

HOLLIES IN WISCONSIN

With the coming of the winter season botanical interests are directed chiefly toward yuletide plants, one of which is the holly. The species most commonly used in wreaths and decorations is the English Holly (*Ilex aquifolium* L.); however, many people are unaware that a number of native holly species are found in eastern North America and two of them occur in Wisconsin. Unfortunately, the Wisconsin representatives are deciduous shrubs and not suitable for Christmas decorations. Although of no value to us for the holiday season, their fruits are eaten by overwintering birds and squirrels, hence they may be considered as a winter treat for wildlife.

Our Wisconsin hollies include the Winterberry or Black Alder (*Ilex verticillata* L.) and the Mountain Holly (*Nemopanthus mucronata* (L.) Trel.). Both are medium to tall shrubs, 3-15 feet tall, with the characteristic orange-red (or sometimes yellow) berry-like drupes which mature in mid-autumn and may persist until mid-winter. These shrubs are not very common and must be searched for in bogs, swamps and wet woods which are difficult areas to traverse. For those interested in distinguishing between these two species, the characteristic features of each are illustrated in Figure 1, and summarized in the following key.

- a. Leaves obovate, elliptic to lance-oblong, with numerous appressed teeth, acuminate tips and somewhat stout petioles; the flowers are white, with 4-9 oblong petals; the fruits are on short stalks. Winterberry (*Ilex verticillata*).
- a. Leaves elliptic, entire or minutely and sparsely serrate, with rounded or apiculate tips and very thin petioles; the flowers are yellowish, with 4-5 linear petals; the fruits are on long thin stalks. Mountain Holly (*Nemopanthus mucronata*).

According to Fernald (1950) and Gleason and Cronquist (1952), there are four geographic variants of the Winterberry, two of which are present in Wisconsin. The more common one, var. *padifolia* (Willd.) T. & G., has leaves with the lower surfaces downy with minutely appressed hairs, while the lower surfaces of the leaves of var. *verticillata* are nearly glabrous or only sparsely pubescent along the veins. Because these two varieties intergrade, it may not be possible for an amateur botanist to clearly identify individual specimens of either one.

The members of the Holly Family (*Aquifoliaceae*) are world-wide in distribution and may claim the title of international plants for the Christmas Season. This family consists of three genera (*Ilex*, *Nemopanthus* and *Phylline*) and about 500 species. *Ilex* is the largest genus with over 300 species and whose center of distribution is in Central and South America, but with representatives in Africa, Asia, Europe and North America. About ten native species of this genus occur in southeastern North America and, although none are native in the western states, the English Holly (*Ilex aquifolium*) is grown commercially from British Columbia to California for the holiday trade. Three species of this genus, which are sometimes grouped together under the genus *Byronia*, are found in Polynesia and Australia. *Nemopanthus* is a monotypic genus with the single species, *Nemopanthus*

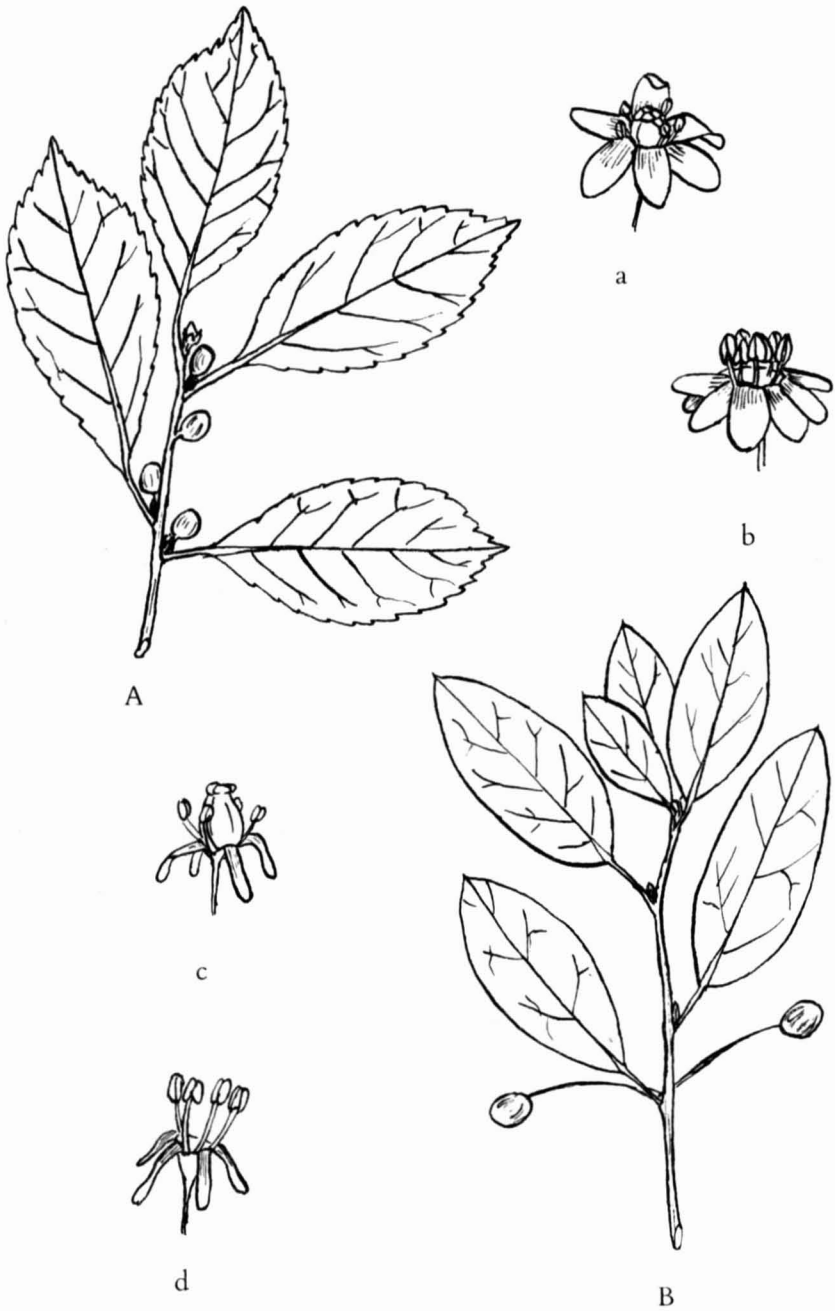


Figure 1. Wisconsin Hollies: A. Winterberry (*Ilex verticillata*) twig, leaves and fruits; a. pistillate flower; b. staminate flower. B. Mountain Holly (*Nemopanthus mucronata*) twig, leaves and fruits; c. pistillate flower; d. staminate flower. (flowers from Gleason, 1952).

mucronata, occurring in northeastern North America, and the genus *Phylline* consists of about ten species in the New Hebrides Islands.

The use of holly in winter festivities began before the Christian era. The Romans used it for gifts of friendship during their Saturnalia, a harvest festival in honor of their god Saturn, and the Druids in England brought branches of the plant into homes as a protection against winter miseries (Hunter, 1970). In South America the dried leaves of several holly species have been used for untold centuries in brewing tea, while the Indians of southeastern United States used another holly, called *Yaupon* (*Ilex vomitoria* Ait.) as a drink and an emetic. Because the holly had been associated with pagan rites, it was some time before Christians were allowed to use its branches in their Christmas celebrations; however, since its acceptance it has become as traditional as the Christmas tree, mistletoe and cranberries.

Many persons inquire about planting holly shrubs in their yards. In the bulletin "Growing Hollies", published by the U.S. Department of Agriculture (USDA, 1957), are listed some of the native and introduced hollies suitable for the home grounds, together with their care and planting instructions. One of our native shrubs, the Winterberry (*Ilex verticillata*) is adaptable to drier soils and is hardy throughout the State. Although it lacks spine-tipped leaves and is deciduous, it will produce many red "berries" which persist into the winter season and are sometimes eaten by birds. The introduced Japanese Holly (*I. crenata* Thunb.), an evergreen shrub, is quite hardy and should thrive in the counties bordering Lake Michigan. Because of its dark-green roundish leaves and black fruits it does not resemble a typical holly, but it can withstand city conditions and tolerate considerable shade so it may be used as a specimen plant, a hedge or a border shrub. A Chinese species (*I. cornuta* Lindl.) and two other Asiatic species (*I. pedunculosa* Miq. and *I. Pernyi* Franch.) are sometimes planted, but there are no records of their hardiness in Wisconsin's climate. Horticulturalists have crossed several species and produced new forms which are dwarf in stature, vary in spininess of the leaves and some have variegated leaves. One of these newer forms, resulting from the crossing of the English Holly (*I. aquifolium*) and the Asiatic species *I. Pernyi*, is a spiny, slow-growing shrub known only by the scientific name of *Ilex X aquipernyi*, which may prove to be an interesting ornamental.

Because little is known about the adaptability of introduced holly shrubs to our climate, observations on their vegetative growth, flowering and fruiting would be an interesting phenology project for persons interested in ornamental plants. Local nurseries can supply names of dealers or horticulturalists from where some of these species and their hybrids may be obtained. However, one precaution must be taken if fruits are desired on these shrubs. Because the plants are dioecious, a staminate (pollen bearing) shrub as well as a pistillate (pistil bearing) shrub of each species must be planted to insure pollination and fruit development.

Peter J. Salamun
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LITERATURE CITED

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FUNGI AT THE FIELD STATION

The UWM Field Station now has a mycological reference collection, for use in identifying fungi of the area. Botanists and zoologists doing research at the Field Station will find the collection useful. It can also be used by visiting groups who have some interest in identifying the more conspicuous fungi that are likely to be seen during a tour of the area.

In spite of the dry summer, 1970 proved to be a good year for collecting fungi in southeast Wisconsin. The rainy period in September was followed by an abundance of many species of mushrooms and other fungi. At the Field Station some unusually large specimens were found, including a white jelly fungus (*Tremella* sp.) the size of a head of cabbage and a slime mold plasmodium 1½ feet wide and nearly 3 feet long.

The following is a list of fungi collected at the Field Station during 1970:

Myxomycetes (Slime Molds)

- Lycogala epidendrum*
- Fuligo septica*
- Fuligo* sp.
- Stemonitis* sp.

Ascomycetes

- Erysiphe graminis*
- E. polygoni*
- Phyllachora graminis*
- Venturia inaequalis*
- Xylaria polymorpha* (Dead Man's Finger)
- Daldinia concentrica* (Cramp Ball)