LOCAL NAMES
English (upas tree,false mvule,false iroko,antiaris,bark cloth tree); Filipino (upas); Indonesian (bemoe); Javanese (ancar); Malay (antjar,antiaris); Mandinka (jafo); Swahili (mkunde); Thai (yang yong); Wolof (man,kan)

BOTANIC DESCRIPTION
Antiaris toxicaria is a magnificent deciduous tree of the forest canopy, often 20- 40 m tall with a dome-shaped crown, drooping branchlets and hairy twigs. Large trees have clear boles and are butressed at the base. Bark smooth, pale gray, marked with lenticel dots and ring marks. When cut thin creamy latex drips out, becoming darker on exposure to air.

Leaves variable, usually oval 5-16 cm x 4-11 cm, the upper half often widest to a blunt or pointed tip, the base unequal and rounded. Saplings and coppice shoots have long narrow leaves, the edge toothed- but rare in mature leaves. Mature leaves prominently veined. Leaves are rough, papery with stiff hairs above but softer below.

Male flowers short-stalked, discoid head with many flowers, each flower with 2-7 tepals and 2-4 stamens, growing just below leaves. Female flowers in disc or kidney-shaped heads to 3 cm across. Ovary adnate to the perianth, 1-locular with a single ovule and 2 styles.

Fruit bright red, ellipsoid, dull and furry, 1.5 cm long, the swollen receptacle contains just one seed.

Some botanists have referred to all African specimens as the Asiatic species. However there appear to be 2 easily recognizable taxa in west Africa. Currently, A. toxicaria is regarded as a single species with 5 subspecies; subsp. toxicaria and macrophylla occur within the Malesian region. Other subspecies are africana, humbertii and welwitschii.

The generic name is after the Malay plant name ‘antjar’, and the specific epithet comes from the Greek word ‘toxicon’-an arrow poison, alluding to its toxic properties.

BIOLOGY
A. toxicaria is monoecious. African fruit material is bigger than Polynesian material. In Java A. toxicaria flowers in June on the new shoots while in Kenya March is the peak seeding time. The soft fruit is dispersed by birds, bats, monkeys, and antelopes.

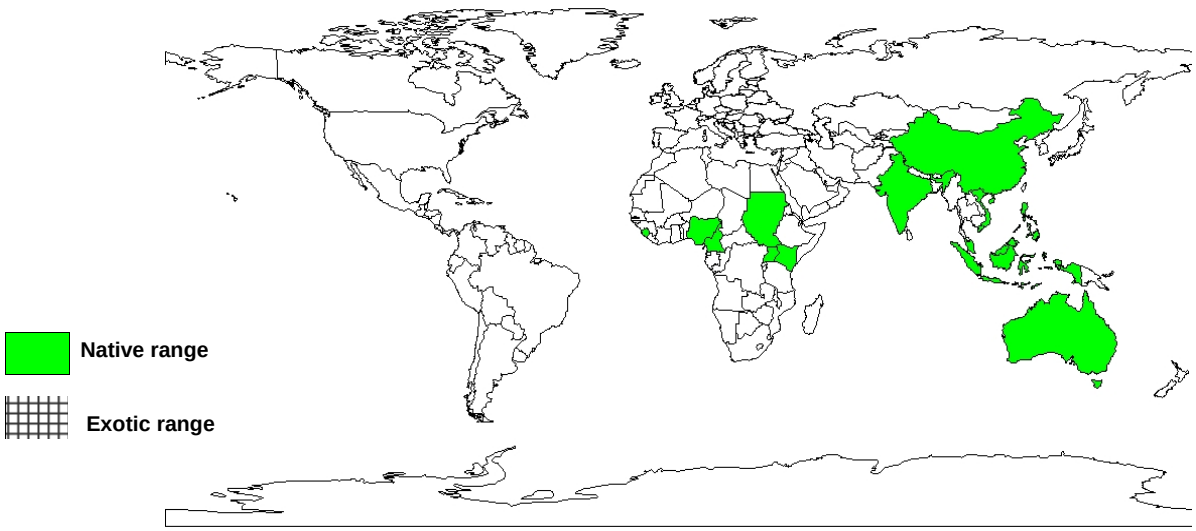
ECOLOGY
A tree common in grassy savanna and on coastal plateaus. In Africa this tree has three varieties which are clearly distinguished by their habitat preferences and juvenile forms. While one is found largely in wooded grassland, the others grow in rain forest, wetter forest, riverine and semi-swamp forests. In the west African rain forest, Milicia excelsa and A. toxicaria are components of a 3-layered forest canopy structure.

BIOPHYSICAL LIMITS
Altitude: 1 350-1 700 m

DOCUMENTED SPECIES DISTRIBUTION

Native: Australia, Cameroon, China, Democratic Republic of Congo, Fiji, India, Indonesia, Kenya, Malaysia, Nigeria, Philippines, Sierra Leone, Sudan, Tonga, Uganda, Vietnam

Exotic:



The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

PRODUCTS
Food: The fruit is edible.

Fuel: The wood provides only marginal fuel.

Timber: It yields a lightweight hardwood with a density of 250-540 kg /cu.m. There is little difference between the sap and heartwood; it is yellow-white and soft with moderate shrinkage upon seasoning. The wood has good peeling properties making it a good choice for veneer production. The timber is also used in construction of beer canoes. Wood treatment using boron, chromium, arsenic fluoride treated with 5 and 10% BFCA preservative by hot immersion (1, 2 or 3 h at 60-70 deg C) followed by cold immersion for 24 h was suitable. Rapid conversion and the application of anti stain chemicals upon felling are essential, as the wood is liable to sap-stain. The wood is easily attacked by termites and the marine-borer Limnoria tripunctata.

Tannin or dyestuff: Bark has tannins and is employed in dyeing.

Poison: Used with Strychnos ignatii, A. toxicaria latex is an important component in the manufacture of dart and arrow poisons whose active components are cardenolides and alkaloids (chemicals with cardiac arresting potential). The sawdust may cause skin irritation and stomach pain.

Medicine: The leaves and root are used to treat mental illnesses. Seed, leaves and bark are used as an astringent and the seeds as an antidysenteric.

Other products: From the bark a strong, coarse bark cloth is obtained.

SERVICES
Shade or shelter: Provides dense shade.

Soil improver: Leaf litter enriches the soil.

Intercropping: Has dense shade and may interfere with other crops.

Other services:
The bark is used to make rough clothing.

TREE MANAGEMENT
The tree is fast growing and attains full size within 20 years. The trees have a good self pruning ability. Fire protection should be offered to A. toxicaria.

GERMPLASM MANAGEMENT
A. toxicaria produces large amounts of seed which are easily collected from the ground. These seeds require no pretreatment. However they lose viability very fast and should be sown as soon as collected. About 70-90% of sown seeds germinate in 18-89 days. Seed germination is hypogeal.

PESTS AND DISEASES
The sapwood is susceptible to Lyctus.

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