Woody Plants of Western Wisconsin

L. H. Pammel
This paper simply embodies the results of some observations made about La Crosse, Wisconsin, from twenty to twenty-five miles northeast and south, and the southwestern part of Minnesota in Houston and Fillmore counties. The region is entirely in the driftless area. This part of the State is lower than the area lying to the northeast. Its most marked feature is the absence of drift. This area (driftless) occupies about 12,000 square miles. So far as the soil is concerned, it is not unlike that found in many other parts of the State. Sandy soils abound as elsewhere in the State. In some cases the topography is nearly flat, but generally it is hilly and in some cases slightly rolling. The alluvial bottoms along the streams and creeks abound in as rich a soil as is found anywhere in the State. Prairies are limited and of small size, in some cases sandy with black, sandy depressions of better soil. La Crosse Prairie, on which La Crosse is built, may be given as an illustration. Few trees abound except along its margins near the rivers. This prairie is bounded by La Crosse river on the north, Mississippi river on the west, and Mormon Cooley creek on the south. The region is abundantly supplied with water, there being numerous small streams and springs, which occur in almost every valley, besides there are streams of considerable size like Black, Root, Kickapoo and La Crosse rivers.

The geological formation belongs to the lower Silurian which shows abundant out-crops of potsdam sandstone everywhere. According to Moses Strong, the maximum elevation of the hills at La Crosse is 470 feet above the river. The hills are only 350 feet at Fountain City, 200 feet at Maiden Rock and eighty feet at Bay City. The higher hills facing the Mississippi river are covered with lower magnesium limestone, varying considerable in thickness. The fact that the soils on the ridges, as well as the valleys, were once thickly covered with timber, and is returning to that condition, when allowed to do so, is largely due to the decomposition of the limestone rock and the physical condition of the soil. This soil is not only fertile, but retentive of moisture, which is an important feature in forest growth. The alluvial soils, which are derived from the washing of the hills, have a somewhat different growth than is found on the ridges and valleys, since

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a portion of this land is often covered with water. Peat-bogs and wet swamps also abound. The vegetation here is quite uniform. A marked feature is the absence of trees and woody plants as a rule. *Salix, Nemopanthes fascicularis, Larix, Carex, Cyperus, Scirpus, Eleocharis, Sarracenia, a few grasses, especially Spartina cynosuroides* in the drier places, *Habenaria psycodes, Lilium Canadense, etc., abound.

The woody plants of this region are represented by the following orders:

1. Menispermaceae;
2. Tiliaceae;
3. Rhamnaceae;
4. Celastraceae;
5. Rubiaceae;
6. Vitaceae;
7. Sapindaceae;
8. Anacardiaceae;
9. Leguminosae;
10. Rosaceae;
11. Saxifragaceae;
12. Hamamelidaceae;
13. Cornaceae;
14. Caprifoliaceae;
15. Rubiaceae;
16. Oleaceae;
17. Urticaceae;
18. Juglandaceae;
19. Cupuliferae;
20. Salicaceae;
21. Coniferae;
22. Liliaceae.

In the arrangement of the genera Gray's Manual, 6th edition, has been followed.

**MENISPERMACEAE.**


**TILIACEAE.**


**ILICINEAE.**


**CELASTRACEAE.**


**RHAMNACEAE.**

7. *C. ocatus*, Desf.

**VITACEAE.**


**SAPINDACEAE.**

15. *A. negundo*, L. Box Elder or Ash-leaved Maple.

**ANACARDIACEAE.**


**LEGUMINOSAE.**

23. *Robinia pseudacacia*, L. Black Locust or False Acacia. Frequent escape.
<table>
<thead>
<tr>
<th>No.</th>
<th>Scientific Name</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td><em>P. pumila</em>, L.</td>
<td>Sand Cherry.</td>
</tr>
<tr>
<td>27</td>
<td><em>P. pennsylvanica</em>, L.</td>
<td>Wild Red Cherry.</td>
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<tr>
<td>28</td>
<td><em>P. virginiana</em>, L.</td>
<td>Choke Cherry.</td>
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<tr>
<td>29</td>
<td><em>P. serotina</em>, L.</td>
<td>Wild Black Cherry.</td>
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<tr>
<td>30</td>
<td><em>Spiraea salicifolia</em>, L.</td>
<td>Common Meadow Sweet.</td>
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<tr>
<td>31</td>
<td><em>S. tomentosa</em>, L.</td>
<td>Hardhack.</td>
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<tr>
<td>34</td>
<td><em>R. occidentalis</em>, L.</td>
<td>Black Raspberry.</td>
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<tr>
<td>36</td>
<td><em>R. canadensis</em>, L.</td>
<td>Dewberry.</td>
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<tr>
<td>37</td>
<td><em>Potentilla fruticosa</em>, L.</td>
<td>Shrubby Cinquefoil.</td>
</tr>
<tr>
<td>38</td>
<td><em>Rosa blanda</em>, Alt.</td>
<td>Rose.</td>
</tr>
<tr>
<td>40</td>
<td><em>Pyrus coronaria</em>, L.</td>
<td>Wild Crab. The species as recognized in Gray’s Manual.</td>
</tr>
<tr>
<td>41</td>
<td><em>Pyrus ardiatifolia</em>, L.</td>
<td>Choke Berry.</td>
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<tr>
<td>42</td>
<td><em>Craeagus occidenta</em>, L.?</td>
<td>White Thorn.</td>
</tr>
<tr>
<td>43</td>
<td><em>Craeagus sp</em>.</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td><em>Ribes cynosbati</em>, L.</td>
<td>Gooseberry.</td>
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<tr>
<td>46</td>
<td><em>R. gracile</em>, Michx.</td>
<td>Missouri Gooseberry.</td>
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<tr>
<td>47</td>
<td><em>R. rubrum</em>, L. var. subglandulosum, Maxim.</td>
<td>Red Currant.</td>
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<tr>
<td>49</td>
<td><em>Hamamelis virginiana</em>, L.</td>
<td>Witch Hazel.</td>
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<tr>
<td>50</td>
<td><em>Cornus canadensis</em>, L.</td>
<td>Dwarf Corn.</td>
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<tr>
<td>51</td>
<td><em>C. circinata</em>, L’Her.</td>
<td>Round-leaved Dogwood.</td>
</tr>
<tr>
<td>52</td>
<td><em>C. stolonifera</em>, Michx.</td>
<td>Red-osier.</td>
</tr>
<tr>
<td>53</td>
<td><em>C. paniculata</em>, L’Her.</td>
<td>Panicled Cornel.</td>
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<tr>
<td>54</td>
<td><em>C. alternifolia</em>, L.</td>
<td>Alternate-leaved Dogwood.</td>
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<tr>
<td>55</td>
<td><em>Sambucus canadensis</em>, L.</td>
<td>Common Elder.</td>
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<tr>
<td>56</td>
<td><em>S. racemosa</em>, L.</td>
<td>Red-berried Elder.</td>
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<tr>
<td>57</td>
<td><em>Viburnum opulus</em>, L.</td>
<td>Cranberry-tree.</td>
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<tr>
<td>58</td>
<td><em>V. lentago</em>, L.</td>
<td>Black Haw.</td>
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<tr>
<td>60</td>
<td><em>Symphoricarpos occidentalis</em>, Hook.</td>
<td>Wolfberry.</td>
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<tr>
<td>63</td>
<td><em>Diervilla trifida</em>, Moench.</td>
<td>Rush Honeysuckle.</td>
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<tr>
<td>64</td>
<td><em>Cephalanthus occidentalis</em>, L.</td>
<td>Button-bush.</td>
</tr>
<tr>
<td>65</td>
<td><em>Vaccinium pennsylvanica</em>, Lam.</td>
<td>Dwarf Blueberry.</td>
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<tr>
<td>66</td>
<td><em>V. oxycoccos</em>, L.</td>
<td>Small Cranberry.</td>
</tr>
<tr>
<td>69</td>
<td><em>Gaultheria procumbens</em>, L.</td>
<td>Creeping Wintergreen.</td>
</tr>
<tr>
<td>70</td>
<td><em>Cassandra caliculata</em>, Don.</td>
<td>Leather Leaf.</td>
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</tbody>
</table>
OLEACEÆ.

73. *F. viridis*, Michx.
74. *F. Sambucifolia*, Lam.?

URTI CACEÆ.

75. *Ulmus fulva*, Michx.
76. *U. americana*, L. Slippery or Red Elm.
78. *Celtis occidentalis*, L. Cork or Rock Elm.

Red Mulberry. On authority of Mr. Harris.

JUGLANDACEÆ.


CUPULIFERÆ.

84. *Betula lenta*, L. Sweet or Black Birch.
86. *B. nigra*, L. Red or River Birch.
94. *Quercus alba*, L. White Oak.

SALICACEÆ.


CONIFERÆ.

111. *Larix laricina*, Koch. Tamarack or American Larch.

It may be well to compare the woody flora of Western Wisconsin with that of the prairie region. Since presenting this paper several catalogues have appeared that will give us an accurate idea of the woody flora of prairie regions. Bessey and Webber. "Flora of Nebraska," "Bessey's Prelimin-
IOWA ACADEMY OF SCIENCES.

Mary Report on the Native Trees and Shrubs of Nebraska." These two papers cover a large territory, while Hitchcock's Catalogue of the "Anthophyta and Pteridophyta of Ames," is limited in its scope, but includes, perhaps, nearly all of the woody plants within a radius of thirty miles. Bessey's list contains sixty-one trees and sixty-four shrubs, making one hundred and twenty-five woody plants. When Nebraska is more fully explored a few more may be added. Hitchcock's catalogue only gives seventy-five. Within a radius of thirty miles several more species probably occur, but the number will certainly not reach much beyond eighty. In the region about La Crosse, Wisconsin, one hundred and fifteen are enumerated. The genera Crataegus, Salix and Fraxinus carefully worked over will probably bring the number close to one hundred and twenty. Three of the species enumerated above have escaped from cultivation and a fourth has been naturalized. Comptonia asplenifolia, Picea nigra and Thuja occidentalis may still be found within this range. Several species named are scarcely shrubby. On the whole the region is well represented in woody plants. With few exceptions the species are northern, Juglans nigra, Morus rubra, Gymnocladus dioicus, have reached nearly their northern limit.

FOREST VEGETATION OF THE UPPER MISSISSIPPI.

BY L. H. PAMMEL.

The paper before the Academy consisted in a verbal communication of the salient features of the forest vegetation. It was afterward written out in full and sent to Garden and Forest (See Vol. IV. pp. 460, 472 and 531). As the paper may be of general interest to Iowa readers I give it essentially as it appeared in Garden and Forest. A few notes have been added.

The Mississippi river and its tributaries, from Trempleau, Wisconsin, to Dubuque, Iowa, are enclosed by bluffs, varying from two hundred to six hundred feet high. At Dubuque they are much lower than at La Crosse; in the latter place they are something more than five hundred feet above the level of Lake Michigan; sometimes they present steep, sandy rocks, in other places they are covered with a dense growth of trees. The region is well watered by numerous small streams emptying into the Mississippi, while it contains a number of streams of good size, as the Wisconsin, Black, La Crosse, Root and Turkey rivers. The smaller as well as the larger streams are well timbered with Oaks, Poplars, Birches, Maples, Hickories, Butternut, Walnut, Plums, Cherries, a few Conifers and southward, the Coffee-tree and Honey-Locust.

Much has been written concerning soils and the character of the vegetation. It is indeed a puzzling question, and I doubt whether it can truly be