



Swartzia spp.

Family: Leguminosae

Wamara

Bannia

Other Common Names: Naranjillo (Mexico, Honduras, Panama), Parakusan (Guyana), Gandoe, Ijzerhart (Surinam), Alma negra (Colombia), Orura barrialera (Venezuela), Icoje (Peru), Pau ferro, Mututy (Brazil).

Distribution: Southern Mexico, through Central America, the West Indies and southward to northern South America; especially abundant in the Guianas and the Amazon region.

The Tree: Size varies considerably with species, some reaching heights of 110 ft with trunk diameters commonly to 24 in., but reaching 36 in.

The Wood:

General Characteristics: Heartwood dark brown, reddish brown, or nearly black, in solid color or somewhat variegated; sharply demarcated from the nearly white to yellowish sapwood. Texture very fine to medium; luster usually medium; grain straight to irregular; without distinctive odor or taste. Dust irritating to some workers.

Weight: Basic specific gravity (ovendry weight/green volume) 0.87 to 1.02; air- dry density 65 to 75 pcf.

Mechanical Properties: (First and third sets of data based on the 2-in. standard, the second set on the 2-cm standard.)

Moisture content	Bending strength	Modulus of elasticity	Maximum crushing strength
(%)	(Psi)	(1,000 psi)	(Psi)
Green (75)	22,870	3,000	12,930
12%	26,370	3,630	15,440
Green (42)	21,400	2,480	10,500
12%	32,600	3,220	16,500
15% (34)	23,460	2,620	12,900

Janka side hardness 3,325 to 4,060 lb for dry material. Forest Products Laboratory toughness average for green and dry material is 260 in.-lb (5/8-in. specimen).

Drying and Shrinkage: Generally reported to be moderately difficult to air-dry because of checking and warp. Kiln schedule T2-C2 is suggested for 4/4 stock and T2-C1 for 8/4. Shrinkage green to oven-dry: radial 3.9%; tangential 7.6%; volumetric 11.2%. Movement after manufacture of some species is reported high.

Working Properties: The woods are difficult to work because of their high density, but finish very smoothly and takes a high polish. Workers should be protected from the irritating dust of some species (S. bannia).

Durability: Heartwood is very resistant to attack by decay fungi and resistant to dry-wood termites. Not resistant to marine borers.

Preservation: No information available.

Uses: inlay, parquet flooring, turnery, furniture, cabinetwork, violin bows, specialty items, suggested as a substitute for ebony.

Additional Reading: (34), (42), (46), (75)

- 34. Japing, H. W. 1957. Tests of the most important mechanical and physical properties of 41 Surinam wood species. Meded. Inst. Trop. Amst. No. 122 (Afd. trop. Prod. No. 46).
- 42. Lavers, G. M. 1969. The strength properties of timbers. For. Prod. Res. Bull. No. 50. H. M. Stationery Office. London.
- 46. Longwood, F. R. 1962. Present and potential commercial timbers of the Caribbean. Agriculture Handbook No. 207. U.S. Department of Agriculture.
- 75. Wangaard, F. F., W. L. Stern, and S. L. Goodrich. 1955. Properties and uses tropical woods, V. Tropical Woods No. 103:1-139.

From: Chudnoff, Martin. 1984. *Tropical Timbers of the World*. USDA Forest Service. Ag. Handbook No. 607.