Pyinkado

Xyliia dolabriformis² Benth.
(= Mimosa xylocarpa Taub.)
Family: Leguminosae

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By

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Pyinkado occurs chiefly in Burma and is one of the most valuable Burmese timbers, second only to teak (5, 6, 13).²

Other vernacular names (6, 14) are:

<table>
<thead>
<tr>
<th>Baja</th>
<th>Jamba</th>
<th>Konda</th>
<th>Pyin</th>
<th>Tangedu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bajeh</td>
<td>Jambu</td>
<td>tangedu</td>
<td>Shilve</td>
<td>Tangdu</td>
</tr>
<tr>
<td>Eruvalu</td>
<td>Kongora</td>
<td>Suria</td>
<td>Tirieba</td>
<td></td>
</tr>
<tr>
<td>Ironwood</td>
<td>Kada</td>
<td>Orjori</td>
<td>Tangani</td>
<td>Yerul</td>
</tr>
<tr>
<td>Irul</td>
<td>Pangali</td>
<td>Tangedi</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹Maintained at Madison, Wis., in cooperation with the University of Wisconsin.

²Xyliia xylocarpa Taub. is found on the west coast of India (13) and is sometimes considered syn. X. dolabriformis.

³Underlined numbers in parentheses refer to the list of numbered references at the end of the article.
The Tree

Pyinkado trees may grow very large, 100 to 120 feet in height and 8 to 12 feet in girth. At their best the boles are straight and fairly cylindrical. These trees grow in association with teak (6, 10, 13, 14). The trees occur in the lower hill forests in Burma up to about 2,500 feet (14).

Bark

The bark may contain as much as 14 percent of tannin (14).

The Wood

Color

The sapwood is pale yellowish or reddish-white to light brown and narrow. The heartwood is uniform reddish-brown with few markings, but may be faintly veined with darker lines. It darkens with age (2, 13).

Grain, Texture

The grain is straight, wavy, or broadly interlocked, and the texture is medium.

Weight

The wood is heavy; too heavy to float, up to 80 pounds per cubic foot or more when green (2, 6, 14, 15). At 12 percent moisture content it weighs 57 to 64 pounds per cubic foot; specific gravity about 1.00 (11, 12).

Mechanical Properties

Pyinkado is one of the strongest and hardest of Indian and Burmese timbers (6, 10, 11, 13, 15). It is similar in properties to Burma teak, but harder.

The values in table 1 represent average properties of pyinkado as determined in India (11) and the results of these tests are compared with data for white oak from the United States.

Workability

The wood is very difficult to work in the dry condition, but it is possible to obtain a smooth surface that will take a high polish. It is considered best to convert freshly cut logs into timber at once. It is customary to box the heart when cutting railway ties (6, 13).

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Seasoning

Pyinkado has been rated as difficult to season (12), but it is thought to give less trouble in splitting than the Xylica xylocarpa of the west coast of Burma. The British Forest Products Research Laboratories recommended (1952) their Schedule 3 for kiln drying 4/4 stock. The U. S. Forest Products Laboratory schedule (16) that corresponds to this, generally, during the first part of kiln drying is T4-D2. Shrinkage data are given in table 1.

Durability

Pyinkado is extremely durable, rated as the most durable timber with respect to decay found in India (13). Untreated ties have lasted 20 to 24 years and more in service. It is not immune, however, from insect and termite attack (6).

Uses

Pyinkado is an excellent construction wood for house posts, bridges, piles, poles, flooring, and planking, and is used for railway ties because of its natural durability. It is also used for tent pegs, cart wheels, tool handles, and boatbuilding (6, 12).

Supplies

Very large supplies of pyinkado are reported available in Burma. Squares up to 40 feet by 16 by 16 inches have been available in quantity (13, 14).

Structure

Growth rings.—The growth rings are present, but not always distinct (7).

The pores.—The pores or vessels are quite uniformly scattered (2), but they vary in size, being large (though barely visible without magnification), medium size, and small (13).

Rays.—The rays are not visible without magnification.

Gum.—Some vessels contain an orange-brown oily gum that gives a sticky feeling to the touch. Rarely, white deposits also are present (6, 7, 13).

Tyloses.—Small tyloses may occur.

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17. Troup, R. S.

18. Troup, R. S.
Table 1

<table>
<thead>
<tr>
<th></th>
<th>Pyinkado¹ (Xyilia dolabriformis)</th>
<th>White Oak² (Quercus alba)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Green</strong></td>
<td><strong>Dry</strong></td>
</tr>
<tr>
<td>Moisture content</td>
<td>49</td>
<td>12</td>
</tr>
<tr>
<td>Specific gravity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume at test</td>
<td>0.78</td>
<td>0.81</td>
</tr>
<tr>
<td>Oven dry volume</td>
<td>0.87</td>
<td>0.71</td>
</tr>
<tr>
<td>Shrinkage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In volume -- green to ovendry</td>
<td>11.1</td>
<td>15.8</td>
</tr>
<tr>
<td>Radial -- green to ovendry</td>
<td>3.3</td>
<td>5.3</td>
</tr>
<tr>
<td>Tangential -- green to ovendry</td>
<td>6.7</td>
<td>9.0</td>
</tr>
<tr>
<td>Static bending</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiber stress at proportional limit</td>
<td>9,600</td>
<td>12,200</td>
</tr>
<tr>
<td>Modulus of rupture</td>
<td>15,600</td>
<td>20,000</td>
</tr>
<tr>
<td>Modulus of elasticity</td>
<td>2,260</td>
<td>2,500</td>
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<tr>
<td>Work to proportional limit</td>
<td>2.8</td>
<td>2.99</td>
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<tr>
<td>Work to maximum load</td>
<td>14.9</td>
<td>16.7</td>
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<tr>
<td>Work, total</td>
<td>33.1</td>
<td>36.0</td>
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<tr>
<td>Impact bending -- 50-pound hammer</td>
<td>18,300</td>
<td>20,000</td>
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<tr>
<td>Fiber stress at proportional limit</td>
<td>7.5</td>
<td>6.9</td>
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<tr>
<td>Drop causing complete failure</td>
<td>43</td>
<td>49</td>
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<tr>
<td>Compression parallel to grain</td>
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<tr>
<td>Crushing strength at proportional limit</td>
<td>6,440</td>
<td>7,090</td>
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<tr>
<td>Maximum crushing strength</td>
<td>8,020</td>
<td>11,100</td>
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<tr>
<td>Compression perpendicular to grain</td>
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<td></td>
</tr>
<tr>
<td>Crushing strength at proportional limit</td>
<td>1,700</td>
<td>2,160</td>
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<td>Hardness -- ball test</td>
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<tr>
<td>End</td>
<td>1,820</td>
<td>2,060</td>
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<tr>
<td>Side</td>
<td>1,920</td>
<td>2,230</td>
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<td>Shearing strength</td>
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<tr>
<td>Average radial and tangential</td>
<td>1,740</td>
<td>2,180</td>
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<tr>
<td>Tension perpendicular to grain</td>
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<tr>
<td>Average radial and tangential</td>
<td>1,020</td>
<td>710</td>
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</tbody>
</table>

¹Data obtained from Indian Forest Records (1933) Vol. 18, Part 10, "The Physical and Mechanical Properties of Woods Grown in India." Five trees represented (11).


³Data for dry tests were adjusted from values given in the reference (footnote 1) for 10.3 percent moisture content by application of the usual exponential relationship, assuming an "intersection point" of 25 percent.

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