

## IDENTIFICATION AND UTILIZATION OF LESSER-KNOWN COMMERCIAL TIMBERS IN PENINSULAR MALAYSIA 9: MEMPOYAN, MENGGIRAI, MENGGUNDOR AND MENTULANG

S. C. Lim & K. S. Gan

### INTRODUCTION

This article elaborates further another four lesser known timbers. The tree of Mempoyan is small to medium in size up to 25 m tall and 50 cm diameter. The trees are usually found in secondary and lowland forest, sometimes up to 1400 m altitude. The timber is very hard and heavy (comparable with balau) and suitable for structural use, heavy traffic flooring and possibly tool handles and handles for agricultural implements. Mengkirai is also made up of small to medium-sized trees. It is one of the most abundant genera of open sites and is always growing gregariously. The timber is light and soft and possible uses include picture frames, skirting, laminated timber, boxes and crates and other light utility purposes. The trees of mengkundor can grow to very large tree of 45 m tall and 4 m girth on low lying and undulating lands. The occurrence of the species is more or less restricted to regions with pronounced dry season e.g. Langkawi island, Kedah, Perlis, North Perak, Kelantan and Pahang. The timber is generally light and soft and may be used for picture frames, skirting, laminated timber, boxes and crates and other light utility purposes. Mentulang consists of small to medium-sized trees except *A. ridleyi* which is a big tree reaching 36 m tall and 183 cm girth. The trees are found scattered on lowland forests and undulating land and hills up to 140 m and rarely at higher elevation. The wood is moderately hard and heavy (comparable with keruing). The timber can be used for medium construction under cover, furniture and cabinet works, medium traffic flooring, tool handles and panelling. Generally, in the utilization of lesser-known timbers, common features encountered include small-sized logs, logs in poor form and limited in supply and as such, the recovery of the log is usually poor. Maximum utilization of the timber includes lamination and finger-jointing of the timber.

### MEMPOYAN (*Rhodamnia cinerea*) (Figure 1) (Family: Myrtaceae)

#### *Material*

*Rhodamnia cinerea* Jack

#### *Tree and distribution*

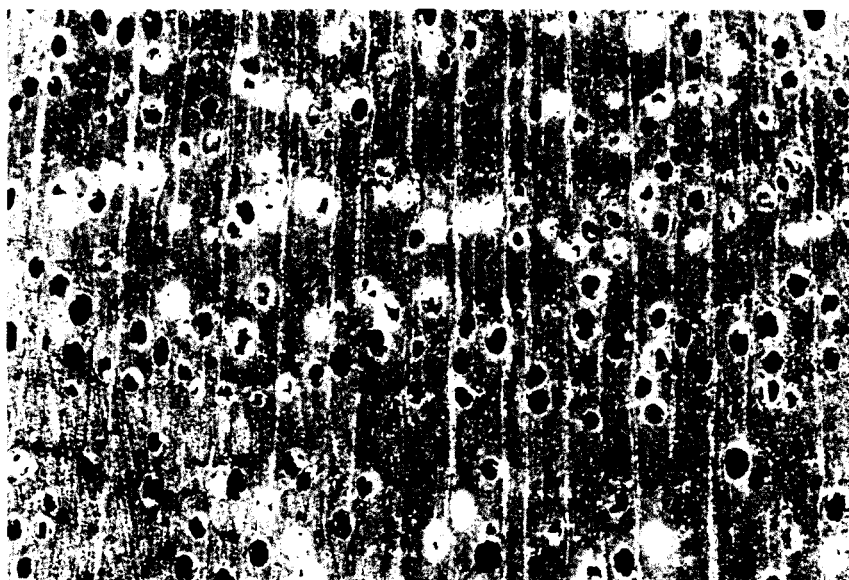
Small to medium-sized tree or shrubs up to 25 m tall and 50 cm diameter, sometimes more. The species usually occur in secondary lowland and lower montane forest, up to 1400 m altitude, rarely in primary forest. Locally common and grow in various habitats but with a preference for open places in the forest.

### *Characteristics and physical properties*

The sapwood is lighter in colour and not distinct from the heartwood, which is grey-brown with purple tinge. Texture is fine and even. Grain usually interlocked. The timber is very hard and heavy with an air-dry density of 950–1050 kg m<sup>-3</sup> (average: 1025 kg m<sup>-3</sup>).

### *Macroscopic structures*

**Growth rings** indistinct, marked by layers of darker and thicker fibres and layers of parenchyma containing vessels. **Vessels** moderately small to medium-sized, exclusively solitary and rarely in radial or oblique pairs, tyloses sparse or absent. Chalky white or reddish coloured deposits sometimes present. **Wood parenchyma** moderately abundant, mainly as paratracheal parenchyma vasicentric, aliform and confluent. Apotracheal parenchyma in narrow to moderately broad layers. **Rays** of two distinct sizes, the broader rays are visible to the naked eye. **Ripple marks** absent. **Intercellular canals** not observed.



**Figure 1** Mempoyan (*Rhodamnia cinerea* × 20)

### *Uses*

Small to medium-sized trees producing very heavy timber. Suitable for structural use and heavy traffic flooring. Other uses include tool handles and handles for agricultural implements, posts and even charcoal production.

## **MENKIRAI** **(*Trema* spp.) (Figure 2)** **(Family: Ulmaceae)**

### *Main species*

*Trema angustifolia* (Planch.) Bl. (manarong, mengkirai), *T. cannabina* Lour. (menarong, mengkirai), *T. orientalis* (L.) Bl.

### *Loc and distribution*

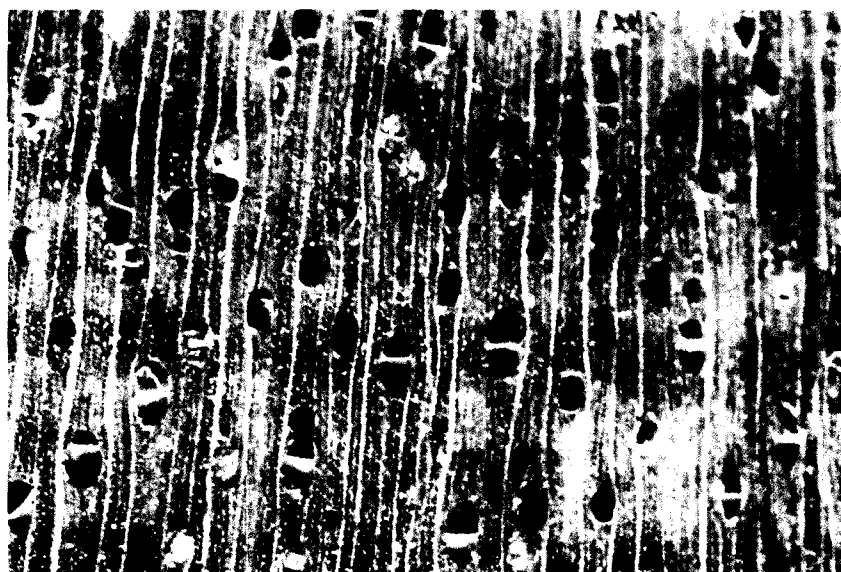
Small to medium-sized trees. It is one of the most abundant genera of open sites and is always growing gregariously. It can be found on degraded sites such as logging track, disturbed sites like road building, burning, erosion, forest edges, secondary vegetation and areas open up for cultivation up to 1350 m altitude. It can also be found in primary forest.

### *Characteristics and physical properties*

The sapwood is straw colour and distinct from the heartwood which is light brown when fresh, darkening to darker shade on exposure. Texture is moderately coarse and even. Grain is straight or interlocked. The wood is soft and light with an air-dry density of 410 to 420 kg m<sup>-3</sup> (average: 415 kg m<sup>-3</sup>).

### *Macroscopic structures*

**Growth rings** absent or indistinct, marked by layers of thicker fibres. **Vessels** medium-sized to moderately large, solitary and in radial multiples of 2 to 3, sometimes more, tyloses sparse, deposit absent. **Wood parenchyma** sparse, mainly as apotracheal diffuse parenchyma. **Rays** moderately fine and visible to the naked eye. **Ripple marks** absent. **Intercellular canals** not observed.



**Figure 2** Mengkirai (*Trema orientalis* × 20)

### *Uses*

The trees are small to medium-sized and thus, cannot be obtained in large dimension. The timber is light and soft and possible uses include picture frames, skirting, laminated timber, boxes and crates and other light utility purposes.

## **MENGGUNDOR** **(*Tetrameles nudiflora*) (Figure 3)** **(Family: Datisaceae)**

### *Main species*

*Tetrameles nudiflora* R. Br.

### *Tree and distribution*

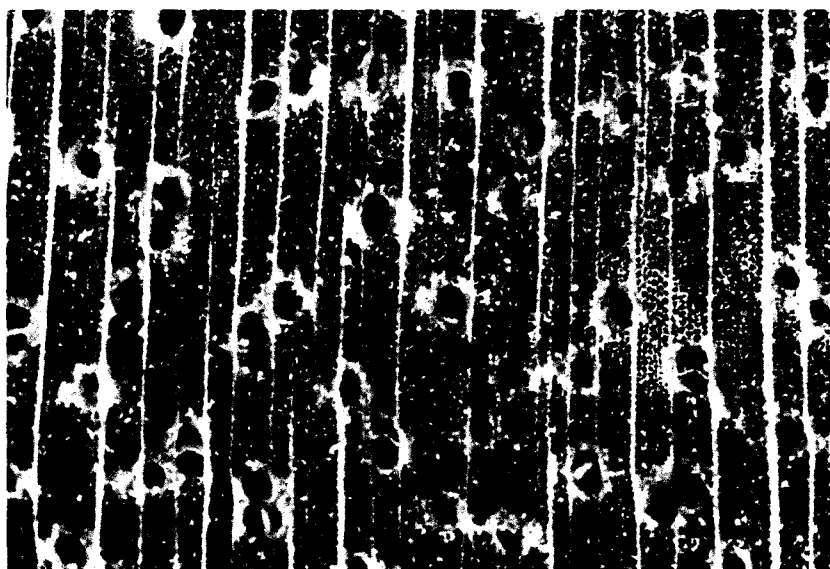
Very large tree to 45 m tall and 4 m girth. Bole with steep and thick buttresses to 5 m high. Only one species occurs in Peninsular Malaysia. The occurrence of the species is more or less restricted to regions with pronounced dry season e.g. Langkawi island, Kedah, Perlis, North Perak, Kelantan and Pahang. On low lying and undulating lands.

### *Characteristics and physical properties*

The sapwood is not differentiated from the heartwood which is light straw in colour with a slight greenish tinge; texture is moderately coarse and even; grain is straight to shallowly interlocked; stripe figure on radial surface; the wood is soft and light with air-dry density ranging from 310 to 430 kg m<sup>-3</sup> (average 370 kg m<sup>-3</sup>); the timber is unlikely to be durable in exposed condition as the specimens in the Kepong wood collection have been attacked by powder post beetles and discoloured by sap stain fungi.

### *Macroscopic structures*

**Growth rings** absent. **Vessels** medium to moderately large-sized; moderately few; solitary and in radial groups of 2 to 3, rarely more; tyloses absent; deposit absent. **Wood parenchyma** abundant, mainly as paratracheal parenchyma consisting of moderately broad vasicentric sheaths to the vessels, sometimes with the tendency to aliform. **Rays** of two distinct sizes; medium in size and conspicuous to the naked eye on all surfaces; the fine rays are visible only with a lens. **Ripple marks** absent. **Intercellular canals** not observed.



**Figure 3** Mengkundor (*Tetranches nudiflora* × 20)

### *Uses*

The trees can grow to very large size but the timber is generally light and soft. Possible uses of the timber include picture frames, skirting, laminated timber, boxes and crates and other light utility purposes.

## **MENTULANG** **(*Alangium* spp.) (Figure 4)** **(Family: Alangiaceae)**

### *Main species*

*Alangium javanicum* var. *ebenaceum* (Clarke) Harms (mentulang daun bujor), *A. griffithii* (Clarke) Harms, *A. kurzii* Craib, *A. nobile* (Clarke) Harms (m. bulu), *A. ridleyi* King (m. daun lebar).

### *Tree and distribution*

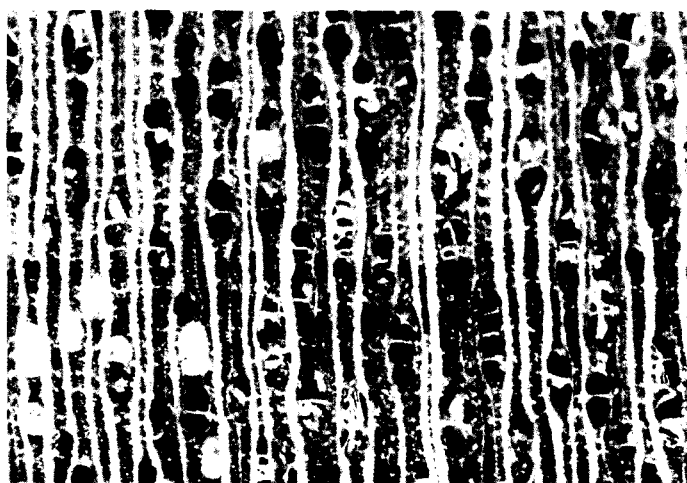
Small to medium-sized trees except *A. ridleyi* which is a big tree reaching 36 m tall and 183 cm girth. The trees are found scattered on lowland forests and undulating land and hills up to 140 m and rarely at higher elevation.

### *Characteristics and physical properties*

The sapwood and heartwood are not well defined; wood light yellow-brown, light brown or light red brown without any characteristic marking or figure on the surface; texture fine and even; grain is straight or interlocked or wavy; wood is moderately hard and moderately heavy to heavy; air-dry density ranging from 845 to 960 kg m<sup>-3</sup> (average: 895 kg m<sup>-3</sup>).

### *Macroscopic structures*

**Growth rings** absent or indistinct. **Vessels** moderately small or medium-sized; moderately few to moderately numerous; mostly arrange in radial groups of 2 to 4 rarely more; scalariform perforation plates present but not easily discern even with a handlens due to the size of the vessels; tyloses present; deposit absent. **Wood parenchyma** abundant; mainly as narrow apotracheal diffuse and diffuse in aggregates, from ray to ray, producing a reticulate effect on cross section, distinct with a handlens. **Rays** of two distinct sizes, the broader rays are medium in size, visible on cross section but inconspicuous on both tangential and radial surfaces. **Ripple marks** absent. **Intercellular canals** absent.



**Figure 4** Mentulang (*Alangium javanicum* var. *ebenaceum* × 20)

### *Uses*

The timber can be used for medium construction under cover. Other uses include furniture and cabinet works, medium traffic flooring, tool handles and paneling.

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