

COMMON TREES OF CENTRAL VICTORIA



RED STRINGYBARK

BY STEVEN & DAVID HIBBERT



COMMON
TREES OF
CENTRAL
VICTORIA

RED STRINGYBARK

E. macrorhyncha

By Steven and David Hibbert



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INTRODUCTION

This publication is dedicated to our father Trevor Hibbert who passed in early 2019. As the patriarch of our family, he guided us into a greater understanding of nature and taught us to appreciate and respect our natural environment. As a carpenter for most of his adult life, he loved wood and understood its strengths and weaknesses.

This book is a collaborative effort between two tree-loving brothers Steven Hibbert and his younger brother David Hibbert. As brothers growing up in the rural township of Alexandra in Central Victoria, we were constantly around trees and wood.

This book is a comprehensive free photographic eBook on the iconic red stringybark. It is our hope that it can be used for nature-based education in schools as well as for the broader community.

As an education aid, this publication has been designed with teachers and their classrooms in mind. Teachers can easily load the eBook onto their students' electronic learning devices and the content has been crafted to be visually instructive and easily understood.

This eBook will continue to improve over time, including through community input and direction. If you can help, we would love to hear from you.

Thanks to our contributors for helping make this publication possible.

Steven and David Hibbert

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CLASSIFICATION & INFORMATION

Common name: Red Stringbark
Kingdom: Plantae
Order: Myrtales
Family: Myrtaceae
Genus: *Eucalyptus*
Species: *Eucalyptus macrorhyncha*



Growth rate: Fast
Height: Up to 35 metres (dependant on the soil and moisture level)
Trunk: Up to 1 m diameter (3.14 m girth at one metre above ground)
Age: 80–100 years
Distribution: New South Wales, ACT, Victoria, SA
Altitude: Usually found from sea level to 1000 m
Cultivation: From seed in summer to autumn months
Frost: Tolerant
Drought: Tolerant
Fire: Moderate
Bark: Extremely rough and stringy
Bark colour: Reddish brown to grey and page grey
Adult leaves: Lanceolate shaped
Flowers: Cream flowers appear from January to March (width to 16 mm)

Description



The hardwood red stringybark species *Eucalyptus macrorhyncha* has a naturally occurring distribution in NSW, the ACT and Victoria. It prefers drier soils on sides of hills and will grow in well-drained rocky soils. Red stringybark are often found with red box and grey box, though avoid floodplains.

It is known for forming lignotubers (woody swelling of the root crown) and was named for the colour of its red bark. Its wood is moderately hard and can be used for farming applications such as fence posts, as well as for light construction and cabinetmaking. It was first described in 1867 by botanist Ferdinand von Mueller.

Red stringybark generally flowers in bulk from January to March and is a preferred flower for honey bees, as well as other native bees, insect species and ants. Bark fibres can be used to make cordage with moderate strength (when compared to other tougher options).

Eucalyptus macrorhyncha

RED STRINGYBARK



Eucalyptus macrorhyncha

The background of the entire page is a close-up, vertical texture of red stringybark. It shows long, fibrous, and layered pieces of bark in various shades of orange, red, and grey, creating a complex, organic pattern.

QUICK ID

A QUICK REFERENCE GUIDE FOR THE RED STRINGYBARK

QUICK ID



The red stringybark is a common large sized tree that grows to 35 m and prefers drier rocky hilly soils.

Trunks are often rough, stringy, deeply fissured and reddish brown. Rubbing the bark will cause it to fall apart.



Bark may appear less fissured and more greyish on weathered bark.

QUICK ID



Like the trunk, branches also have reddish brown bark on them.

Adult leaves are lanceolate in shape and generally grow to 14 cm length.



Bright green buds grow in clusters of 3–12 and each bud can grow to a width of 5 mm.

QUICK ID



The red stringybark flowers each year between January and March. The width of the flower can be up to 16 mm.

Fruits begin to swell after the flower is pollinated. They eventually dry, open and drop their seeds.



Nuts have three and sometimes four valves, with large conical shaped beaks. When dry, they are known as gumnuts.

RED STRINGYBARK



Eucalyptus macrorhyncha

TREE

EXPLORING THE TREE IN PICTURES

TREE

TRUNK

BARK

LIMBS

CANOPY

LEAVES

BUDS

FLOWERS

FRUITS

CAPSULES

SEEDS

Tree

The red stringybark can grow to 35 metres in excellent environmental circumstances.



More often they are found growing to a height of around 20–28 metres.



Red stringybark are prone to fire damage, though their stringy bark can help insulate the tree in cooler fires.



Tree

The red stringybark can grow in rockier environments.



They are comfortable growing in exposed areas that have a limited supply of water.



They are generally considered a drought tolerant species.



Trunk

Summer

Trunks are usually straight though can have a slight angle.



Summer



They are often found growing with red box.

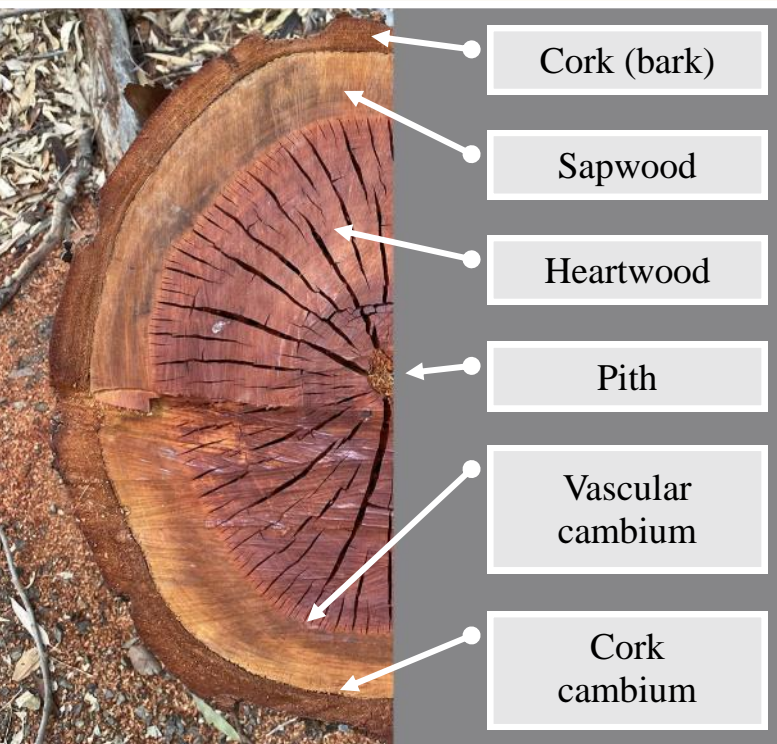
They were described by botanist Ferdinand von Muller, of the Melbourne Botanic Gardens. He also introduced blackberries to Australia.



Summer

Trunk

The red stringybark has red wood. But when dried, it takes on a more pinkish-brown colour.



Trunk cross-section.

The sections of a tree can appear differently in each specimen.



Bark

Red stringybark bark is reddish to greyish with a red interior.



Bark is very fibrous but the outer fibres lack strength.

Inner fibres can be used to make cordage.



It is called stringybark as the bark fibres can be long like string.



Limbs

Red stringybark limbs have rough bark to the upper branches and can resemble messmate.



Like the trunk, branches can have reddish brown bark on them, but they may also appear grey.



End of branches are generally smooth.



Canopy

Limbs of the red stringybark are numerous towards the canopy.



Leaves are tightly grouped together, though can appear less tight, depending on the trees health and environment.



The canopy of the red stringybark can attract the mistletoe parasite.



RED STRINGYBARK



Eucalyptus macrorhyncha

Juvenile leaves

Summer

Juvenile red stringybark leaves start tiny and uncoil as they grow.



Juvenile leaves have a shorter stalk than older leaves.

Like many eucalypt species, juvenile leaves often have a reddish hue.



Juvenile leaves

New red stringybark epicormic shoots can grow from Epicormic buds underneath the bark.



Shoots can appear reddish with a yellowish tinge. This shoot has tiny hairs scattered around the margins of the leaf.

This new shoot has grown from an area of the trunk that has been previously damaged.



Intermediate leaves

Developing red
stringybark intermediate
leaves can be red.



Intermediate leaves
can have stems with
a strong red colour.

Veins and oil glands
in intermediate leaves
are still developing.
Intermediate leaves can
also have a reddish border.



Adult leaves

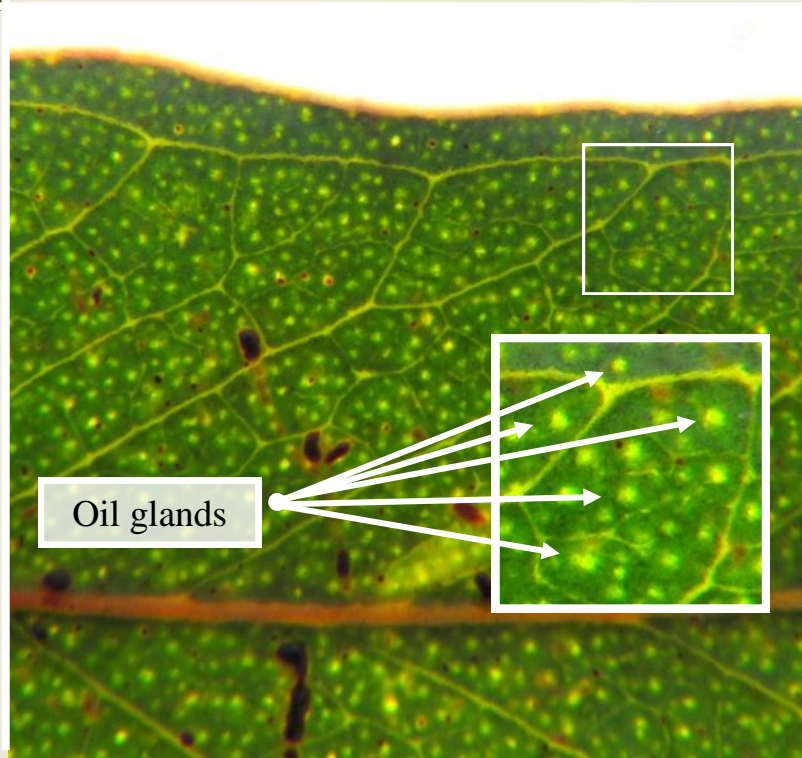
Adult leaves are lanceolate shaped, thick, darker green and can be shinier than juvenile leaves.



Leaf stems are longer on older leaves and can have a reddish colour. Leaves grow to 20 cm.

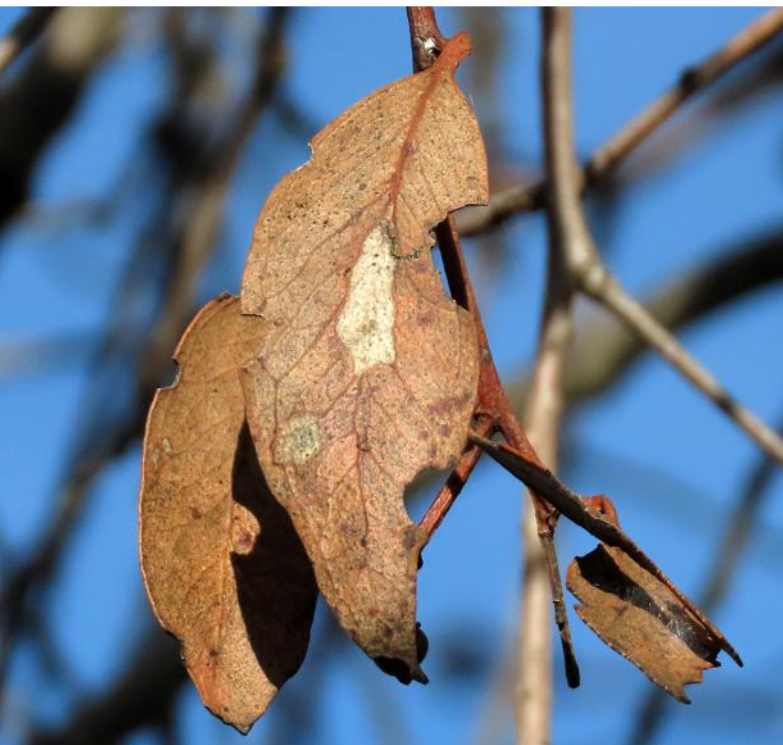


Adult leaf lateral veins are visible as are their eucalypt glands, from which eucalyptus oil can be extracted.



Old leaves

As red stringybark leaves die, chlorophyll is lost and they lose their green colour.



Old leaves may change to a reddish hue before becoming brown.

Eventually old leaves drop to the ground where they decay into the soil, providing the soil with essential nutrients.



RED STRINGYBARK



Eucalyptus macrorhyncha

Juvenile Buds

Red stringybark buds are found in clusters of 3–12 buds and appear 15–18 months before flowering.

Autumn



Autumn



Caps on young buds are elongated, pointy and some may develop a reddish tip.

Young buds are 2–3 mm in width.



Winter

Flowers

Red stringybarks flower from January to March. However some flower outside of this range.



Spring



Spring

Red stringybark is not a reliable honey producer. Its honey is usually strongly coloured and strongly flavoured.

This specimen was photographed flowering out of season (September). Its flowers are up to 16 mm wide.

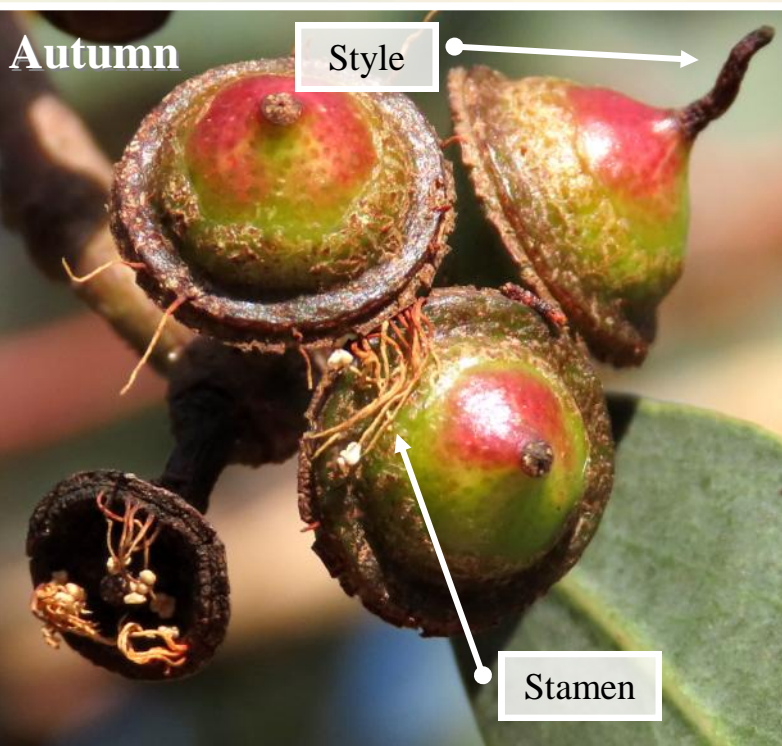


Spring

Early Fruits

The red stringybark flowers develop into fruits after pollination.

Late Winter



At this time they drop their style and stamen.

They can appear to be an orange to red colour at this early stage of development.



Late Winter

Fruits

Late Winter

The red stringybark
develop a rim at
their widest section.



Late Winter



It is common for a
red ring to develop
around the closed valves,
though with age the
red can fade.

Fruits can turn from
reddish-brown colour
to grey over time.

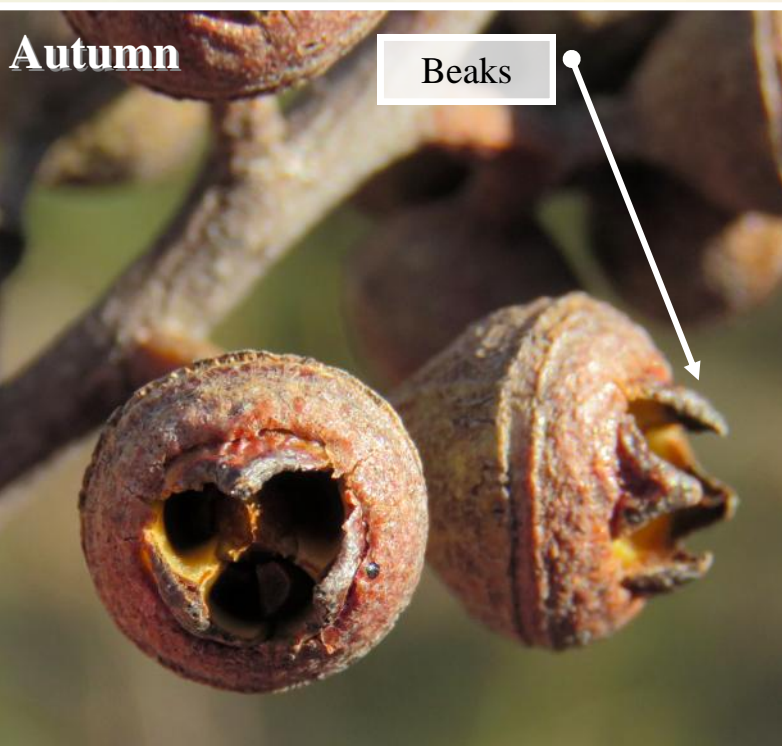


Late Winter

Capsules (nuts)

Nuts usually have three outward projecting valves, though may occasionally be found with four.

Autumn



Beaks

The outward projecting valves (beaks) are conical shaped, protrude outward and have sharp points.

Old buds can reach
7–12 mm width.
At this stage they are
known as gumnuts.



Spring

Seeds

The seeds from the red stringybark are extremely small, measuring just a few millimetres in length.



Spring

Spring



Each gumnut disperses a large number of seeds. Some are taken by ants which store them in their nests as a winter food.

Seeds fall to the ground where they germinate into new trees.



Spring

HABITATS

THINGS THAT USE THE RED STRINGYBARK AS A HABITAT

BIRD

INSECT

OTHER

Habitat - Birds

The red stringybark supports birds such as this magpie.

Autumn



Autumn

Currawong.

Crimson rosella.



Habitat - Birds

Autumn

Striated thornbill.



Habitat - Insects

Common brown butterfly
(*Heteronympha merope*).

Autumn



Honeybrown beetle
(*Ecnolagria grandis*).

Autumn

Habitat - Insects

Autumn

An insect nymph
found between two
leaves of a red
stringybark.



Autumn

This insect is just
2 mm long, is covered
in white tiny hairs and
feeds on the surface of
red stringybark leaves.

It is not currently
known what species
this insect is.



Autumn

Habitat - Other

A small lizard was found
on one specimen.

Spring



Autumn



This tiny spider measured
around 4 mm in length.

Habitat - Other

Introduced sambar deer such as this stag are a direct threat to the red stringybark.



They are often seen in stands of red stringybark where they rub their antlers directly against the trunks.

Rubbing causes the flimsy outer tree bark to detach, damaging the tree's trunk.



Habitat - Other

Autumn

In some cases large sections of bark are removed by sambar deer.



Winter

This damage shortens the life expectancy of the tree. In some cases, trees are ringbarked which leads to death.

This tree has been ringbarked by deer. The deer population in Victoria has been increasing since the 1980s.



Summer

The background of the entire page is a close-up photograph of red stringybark tree bark. The bark is characterized by its fibrous, layered structure, with vertical ridges and deep grooves. The color palette is a mix of warm reds, oranges, and yellows, contrasted with cooler greys and whites in the recessed areas, creating a highly textured and organic appearance.

PARASITES

THINGS THAT ATTACK RED STRINGYBARK TREES

Parasites

Red stringybark often attracts the parasite known as mistletoe.



Mistletoe flowers are pollinated by insects, then develop into berries.

The mistletoe bird feeds on mistletoe berries and carry the sticky seeds on its beak to other trees – where they wipe them off.



Parasites

Red stringybark are susceptible to white ants as well as other ant species which nest inside trunks and limbs.



Ant colonies build nests within holes in trunks and large limbs first created by white ants.

Ant nest structure from the above trunk. Ants use wood frass left by white ants to build new strong sturdy structures.



Parasites

Summer

Red stringybark
are susceptible to
moulds when their
inner wood is exposed.



Here the centre of a
tree has attracted a
mould which has
rotted the heartwood.

The weakened tree fell
during a windy storm.



Summer

Parasites

Red stringybark
are susceptible to
wood boring insects.

Winter



Winter

Hundreds of these holes
were found on one tree.

These holes were around
3 mm in width, though
can be larger or smaller
depending on the borer.



Winter

Parasites

Red stringybark are home to other parasites such as this unknown insect.

Autumn



The cocoon was filled with water-like liquid, was soft with a leaf-like green structure.

Two insect larvae are seen here covered in a white substance.



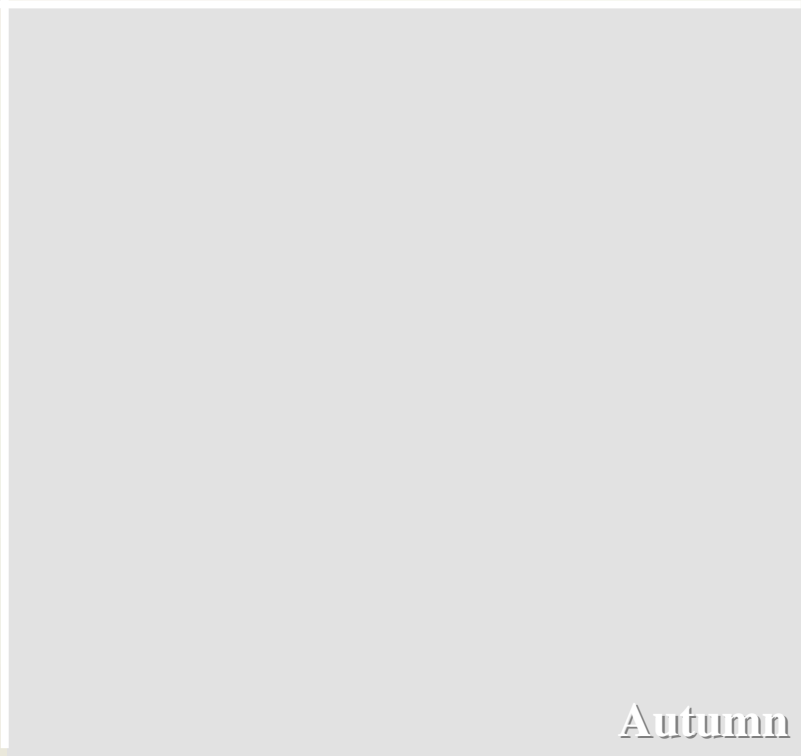
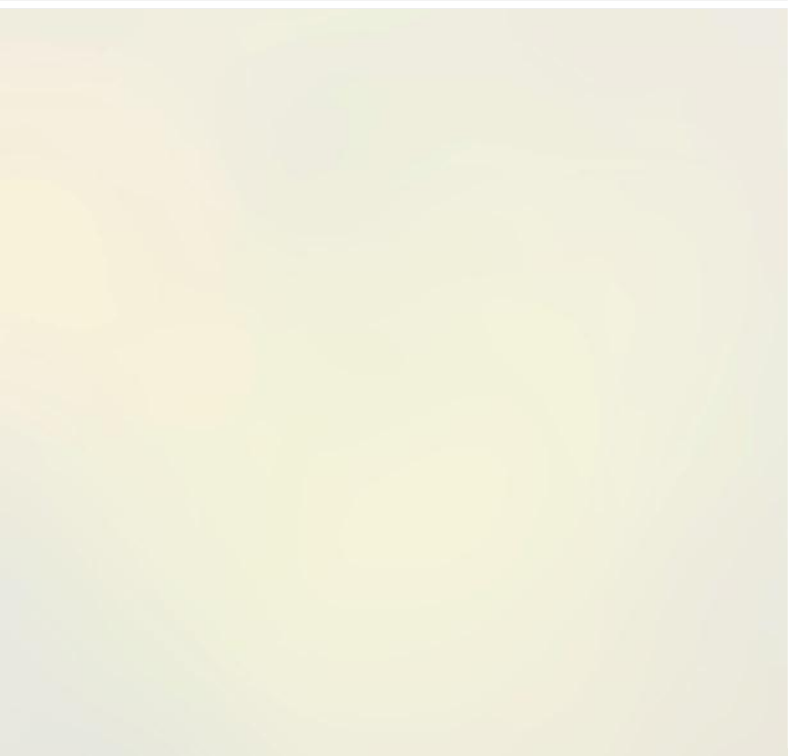
Parasites

Autumn

Red stringybark are home to lerp-like structures such as this one built by an unknown insect species.



Autumn



Autumn

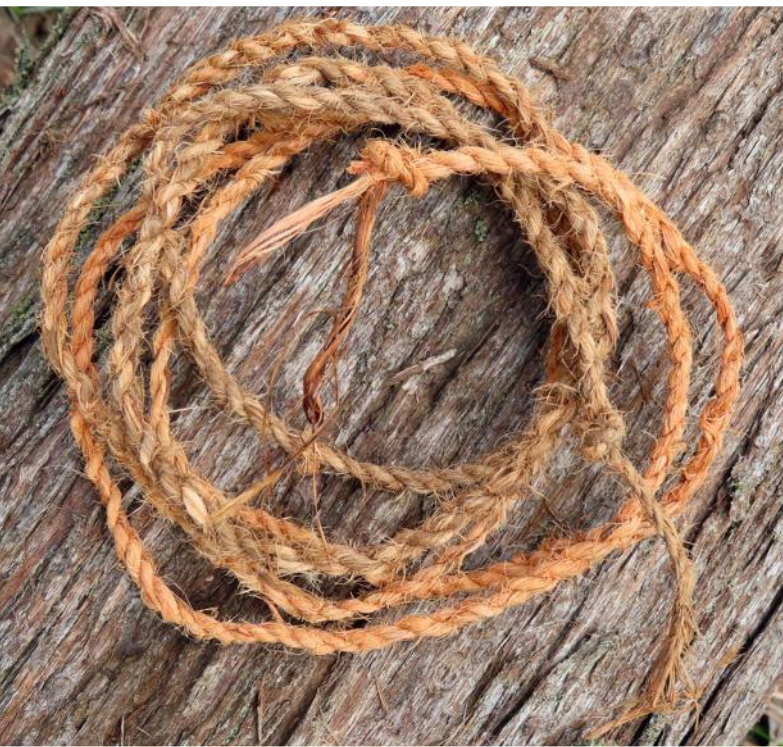
The background of the entire page is a close-up, vertical texture of red stringybark. The bark is peeling and fibrous, showing a mix of reddish-brown and greyish-white colors. The texture is highly detailed and organic.

USES

THINGS THAT THE RED STRINGYBARK CAN BE USED FOR

Uses

The bark of the red stringybark has fibres that are reddish and very distinct.



Fibres were used by
Aboriginals for cordage.
The cordage could be
up to a thumbs thickness.

The outer bark fibres
are weak, though the
fibres near the cambium
layer are stronger and
flexible when moist.



Uses

Fine bark fibres of the red stringybark can be used in fire starting.



Uses

Structural

The wood of the red stringybark can be used as farm fence posts. Farmers often use wood that is available to them for posts, so farms located in red stringybark belts would often fashion red stringybark posts.

Red stringybark is useable in construction. Though it is most often used in sheds and smaller structures.

The wood is hard and has a desired hue and grain, making it a good choice for furniture. However its use is not as common as other woods.

Outdoors

Red stringybark fibres can be rubbed to create finer particles suitable for fire starting. When it is raining, outer bark can be rubbed off to expose dry fibres capable of supporting fire making.

Inner fibres of the red stringybark can be used for cordage.

Leaves of the red stringybark were used to produce eucalypt oil in days past, though were less desirable than leaves of other eucalypt species.

Honey bees would source nectar from red stringybark, however it was not considered a reliable source.

The background of the entire page is a close-up, vertical texture of red stringybark. The bark is peeling and fibrous, showing a mix of light tan, beige, and reddish-brown colors. The texture is highly detailed and runs vertically across the entire frame.

QUICK FACTS

SOME QUICK FACTS ABOUT RED STRINGYBARK

QUICK FACTS

The red stringybark was first described by Government appointed botanist for Victoria, Ferdinand von Mueller. He served as the Director of the Melbourne Royal Botanic Gardens. He is also known for introducing blackberries into Australia to help mitigate bank erosion. Locally he is remembered for donating trees for planting in the grounds of the Alexandra Hospital.

It is a preferred tree for parasites such as mistletoe, mould and white ants.

The cambium layer bark can be harvested under certain circumstances and fashioned into moderately strong cordage. Its strength can be multiplied by fashioning it into thicker cordage.

They are usually found with boxes such as red box, grey box and even long-leaved box, though may also be found with candlebark, broad-leaved peppermints and to a lesser degree with narrow-leaved peppermint. They also grow with burghan scrub (*Kunzea ericoides*).

The introduced sambar deer are a direct threat to the red stringybark in Central Victoria as they rub their antlers against the trunks and can even ringbark the tree trunk.

Red stringybark fence posts have been used by farmers since early settlement. While not the best wood for posts, they are reasonably suited to the task in areas abundant with the species and where ground is drier.

Red stringybark can be used in carpentry and furniture making.

A rarer Gippsland red stringybark (*Eucalyptus mackintii*) exists. It is more commonly known as the blue-crowned stringybark.



GLOSSARY

A GROWING BASIC GLOSSARY OF TERMS

Basic Glossary

| | |
|-----------------------------|---|
| .ssp | (<i>acronym</i>) Sub Species. |
| Abscission | (<i>noun</i>) The normal separation of flowers, fruit and leaves from plants. |
| Adult | (<i>noun</i>) Any life form that has stopped developing. |
| Allelopathy | (<i>adjective</i>) The phenomenon where a plant is able to stop other plants growing near them by producing biochemicals which resist their germination, growth and reproduction. |
| Bark | (<i>noun</i>) The outer protective layer of tissue that surrounds all stems, roots and woody plants, such as trees. Bark is most evident on tree trunks. |
| Borer | (<i>noun</i>) A term often used to describe any of the wood boring insects that can infect a bush or tree. |
| Capsule | (<i>noun</i>) A dried fruit that is at its seed releasing stage. They are also known as gumnuts. |
| Chlorophyll | (<i>noun</i>) A green pigment manufactured by trees and found in their leaves. Chlorophyll helps leaves absorb energy from light (photosynthesis). |
| Conifer | (<i>noun</i>) A tree where the seeds are located within a cone. |
| Corolla | (<i>noun</i>) Whorl of petals of a flower. |
| Deciduous | (<i>adjective</i>) A tree that sheds all of its leaves each year. |
| Endemic | (<i>adjective</i>) Prevalent or regularly found among a people or in a district; confined to a particular area (<i>biology</i>). |
| Escarpment | (<i>noun</i>) A long, steep slope, esp. one at the edge of a plateau or separating areas of land at different heights. |
| Eucalyptus Longhorne | (<i>noun</i>) The beetle (<i><u>Phoracantha semipunctata</u></i>) which attacks eucalypt trees, eating the sapwood under the bark. |

Basic Glossary

| | |
|----------------------|--|
| Flower | <i>(noun)</i> The seed bearing reproductive organ of a plant.. |
| Frass | <i>(noun)</i> A fine powdery wood produced as excrement by wood boring insects. |
| Fruit | <i>(noun)</i> A seed bearing reproductive organ. |
| Geotropism | <i>(noun)</i> Oriented growth with respect to gravity. |
| Girth | <i>(noun)</i> Circumference of a tree trunk (usually measured a certain height from the ground – this measurement varies around the world though is often 1 m or 1.2 m). |
| Glabrous | <i>(adjective)</i> Free from hair. |
| Glaucous | <i>(adjective)</i> Of a dull greyish-green to greyish-blue colour, or covered with a powdery bloom. |
| Heartwood | <i>(noun)</i> The older harder wood found between the sapwood and the centre of woody plants (pith). It is classed as non-living. |
| Inflorescence | <i>(noun)</i> A cluster of flowers arranged on a stem that is composed of a main branch or a complicated arrangement of branches. |
| Internodes | <i>(adjective)</i> The part of the plant between the nodes on a stem from where leaves grow. |
| Inosculate | <i>(verb)</i> to unite intimately, connect or join so as to become one. |
| Juvenile | <i>(noun)</i> Any individual organism that has not reached its adult form. Juvenile life forms are still developing, but adult life forms have stopped developing. |
| Kino | <i>(noun)</i> Resin from a eucalypt tree, especially those known as bloodwood trees. |
| Node | <i>(noun)</i> The part of a plant's stem from where leaves emerge. |
| Organism | <i>(noun)</i> Any plant or single-celled life form. |

Basic Glossary

| | |
|---------------------------|--|
| Pinnacle | (<i>noun</i>) A loose cluster of buds or flowers. |
| Perennial | (<i>noun</i>) A plant that lives for two or more years. |
| Petiole | (<i>noun</i>) The stalk that attached the leaf blade to the stem. It can twist the leaf so it faces the sun. |
| Pith | (<i>noun</i>) The very centre wood of a tree. It is found inside the heartwood. |
| Phyllode | (<i>noun</i>) Modified petioles (leaf stems) which look like and function as a leaf. In some species the leaf and petiole is modified to the point that the phyllode serves as a leaf. They are common in acacias such as the narrow-leaved wattle (<i>Acacia linearifolia</i>). |
| Root | (<i>noun</i>) Anchors the tree to the soil and absorbs water and soil minerals. |
| Sapwood | (<i>noun</i>) The softer section of recently formed wood found between the bark and heartwood of a woody plant. |
| Sclerophyll forest | (<i>noun</i>) Vegetation dominated by evergreen species with hard leaves to reduce water loss and short internodes. |
| Sessile | (<i>adjective</i>) Attached directly by its base without a stalk or peduncle or fixed in one place and immobile. |
| Stamen | (<i>noun</i>) The male fertilising organ of a flower, typically having an anther which contains pollen and a filament. |
| Stigma | (<i>noun</i>) The part of the flower that receives the pollen during pollination. |
| Tree | (<i>noun</i>) A single erect woody perennial plant that has a trunk, lateral branches and attains a good height. |
| Tuber | (<i>noun</i>) The thick underground root-like part of some plants that serves as a food reserve as well as bearing buds. A potato is a tuber. |

Basic Glossary

| | |
|-------------------|--|
| Umbel | <i>(noun)</i> An inflorescence in which a number of similar length flower supporting stalks or pedicels, emerge from a common point. |
| Umbrageous | <i>(noun)</i> Creating or providing shade. |
| Understory | <i>(noun)</i> The shrubs and plants growing beneath the main canopy of a forest or tree. |
| Whowl | <i>(noun)</i> A set of leaves, flowers, or branches extending from a stem at the same level and encircling it. |



By
Steven and David Hibbert