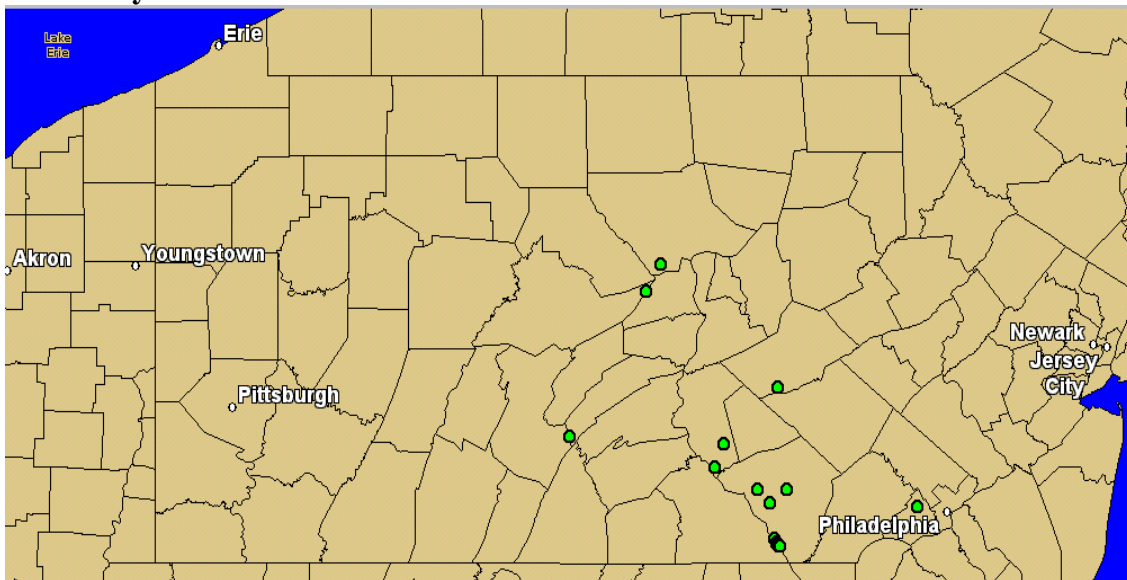
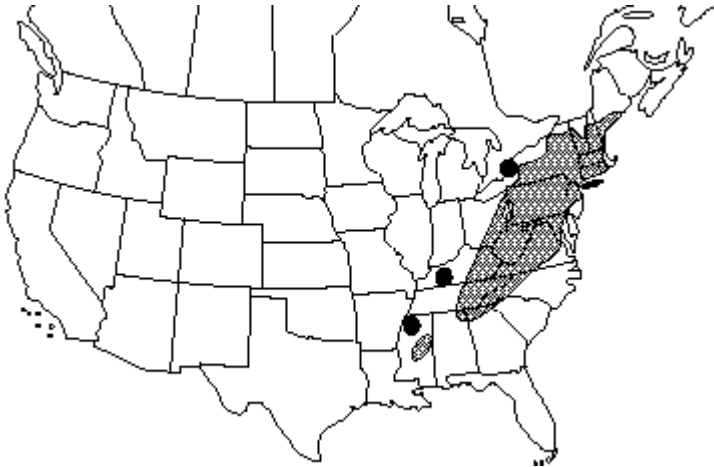


Figure 2 shows a distribution map of the *Betula lenta* species found throughout the entire country. It is apparent that the Millersville University herbarium does not have enough specimens to represent the distribution completely. According to Figure 2 *Betula lenta*

should be able to be found throughout the entire state of Pennsylvania, not just in the Piedmont or Ridge and Valley providences.

Figure 2. Distribution map of *Betula lenta* across North America.

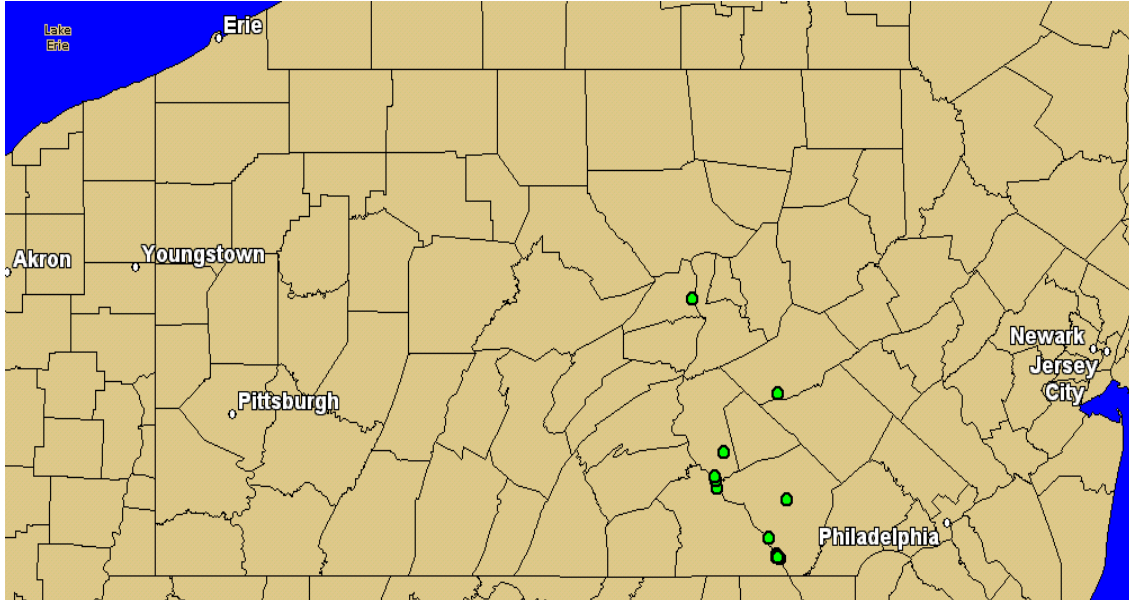


The only other species from the Betulaceae family in the Millersville herbarium is *Betula nigra* otherwise known as the river birch. Like the sweet birch the river birch is a tree capable of growing up to 30 meters in height. The bark is a tan to reddish-brown color and often exfoliates into irregular shaped papery layers. Unlike the sweet birch the river birch does not have the wintergreen taste or smell when the twigs are snapped. Likewise, the wood from river birch is not of great value for timber because of the poor wood quality. The Native Americans used to use river birch to treat many of the same illnesses as the sweet birch including colds, dysentery and soreness as well as for milky urine.

Millersville's herbarium consists of 21 specimens of *Betula nigra*. All of these specimens were found in the same general areas as the sweet birch. In fact, many of the specimens were collected at the same exact sites as the sweet birch. Many of them were from islands in the Susquehanna River and quite a few of them were from areas

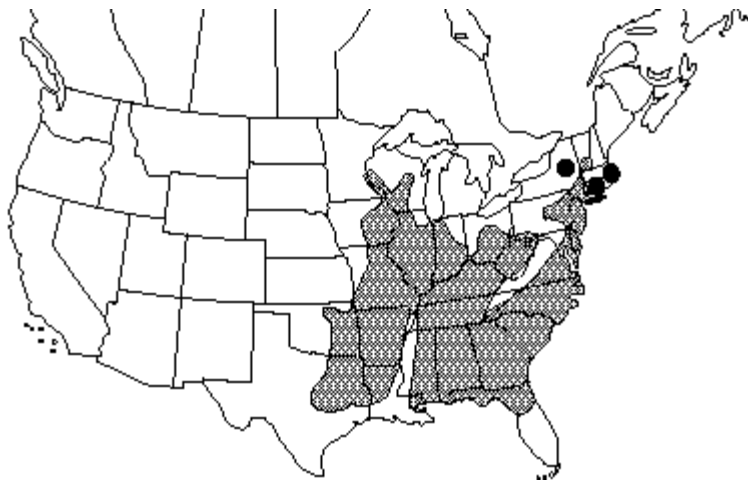
surrounding the river. Figure 3 shows a distribution map of the *Betula nigra* specimens that we have here at Millersville.

Figure 3. Distribution map of the *Betula nigra* specimens found in the Millersville Herbarium.



Unlike the *Betula lenta* I do believe that Millersville has an adequate representation of the river birch. According to the distribution map for *Betula nigra* across North America shown in Figure 4, river birch is only found in the eastern portion of Pennsylvania. I still believe that more specimens would better help represent this species in our state.

Figure 4. Distribution map of *Betula nigra* across North America



Comparing figures 2 and 4 one can see that the river birch has a distribution that reaches much farther west than the sweet birch.

Appendix

Family	Genus	Species	Collector	Collector No.
Betulaceae	Betula	lenta L.	J. Parks	684
Betulaceae	Betula	lenta L.	J. Parks	1343
Betulaceae	Betula	lenta L.	J. Parks	643
Betulaceae	Betula	lenta L.	J. Parks	861
Betulaceae	Betula	lenta L.	J. Parks	597
Betulaceae	Betula	lenta L.	J. Parks	1135
Betulaceae	Betula	lenta L.	J. Parks	628
Betulaceae	Betula	lenta L.	D.F. Scheer	s.n.
Betulaceae	Betula	lenta L.	D. Neuberger	s.n.
Betulaceae	Betula	lenta L.	T. Morgan	21
Betulaceae	Betula	lenta L.	J. Parks	597
Betulaceae	Betula	lenta L.	V. Shuman	s.n.
Betulaceae	Betula	lenta L.	J. Parks	628
Betulaceae	Betula	lenta L.	J. Parks	1556
Betulaceae	Betula	lenta L.	J. Parks	1628
Betulaceae	Betula	lenta L.	J. Peffer Jr.	s.n.
Betulaceae	Betula	lenta L.	R. Heisey Dan	12
Betulaceae	Betula	lenta L.	Bowman	17
Betulaceae	Betula	lenta L.	J. Parks	1294
Betulaceae	Betula	lenta L.	J. Parks	1087
Betulaceae	Betula	lenta L.	J. Parks	806
Betulaceae	Betula	lenta L.	T. Patrick	s.n.
Betulaceae	Betula	nigra L.	J. Parks	1366
Betulaceae	Betula	nigra L.	J. Parks	2755
Betulaceae	Betula	nigra L.	J. Parks	799
Betulaceae	Betula	nigra L.	W.E. Manning	s.n.
Betulaceae	Betula	nigra L.	W.E. Manning	s.n.
Betulaceae	Betula	nigra L.	J. Parks	994
Betulaceae	Betula	nigra L.	J. Parks	1493
Betulaceae	Betula	nigra L.	J. Parks	1183
Betulaceae	Betula	nigra L.	J. Parks	1288

Betulaceae	Betula	nigra L.	J. Parks	1820
Betulaceae	Betula	nigra L.	J. Parks	1787
Betulaceae	Betula	nigra L.	J. Parks	1606
Betulaceae	Betula	nigra L.	J. Parks	1782
Betulaceae	Betula	nigra L.	J. Parks	2745
Betulaceae	Betula	nigra L.	J. Parks	529
Betulaceae	Betula	nigra L.	J. Parks	656
Betulaceae	Betula	nigra L.	J. Parks	2807
Betulaceae	Betula	nigra L.	K.D. Kauffman	47
Betulaceae	Betula	nigra L.	R. Heisey	40
Betulaceae	Betula	nigra L.	J. Parks	753
Betulaceae	Betula	nigra L.	C. L. Grab	s.n.