Brief Note: A Guide to the Identification of the Hickories of Southeastern Ohio

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Species of hickory (Carya) are often difficult to identify because morphological features vary tremendously and overlap greatly. A number of authors have provided morphological information useful for the identification of the hickories of northeastern North America. These include Boisen and Newlin (1910), Braun (1961), Fernald (1950), Gleason (1952), Gleason and Cronquist (1963), Harlow et al. (1979), Little (1969), Manning (1950, 1969, 1973), and Sargent (1918, 1933). However, few of the above provide sufficient information on both vegetative and reproductive characters to be useful in the field in all seasons.

This guide originated as part of a study investigating vegetation-aspect relationships and the interspecific ecological variation among several species of hickory indigenous to unglaciated southeastern Ohio (McCarthy et al. 1984). The study was conducted principally in an oak-hickory forest at the Waterloo Wildlife Experiment Station, Athens County, Ohio. Additional morphological observations were made in several other forests in Athens and adjacent Hocking counties.

Due to the large number of characters often required to make a positive identification, a dichotomous key relying on diagnostic features is inappropriate. Thus a tabular format has been adopted. Table 1 provides a summary of the characters the author believes to be most useful in the identification of the hickories in southeastern Ohio. The principal contributions of the guide are the inclusion of staminate catkin lengths and a more detailed description of bark characters than previously available, both of which greatly aid in the identification of dominant and co-dominant canopy trees where detailed foliar characters and mature fruit may not be readily available.

Manning (1950) indicated that "the two pignuts, Carya glabra and C. ovalis, are the most difficult of all species in the northeast to separate" and can only be separated on the basis of "mature fruit collected in November." The length of the staminate catkins (pers. obs., Krochmal and Krochmal 1982) appears to be an additional character to aid in and extend the period of identification of these two particularly enigmatic species. Oddly, floral characters are of little use in differentiation and identification of the remaining species.

ACKNOWLEDGMENTS. I wish to thank Drs. Philip D. Cantino, Warren A. Wistendahl, and two anonymous reviewers for helpful comments on the manuscript. I would also like to extend my thanks to Robert Donohoe and the Ohio Department of Natural Resources for permission to use its property. Partial support for this project was provided by a John Houk Memorial Research Grant, Ohio University.

LITERATURE CITED

### Summary of characters useful for identification of the hickories (Carya spp.) of southeastern Ohio. Nomenclature follows Gray's manual (Fernald 1950).

<table>
<thead>
<tr>
<th>Section</th>
<th>Species</th>
<th>Flowers/Fruit</th>
<th>Bark</th>
<th>Leaves</th>
<th>Buds/Twigs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apocarya</td>
<td>C. cordiformis</td>
<td>catkins 7-10 cm long; fruit sharply pointed; husk thin, 4-winged to middle; kernel bitter</td>
<td>close with shallow interlacing ridges</td>
<td>9(7-11) lfs.; lvs. 15-25 cm long</td>
<td>term. bud yellow, lanceolate valvate scales, 1.6-2.0 cm long; twigs slender, gray-br.</td>
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<tr>
<td>Eucarya</td>
<td>C. ovata</td>
<td>catkins 10-20 cm long; fruit depressed at apex; husk thick, readily dehiscent to base; nut 4-ribbed; kernel sweet</td>
<td>light gray; separating into long, broad, thin slightly recurved plates</td>
<td>5(7) lfs.; lvs. 20-50 cm long; 3 terminal lfs. noticeably larger than 2 laterals; dense tufts of hairs on lfl. margin</td>
<td>term. bud acute, stout, 1.5-2.5 cm long; twigs gray to reddish-brown</td>
</tr>
<tr>
<td>Eucarya</td>
<td>C. laciniosa</td>
<td>catkins 12-20 cm long; fruit depressed at apex; husk thick, readily dehiscent to base; nut 4-6 ribbed; kernel sweet</td>
<td>light gray; separating into long, thin, straight plates (or only slightly curved)</td>
<td>7(5) lfs.; lvs. 30-60 cm long; no dense tufts of hairs on margins of lfs.</td>
<td>term. bud blunt 2.0-3.5 cm long; twigs stout, orange-tan</td>
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<tr>
<td>Apocarya</td>
<td>C. tomentosa</td>
<td>catkins 10-20 cm long; fruit depressed at apex; husk thick, 4-channeled, splits to middle or beyond; nut 4-ribbed; kernel sweet</td>
<td>dark gray; becoming deeply furrowed, ridges flat, often with distinct edges</td>
<td>7(5) lfs.; lvs. 20-35 cm long; lfs. &amp; rachis glandular-resinous, densely pubescent on lower side</td>
<td>term. bud acute 1.4-2.0 cm long, outer scales readily deciduous; twigs reddish-brown</td>
</tr>
<tr>
<td>Apocarya</td>
<td>C. glabra</td>
<td>catkins 5-8 cm long; fruit smooth and shining, pyriform; husk thin, splits to center by 1(0-2) suture; nut rounded; kernel bitter</td>
<td>light/med. gray; close, can become deeply furrowed, ridges often rounded</td>
<td>5 (occasionally 7 on same tree) lfs.; lvs. 20-30 cm long; lfs. &amp; rachis generally glabrous, lower surf. may be pubes.</td>
<td>term. bud acuminated, 0.6-1.2 cm long; twigs reddish-brown</td>
</tr>
<tr>
<td>Apocarya</td>
<td>C. ovalis</td>
<td>catkins 8-17 cm long; fruit dull, often warty; husk thin, splits to base by 4 sutures; nut distinctly 4-ridged to center; kernel sweet</td>
<td>med. gray; close with shallow ridges when young, often becomes platy later (plates shorter and narrower than C. ovata)</td>
<td>7(5) lfs.; lvs. 20-30 cm long; lfs. same as above</td>
<td>term. buds and twigs same as above</td>
</tr>
</tbody>
</table>


