

## IDENTIFICATION AND UTILIZATION OF LESSER-KNOWN COMMERCIAL TIMBERS IN PENINSULAR MALAYSIA 11: NGILAS, NIPIS KULIT, NYIREH AND OTAK UDANG

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### INTRODUCTION

Four more lesser-known timbers (LKT) are introduced and they are (a) Ngilas (*Parastemon urophyllus*), (b) Nipis kulit (*Memecylon* spp.), (c) Nyireh (*Xylocarpus* spp.) and (d) Otak udang (*Buchanania* spp.). Ngilas is the Sarawakian name for the tree and timber of *Parastemon urophyllus* and in Peninsular Malaysia, the tree and timber is known as Nyalas. Ngilas is a monospecific, small to medium-sized tree occurring in lowland, swamps and secondary forest. The timber is very hard and heavy and it is suitable for most heavy-duty purposes such as flooring, construction, tool handles and bridges. Nipis kulit is a small to medium-sized tree found growing gregariously in the lower part of the canopy of primary lowland to montane forest and sometimes, in peat swamp forest. The stem of the tree is usually not in good form and thus, restricts the utilization of the timber to some extent. Nyireh, is a small to medium-sized tree with straight and cylindrical bole, sometimes crooked. The trees are found around the coast in mangrove swamps, beaches and coastal woodlands. It is a favourite timber used by the native in Carey Island, Selangor for their carving works. Otak udang is a small to medium-sized tree and can be found throughout Peninsular Malaysia on lowlying undulating areas, hill, river banks, sandy and rocky coasts. The timber is fairly light and it is suitable for light utility purposes such as picture frames, laminated structures, turneries etc.

### NGILAS

(*Parastemon urophyllus*) (Figure 1)  
(Family: Chrysobalanaceae)

#### Main species

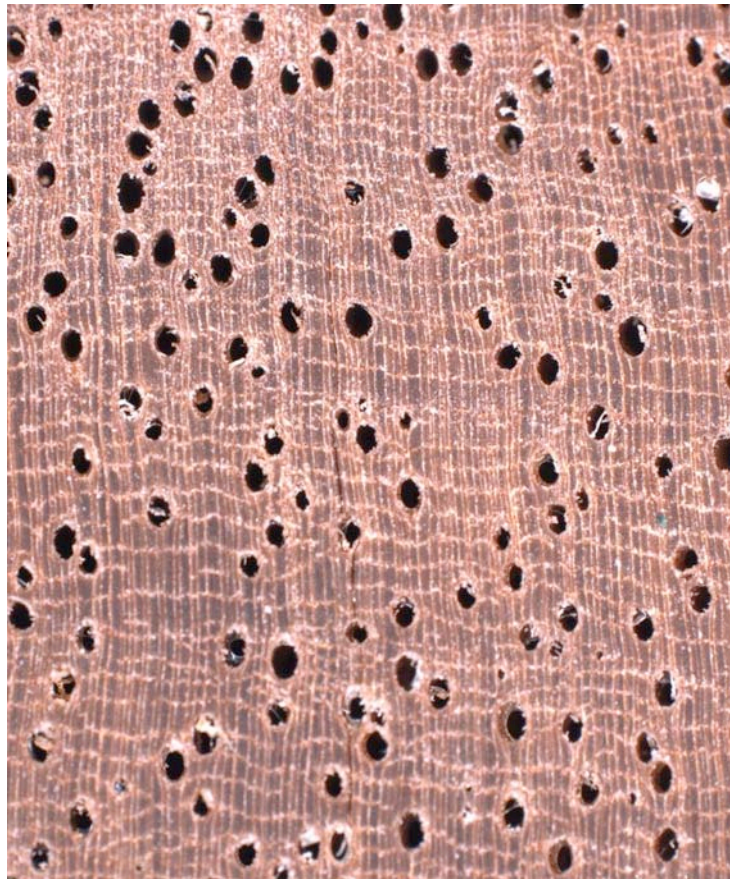
*Parastemon urophyllus* (A. DC.) A. DC. (nyalas).

#### Tree and distribution

Small to medium-sized trees to 33 m tall. Bole generally straight and cylindrical and branchless for up to 20 m, up to 70 cm diameter but sometimes tapering. Found in lowlands, river banks, seashore, peat-swamp, more often in secondary forest and occasionally in primary forest.

#### Characteristics and physical properties

The sapwood is light purple brown and merges gradually to heartwood which is purple-brown weathering to dark brown. Texture is moderately coarse and even. Grain is straight or slightly interlocked. The timber is hard to very hard, heavy to very heavy with an air-dry density of 910 to 1095 kg m<sup>-3</sup> (average: 1025 kg m<sup>-3</sup>).



**Figure 1** Ngilas (*Parastemon urophyllum* ×20)

### Macroscopic structures

**Growth rings** indistinct, sometimes visible by the lack of vessels. **Vessels** medium-sized, mostly solitary with tendency to arrange obliquely. Tyloses abundant. Deposit absent. **Wood parenchyma** abundant. Apotracheal parenchyma in narrow bands and distinct to the naked eye. **Rays** fine and visible with the use of handlens. **Ripple marks** absent. **Intercellular canals** not observed.

### Uses

Suitable for medium to heavy construction under cover. Other uses include flooring boards for heavy traffic, benches for laboratory, garden furniture and handles for striking tool.

### NIPIS KULIT (*Memecylon* spp.) (Figure 2) (Family: Melastomaceae)

#### Main species

*Memecylon campanulatum* Cl., *M. excelsum* Bl., *M. lilacinum* Zoll. & Mor., *M. minutiflorum* Miq., *M. paniculatum* Jack., *M. pubescens* (Cl.) King.

#### Tree and distribution

Shrubs, treelets to medium-sized trees up to 25 m tall, sometimes taller and up to 100 cm in

Bole sometimes twisted, often fluted and occasionally with buttresses. Found growing gregariously in the lower part of the canopy of primary lowland to montane forest, up to 1800 m altitude. Also found in peat swamp forest, kerangas and seashore.

### Characteristics and physical properties

The sapwood is lighter in colour and not well defined from the heartwood which is brown to dark purple-brown. Texture is moderately fine and uneven due to the presence of included phloems. Grain is interlocked, sometimes irregular. The wood is hard to very hard, heavy to very heavy with an air-dry density of 845 to 1150 kg m<sup>-3</sup> (average: 965 kg m<sup>-3</sup>).

### Macroscopic structures

**Growth rings** absent or indistinct. **Vessels** moderately small to medium-sized, solitary and in radial multiples of 2 to 3 or in clusters, with tendency to arrange obliquely and tangentially, tyloses absent, dark-coloured gum-like deposit present. **Wood parenchyma** moderately abundant. Apotracheal parenchyma diffuse and diffuse in aggregates; paratracheal parenchyma vasicentric, aliform and occasionally confluent. **Rays** of two sizes, the broader ray visible to the naked eye. **Ripple marks** absent. **Intercellular canals** not observed. **Included phloem** of the island type scattered in transverse section and visible with the use of handlens.

### Uses

Poor form of the tree may prevent extensive use of the timber. However, with the present technology, the timber can be finger-jointed and laminated into a wider board for various applications such as table top, garden furniture set, flooring boards and other medium construction purposes.



Figure 2 Nipis kulit (*Memecylon pubescens* ×20)

**NYIREH**  
**(*Xylocarpus* spp.) (Figure 3)**  
**(Family: Meliaceae)**

**Main species**

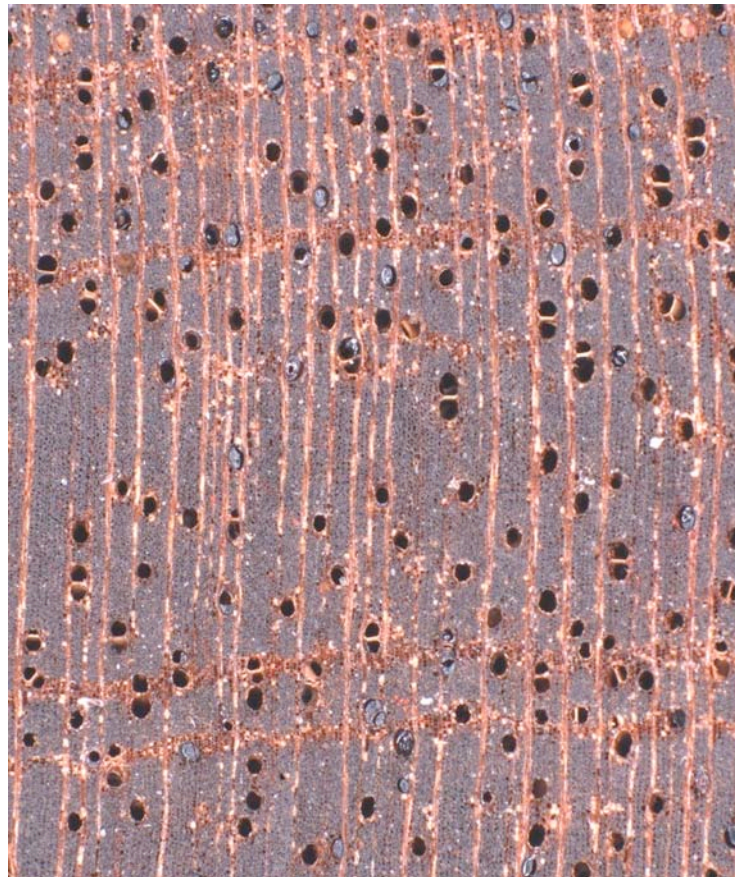
*Xylocarpus granatum* Koenig (nyireh bunga), *X. moluccensis* (Lam.) M.J. Roemer (nyireh batu), *X. rumphii* (Kostel.) Mabb.

**Tree and distribution**

Small to medium-sized trees up to 20 m tall, 2.7 m girth, branchless up to 10 m high. Bole straight and cylindrical with some crooked. Found around the coast in mangrove swamps, beaches and coastal woodlands.

**Characteristics and physical properties**

The sapwood which is light yellow brown is distinct from the heartwood which is light red or bright red when fresh, darkening on exposure to brick red or dark red. Texture is moderately fine and even. Grain is interlocked or irregular. Faint cedar-like odour when fresh. Darker-coloured streaks on surface. The timber is moderately hard to hard, moderately heavy to heavy with an air-dry density of 620 to 895 kg m<sup>-3</sup> (average: 755 kg m<sup>-3</sup>).



**Figure 3** Nyireh (*Xylocarpus granatum* ×20)

## Macroscopic structures

**Growth rings** indistinct, sometimes marked by marginal parenchyma. **Vessels** small to medium-sized, mainly arranged in solitary and radial pairs, rarely in radial multiples of 3, sometimes 4. Tyloses absent. Reddish-brown and dark-coloured gum-like deposit present. **Wood parenchyma** moderately abundant, apotracheal parenchyma in narrow and irregularly-spaced and moderately broad parenchyma layers but difficult to discern with the naked eye due to poor contrasting effect between the parenchyma and dark-coloured background; paratracheal parenchyma vasicentric. **Rays** moderately fine to medium-sized, visible to the naked eye. **Ripple marks** present but may be vague. **Intercellular canals** not observed.

## Uses

The timber is suitable for interior finishing, flooring, cabinet work, veneer and plywood, staircase components, carving works and the manufacture of fancy and ornamental items. It is highly prized as a premier wood by the natives in Carey Island, Selangor for their carving works.

## OTAK UDANG (*Buchanania* spp.) (Figure 4) (Family: Anacardiaceae)

### Main species

*Buchanania arborescens* (Bl.) Bl. (otak udang tumpul), *B. sessifolia* Bl. (otak udang tajam).

### Tree and distribution

Small to medium-sized trees, rarely reaching 27 m tall and 200 cm girth. Distributed throughout Peninsular Malaysia on lowlying undulating and hill areas to 750 m altitude. The species also occur on sandy and rocky coasts and river banks.

### Characteristics and physical properties

The sapwood is lighter in colour but not sharply differentiated from the heartwood which is light red-brown, often with a grey tinge; planed surface fairly lustrous; texture moderately fine and even; grain is straight or shallowly interlocked. Wood soft to moderately hard, light to moderately heavy with air-dry density ranging from 475 to 615 kg m<sup>-3</sup> (average: 550 kg m<sup>-3</sup>).

## Macroscopic structures

**Growth rings** absent or indistinct sometimes marked by layers of smaller diameter vessels in radial multiples and clusters. **Vessels** mainly medium-sized with few small-sized; few to moderately few; mainly in radial multiples of between 5 to 10 or more, many with a large vessels follow by numerous smaller vessels or with numerous smaller vessels at the centre with larger vessels at both ends; solitary or in radial groups of 2 to 3 also present, few are also in clusters; tyloses sparse or absent; white-coloured deposits sometimes present. **Wood parenchyma** sparse, mainly paratracheal and confined to narrow layer surrounding the vessels. **Rays** fine to moderately fine and visible only with a hand lens on end surface but distinct to the naked eye on tangential surface and fairly conspicuous on the radial surface. **Ripple marks** absent. **Intercellular canals** radial canals present and visible with a lens.



**Figure 4** Otak udang (*Buchanania lucida* ×20)

### Uses

Small sized tree where the use of the timber is limited. Uses include light to medium construction under cover, light framing, laminated structure, turneries and small ornamental items.

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