

IDENTIFICATION AND UTILIZATION OF LESSER-KNOWN COMMERCIAL TIMBERS IN PENINSULAR MALAYSIA 8: KERUNTUM, KUNDANG, LEBAN AND MALABERA

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INTRODUCTION

This article further introduces four more lesser-known timbers with the hope that the timbers can be recognized and utilized more efficiently. Keruntum, which is found in the swamp, is a medium weight timber with coarse texture due to the presence of broad rays and fairly large vessels. Quarter-sawn material of the timber gives 'silver grain' figure due to the broad rays. The timber may have some problems in drying; particularly on the flat-sawn materials as the presence of broad rays give rise to a zone of weakness resulting in surface checks and splits. Kundang is generally light and is suitable for general light utility purposes. The presence of parenchyma bands only gives rise to vague growth rings figure due to poor contrast between parenchyma and fibre background of the wood. Leban is a small to medium but mostly small tree, common as a pioneer species in secondary forest. The timber is medium to hard and suitable for purposes such as tool handles, turneries and small articles. Malabera can grow to a fairly tall tree with cylindrical bole but not very large in diameter. The timber is light and only suitable for light applications under cover. It is also suitable as a peeler log since the logs are always cylindrical.

KERUNTUM

(*Combretocarpus rotundatus*) (Figure 1)
(Family: **Anisophyllaceae**)

Main species

Combretocarpus rotundatus (Miq.) Danser

Tree and distribution

Medium-sized to large trees to 40 m tall and 100 cm diameter. Bole usually straight but sometimes twisted. The trees grow on waterlogged soils of peat-swamp forest and kerangas up to 100 m altitude, sometimes higher. It occurs most abundantly in secondary forest or forest with an open canopy but the trees are often small and of poor form.

Characteristics and physical properties

The sapwood is greyish-brown and distinct from the heartwood which is reddish-brown. Texture is coarse and uneven due to broad rays. Grain is straight or interlocked. 'Silver grain' figure on quarter-sawn material. The timber is moderately hard to hard with an air-dry density of 632 to 868 kg m⁻³ (average: 770 kg m⁻³).

Macroscopic structures

Growth rings absent or indistinct. **Vessels** medium-sized to moderately large, mostly solitary, sometimes in radial multiples of up to 4, occasionally up to 8. Tyloses sparse. White-coloured deposit present. **Wood parenchyma** present, mainly as apotracheal parenchyma, diffuse in aggregates, with tendency of forming short layer joining ray to ray. **Rays** of two sizes, the broader rays distinct to the naked eye. **Ripple marks** absent. **Intercellular canals** not observed.

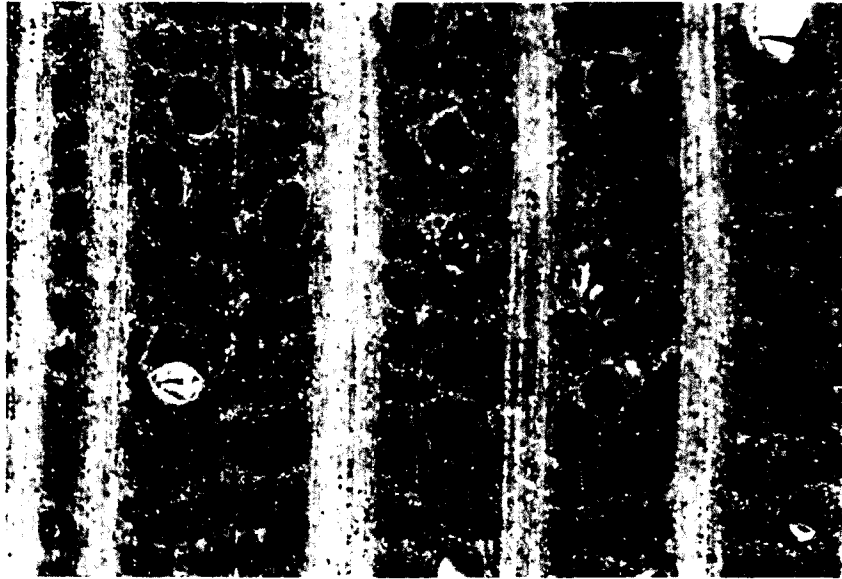


Figure 1 Keruntum (*Combretocarpus rotundatus* × 20)

Uses

The timber is medium in weight and is suitable for medium construction under cover. Quarter-sawn material is rather attractive due to the presence of 'silver grain' as a result of broad rays. Other uses of the timber include furniture, flooring boards, panelling, turneries and medium construction under cover.

KUNDANG **(*Bouea* spp.) (Figure 2)** **(Family: Anacardiaceae)**

Main species

Bouea macrophylla Griff. (kundang daun besar), *B. oppositifolia* (Roxb.) Meisn. (kundang daun kechil)

Tree and distribution

Medium-sized to tall trees reaching about 36 m tall and 240 cm girth and widely distributed in lowland and hill forests up to 700 m throughout Peninsular Malaysia, sometimes cultivated.

Characteristics and physical properties

Sapwood which is light brown with a reddish tinge and sharply differentiated from the heartwood which is dark brown with black streaks. Figures formed by dark-coloured wood parenchyma on flat-sawn surfaces. Dark-coloured corewood may be present. Vessels lines distinct; texture is coarse and even; grain is straight and/or interlocked. Wood moderately hard to hard with an air-dry density of 670 to 900 kg m⁻³ (average 699 kg m⁻³).

Macroscopic structures

Growth rings present, marked by wider spacing of terminal parenchyma bands. **Vessels** medium-sized to moderately large; very few to moderately few, solitary and in radial multiples of 2 to 3, occasionally in clusters, tyloses present. **Wood parenchyma** of both apotracheal and paratracheal types present. Apotracheal parenchyma as irregularly spaced bands appear as terminal parenchyma bands but rather indistinct due to the lack of contrast; paratracheal parenchyma as narrow sheath to the vessels. **Rays** very fine to moderately fine; visible only with a lens on end surface and relatively conspicuous on the radial surface. **Ripple marks** absent. **Intercellular canals** absent.

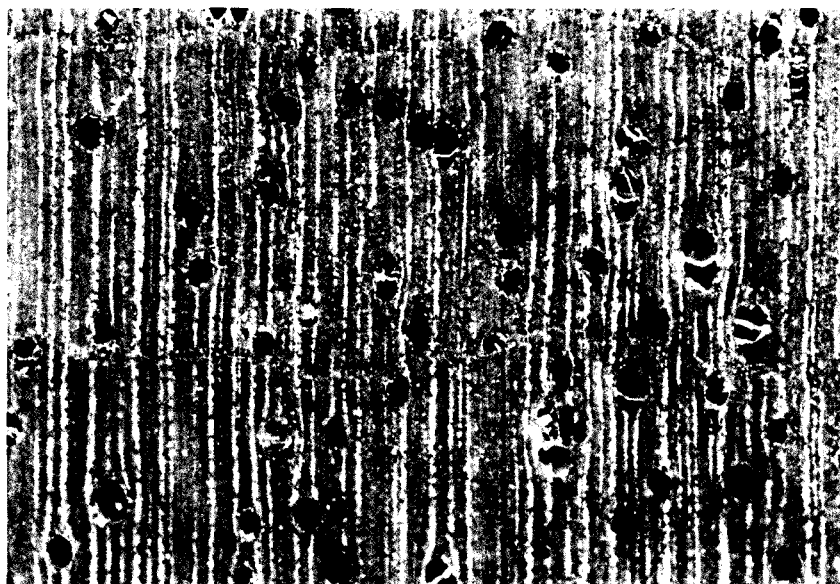


Figure 2 Kundang (*Bouea macrophylla* × 20)

Uses

Timber turning dark brown on exposure and not particularly attractive. Suitable for medium construction under cover. Other uses include veneer and plywood, planking, general cabinet works and furniture.

LEBAN

(*Vitex* spp.) (Figure 3)
(Family: Verbenaceae)

Main species

Vitex gamosepala Griff., *V. glabrata* R.Br., *V. pinnata* L., *V. quinata* (Lour.) F. Will.

Tree and distribution

Small to medium-sized trees up to 36 m tall and 150 cm girth. Bole is straight or sometimes crooked. The trees are mostly found in comparatively dry regions in the lowland forests. *V. pinnata* is a pioneer species and a common tree of secondary forest where it is often gregarious.

Characteristics and physical properties

The sapwood is light in colour and not well defined from the heartwood, which is light straw to light brown. Texture moderately fine and even. Grain is straight or interlocked. The timber is moderately hard to hard and moderately heavy to heavy with an air-dry density of 695 to 885 kg m⁻³ (average: 800 kg m⁻³).

Macroscopic structures

Growth rings distinct, marked by layers of denser fibre and also by the present of marginal parenchyma bands. **Vessels** small to medium-sized, solitary and in radial multiple of 2 to 4 but mainly 2, tyloses usually sparse but sometimes abundant. Gum-like or white-coloured deposit may be present. **Wood parenchyma** scanty. Apotracheal parenchyma diffuse and in narrow marginal parenchyma bands. Paratracheal parenchyma sparse and confine only to the immediate vicinity of the vessels. **Rays** moderately fine and visible to the naked eye. **Ripple marks** absent. **Intercellular canals** not observed.



Figure 3 Leban (*Vitex pinnata* × 20)

Uses

As most of them are small trees and their uses are limited to smaller items such as tool handles, posts, turneries, carving and fancy articles.

MALABERA **(*Fagraea crenulata*) (Figure 4)** **(Family: Loganiaceae)**

Main species

Fagraea crenulata Maingay ex Clarke

Tree and distribution

Medium-sized tree to 23 m tall and 150 cm girth. Bole usually straight and cylindrical but not large and branchless until about 20 m high. The trees can be found in swampy ground near the coast. Also can be in open spaces and secondary forest.

Characteristics and physical properties

The sapwood is light yellow-brown and not distinct from the heartwood which is yellow brown to pale brown. Texture is moderately coarse and even. Grain is straight or interlocked. Vague growth rings figure can be seen on the tangential surface. The wood is soft to moderately hard with an air-dry density of 435 to 645 kg m⁻³(average: 540 kg m⁻³).

Macroscopic structures

Growth rings present but vague due to low contrast between the parenchyma bands and the colour of the wood. **Vessels** medium-sized to moderately large, mainly in radial multiples of 2 to 3, sometimes more, occasionally solitary. Tyloses occasionally present. Deposit absent. **Wood parenchyma** abundant, mainly as apotracheal parenchyma forming continuous or sometimes interrupted bands. Paratracheal parenchyma forming incomplete or complete sheath to the vessels. **Rays** moderately fine but visible to the naked eye. **Ripple marks** absent. **Intercellular canals** not observed.

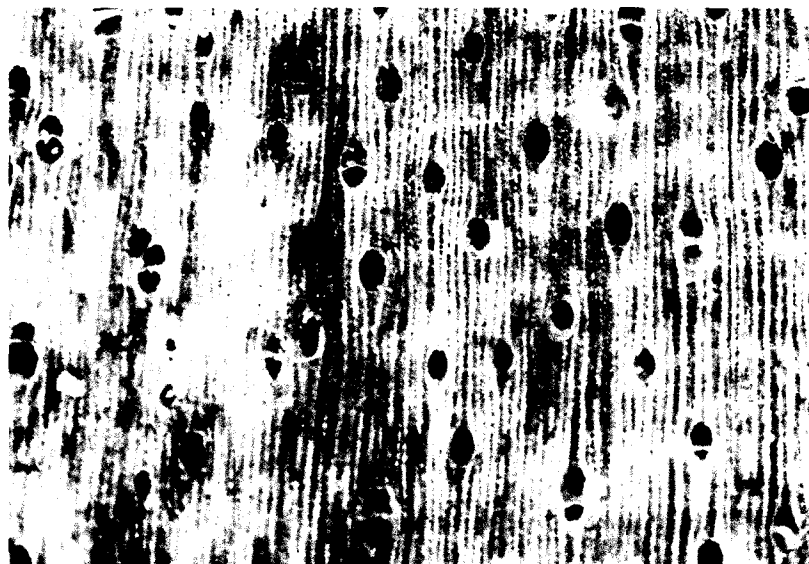


Figure 4 Malabera (*Fagracea crenulata* × 20)

Uses

The timber is suitable for light construction under cover, veneer and plywood manufacture, interior finishing, panelling, packing cases and boxes.

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