... The Timber Trees ... of the State of São Paulo Brazil
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THE TIMBER TREES

OF THE STATE OF

São Paulo

BRAZIL
REPUBLIC of the UNITED STATES of BRAZIL. 
THE STATE of S. PAULO.

Department of Agriculture, Commerce and 
Public Works.

THE TIMBER TREES 
OF THE STATE OF 
SÃO PAULO 
BRAZIL.

A Descriptive Summary

by

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Introduction.

In successive Universal Exhibitions it has been recognised that Brazil is the richest country in the world in timber for building and industrial purposes.

In the State of S. Paulo more than 300 varieties of timber for building and industrial purposes have been noted; its higher regions are still covered for the greater part with dense virgin forests.

Its timber-lands and forests stretch from the shores of the Atlantic Ocean to the Campos do Jordão in the Serra da Mantiqueira which rise to an altitude of 2,100 metres, producing a succession of zones of varying climate, from a tropical warmth to the temperature of the higher lands of Middle Europe.

The State of S. Paulo produces timber so durable that it has been known to form part of structures much more than a century old, and even of as long standing as the colony itself; a duration of 50 years is very common for many species of timber used in work exposed to the weather and to the action of water. This period is quite usual, for instance, in bridge structures, in river works, and even in harbour and coast constructions exposed to the action of salt water.

Its timber is remarkable, too, for its beauty of colouring, from the clear white of the Malacacheta, &c., to the jet-black of the Graúna and others. In fact all colours are represented, the white marfim-velho of the Pequiá-marfim, the uniform light-yellow of the Guatambú, the red of the Aroeira and others, the green of the Sucupira, the violet of one of the Jacarandás, and the pink of the Guarabú; all with grain of most exquisite marking, which greatly enhances their employment for works of art in wood and affording handsome surfaces for polishing.

The Eucalyptus has become quite indigenous to the soil, grows rapidly and lends itself well to auto-reproduction. It may be truly regarded as the timber of the State, for it exhibits the same valuable qualities so notable in the Eucalyptus of Australia.
The Paulist timber is often very flexible, elastic and resistant, as, for example the Guatambú, Genipapo, Goiabeira do matto, Guarantá, &c., yielding timber specially suitable for the more elastic parts of agricultural carts, and particularly for like parts of machines. Some timber has extraordinary resisting qualities, the Pão-ferro withstanding a crushing force of 951 kilograms per square centimetre, the Jacarandá-tã, 1,043 kilos. and the Pão-Brazil the extraordinary figure of 1,361 kilos. per square centimetre.

The timbers vary greatly in specific weight, from the Cedro branco with 370 kilos. per cubic metre to the Aroeira with 1,267 kilos.; the ordinary building-timbers average from 800 to 1,000 kilos. per cubic metre.

The following varieties are applicable to ship-building: the Sucupira, Tapinhoan, Mossotahyba, Pequiá, Oleo pardo, Oleo vermelho, Massaranduba, Eucalyptus, Jacarandá, Guatambú, &c.

Wood for first-class carriage-building is provided by the Jacarandá, Cedro vermelho, Oleo, the Canellas preta, imbuia, sassafras, &c., the Araribá, Vinhatico, &c., all presenting very handsome surface for polished and decorative work. More than 50 varieties of timber afford suitable material for all kinds of household furniture and appointments, from the Grumichaba, Araribá, Oleo, Peroba rajada, and miúda, &c., for ordinary qualities of work, to the Jacarandás-tã and violeta, and the Imbujás, Guayuvira, Carvalho nacional, Caxicahen, &c., all possessing qualities especially fitting them for work of the highest finish.

This higher-class timber allows of fine polish, gilt and beaded work, is remarkably firm and strong, allowing of the use of parts of small dimensions, and is also of excellent quality for moulding and carving. There are in the homes of Brazilians of rank and wealth many examples of artistic cabinet-work which has long been of traditional note.

The Araruva, Arco de pipa, Guarantá, &c., are suitable for making casks, barrels, vats, &c.

The following supply timber for railway-sleepers of more than 12 years duration: the Oleo vermelho, Tapinhoan, Aroeira, Gibatão do Norte, Peroba miúda, the Ipes, &c.

The following trees yield secondary products useful in pharmaceutical and veterinary science, viz: The Andá-assú, Angico, Angelim, Aroeira, Bicuiba, Cambará, Canella preta, Cangerana, Capechengu, Copahyba, Eucalyptus, Genipapo, Graúna, Guanandi, the Ipé tabaco and others, the Jatobá Oleo vermelho, Pão d'Arco, Pereira, Sucupira, &c., &c.

For tanning, the leaves, bark. &c. of the following are used,
The Mague, Angico, Peroba, Guatambú, Peito de pomba, Tapinhoan, Sucupira, Barbatimão, Capechenguy, &c.

The specific weights of the various varieties are determined in kilogrammes per cubic metre, and the co-efficients of resistance to crushing and flexion, or bending, are given in kilogrammes per square centimetre.

The botanical classification has been made by the eminent Brazilian botanist, Barboza Rodrigues and other capable scientists, so insuring accuracy.

All the information supplied concerning the various uses and applications was carefully compiled by the Author of this Summary.

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Acacia.

Acacia polyphilla D C. Order: Leguminosae.
Fine wood affording a surface which can be polished.
May be used for furniture, decorative purposes, &c., and for interiors of buildings. Is found in S. Paulo and in neighbouring localities. Specific gravity: 750 kilograms per cubic metre.

 Açoita-Cavallo.

VARIETIES: Açoita-cavallo.

" " branco.


CLASSIFICATION: Luehea paniculata Mart. Family: Tiliaceae.

Order: Columniferae.

DESCRIPTION OF THE TIMBER: Trunks 10 to 12 metres long with diameter of 0.80 to 1 metre. Colour whitish, or hoary, with darker patches. Stubborn fibrous texture.

No alburnum. Easy to carve.

SPECIFIC GRAVITY: From 640 to 850 kilogs.


Branches very flexible.

The bark is used for tanning and is of medicinal value, for arthritic tumours, diarrhoea and leucorrhoea.

HABITAT: Abounds in the North of the State to the boundaries of the State of Rio; is met with, nevertheless, in nearly every part of the State.

OBSERVATIONS: Its wood is of second-rate quality, the Açoita-cavallo branco being even more inferior.

The tree attains a large size, widely branching and leafy, affording grateful shade to cattle in the pastures.

Very flexible branches.

Large, oval, bright green leaves; woody fruit, long, divided into five cavities.

Flowers in February and March.
A forest scene.
Aderno.

VARIETIES: Aderno verdadeiro.

„ vermelho.

SYNONYMS: Aderno verdadeiro or preto.

CLASSIFICATION: Astronium commune Jacq.

DESCRIPTION: Trunks from 8 to 10 metres long, and from 60 to 80 cms. in diameter.

Light red colour, with whitish patches, which almost disappear on polishing. In the Aderno verdadeiro the colour is darker and the patches are brown.

Very regular and light fibres. Hard to carve.

SPECIFIC GRAVITY: Aderno vermelho: From 870 to 1,050 kilograms.
Aderno vermelho: From 820 to 900 kgs.

RESISTANCE: To crushing force: 700 kilogs.; to bending 638 kilograms.

USES: Exterior woodwork, dry situations. Stakes, bridges, cabinet-work, turning, polished work.

Sleepers of second-rate quality. Both kinds have the same uses.

HABITAT: To boundaries of the State of Rio, Sierra del Mar.

OBSERVATIONS: Of large growth.

Fine appearance.

Timber rare.

Alecrim.


DESCRIPTION: Trunks from 4 to 5 metres long and with a diameter of from 20 to 30 centimetres.

Colour dark-red, almost black.

Fibres straight, light in colour and very resistant.

Thick layer of sap-wood or alburnum in proportion to its diameter.

Very hard to cut.

SPECIFIC GRAVITY: From 940 to 1,000 kilogs.

USES: Exterior woodwork, damp localities. Cabinet-work, axle-trees; polished work, affording a very beautiful surface.


The sap-wood also can be used for interior wood-work.

HABITAT: West of the State, rare in other localities.

OBSERVATIONS: Tree of flourishing growth, much branched and leafy.
Bark rough and thin.
Leaves small, hoary or whitish and very similar to the garden Alecrim.
Flowers small, white and in clusters.
Fruit large, copious and fine.

Almesca.

Tree of ordinary growth. Wood of inferior quality used for interior wood-work, frame-work and boxes. It has a sp. gr. of 950 to 1,000 kilogs. per cubic metre.
Is met with in the North of the State and in the valley of the Parahyba.

Amendoeira.

Amendoeira brava (Hardy Amendoeira). Wood of inferior quality used for interior wood-work, frame-work and boxes. Sp. gr. 700 to 800 kilogs.
Is found in all parts of the State.

Amendoim.

SYNONYM: Oleo branco.
CLASSIFICATION: Pterogyne nitens Tul.
Order: Leguminosae.
DESCRIPTION: Trunks from 6 to 8 metres long and 60 centimetres diameter.
Colour uniform whitish or hoary.
Fibres or grain, fine golden yellow. Leaves lengthwise with the stem.
No alburnum or sap-wood.
SPECIFIC GRAVITY:
HABITAT: A plant of small growth, very branching and little foliage. Branches erect and much subdivided towards base.
Leaves small, smooth and opposite. Flowers white, small and perpendicular, in groups. Fruit small and abundant similar to amendoim.
Clearing a Virgin Forest.
Amarellinho.

**CLASSIFICATION:** Symplocos sp. **Family:** Symplocaceae.

**DESCRIPTION:** Trunks from 10 to 12 metres long with diameter from 0.80 to 1 metre.

- Colour, bright yellow, very even colouring. Fine and regular grain. Hard to cut.


**HABITAT:** Valley of the Ribeira.

**OBSERVATIONS:** In Cananeia it is called the Amarellinho or Canella Paula Teixeira; has a texture of second-rate quality, used only for interior-work.

Andá-Assú.

**SYNONYMS:** Andá-guassú. Inda-guassú. Purga de gentio. Côco de purga. Fructa de Arara.

**CLASSIFICATION:** Joannesia princeps Vell. **Family:** Euphorbiaceae. **Order:** Tricoccae:

**DESCRIPTION:** Trunks from 4 to 6 metres long and 40 to 60 centimetres diameter.

- Colour white, with slightly golden patches. Grain much intercrossed forming a very loose texture.
- No sap-wood.
- Easily carved.

**SPECIFIC GRAVITY:** From 480 to 600 kgs.

**USES:** Interior wood-work. Frame-work. Floats. Canoes. Packing-cases. It is of third-rate quality.

- The fruit is purgative both for men and animals, and stupifies fish causing them to come to the surface.

**HABITAT:** Is common throughout the State.

**OBSERVATIONS:** Tree of ordinary growth, twisted, branching and with thick tufted foliage. Large palmlike compound leaves at the ends of the branches.

- Fruit divided into two capsules with oily almond-like seeds.

- On the Southern Coast this tree has a much smaller development.

Angelím.

**VARIETIES:** Angelím amargoso.

"côco."
Angelim doce.
" pedra.
" rosa.

SYNONYMS: Angelim or Mangalô.
" amargoso or aracui.
" côco or urarema.

Order: Leguminosae.

DESCRIPTION: All the varieties of Angelim have trunks from 8 to 10 metres long and 0.60 to 1 metre in diameter.
Colours vary from bright yellow to dark red.
This description is departed from in some respects, especially in the Angelim pedra.

SPECIFIC GRAVITY: Angelim amargoso. From 700 to 954 kgs.
Angelim côco: From 780 to 850 kilogs.
" doce: From 800 to 1,000 kilogs.
" pedra: From 980 to 1,052 kilogs.
" rosa: From 670 to 1,000 kilogs.

RESISTANCE: Angelim amargoso: To crushing 1,007 kilogs.
" côco: To crushing: 626 kilogs.
" pedra: " 648 "
" rosa: " 670 "

to bending: 570 kilogs.

Not suitable where subjected to much flexion or bending.
Angelim côco and pedra make sleepers of first-rate quality, but does not hold nails well.
The Angelim amargoso is a vermifuge and drastic medicinally.
The bark of Angelim côco is a vermifuge, but is poisonous if used in too large doses.

HABITAT: Sierra del Mar. Rare in the rest of the State.

Fruit large, long and always green. Leaves red, slightly aromatic.

Angelim doce: Tree of ordinary growth. Flowers hanging, with dark red calices. Fruit oval, with a single seed ripening to a golden yellow colour.

Angelim pedra: Tree of large growth. Rayed flowers with five points or teeth.
The fruit is white with a red seed.
Angico.
**Angelim rosa:** Tree of ordinary growth. Flowers reddish, rather irregular. Fruits very broad with three edible seeds.

**Angico.**

**VARIETIES:** Angico.

"côco.

"escuro.

**SYNONYMS:** Angico or Curupay.

**CLASSIFICATION:** Angico: Piptademia rigida Benth.

Order: Leguminosae.

**DESCRIPTION:** Trunks from 6 to 7 metres in height, and from 60 to 80 cms. diameter.

Colour from yellow to dark-brown with bright patches.

Coarse and crossed or netted grain.

Hard to cut.

**SPECIFIC GRAVITY:** Angico: From 907 to 1,070 kilogs.

Angico côco: From 770 to 890 kilogs.

**RESISTANCE:** Angico: To crushing 755 kilogs.

**USES:** Bridges, posts, work exposed to changing and extreme temperatures, dry situations, first-rate quality.

Flooring, panelling, interior wood-work. Sleepers of second-rate quality. The bark is used for tanning. Produces a gum of medicinal value.

In the North of the State, in the valley of the Parahyba, there is much Angico but of inferior quality, applicable only for interior work and boxes or cases.

**OBSERVATIONS:** Tree of large growth, branching with little foliage, branches thin and subdivided. Leaflets small and compound leaves, palm-like.

Flowers white, small, very numerous and odorless. Fruit small and flat with small seeds.

**Araçá.**

**VARIETIES:** Araçá.

Araçagy.

Araçapyranga.

Araçarana de concha.

Araçarana branca.

Araçatuba.

**CLASSIFICATION:** The Araçá and its varieties are all of the genus Psidium. Family: Myrtaceae. Order: Myrtilfloraee.

**DESCRIPTION:** Trunks from 4 to 6 meters long, with 30 to
60 cms. diameter. Colour, dark-yellow to dark-brown. Grain very regular and compact. No sap-wood or alburnum.

Hard to cut.

**SPECIFIC GRAVITY:** Araçá: From 997 to 1,071 kilogs.
Araçapyranga: From 1,000 to 1,100 kilogs.

**RESISTANCE:** Araçá: To crushing: 735 kilogs.; to bending 865 kilogs.

Araçagy: Only applicable to interiors, not fitted for flooring.
Araçapyranga: The same uses as Araçá, to which it is superior being of first-rate quality.
Araçaranana: Is of inferior quality in both varieties.
Araçatuba: Is of inferior quality and is only applicable to interior work.

**HABITAT:** Around S. Paulo, Sierra del Mar, is however found in other parts of the State.

**OBSERVATIONS:** The Araçás are trees having little foliage, branching upward and straight, the bark dark-brown in colour but fine, except the Araçatuba which branches more and has a greenish rough bark.

The Araçaranana branco is met with on the south-lying coast.

**Arapassú.**

Handsome timber for turning, polishing, furniture, &c. Of first-rate quality for interior work. Is found in the valley of the Ribeira.

**Arapóca.**

**SYNONYMS:** Guatayapóca. Pão-amarello. Arapóca-amarella.

**CLASSIFICATION:** Raputia magnifica Engl. Family: Rutaceae.
Order: Gruniales.

**DESCRIPTION:** Trunks from 6 to 8 metres long with 40 to 80 cms. diameter.

Colour, very even light yellow. Whitish grain, fine and not very marked.

Small amount of sap-wood. Hard to cut.

**SPECIFIC GRAVITY:** From 720 to 1,210 kilogs.

**USES:** Exterior work. Bridges, posts. Beams, damp localities. Cabinet-work. First-class carriages and coaches. Turning, etc. Sleepers of second-rate quality lasting 9 years.
HABITAT: Franca, Batataes, etc.

OBSERVATIONS: Tree of ordinary growth. Leathery leaves of various forms. The fruit is a tough capsule of five chambers or vessels with five depressions.

Araribá.

VARIETIES: Araribá amarelo.

" branco.
" rosa.
" vermelho.

SYNONYMS: Araribá amarelo or Grande.

" vermelho or Carijó.

CLASSIFICATION: Araribá amarelo: Centrolobium.

" branco: Centrolobium.

" rosa: Centrolobium robustum Benth.

Araribá vermelho: Centrolobium tomentosum Benth.

Order: Leguminosae.

DESCRIPTION: Trunks from 8 to 10 metres long, with 0.80 to 1 metre diameter.

Colour, yellow, with reddish veins and surface varied by bright tones. Grain fine and netted.

Small layer of sap-wood. Easy working with the knife.

SPECIFIC GRAVITY: Araribá amarelo: From 700 to 872 kgs.

" branco: 650 to 780 kilogs.

" rosa: 705 to 920 kilogs.

" vermelho: 700 to 1,000 kilogs.

RESISTANCE: Araribá amarelo: To crushing 307 kilogs.; to bending: 1,322 kilogs.

Araribá rosa: To crushing: 718 kilogs.; to bending: 972 kilogs.

Araribá vermelho: To crushing: 538 kilogs.

USES: Beams, posts. Exterior work.

Naval construction. Barrels. The Araribá amarelo is superior to the Araribá vermelho. The Araribá branco is of inferior quality to the others. The Araribá amarelo supplies flooring boards of remarkable flexibility. The root of the Araribá yields a red dye. The Araribá rosa may be put to the same uses as the Araribá amarelo and makes a sleeper of first-rate quality, lasting 11 years.

HABITAT: Is common throughout the State.

OBSERVATIONS: Trees of large growth, very branching and
leafy, noted for their beauty in the landscape. On the coast two varieties only have been noted up to the present: the Araribá amarelo or grande. Araribá vermelho, carijó or pequeno.

**Araruva.**

**VARIETIES:** Araruva branca. 
, vermelha.

**SYNONYMS:** Araruva vermelha or amarella.

**DESCRIPTION:** Trunks from 4 to 5 metres long with diameter of 40 to 60 centimetres.

- Colour, yellow or bright reddish with patches.
- Some planks from the bole are not evenly dense.
- Grain very regular and well-marked.
- Easy to work with the knife.

**SPECIFIC GRAVITY:** Araruva branca: From 700 to 820 kgs. 
, vermelha: From 750 to 950 kgs.

**RESISTANCE:** Araruva vermelha: To crushing: 402 kilogs.; to bending: 1,217 kilogs.

**USES:** Barrels. Interior work. Boxes. Flooring and panelling.

The Araruva branca is much inferior to the Araruva vermelha; it cannot be employed for building, only for large baskets.

**HABITAT:** Valley of the Tieté and of Piracicaba.

**OBSERVATIONS:** A tree with sparse branching and little top. Smooth and fine bark. Large round leaves with coarse and plainly-seen veining. This timber is not of standard quality.

**Araxixá.**

Wood of white colour, easy to cut, and suitable for boxes, panelling, matches, etc. Tree of medium height, upright trunk, high branching head. Edible fruit, raw or cooked as chestnuts.

**Arco de Pípa.**

**CLASSIFICATION:** Erythroxylum pulchrum St. Hil. Family: Erythroxylaceae. Order: Gruinales.

**DESCRIPTION OF TIMBER:** Very compact. Hard to cut.

**SPECIFIC GRAVITY:** From 1,071 to 1,072 kilogs.

**RESISTANCE:** To crushing: 538 kilogs.
Araruva.
USES: Barrels. Carts. Bridges. Beams. Sleepers of first-rate quality. This wood is noted for its flexibility.

HABITAT: North of the State and in the valley of the Tieté. A rare wood.

Aroeira.

VARIETIES: Aroeira.
  " do campo.
  " preta.
  " do sertão.

SYNONYMS: Aroeira preta or Orindeuva (Q. V.)

CLASSIFICATION: Aroeira: Schinus terebinthifolius Raddi.
  " do campo: Schinus anthartribua F.


SPECIFIC GRAVITY: From 1,050 to 1,267 kilogs. All the varieties of Aroeira have this same sp. gr.

RESISTANCE: Aroeira: To crushing: 1,005 kilogs.
  Aroeira do sertão: To crushing: 1,095 kilogs.

DESCRIPTION: Trunks from 6 to 8 metres long, with diameter from 40 to 50 centimetres.
  Colour from dark-yellow to red with darker patches, forming a kind of pattern or design.
  Grain fine and closely marked forming a compact wood.
  Layer of alburnum, or sap-wood, also applicable to wood-work.
  Very hard to cut.

USES: Bridges, posts, beams, damp situations. This timber is justly considered to be the best in S. Paulo for exterior wood-work and damp situations. Cabinet-work, axle-trees. Forms handsome surface for polishing. The bark of the Aroeira and its varieties is used for tanning leather, for preparing a dye for textile fabrics and for its medicinal properties used in cases of rheumatism.

The Aroeiras yield an oil which is used for ulcerated wounds, and a distillate from their leaves and fruit is an extract of diuretic value. The dye of the Aroeira is firm in textures which come in contact with salt water, such as hair, string and rope, ribbon, etc.

HABITAT: The valleys of the Mogy-Guassú and Tieté, but is found in nearly every part of the State.

OBSERVATIONS: The tree is small and has a twisted and gnarled growth. It yields a fine powder very irritating to the skin.

Stakes and posts made of Aroeira have usually a duration of 50 years.
Balsino.

Timber used for carts and waggons, joinery, exterior wood-work, etc. Of second-rate quality. Tree of small growth to be met with on the Sierra del Mar. Sp. gr from 930 to 1,010 kilogs.

Barbatimão.

SYNONYMS: Casca de virgindade.
DESCRIPTION: Trunks from 3 to 4 metres long with 40 to 50 centimetres diameter.
Fibres much interlacing.
SPECIFIC GRAVITY: From 1,045 to 1,304 kilogs.
RESISTANCE: To crushing: 1,105 kilogs.
USES: Cabinet-work, turning. Exterior work. Damp situations.
Is not suitable for flooring nor for broad planking.
The bark is astringent and is used for tanning. The bark and leaves are used as a tonic, also for malignant wounds or sores and diarrhoea, both for men and animals.
HABITAT: North of the State, valleys of the Tieté and Rio Pardo, being found, however, in almost every part of the State.
OBSERVATIONS: Twisted and gnarled growth, very few leaves, small palmate. White flowers in dense spikes.
The fruit is small with coarse red seeds.

Bico de Pato.

SYNONYMS: Guaximbé. Bico de papagaio.
CLASSIFICATION: Machaerium sp. Order: Leguminosae.
DESCRIPTION: Trunks of 8 to 10 metres in length with 50 to 60 centimetres diameter.
Whitish colour with branching patches.
Grain very fine and interlaced. Large layer of sap-wood.
Hard to cut.
SPECIFIC GRAVITY: From 900 to 1,000 kilogs.
The bark is used for tanning.
HABITAT: Valley of the Tieté and certain parts of the North of the State.
Aroeira.
OBSERVATIONS: Tree of large development, very branching and
good foliage. Erect. Bark fine and rough. Leaves large
and very uniform in size. Flat spines, large in newer branches.
Fruit small, hooked like the bill of a bird.

In the valley of the Mogy-Guassú the timber grown
is of inferior quality.

Bícuíba.

VARIETIES: Bícuíba assú.

„ mirim.

CLASSIFICATION: Myristica Bicuhyba Schott.


DESCRIPTION: Trunks from 8 to 10 metres long and 60 to
80 centimetres diameter. Colour white, which rapidly becomes
red on exposure to the air.

Easy to cut.

SPECIFIC GRAVITY: From 680 to 800 kilogs.

USES: Beams, joists, rafters, flooring. Interior work, first-rate
quality. Yields medicinal oil used for rheumatism and
dyspepsia.

HABITAT: North of the State and the valley of the Tieté.

On the Southern shores it is of inferior quality.

OBSERVATIONS: A lofty tree, large head, rounded like the pine,
very branching and leafy. Broad leaves. Flowers unisexual.
The fruit contains a single seed yielding the medicinal oil.

The Bícuíba mirim is inferior to the Bícuíba assú.

Bíry.

Wood of inferior quality, used for interior work and for
boxes. Grows very rapidly and can be felled in 6 years.

Makes very good fire-wood.

Is found in Campinas and neighbouring country.

Bocuva.

DESCRIPTION: Trunks from 8 to 10 metres long with 0.60 to
1 metre diameter. Colour dark-yellow with reddish patches.

Coarse grain, straight, in layers; presenting divers colours
in regular transverse bands.

Layer of sap-wood. Soft under the knife.

SPECIFIC GRAVITY: From 820 to 910 kilogs.

HABITAT: Valley of the Ribeira, Sierra del Mar and in the North of the State.

OBSERVATIONS: Upright in growth, much branched, little foliage. Dark round leaves. Broad black fruits with yellow veining and very oily. This fruit, even without drying, will burn giving out a very good light.

Bracuhy.

VARIETIES: Bracuhy amarello.
'' de pedra.
'' vermelho.


DESCRIPTION: Trunks from 10 to 12 metres long and 60 to 80 centimetres diameter.

Colour from bright yellow to dark-red. Grain small, compact and straight, except in the Bracuhy de pedra, which has coarse grain, irregular and netted with faults and knots in the interior.

Thick layer of alburnum. Hard to cut.

SPECIFIC GRAVITY: Bracuhy amarello: From 920 to 1,010 kgs.
'' de pedra: From 780 to 850 kgs.
'' vermelho: From 800 to 920 kgs.

USES: Beams, bridges and exterior work. Dry situations. Is not suitable for making broad planks. The Bracuhy de pedra is superior to the other varieties.

HABITAT: Is common in the State, abounding in the valley of the Parahyba.

OBSERVATIONS: The various varieties of the Bracuhy das Marinhas are very superior to those of the interior mountain-lands, the timber of the Marinhas (coast) being of first-rate quality for any kind of wood-work.

They are trees of large and vigorous growth, with thick branches.

Grey bark, thin and fine.

Cabreuva.

VARIETIES: Cabreuva amarella.
'' vermelha.


CLASSIFICATION: Myrocarpus fastigiatu F. All. Order: Leguminosae.
Cabreúva.
DESCRIPTION: Trunks from 10 to 12 metres long with diameter from 0.80 to 1 metre. Colour yellow and dark-brown or red with bright patches in the direction of the grain. The timber is straight, but there is a tendency to show unequally distributed faults or cracks longitudinally with the trunk. Small layer of sap-wood or alburnum. Hard to cut.

SPECIFIC GRAVITY: Cabreuva amarella: From 960 to 1,020 kgs. vermelha: From 980 to 1,050 kgs.

RESISTANCE: To crushing: 759 kilogs.; to flexion: 1,356 kgs.


The Cabreuva vermelha is superior to the Cabreuva amarella or parda. Both yield an oil medicinally valuable in rheumatism, and the bark yields medicaments used for certain lung complaints.

HABITAT: West of the State; it is, however, found in other localities.

OBSERVATIONS: This tree is remarkable as overtopping all the other trees of the forest. A high tree, few branches, thick and strong at the base springing often from the lower part of the bole. Bark coarse and rough. Few faults, or cracks. Flowers small and white at the ends of the branches. Fruit broad, small and with a single seed in the centre.

Cacunda.

VARIETIES: Cacunda. de espinho.

DESCRIPTION: Colour bright yellow with darker patches. Grain fine and regular. Easily carved.

SPECIFIC GRAVITY: From 612 to 807 kilogs.

USES: Furniture, turning. Scantlings. The Cacunda de espinho is used for exterior work.

The root-wood of the Cacunda offers a beautiful surface for polishing, with handsome wave-marks and patches.

HABITAT: Sierra del Mar and the valley of the Ribeira.

OBSERVATIONS: A rare timber.
Café Bravo.

Guarea sp. **Family**: Meliaceae.  
This is a small tree; its leaves are small and like those of the true coffee plant; flowers white and small, with yellow points or spots: fruit, round small and red. Smooth bark. Fruit ripens in August. Trunks from 3 to 4 metres high, with a diameter of 30 to 40 cms. The wood is suitable for interior work only, being of second-rate quality. Its leaves are used medicinally against snakebites.

Caixeta.

**VARIETIES**: Caixeta branca.  
" vermelha.  
**CLASSIFICATION**: Tabebuia leucoxyyla D C. **Family**: Bignoniaceae. **Order**: Passiflorinae.  
**DESCRIPTION**: Trunks from 8 to 10 metres long with 80 cms diameter.  
Colour, uniformly white or slightly reddish with conspicuous veins. Coarse, straight grain.  
Easily carved.  
**SPECIFIC GRAVITY**: Caixeta branca: 400 to 510 kilogs.  
" vermelha: 460 to 560 kilogs.  
**USES**: Boxes, panelling. Interior wood-work. Does not crack nor warp in the sun. The Caixeta vermelha is superior to the other variety.  
**HABITAT**: Is common throughout the State.  
**OBSERVATIONS**: This is a tree of erect and large growth with few branches. There is found in the valley of the Ribeira a tree, called the Araxixa, branching, with high top, and producing a nut with 4 cavities containing edible fruit when cooked. Its trunk is from 6 to 8 metres high, with a white wood like the Choupo and is used for making matches.  
The Caixetas of the coast regions are superior to those growing in other parts.

Cambará.

**VARIETIES**: Cambará.  
" poca.
Caixêta.

DESCRIPTION: Trunks from 5 to 6 metres long with 40 to 50 centimetres diameter.  
Colour, white or light-brown, with conspicuous veins. Grain fine and straight with small cracks running longitudinally.  
Hard to cut.

SPECIFIC GRAVITY: From 890 to 950 kilogs.
RESISTANCE: To crushing 472 kilogs.
HABITAT: Common throughout the State.
OBSERVATIONS: Tree of small growth, with regular-shaped top. The Cambará poca is of inferior quality.

Cambuhy.

VARIETIES: Cambuhy.  
"vermelho.
SYNONYMS: Cabuhy.
Cambuhy vermelho or C. Pitanga.

DESCRIPTION: Trunks 6 metres long with 60 cms. diameter.
SPECIFIC GRAVITY: Cambuhy. From 670 to 770 kgs.
RESISTANCE: Cambuhy vermelho: To crushing: 580 kgs.

The Cambuhy vermelho is superior to the other variety and makes sleepers of first-rate quality, lasting 10 years.
HABITAT: Valley of the Mogy-Guassú and in other districts of the State, with more or less vigorous growth.

Candeia.

VARIETIES: Candeia graúda.  
mirim.
SYNONYMS: Pão candeia. Acende candeia.
DESCRIPTION: Trunks from 3 to 5 metres long and 40 cms. diameter.

The Candeia graúda is white in colour with slightly red patches.

The Candeia mirim is red with yellow patches. Both have fine grain, compact and straight.

Hard to carve.

SPECIFIC GRAVITY: Candeia graúda: From 1,100 to 1,214 kilograms.

Candeia mirim: From 850 to 960 kilogs.

USES: Bridges, posts. Damp situations. Turned articles. Butts of guns. Fine surface for polishing. Lasts longer when exposed to the weather and covered with its bark. The bark is employed in tanning, imparting to the leather a bright red colour. The branches and twigs will burn in the green State, giving out a bright flame.

HABITAT: It is found in nearly all parts of the State, abounding in the valleys of the Alto Parahyba and the Mogy-Guassú.

OBSERVATIONS: A small tree, much branching and twisted. Leaves lanceolate, small, of yellow colour on the back and dark green surface.

Canella.

VARIETIES: Canella açafrão.

,, amarela.
,, batalha.
,, branca.
,, capitão-mór.

Canellinha.

Canella cedro.

,, imbuia clara.
,, imbuia escura.
,, limão.
,, marçanahyba.
,, mandioca.
,, parda.
,, pimenta.
,, prego.
,, preta.
,, puante.
,, ruiva.
,, santa.
,, sassafras amarella.
Canella.
Canella sassafráz parda.
' sassafráz preta.
' sebo.
' veado.

SYNONYMS: Canella açafrao or Ç. vermelha.
' batalha or Ç. bastarda.
Canellinha or Ç. legitima.
' embuia or Folha larga.
' marçanahyba or Tapanhúma.
' puante or Canellão.

CLASSIFICATION: Canella batalha: Nectandra robusta?
Canella branca: Nectandra leucothrysus Meiss.
' capitão-mór: Nectandra myriantha Meiss.
Canellinha: Nectandra linearia Meiss?
Canella marçanahyba: Cassia marçanahyba F. All?
Order: Leguminosae.
' parda: Nectandra amara Mart.
' preta: Nectandra mollis Meiss.
' puante: Nectandra sp.
' sassafráz: Ocotea pretiosa Benth.
' veado: Actilostemon lanceolatum Said.

All the Canellas belong to the Family: Lauraceae, Order: Polycarpicae, except the veado and marçanahyba.

There is great difficulty in classifying the plants commonly called canellas.

DESCRIPTION: Canella açafrao: Colour yellow or reddish with slight white veining. Irregular grain in distinct layers. Trunks from 8 to 10 metres long and 0.80 to 1 metre diameter. Hard to carve.
Canella amarella: Colour dark-yellow, with golden shades. Grain very straight and regular. Trunks from 8 to 10 metres long and from 0.80 to 1.20 metres in diameter. Easily carved.
Canella batalha: Colour, white satin, with handsome surface for polishing. Trunks of 12 metres long with 1.20 metres diameter.
Very easily carved.
Canella branca: Colour, white or slightly yellow. Grain very regular and coarse. Trunks from 7 to 8 metres long with 70 centimetres diameter.
Easily carved.
Canella capitão-mór: Colour, light-brown patch of golden
colour. Grain coarse. Trunks from 6 to 8 metres long with 60 to 80 centimetres diameter. Hard to cut.

**Canellinha:** Dark, almost black in colour. Grain very regular presenting at times some knots. Trunks from 2 to 5 metres long with 40 to 60 centimetres diameter. Very hard to cut.

**Canella imbuia:** Colours varying from dark-yellow to the almost black colour of the *Imbuia escura*. Grain coarse and very regular. Trunks from 8 to 10 metres long with 60 to 80 centimetres diameter. Easily cut.

**Canella limão:** Colour light-yellow with satin shades. Trunks from 6 to 8 metres long and 40 to 60 cms. in diameter. Easy to cut.

**Canella marçanahyba:** Colour dark-brown with various lighter shades. Grain very irregular. Trunks from 6 to 8 metres long with diameter of 60 to 70 cms. Hard to cut.

**Canella parda:** Colour dark-brown with lighter patches of golden and reddish tint. Grain very regular and rather obscure. Trunks from 8 to 10 metres long and 0.80 to 1 metre in diameter. Hard to cut.

**Canella pimenta:** Colour from light-brown to dark-brown, veins lighter, yellowish shades. Grain very regular and straight. Hard to cut.

**Canella prego:** Colour dark-yellow with patches of light-yellow and black veins. Grain very netted, coarse and disposed in regular layers. Trunks from 8 to 10 metres long and 0.80 to 1 metre diameter. Hard to cut.

**Canella preta:** Colour glossy black. When cut, dark-brown with black veins. Irregular grain. Trunks from 8 to 10 metres long and 60 to 80 cms. diameter. Hard to cut.

**Canella puante:** Colour brown with light patches. Grain coarse and straight. Trunks from 8 to 10 metres long and 0.60 to 1 metre diameter. Hard to cut.

**Canella sassafras:** Colour from light-brown to a very dark-brown, with darker patches and golden shades. Grain very fine and in regular layers. Trunks from 6 to 8 metres long and 60 centimetres diameter.
Batalha.
Easy to cut.

Canella veado: Colour white, uniform.

Easy to cut.

**SPECIFIC GRAVITY:**

<table>
<thead>
<tr>
<th>Canella</th>
<th>Specific Gravity</th>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>açafrão</td>
<td></td>
<td>675 to 701 kilogs.</td>
<td></td>
</tr>
<tr>
<td>amarella</td>
<td></td>
<td>670 to 744</td>
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</tr>
<tr>
<td>batalha</td>
<td></td>
<td>697 to 758</td>
<td></td>
</tr>
<tr>
<td>branca</td>
<td></td>
<td>610 to 720</td>
<td></td>
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<tr>
<td>capitão-mór</td>
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<td>710 to 735</td>
<td></td>
</tr>
<tr>
<td>Canellinha</td>
<td></td>
<td>680 to 780</td>
<td></td>
</tr>
<tr>
<td>cedro</td>
<td></td>
<td>520 to 640</td>
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</tr>
<tr>
<td>limão</td>
<td></td>
<td>711 to 985</td>
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<tr>
<td>mandióca</td>
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<td>780 to 845</td>
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<tr>
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<td></td>
<td>628 to 903</td>
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</tr>
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<td>850 to 920</td>
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<tr>
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<td>597 to 738</td>
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<tr>
<td>sassafráz</td>
<td></td>
<td>868 to 1,082 kgs.</td>
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</tr>
<tr>
<td>veado</td>
<td></td>
<td>827 to 1,000 kgs.</td>
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<td></td>
<td><strong>RESISTANCE:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>açafrão</td>
<td>To bending: 665 kilogs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>amarella</td>
<td>To crushing: 582 kilogs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>batalha</td>
<td>To crushing: 380 kgs.; to bending: 741 kilogs.</td>
<td></td>
<td></td>
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<tr>
<td>branca</td>
<td>To crushing: 324 kgs.; to bending: 747 kilogs.</td>
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<tr>
<td>capitão-mór</td>
<td>To crushing: 402 kgs.</td>
<td></td>
<td></td>
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<tr>
<td>Canellinha</td>
<td>To crushing: 296 kgs.; to bending: 675 kilogs.</td>
<td></td>
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</tr>
<tr>
<td>cedro</td>
<td>To crushing: 405 kgs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>limão</td>
<td>To crushing: 405 kgs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>marçanahyba</td>
<td>To crushing: 405 kgs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>parda</td>
<td>To crushing: 758 kgs.; to flexion: 1,079 kgs.</td>
<td></td>
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<tr>
<td>preta</td>
<td>To crushing: 538 kgs.; to bending: 462 kilogs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>santa</td>
<td>To crushing: 472 kgs.; to bending: 792 kilogs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sassafráz</td>
<td>To crushing: 772 kgs.</td>
<td></td>
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</tr>
</tbody>
</table>

**USES:**


Canella batalha: Interior work. Cabinet-making. Fine surface for polishing. Very suitable for making vessels which do not impart odour nor colour to their contents.

Canella branca: Boxes, etc. Interior work. Is of inferior quality.


Canellinha: Bridges, posts, damp situations. Not much used because of shrinkage. Sleepers of first-rate quality, lasting 10 years.


Canella imbuia: Ship-building. First-class furniture. Mouldings. Scantlings. Bridges, posts. Is of first-rate quality. All the varieties are used for the same purposes.

Canella limão: The same uses as the Canella capitão-mór, but inferior to this. It has medicinal value for lung complaints.


Canella pimenta: The same uses as Canella limão.

Canella prego: Exterior work. Damp situations. Sleepers of first-rate quality, with duration of 9 years.

Canella preta: Is used in all kinds of building construction. For work in damp situations it is of first-rate quality. Sleepers last for 12 years. The leaf yields an aromatic oil which acts as a diuretic upon the body.

Canella puante: Is put to the same uses as the Canella pimenta.

Canella santa: Inferior wood-work.

Canella sassafras: The same uses as the Canella parda, but rather more suitable for mouldings, furniture, etc. The root and bark are used medicinally for rheumatism and stomach troubles.

Canella sebo: Is of inferior quality.

Canella veado: Similar to the Canella santa, handsome surface for polishing.

HABITAT: The Canellas are found in every part of the State, abounding in the cooler regions.

The Canella imbuia is found only in the valley of the Ribeira up to the boundaries of the State of Paraná.
Canellão.
These trees vary much in size from the Canella batalha, a leafy tree growing to a height of more than 25 metres, to the Canella veado, gnarled and twisted, of small growth and with a milky sap.

Almost all the Canellas are put to some industrial application, the most noteworthy being the Nectandra amara Mart., the Nectandra mollis Meiss., and the Ocotea pretiosa.

In certain district the Canella santa is regarded as a treasury of medicinal substances suitable for every ailment.

The most beautiful Canellas are found in the valley of the Ribeira, the Canella imbuia, the sassafras and veado being especially worthy of mention; in addition to these are the brinco, canheirão, nhonhô-sãra, nho-mirim, Yagovira and gato which are improperly named Canellas.

Only able students of plant classification are able to distinguish clearly the numerous plants which are popularly classed under the common name of Canellas.

Cangerana.

VARIETIES: Cangerana amarella. " vermelha.
SYNONYMS: Cajarana. Pão de Santo.
CLASSIFICATION: Cabralea Cangerana Sald. Family: Meliceae.
DESCRIPTION: Trunks from 8 to 10 metres long with 0.60 to 1.20 metre diameter. Colour dark-yellow or red. The wood has a strong odour. Grain fine and straight. Easily cut.

SPECIFIC GRAVITY: Cangerana amarella: 590 to 700 kgs. " vermelha: 693 to 824 kgs.
RESISTANCE: Cangerana vermelha: To crushing: 546 kgs.
USES: Carved work. Furniture, cabinet-work, turning, ship-building, canoes, wood-pavement and flooring. Bridges and damp situations. Is of first-class quality. Sleepers of first-rate quality. Cross-grain working. The bark and leaves are used for tanning. The Cangerana vermelha is superior to the Cangerana amarella. Both may be used for the same purposes as the cedro.
HABITAT: Is common throughout the State.

OBSERVATIONS: Tree of large growth, leafy and branched. Greyish bark. Leaves small and tough, not glossy, and disposed in palm-like manner. Flowers greenish and covered with fine odorous hairs. Mussel-shaped fruit, rather rough on the surface and edible.
Canna-Frista.

SYNONYM: Canna-fistula.

CLASSIFICATION: Cassia ferruginea Schrad.

Order: Leguminosae.

DESCRIPTION: Trunks from 8 to 10 metres long and from 60 to 80 cms. diameter. Colour light-red, with darker patches. Coarse grains, in spite of which fact the timber is compact and arranged in regular layers. Very hard to cut.

SPECIFIC GRAVITY: From 1,190 to 1,240 kgs.


The bark is used for tanning, imparting a light colour to the leather.

The alburnum is also applicable to building work.

HABITAT: Sierra del Mar. The valleys of the Mogy-Guassú and Tieté.

OBSERVATIONS: A tree of large growth, very branching and leafy. Leaves small and wide. The fruit contains very small seeds.

It is regarded as patron of the wilds.

Canudo.


CLASSIFICATION: Carpotroche brasiliensis Endl.

Family: Flacourtiaceae.

DESCRIPTION: Trunks from 4 to 5 metres in length and 25 to 30 cms. in diameter.

Colour dark-brown with black patches.

A large cavity is formed throughout the centre of the trunk.

Very hard to cut.

USES: Bridges and posts; dry situations. It cannot be used for other purposes on account of the central hollow.

The bark is used for tanning, and has medicinal properties acting as an antifebrile.

HABITAT: In the valley of the Alto Parahyba and Sierra del Mar.

OBSERVATIONS: A low tree short branches. On the higher branches the leaves are of a bright green colour on the back and brown on the front, or upper surface. Flowers brown, small and in clusters. The fruit is a brown capsule.
Capcchenguy.

CLASSIFICATION: Croton floribundus Spr.
DESCRIPTION: Trunks from 4 metres in length with 40 to 50 centimetres diameter. Colour, white or yellow. Grain inconspicuous irregular and with small resistance.
SPECIFIC GRAVITY: 765 kgs.
USES: Interior work. Skirting-boards, etc. The central portion or "heart" wood may be employed in bridges and in dry situations. The leaves have medicinal properties, cathartic.
HABITAT: Is common throughout the State.
OBSERVATIONS: This is a small tree, twisting and gnarled in growth. Leaves large, broad and rough. Bast, red and fibrous.

Carne de vacca.

VARIETIES: Carne de vacca amarella.
   " " " vermelha.
SYNONYM: Carvalho nacional. Q. V.
CLASSIFICATION: Rhopala sp. Family: Proteaceae.
DESCRIPTION: Trunks from 4 to 6 metres in length and 50 to 60 cms. in diameter. Colour white and yellowish becoming dark red toward the bark.
   Grain very irregular and coarse giving the wood a mosaic appearance. A layer of sap-wood. Easy to carve.
SPECIFIC GRAVITY: From 858 to 1,124 kgs.
USES: Furniture, cabinet-work, and turning. Interior work.
HABITAT: Valleys of the Parahyba and Mogy-Guassú; rare in other regions.
OBSERVATIONS: Tree of small growth, regular leaves, tough and notched.
   Bark reddish.

Carvalho Nacional.

Rhopala brasiliensis Kl. Family: Proteaceae.
Handsome wood, reddish, varying from yellow to almost black. The trunk not very compact. Is employed for cabinet-work and for turning, lending itself admirably to rebating. It has a sp. gr. from 674 to 780 kgs. Is only met with in dry soils. There are three varieties found in the coast-
region, (la's Marinhas) the amarillo, the escuro, and the encarnado. The co-efficient of resistance to crushing of the Carvalho nacional is 332 kgs., and to bending 695 kgs.

Cataguá.

VARIETIES: Cataguá branco. Cataguá rajado.
CLASSIFICATION: Metrodorea pubescens St. Hil.
DESCRIPTION: Colour, uniformly white, with reddish veins.
   Trunks from 6 to 8 metres in length and 40 to 60 cms. in diameter.
SPECIFIC GRAVITY: From 1,050 to 1,120 kgs.
USES: Interior work. Wood used exclusively for dwelling-houses.
   Is not suitable for flooring on account of shrinkage. No sap-
   wood. The varieties are equal in quality.
HABITAT: Mogy-mirim and its neighbourhood.
   Grows upon the plain.

Catiguá.

VARIETIES: Catiguá graúdo. Catiguá miudo.
CLASSIFICATION: Trichilia Catiguá A. Juss.
   Family: Meliaceae.
DESCRIPTION: Trunks from 4 to 5 metres in length and 50 to
   60 cms. in diameter.
   Colour light yellow or reddish with white patches.
   Grain very coarse and netted. A large layer of alburnum
   or sap-wood. Easily carved.
SPECIFIC GRAVITY: From 612 to 720 kgs.
USES: General exterior work, carpentering or timbering, posts.
   Dry situations. Makes sleepers of second-class quality.
HABITAT: North of the State; rare in other regions.
OBSERVATIONS: Tree of large growth. The catiguá miudo
   is much superior in quality to the graúdo.

Catucahem.

VARIETIES: Catucahem graúdo. Catucahem miudo.
SYNONYMS: Catucanhem, Caxicahem, Sobro.
CLASSIFICATION: Rhopala glabrata Kl. Family: Protaceae.
DESCRIPTION: Trunks from 6 to 8 metres in length and 40 to
   60 cms. in diameter.
Colour light-yellow or reddish with white patches. Grain coarse and tangled. A layer of sap-wood. Easily carved.

**SPECIFIC GRAVITY:** From 964 to 1,124 kgs.

**RESISTANCE:** To crushing: 472 kgs.; to bending: 1,382 kgs.

**USES:** Furniture, cabinet-work, turning, etc. Handsome surface for polishing. Sleepers of second-rate quality.

Bark astringent.

**HABITAT:** North of the State. *Marinhas.*

**OBSERVATIONS:** A tree of normal growth with cylindrical branches. Leaves regular, tough and denticulated or toothed.

Bark rough and yellow. Flowers white and small.

**Caviúna.**

**VARIETIES:** *Caviúna amarella.*

„ *preta.*

„ *roxa.*

**SYNONYMS:** Cabiúna. Cabeúna.

**CLASSIFICATION:** Machaerium *sp.*

**Order:** Leguminosae.

**DESCRIPTION:** Trunks from 10 to 12 metres in length and 0.60 to 1 metre in diameter.

Colour light-brown with yellow or black veins, or black with glossy black veins. Grain very regular and fine, and symmetrically arranged.

Large layer of alburnum.

Hard to cut.

**SPECIFIC GRAVITY:** *Caviúna preta:* From 835 to 880 kgs.

*Caviúna roxa:* From 850 to 960 kgs.

**USES:** Bridges, coarse flooring. Posts, damp situations. Carpenters' tools. It is of first-class quality. Cabinet-work. A noted wood for furniture.

Very hard to cut.

**HABITAT:** Is met with in all parts of the State, being most common in the West.

**OBSERVATIONS:** Tree of large growth, branching freely, but with little foliage.

Form usually twisted. Leaves small and broad.

The wood of the *caviúna* on exposure to the atmosphere becomes darker and darker in colour until it is dense black.
Cazuarina.

A fine tree, of the **Family**: Casuarinaceae, having a large growth, branching freely, with smooth bark and flowers very small and almost invisible. The timber is of a light-brown colour with very regular veins and patches, presenting a handsome surface for polishing. Is used for making furniture, decorative wood-work, etc., and for interiors.

It is a handsome plant used in ornamental gardening and for parks, and is very similar to the cypress. It grows in the valley of the Tieté from Mogy das Cruzes beyond Itú.

Cedro.

**VARIETIES:** Cedro amarello. 
" " branco. 
" " vermelho.

**SYNONYMS:** Cedro branco or caopiuva. 
" " vermelho or C. batata.

**CLASSIFICATION:** Cedro amarello: Cedrela fissilis Vell. 
" " branco: Cedrela brasiliensis Vell. 
" " vermelho: Cedrela odorata Jus.

**Family:** Meliaceae.

**DESCRIPTION:** Trunks from 10 to 12 metres in length and 0.80 to 1.20 metres in diameter. Colour from whitish-yellow to light-red with wavy lighter patches. Grain direct, fine and tractable. Layer of alburnum. Very easily carved.

**SPECIFIC GRAVITY:** Cedro branco: From 380 to 582 kgs. 
Cedro vermelho: From 515 to 723 kgs.

**RESISTANCE:** Cedro branco: To crushing: 260 kgs.; to bending: 582 kgs. 
Cedro vermelho: To crushing: 467 kgs.

**USES:** Cedro amarello: Cases and work of an inferior quality. Picture-frames. Carving.
Cedro branco: The same uses as the Cedro amarello to which it is wholly inferior. Yields a dye for leather.
Cedro vermelho: Furniture. Frame-work. Scantlings. Venetians and ship-building. Wood-carving. Is the best wood for launches, boats, etc. The bark is astringent and is an emetic.

**HABITAT:** Is common throughout the State.

**OBSERVATIONS:** A tree of rapid growth, easy to cultivate for the twigs take root on planting.
Cedar.
It is of large growth, erect, branching and with a large top.
Large palmate leaves, which fall in the winter. Fruit large, full and of oval shape.
The bark is veiny, coarse and rugged. The tree reaches its full growth and may be felled in less than 15 years.

**Ceregeira.**

*Myrcianthes edulis* Berg. **Order:** Leguminosae.

**Chibatão.**

**VARIETIES:** Chibatão pedra. Chibatão vidrado.
**SYNONYMS:** Gibatão. Ubatão.
**CLASSIFICATION:** Astronium gracile Eng.
  **Family:** Anacardiaceae, **Order:** Sapindinae.
**DESCRIPTION:** Trunks from 6 to 8 metres in length and 60 to 80 cms. in diameter.
  Colour light-yellow with reddish patches. Coarse grain.
  Layer of alburnum. Hard to cut.
**SPECIFIC GRAVITY:** From 927 to 1,022 kgs.
**RESISTANCE:** To crushing: 582 kgs.
**USES:** Exterior work, beams, bridges, posts. Damp situations.
  Work subject to flexion. Sleepers of first-rate quality, lasting 12 years.
  Both varieties are put to the same uses.
**HABITAT:** Is found throughout the State.
**OBSERVATIONS:** The Chibatão of the West and of the *Marinhas* is inferior to that growing in the valley of the *Parahyba*; this may be attributed to the soil in which they grow. A very spreading tree, with not much head and large cavities in the trunk passing through it from one side to the other. Is subject to the shrinking of the radiating fibres.

**Cangonha.**

*Villaresia mucronata* R. et P.
**Family:** Olacinaceae.
Wood of inferior quality, used only for interior work,
frame-work and boxes. Sp. gr.: 830 kgs. Is met with in the North of the State.

**Copahyba.**

**VARIETIES:** Copahyba pardá. Copahyba vermelha.


**CLASSIFICATION:** Copaifera Langsdorffii Desf.

**Order:** Leguminosae.

**DESCRIPTION:** Trunks from 8 to 10 metres in length and 60 to 80 cms. in diameter.

Colour light-red, uniform. Grain coarse and straight. Easily carved.

**SPECIFIC GRAVITY:** Copahyba pardá: From 840 to 1,078 kgs.

Copahyba vermelha: From 790 to 875 kgs.

**RESISTANCE:** Copahyba vermelha: To crushing: 888 kgs.

**USES:** Cabinet-work, carriages, turning. Ship-building, masts of ships. Yields a medicinal resin. The bark is used for tanning.

The two varieties are of equal value.

**HABITAT:** General throughout the State.

**OBSERVATIONS:** A tree of ordinary growth. Flowers small, in clusters. Compound leaves.

Flowers in summer.

**Corana.**

**Coirana.** Coerana. Goerana.

Timber white, compact, with straight grain. Used only for interior work and ordinary furniture. The plants are as small as the olive and yield a fine red dye used for writing-ink.

**CLASSIFICATION:** Solanum auriculatum Ait.

**Family:** Solanaceae. **Order:** Personatae.

**Eucalyptus.**

The Eucalyptus is a native of Australia and the adjacent islands. It was first botanically described by Baron von Müller who proclaimed its worth and introduced it into the United States about the middle of last century.

According to von Müller the first Eucalyptus brought to Europe was planted in the Botanical Garden of Naples in the early part of last century. It soon become perfectly acclimatised in the South of Europe and its growth spread
through the South of France to Spain where it grew pro-
fusely forming extensive plantations.

In Portugal, however, the Eucalyptus is little grown.

It was introduced into North Africa, in Algeria, in 1854,
being planted upon a large scale: in groves and avenues,
isolated and in groups, throughout the whole of the country,
so that, as Planchon says, "A stranger ignorant of the
origin of the Eucalyptus would suppose that it was in-
digenous there".

The railway companies also planted it along their lines
using its timber as sleepers and for building purposes.

The first plantations of Eucalyptus were made in Asia
in 1854. In India Mr. Polk, in 1884, remarks upon the "Eu-
calyptus globulus". He says "It may be said that the growth
of this species is an unqualified success"

In North America, owing chiefly to the continued stud-
ies of Messrs. Polk and Bowen, American Consuls, the
Eucalyptus was introduced some years after it became known
in France.

It was made known in California by Mr. Walker in
1856, and from there its growth extended through Arizona,
Texas, New Mexico, etc. The Americans now use the Eu-
calyptus on a large scale and are in process of growing
forests of the plant; it is certain, therefore, that in a few
years they will become large cultivators for the production
of its essential oil.

In South America the Eucalyptus is not yet sufficient-
ly regarded as it should be, as one of the most valuable
of plants.

In 1870, it was planted in Rio de Janeiro where it
soon showed perfect acclimatisation and adaptability, notably
in the Garden of the town of Barra Mansa. There is at the
present time, in the plantation of Sr. Pereira da Fonseca,
15,000 plants of various kinds.

In S. Paulo, Dr. Luiz Pereira Barreta may be con-
sidered as the scientific introducer of the antiseptic oil of
Eucalyptus, and the Paulista Railway Co. has planted, in
its Botanical Garden in Jundiahy, 600,000 plants of 58
varieties.

It is now quite a popular plant in the State, having
become the timber of commerce in Mogy das Cruzes and
in the Capital.

Here in S. Paulo, the Eucalyptus is increasing rapidly,
several varieties being grown, and planted in suitable ground, they may be cut down in 10 to 12 years.

As propagation is made by seeds, the varieties grown here are remarkably exempt from the ravages of the insects inimical to the growth of the Eucalyptus.

The trunk of the Eucalyptus varies much in its manner of growth, sometimes it is straight as the mast of a vessel and at others contorted and twisted. In nearly all varieties the trunk tapers gradually from below upwards, rendering it suitable for use as masts, high posts, etc.

The bark, too, varies greatly, even in the same tree, changing its aspect with its age.

The colour of the trunk of the Eucalyptus varies from white to dark brown or gray, and its grain from fine, straight and regular to the most interwoven texture. Generally it is not easily cut.

The timber is put to innumerable uses for all kinds of civil and naval construction as well as for many industrial purposes, and it is rare that the quality of wood is inferior.

All varieties of Eucalyptus have perennial foliage which is of advantage to the horticultural value of the plant. The foliage and shape of the tree vary greatly, now dense and affording cool shade, now sparse and suitable for situations where plenty of sunlight is necessary.

The uses of the Eucalyptus are much more numerous and of varying kind than those of any other kind of tree.

Rapid in growth it serves for the planting of groves and woods and for ornamentation of park, estate or garden.

The surrounding air is purified, it supplies bees with nectar, it beautifies the landscape, its wood is abundantly serviceable, as fuel its heating power is superior to coke, it has valuable medicinal properties, its bark may be used for tanning, etc., etc.

The oil distilled from the leaves and young shoots of the Eucalyptus is used in the manufacture of soap, and for medicines, yielding a return to the producer of 1.6 to 1.8 per cent.

There are at present grown, or may be grown, in São Paulo the following varieties upon which the following information may be given:
Eucalyptus amygdalina: A fine tree, smooth bark, tortuous growth, few shoots. A pronounced odour of peppermint. Will support low temperatures, but suffers much in a hot or dry climate. Attains a height of 40 metres with a diameter of 1.50 metre.

The wood is not of first-class quality and is suitable for frame-work, boxes, etc.

Yields the liquid eucalyptol, transparent and camphorated. Is good for purifying the air and to dry the earth.

Specific gravity: 850 kgs.

Eucalyptus botryoides: Damp situations, little subject to frost.


Is of first-rate quality for building, both of naval and civil kinds.

Eucalyptus coriacea: Suited for planting on hilly and stony soil.

Eucalyptus calophylla: For warm and moist situations.

Eucalyptus cornuta: Tree of 20 to 25 metres in height, branching, with spreading top. Will bear, high temperatures, but suffers much from frost. Is much used in the making of carpenters’ tools and agricultural implements, etc. Wood very flexible. Needs a warm, moist soil. Both bark and leaves are rich in tannin.

Eucalyptus corymbosa: Needs warm and damp soil. The leaves produce latex which is used for making gum.

Eucalyptus corynocalyx: Of great height and growth, attaining a height of 30 metres with 1.50 to 1.80 metres in diameter. Is not very exacting as to the ground in which it is planted, developing well in all temperatures, excepting that it suffers under frost.

The trunk is used for bridges and posts. Damp situations. Ship-building. Yields citronellon and genariol a volatile liquid.

Eucalyptus creba: A fine tree of agreeable aspect. Trunk fine and erect. Is the most picturesque of all the Eucalyptus trees. Has a very flexible wood and is regarded as the best for all kinds of building both civil and naval.

Specific gravity: From 1,050 to 1,120 kgs.

Needs a temperate and humid soil and suffers from frost.

Eucalyptus diversicolor: Tree of large size, branching and
with spreading top. Produces a timber for both civil and naval constructions. Carts, first-class carriages, etc. Has a very rapid growth and needs a temperate climate and humid soil, suffering in frost. Is very suitable for planting in forest for production of wood for fuel. The wood does not lend itself well to exterior work in situations exposed to rough and changeable weather.

**Eucalyptus fissilis**: Recommended by Sr. Pereira Fonseca.

**Eucalyptus globulus**: This is one of the most useful trees in the world. It attains a height of 35 to 40 metres and 1 to 1.2 metre in diameter. Needs temperate and damp soil with little exposure to frost. Has rapid growth and sends out shoots when felled. The bark and leaves are very rich in tannin. Yields cincol. Gives a wood suitable for all kinds of naval and civil construction and produces very good wood for fuel. It has an average specific gravity of 1,058 kgs.

**Eucalyptus leucoxylum**: Has the same uses as the *Eucalyptus globulus* and is not subject to injury from frost. Not so large a growth as *E. globulus*.

**Eucalyptus marginata**: A tree of regular growth, but very exacting as regards the soil, it will only grow well in hot and damp climates. The wood is suitable for exterior work and damp situations. Contains an acid principle and yields much resin.

**Eucalyptus microtheca**: This tree has not a fine appearance, it is small, only attaining a height of 15 metres at most, with a diameter of 60 cms. Hot and dry situations but suffers little from frost although it may be severe. Produces a dark-brown or red wood, good for bridges, posts and damp situations.

The roots of this Eucalyptus always contain a large quantity of water which may be used for drinking.

**Eucalyptus robusta**: A tree of regular growth and of fine aspect. Needs temperate and damp situations which are little subject to frost. The wood is not suitable for important work, but it is of first-rate quality for damp situations. Yields kino and other resins. Is absolutely exempt from insects.

**Eucalyptus rostrata**: Is of very rapid growth. Varies much in height and appearance. It is considered by Baron von Müller as the most valuable variety and is highly commended by Pereira da Fonseca. Needs a temperate, humid climate little subject to frost. It may be cut for firewood at intervals of seven years, fully reproducing itself after twice cutting: The wood is red, which colour gradually fades. Is extraordinarily resistant against damp, and according to von Müller is one of the most durable timbers in the world. Very hard to carve.
Yields **kino** and other resins. Is used for desiccation and ornamentation.

**Eucalyptus sydoroxylos**: An erect tree, not very leafy, branches long and high. The wood is used for exterior work, posts, bridges, and damp situations. It is used very much for drying the soil and yields large quantities of nectar for the bees. Has a rapid growth. Mr. **James** advises the planting of this tree along lines of railway. Has a mean specific gravity of 1,157 kilogs.

**Eucalyptus tereticornis**: Tree of regular growth, having few branches and little foliage. Needs a temperate and damp soil, little subject to frost.

Wood of reddish colour, used for interior work. It is the variety of Eucalyptus which yields best return in the timber market.

**Eucalyptus viminalis**: A tree of gigantic proportions and rapid growth, attaining a height of 30 metres and a diameter of 1.5 metre. The wood is suitable for ship-building and for all kinds of interior work. Needs a temperate, damp situation, little exposed to frost.

In addition to the above-varieties, **Pereira da Fonseca** recommends the following: **Euc. fissilis**, **Euc. gomocephala**, **Euc. longifolia**, **Euc. resinifera**, and **Euc. rudis**, which succeed admirably well in Rio de Janeiro.

**Faveiro**.

**VARIETIES**: Faveiro amarelo. Faveiro vermelho.

**SYNONYMS**: Faveiro amarelo or Faveiro do Campo; Faveiro vermelho or Faveiro do Matto.

**CLASSIFICATION**: Pterodon pubescens Benth.

**Order**: Leguminosae.

**DESCRIPTION**: **Faveiro amarelo**: Trunks from 4 to 5 metres in length and 30 to 40 cms. in diameter.

Colour whitish yellow, grain coarse and straight. Hard to cut.

**Faveiro vermelho**: Trunks from 6 to 8 metres in length with 40 to 50 cms. in diameter.

Colour reddish. Grain coarse and straight. Hard to cut.

**SPECIFIC GRAVITY**: **Faveiro amarelo**: From 948 to 1,089 kgs.

**RESISTANCE**: **Faveiro amarelo**: To crushing: 658 kgs.; to flex-ion: 1,209 kgs.

**USES**: Bridges, posts, damp situations. Sleepers of first-class quality. Is not of great adaptability because of shrinking.
The Faveiro amarelo is superior to the Faveiro vermelho, but both are put to the same uses.

**HABITAT:** West of the State.

**OBSERVATIONS:** Tall, coarse trees, erect, not branching much and with little foliage. Fine, smooth whitish or brown bark. Leaves regular, isolated, rough and of a dark green colour. Large flowers of a dark ashen gray and very pretty. The fruit is a kind of twisted acorn. Flowers in winter.

**Garapa Amarella.**

**SYNONYMS:** Garapriapunha. Grapeapunha.

**CLASSIFICATION:** Apuleia praecox Mart.

**Order:** Leguminosae.

**DESCRIPTION:** Trunks from 8 to 10 metres in length and 60 to 80 cms. in diameter. Colour light yellow, very uniform. Hard to cut.

**SPECIFIC GRAVITY:** From 773 to 927 kgs.

**RESISTANCE:** To crushing: 860 kgs.; to bending: 608 kgs.

**USES:** Ship-building, cabinet-work, bridges, pontoons. Work exposed to weather. Is of first-rate quality. Sleepers of first quality, lasting 11 years.

**HABITAT:** North of the State and Sierra del Mar.

**OBSERVATIONS:** An erect tree, branching little and not much foliage. Isolated leaves, large coarse and soft. Flowers crimson and large. Fruit green, large and round.

**Genipapo.**

**CLASSIFICATION:** Genipa americana Lin.

**Family:** Rubiaceae. **Order:** Rubinae.

**DESCRIPTION:** Colour, very uniformly light yellow. Straight and very compact leaves. Small layer of alburnum. Easy to cut, smooth.

**SPECIFIC GRAVITY:** From 670 to 850 kgs.

**RESISTANCE:** To crushing: 860 kgs.; to flexion: 1,520 kgs.

**USES:** Ship-building, carts, first-class carriages. Fencing sticks. Agricultural and industrial implements and tools. The wood is of great flexibility and elasticity. The fruit when green is medicinal against syphilis. The new leaves produce a black dye.

**HABITAT:** North of the State. Valley of the Mogy-Guassú.

**OBSERVATIONS:** Very tall tree, leafy and freely branching. Bark ashen grey or brown. Leaves large, glistening and...
Faveiro.
opposite. Large yellow flowers, forming tubes. The fruit is round with a diameter of 15 cms. arranged in circles, very good for preserves.

**Goiabeira do Matto.**


**Gonçalo Alves.**

**SYNONYM:** Guarabú rajado.

**CLASSIFICATION:** Astronium fraxinifolium **Schott.**

- **Family:** Anacardiaceae. **Order:** Sapindinae.

**DESCRIPTION:** Trunks from 8 to 10 metres in length and 0.60 to 1 metre in diameter.

- Colour light-brown with very regular black patches appearing longitudinally. Grain fine and straight. Hard to cut.

**SPECIFIC GRAVITY:** From 0.855 to 1.049 kgs.

**RESISTANCE:** To crushing: 618 kgs.


**HABITAT:** North of the State. Sierra del *Mar.*

**OBSERVATIONS:** High and broad-topped. Erect. Smooth, resinous bark of rusty appearance.

**Graúna.**

**VARIETIES:** Graúna parda. Graúna preta.


**CLASSIFICATION:** Melanoxylon Brauna **Schott.**

- **Order:** Leguminosae.

**DESCRIPTION:** Trunks from 8 to 10 metres in length and 60 to 80 cms. in diameter.

- Colour dark-brown or black, with longitudinal light patches. Grain coarse, straight and tinged with red.

- Layer of alburnum or sap-wood. Very hard to carve.
SPECIFIC GRAVITY: Graüna parda: From 843 to 1,060 kgs.
Graüna preta: From 943 to 1,124 kgs.

USES: Bridges, posts and damp situations. Coarse flooring, cabinet-work, carts. Both varieties give sleepers of first-class quality, lasting 11 years. A dye is obtained from this plant which is good for dying textile fabrics. Bark astringent.

HABITAT: North of the State, Sierra del Mar.

OBSERVATIONS: A tree of large growth with spreading top. Leaves compound, leaflets small and very glossy, distributed in palm-like fashion. Flowers yellow and in boxlike covers. Fruit large with cavities containing the seeds, and depressions between the cavities.

Grossahy.

VARIETIES: Grossahy. Grossahy azeite.
CLASSIFICATION: Moldenhauera floribunda Schrad.

Order: Leguminosae.

DESCRIPTION: Trunks from 8 to 10 metres in length and 50 to 60 cms. in diameter.

Colour light-reddish, with indistinct patches. Grain coarse and straight. Hard to cut.

SPECIFIC GRAVITY: Grossahy: From 712 to 865 kgs.; Grossahy azeite: From 723 to 1,099 kgs.

RESISTANCE: Grossahy: To crushing: 516 kgs.; Grossahy azeite: To crushing: 582 kgs.


The Grossahy azeite is superior to the other variety, making sleepers of first-rate quality, lasting 12 years.

HABITAT: Sierra del Mar.

OBSERVATIONS: Both varieties have medicinal properties.

Grumichaba.

VARIETIES: Grumichaba branca. Grumichaba vermelha.
SYNONYMS: Grumichaba. Grumixáva.
CLASSIFICATION: Eugenia brasiliensis Lin.


DESCRIPTION: White or yellowish, with reddish patches. Grain fine and contorted.

Hard to carve.
SPECIFIC GRAVITY: Grumichaba branca: From 600 to 720 kgs.;
Grumichaba vermelha: From 673 to 719 kgs.
RESISTANCE: Grumichaba vermelha: To crushing: 327 kgs.;
to bending: 890 kgs.
USES: Ordinary furniture. Frame-work, boxes, etc. The Grumichaba vermelha is superior to the Grumichaba branca.
HABITAT: Is common throughout the State.
OBSERVATIONS: Warps very much. Tree of normal growth, with few branches and little foliage.

Guabíróba.

Campomanesia sp. var. Family: Myrtaceae. Order: Myrtiflorae.
A tree of small growth, branching much and with good foliage, bark fine and smooth. Leaves broad, flowers white aromatic and solitary. Fruit yellow, small and edible, producing a very rigid wood of great elasticity. Sp. gr. from 674 to 817 kgs. and resistance to crushing of 611 kgs. Is used for carpenters' tools, cabinet-work, carts, etc. Is common throughout the State.

Guacá.

There are two varieties the branco and the vermelho. Fine trees growing erect, high and with large heads. Bark white and smooth. Leaves broad and light in colour. Fruit large, odorous, soft and edible. Is used for interior work, oars for boats, masts, etc. Is very light and resistant. Abounds in the Marinhas.

Guajíssara.

SYNONYM: Bugre.
DESCRIPTION: Trunks from 10 to 12 metres in length and 0.80 to 1 metre in diameter.
Colour dark with light irregular patches. Grain very coarse, irregular, with many cracks and knots. Very hard to cut.
SPECIFIC GRAVITY: From 1,060 to 1,140 kgs.
USES: Bridges, beams. Coarse wood-work, is not suitable for
many constructions on account of shrinkage. For damp situations of first-class quality. Yields a caustic resin, and in springtime a liquid pleasant to drink.

**HABITAT:** Sierra de la Mantiqueira and in the West.

**OBSERVATIONS:** Where this tree grows it may be taken as an indication that the land is good for cultivation. Of erect growth, with few branches and little foliage. Bark thick, rough and fissured. Leaves small, whitish and palmate. Large flowers, yellow, perfumed and in sheaths. Fruit a small pod, rounded and twisted.

**Gua-Mirim.**

There are two varieties: the *Gua-mirim-ferro* and the *Gua-mirim-guassú*. Trees of small growth with trunks of 4 metres long and 40 cms. in diameter. Sp. gr. The *Gua-mirim-ferro* from 720 to 842 kgs. and the *Gua-mirim-guassú* from 670 to 803 kgs. The wood is much used for gardeners' frames, hurdles and fencing, damp situations, in small pieces, lasting only a short time if used large. The *Gua-mirim-ferro* makes sleepers of second quality, lasting for 6 years. Grows in the neighbourhood of the Capital and in the Valley of the Ribeira.

There is another variety of *Gua-mirim*, the *Gua-mirim-lanceta* which is used only for fire-wood and may be felled every 5 years, in which time it will grow to fit size again.

**Guanandí.**

**VARIETIES:** Guanandi amarelo.

" cedro.
" piolho.
" vermelho.

**SYNONYMS:** Inglez jacaréubá. Landim.

**CLASSIFICATION:** Calophyllum brasiliensis Camb.  
Family: Guttiferae. **Order:** Cistiflorae.

**DESCRIPTION:** Trunks from 6 to 8 metres in length with 60 to 80 cms. diameter.

Colour reddish, very uniform. Grain fine and straight. Hard to cut.

There are small differences in colour and veining between the various varieties except the **Guanandi cedro** which has the same appearance.
SPECIFIC GRAVITY: Guanandi ferro: From 720 to 810 kgs.; Guanandi vermelho: From 635 to 802 kgs.

RESISTANCE: Guanandi vermelho: To crushing: 441 kgs.

USES: Ship-building, masts. Exterior work. Second quality. The Guanandi amarelo is the best of all the varieties; the Guanandi cedro is used for the same purposes as the Cedro vermelho but is a little the inferior. The Guanandi piolho is of inferior quality and is suitable only for interior work.

These trees yield a resin useful to the veterinary, surgeon. A layer of alburnum.

HABITAT: Valley of the Parahyba and the Marinhas.

OBSERVATIONS: Trees with large tops, branching freely and with good foliage. Bark brown, coarse and rugged. Flowers white and small. Fruit an oily capsule. The young trees yield the Landim balsam, used in cases of ulceration and for wounds of long standing.

Guapéva.


Wood of reddish colour, dark grain netted and rough. Hard to carve. Sp. gr. a mean of 758 kgs. and the resistance to crushing is 468 kgs. It is used for interior work in dry situations and cannot be used to advantage for work which suffers by shrinkage of its parts. Grows in the valley of the Mogy-Guassú.

Guaperúvú.

A tree of large growth, very erect, branches straight and long, leaflets very small and its leaves large. Bark light-brown and very smooth. It is the Schizolobium excelsum Vog. Order: Leguminosae. Has a specific gravity of 330 to 380 kgs. Its trunk is from 10 to 12 metres in length with a diameter of 0.60 to 1 metre. Is used for marine canoes. Interior work. Framework. Boxes. The bark is used for tanning.

The Guaperúvú in the Marinhas is much superior in quality to those of the rest of the State.
Guarabú.

VARIETIES: Guarabú branco. Guarabú preto.


CLASSIFICATION: Peltogyne confertiflora Benth.
Order: Leguminosae.

DESCRIPTION: Trunks from 8 to 10 metres in length with 60 to 80 cms. diameter.
Colour light crimson or dark crimson, uniform. Grain straight and fine. Hard to carve.

SPECIFIC GRAVITY: Guarabú branco: From 855 to 1,017 kgs.;
Guarabú preto: From 1,000 to 1,052 kgs.

RESISTANCE: Guarabú branco: To crushing: 618 kgs.; Guarabú preto: To crushing: 685 kgs.

USES: Ship-building. Spokes and hubs of cart-wheels. Work requiring high resistance. Exterior work, damp situations. The Guarabú branco is superior to the Guarabú preto. Sleepers of second-class quality. Yields an odoruous resin used medicinally and having the same uses as turpentine, producing also a red dye used for textile fabrics.
Both varieties are put to the same uses.

HABITAT: Marinhos.

OBSERVATIONS: Trees of large growth.

Guaranhem.


CLASSIFICATION: Chrysophyllum Buranhem Ried.


SPECIFIC GRAVITY: From 869 to 939 kgs.

RESISTANCE: To crushing: 612 kgs.; to bending: 612 kgs.

USES: For various kinds of carriages and carts, spokes, etc. Woodwork where flexibility is required. Interior work. Bark astringent and medicinal, useful in cases of haemorrhage and for leucorrhoea. Roots contain pectic acid.

HABITAT: Sierra do Mar, rare in other parts.

OBSERVATIONS: Tree of large growth, bark smooth and dark-red, with sweetish taste but astringent. Longitudinal cracks. Fruit small and like olives.
Guaritá.
Guarantá.

SYNONYM: Pão duro.
CLASSIFICATION: Esenbeckia leiocarpa Engl.
DESCRIPTION: Trunks from 4 to 6 metres in length and 40 to 50 cms. in diameter. Colour uniformly yellow, with coarse grain, golden and brilliant.
   Large layer of alburnum or sap-wood.
   Hard to cut.
SPECIFIC GRAVITY: From 968 to 1,098 kgs.
RESISTANCE: To crushing: 672 kgs.; to bending: 1,640 kgs.
USES: Bridges, etc., damp situations. Should always be used in small lengths.
HABITAT: Valley of the Tieté and of the Alto Parahyba.
OBSERVATIONS: Small tree, erect and slim. Leaves large and round.

Guaritá.

VARIETIES: Guaritá roxo. Guaritá vermelho.
DESCRIPTION: Trunks from 8 to 10 metres in length and 50 to 60 cms. in diameter. Colour light red or slightly crimson with pronounced black patches.
   Grain fine and straight. Very often forming small cavities.
   Layer of alburnum. Hard to carve.
SPECIFIC GRAVITY: Guaritá roxo: From 936 to 1,007 kgs.; Guaritá vermelho: From 880 to 990 kgs.
RESISTANCE: Guaritá vermelho: To crushing: 681 kgs.; to bending: 1,371 kgs.
   Is a handsome wood for polishing.
HABITAT: West and South of the State, being rare in other parts.
OBSERVATIONS: A tree of large growth.

Guatambú.

VARIETIES: Guatambú amarelo. Guatambú vermelho.
CLASSIFICATION: Aspidosperma macrocarpum Mart.
DESCRIPTION: Trunks of 10 metres in length and 80 cms. in diameter. Colour light-yellow or red, with lighter patches.
   Grain straight and fine. Small layer of alburnum. Easy to carve.
SPECIFIC GRAVITY: Guatambú amarello: From 750 to 796 kilogs.; Guatambú vermelho: From 815 to 900 kgs.

RESISTANCE: Guatambú amarello: To crushing: 529 kgs.; to bending: 1,428 kgs.

Guatambú vermelho: To crushing: 421 kgs.; to bending: 798 kgs.

USES: Ship-building, dwellings, etc. Chairs. Polished work. Makes very flexible flooring. The wood of the branches is used for agricultural implements and walking-sticks. The Guatambú vermelho is superior to the Guatambú amarello and makes a sleeper of third-class quality, lasting 5 years.

HABITAT: Sierra del Mar. Valley of the Tieté. Is met with in all parts of the State.

OBSERVATIONS: Tree of large growth, erect with few branches. Leaves large and broad. Fruit large with cavities. Bark smooth.

Guayaruva.


A tree of erect growth, branching but with little foliage. Bark smooth like that of the Goiabeira. Interior work, wooden bowls for water. Wood white to yellow, very uniform. Grain fine and straight. Flowers white, isolated and small.

Guayuvíra.

DESCRIPTION: Trunks from 6 to 8 metres in length and 60 to 80 cms. in diameter.

Colour black with patches. Grain fine. Large layer of alburnum, of dark yellow colour, making handsome markings in the wood.

Very hard to cut.

SPECIFIC GRAVITY: From 1,045 to 1,145 kgs.


HABITAT: Valley of the Mogy-Guassú and of the Tieté, being rarely found in other parts of the State.

OBSERVATIONS: A high tree, branching freely and with large top, the branches growing from near the root. Leaves of
Guayuvira.
light brown colour, small and isolated. Fruit small, with downy green hairs.  
Bark fine and smooth.  
Wood very flexible.

**Imbira.**

Bombax (var. sp.). **Family:** Bombaceae. **Order:** Sterculiaceae. Pão imbira. Imbirinha.  
Wood of inferior quality, suitable for interior work, etc.  
Sp. gr. 510 kgs.  
Is found in all parts of the State.

**Imbirussú.**

Bombax cyathophorum K. Schum. **Family:** Bombaceae. **Order:** Sterculiaceae.  
Wood of inferior quality, used for making boxes. Has a sp. gr. of 410 kgs.  
Is met with in all parts of the State.

**Ingá.**

Inga edulis Mart. **Order:** Leguminosae.  
Ingá ferradura.  
Wood of inferior quality. Suitable for interior work and boxes, etc.  
Has a sp. gr. of 790 kgs.  
Is common throughout the State.

**Ipé.**

**VARIETIES:** Ipé amarelo.  
.. cascudo.  
.. do campo.  
.. jabotiá.  
.. rôxo.  
.. tabaco.  
.. una.  
**SYNONYMS:** Ipé rôxo or preto.  
.. jabotiá or falhas rôxas.  
**CLASSIFICATION:** Ipé amarelo: Tecoma ochracea Cham.  
.. do campo: Tecoma araliacea P. D C.  
.. tabaco: Tecoma pedicellata Bur. et Sch.
Ipé una: Tecoma sp. F. All.
" rôxo: Tecoma impetiginosa Mart.
All of the Family: Bignoniaceae. Order: Personatae.

DESCRIPTION: The Ipé amarello, Ipé rôxo and Ipé tabaco have trunks from 6 to 8 metres in length and 60 to 80 cms. in diameter. The others are smaller. The Ipé amarello, Ipé cascudo, and the Ipé do campo are of a light yellow or whitish colour, with very small and regular grain.

The other varieties have a dark colour, patchy and with coarse and netted grain with cracks in the trunk.

All hard to carve.

SPECIFIC GRAVITY: Ipé amarello: From 816 to 880 kgs.
,, cascudo: From 805 to 870 kgs.
,, do campo: From 819 to 997 kgs.
,, tabaco: From 992 to 1,099 kgs.
,, una: From 785 to 1,046 kgs.

RESISTANCE: Ipé ararello: To crushing: 802 kgs.
,, do campo: To bending: 1,063 kgs.
,, rôxo: To crushing: 728 kgs.
,, tabaco: To crushing: 885 kgs.
To flexion: 1,834 kgs.
,, una: To crushing: 728 kgs.

USES: All the varieties of Ipé are used for carts, barrels, casks, bridges and posts. Damp situations. Exterior work.

The Ipé tabaco makes a sleeper of first-class quality and duration of 11 years.

The Ipé una, sleepers of second quality, lasting 9 years.
The Ipé tabaco has bast which is used to make cigarette-papers and is of medicinal value against angina.

All the Ipés have astringent bark and are medicinal against syphilis and syphilitic ulcers.

HABITAT: Throughout the State.

OBSERVATIONS: In the North of the State this tree predominates with all its varieties together with the Piuva.

They are trees of small growth, with few branches but long, leaves large, and flowers very abundant, totally covering the trees.

Jacarandá.

VARIETIES: Jacaranda branco.
,, cabiúna.
,, preto.
,, rosa.
Ipê.
Jacaranda rôxo.
Jacarandásinho.
Jacarandá tã.

,, tã amarello.
,, violeta.
SYNONYMS: Jacarandá cabiúna or Jacarandá pitanga.
CLASSIFICATION: Jacarandá: Platypodium elegans Vog.
,, preto: Machaerium legale Benth.
,, rôxo: Machaerium firmum Benth.
,, tã: Machaerium Allemanii Benth.
,, violeta: Mach. violaceum Vog.

Order: Leguminosae.
DESCRIPTION: Trunks from 6 to 8 metres in length with 60 to 80 cms. diameter.


Jacarandá preto: Colour black and glossy with brown patches. Grain very fine. Hard to cut.


Jacarandá tã: Colour brown, light and dark, with black veins. Grain fine and straight. Hard to carve.

Jacarandá violeta: Colour dark-yellow to light-brown, with crimson veins and patches. Grain very fine. Hard to cut.

All the Jacarandás have a thick layer of alburnum of good quality and suitable for working.

SPECIFIC GRAVITY: Jacarandá branco: From 705 to 820 kgs.
,, cabiúna: From 815 to 919 kgs.
,, preto: From 818 to 961 kgs.
,, tã: From 994 to 1,234 kgs.
,, tã amarello: From 810 to 890 kgs.
,, rosa: From 843 to 1,196 kgs.
,, rôxo: From 923 to 1,123 kgs.
,, violeta: From 1,046 to 1,299 kgs.

RESISTANCE: Jacarandá cabiúna: To crushing: 791 kgs.
,, preto: To crushing: 425 kgs.
,, To bending: 1,171 kgs.
,, rosa: To crushing: 777 kgs.
,, tã: To crushing: 1,043 kgs.
,, violeta: To crushing: 1,073 kgs.

USES: Very valuable wood, suitable for first-class cabinet-making. It is of first-rate quality for exterior work, bridges and beams. Damp situations. Ship-building.
The Jacarandá rosa as sleepers will last 12 years. The cabiúna róxo and tã last 11 years. The Jacarandá branco and the Jacarandásinho are inferior to the others.

Jacaré.

Piptadenia communis Benth.
Order: Leguminosae.
A tree of normal growth, having few branches and little foliage. Leaflets small, palm-like compound leaves. Fruit small with coarse pod, covered with teeth, like those of the animal, the Jacaré, on the new branches, disappearing on the older ones, Sp. gr. from 910 to 1,025 kilogs. Wood white in colour, compact: grain fine and easy to carve. Used for interior-work, flooring and carving. The bark is used for tanning.

Jaguatirão.

Tibouchina mutabilis Cogn.
Timber of inferior quality, suitable for interior work only, boxes and flooring.
Specific Gravity: 660 kgs.
Is met with in the North, rarely in other parts of the State.

Jantar.

A tree of erect growth, branching freely with good foliage, leaves large and round, bark thin and cracked. Wood of red colour with grain coarse and conspicuous. Large layer of alburnum forming a small vein in the trunk.
Specific gravity: From 1,120 to 1,210 kgs. Is used for bridges and posts. Damp situations. Exterior work, is of first-class quality. Is found in the valley of the Mogy-Guassú and of the Tieté.

Jatahy.

VARIETIES: Jatahy.
,, péba.
,, vermelho.
Jacarandá.
SYNONYMS: Gitahy. Jitahy. Oleo de Jatahy or Jatoba (q. v.)
CLASSIFICATION: Hymenaea stignocarpa Mart.
   Order: Leguminosae.
DESCRIPTION: Trunks from 8 to 10 metres in length with 60 to 80 cms. diameter.
   Colour red with yellow patches. Grain fine and netted. Hard to carve.
SPECIFIC GRAVITY Jatahy: From 860 to 902 kgs.
   " péba: From 837 to 900 kgs.
   " vermelho: From 850 to 937 kgs.
RESISTANCE: Jatahy: To crushing: 560 kgs.; to bending: 1,315 kgs.
   Jatahy péba: To bending: 550 kgs.
HABITAT: North of the State. Valley of the Tieté. Is rarely met with in other parts of the State.

Jatobá.

VARIETIES: Jatobá. Jatobá rôxo.
SYNONYM: Oleo de Jatahy.
CLASSIFICATION: Hymenaea stilbocarpa Hayne.
   Order: Leguminosac.
DESCRIPTION: Trunks from 6 to 8 metres in length and 60 to 80 cms. in diameter.
   Colour light-red or brown, very uniform. Grain coarse and in distinct layers, forming symmetrical markings on transverse section.
   Layer of alburnum. Hard to carve.
SPECIFIC GRAVITY: Jatobá: From 944 to 1,027 kgs. Jatoba rôxo: From 826 to 908 kgs.
RESISTANCE: Jatobá: To crushing: 841 kgs.; to flexion: 1,325 kilogs.
   Jatobá rôxo: To crushing: 841 kgs.
   Both make sleepers of 11 years duration. Bark astringent. Yields a medicinal oil and the resin, which burns like kerosine, is used in making varnish.
HABITAT: Throughout the State.
OBSERVATIONS: A tree of normal growth with spreading top. The fruit is large, containing 5 seeds.
Jequitibá.

VARIETIES: Jequitibá amarelo.
   ,, branco.
   ,, vermelho.
SYNONYMS: Jequitibá vermelho or rosa.
DESCRIPTION: Trunks from 10 to 12 metres in length and 1 to 1.20 metre in diameter. Layer of alburnum. Easily carved.
   Jequitibá amarelo: Colour yellow, very uniform, grain fine and straight.
   Jequitibá branco: Colour white, grain fine and straight.
   Jequitibá vermelho: Colour red, very uniform, grain fine and straight.
SPECIFIC GRAVITY: Jequitibá branco: From 616 to 691 kgs.
   Jequitibá vermelho: From 641 to 699 kilogs.
RESISTANCE: Jequitibá branco: To crushing: 396 kgs.; To flexion: 938 kgs.; Jequitibá vermelho: To crushing: 750 kgs.; to flexion: 375 kgs.
USES: Flooring. Scantlings. Boxes. The Jequitibá vermelho is superior to the others and is used for carving. The bark is astringent and medicinal.
HABITAT: Is common throughout the State.
OBSERVATIONS: This is the largest tree of S. Paulo and one of the largest in the world. There are some with a diameter of more than 2 metres. Is remarkable for the beauty of its form. Flowers small and white or pink. Fruit long and cylindrical in shape.

Jissára.

Jussara or Gissara. This is a cocoa-palm of large growth and very leafy, and is used for supporting-structures. It is of first-rate quality for such purposes. Is common throughout the State.

Larangeira do Matto.

A tree similar in its leaves and newer branches to the
Jequitibá.
Jequitibá.
ordinary orange. Its wood is white in colour, grain fine and conspicuous. Easy to carve. Is used for cabinet-work, turning, wooden spoons and vessels. It has a sp. gr. of 785 to 1,010 kgs. Presents a handsome surface for polishing. Is found in abundance in the valley of the Alto Parahyba

**Leiteiro.**

Pão de leite. Sapium biglandulosum Müll. Arg. **Family:** Euphorbiaceae. **Order:** Tricoccae. A small tree of upright growth with few branches. Leaves broad, fleshy and large. Bark smooth and thick. Is used for roofing-beams and rafters, etc. Interior work. Sp. gr. 1,222 kgs. Is found in all parts of the State.

**Louro.**

**VARIETIES:** Louro amarello. 
" cheiroso. 
" pardo.

**SYNONYMS:** Louro pardo or Vinheiro.

**CLASSIFICATION:** There are various representatives of the families Cordiaceae and Lauraceae.

**DESCRIPTION:** Trunks of 8 metres in length and 60 to 80 cms. in diameter. Colour light-yellow with darker patches. Grain very fine and meshed. Easy to carve.

**SPECIFIC GRAVITY:** Louro amarello: From 521 to 923 kgs. Louro cheiroso: From 590 to 901 kgs. Louro pardo: From 855 to 853 kgs.

**RESISTANCE:** Louro amarello: To crushing: 681 kgs Louro pardo: To crushing: 422 kgs.; to flexion: 704 kgs.

**USES:** Ship-building. Canoes. Oars. Cabinet-work and turning. Interior work. First-class furniture.

**HABITAT:** Is found in nearly all parts of the State.

**OBSERVATIONS:** A tree of large growth. In Iguape is found another variety called the Louro preto, which I have not yet studied.

**Louveira.**

**CLASSIFICATION:** Cyclolobium sp. **Order:** Leguminosae.

**DESCRIPTION:** Trunks from 8 to 10 metres in length and 60 cms. in diameter. Colour, a uniform light-red, grain coarse
and netted, presenting beautiful markings on the worked surface.

**SPECIFIC GRAVITY:** From 980 to 1,057 kgs.

**USES:** High-class cabinet-work. Exterior work and supporting-structures, first quality.

**HABITAT:** Valley of the *Mogy-Guassú*, and is rare in the Sierra de la *Mantiqueira*.

**Mamica de Porca.**


Wood of inferior quality, used for interior work and flooring. Sp. gr.: 705 kgs. Is found in the North of the State and in the *Marinhas*.

**Mandioqueira.**


This is a tree of large growth with trunks of 6 to 8 metres long, and 60 to 80 cms. in diameter with varying colours in the longitudinal and transverse fibres. Grain coarse and straight. Sp. gr. from 710 to 780 kgs.

Is very suitable for making match-boxes.

Is also employed for flooring.

**Massaranaduba.**

**VARIETIES:** *Massaranaduba amarella.*

" de leite.

" vermelha.

**SYNONYMS:** Maçaranaduba. Aprauá. Chauá.:  


**SPECIFIC GRAVITY:**  

*Massaranaduba amarella:* From 700 to 789 kgs.  

*Massaranaduba de leite:* From 902 to 971 kgs.  

*Massaranaduba vermelha:* From 1,002 to 1,079 kgs.

**RESISTANCE:**  

*Mass. de leite:* To crushing: 506 kgs.; to flexion: 865 kgs.

**USES:**  

*Mass. amarella:* Supporting-structures, beams and work exposed to the weather. Dry situations.

Mandioqueira.
of inferior quality, and a resin which is used as glue for wood-work. It makes a sleeper of first-rate quality, lasting 11 years.

Mass. vermelha: Has the same uses as the Mass. amarella.

HABITAT: Is common throughout the State.

OBSERVATIONS: A tree of free growth and with a large top. Secretes a milky juice in every part of the bark.

Leaves at the ends of the branches, in clusters. Flowers white, greenish. The fruit is of three colours: white, greenish and yellow. On the southern part of the coast these are the only trees upon the swamps.

Milho Cosido.


DESCRIPTION: Trunks from 6 to 8 metres in length and 50 to 60 cms. in diameter. Colour yellow. The trunk has small cracks running in a longitudinal direction. Grain straight, fine and compact. Hard to carve.

SPECIFIC GRAVITY: From 823 to 971 kgs.

RESISTANCE: To crushing: 714 kgs.

USES: Cabinet-work. Interior work. Flooring, scaffolding.

HABITAT: Sierra del Mar.

OBSERVATION: A rare timber.

Monjoleiro Preto.

Pithecolobium sp. Order: Leguminosae.

Guarucaia. A tree of small growth, trunk twisted. Bark dark-coloured and thin. Leaflets small, with inconspicuous veins. The fruit is a broad pod, with six seeds. Is employed in scaffoldings, fencing, posts, in damp situations, of first-rate quality.

Is met with in the valley of the Mogy-Guassá and of the Parahyba.

Mossotahyba.

VARIETIES: Mossotahyba parda.

" preta.

" vermelha.

CLASSIFICATION: Zollernia ilicifolia Vog.

DESCRIPTION: Trunks from 10 to 12 metres in length and 60 to 80 cms. in diameter. Layer of alburnum. Hard to cut.

SPECIFIC GRAVITY: Moss. parda: From 813 to 1,265 kgs. Moss. preta: From 1,000 to 1,048 kgs. Moss. vermelha: From 1,117 to 1,418 kgs.

RESISTANCE: Moss. vermelha: To crushing: 1,057 kgs.; to bending: 874 kgs.


HABITAT: Sierra del Mar. Valley of the Ribeira.

OBSERVATIONS: A tall tree with spreading top, branching freely and with good foliage. Bark, thick, ribbed and black. The branches burn even while green.

Nhanduparana.

A timber suitable for ordinary purposes. Colour white or red. Grain fine, straight and compact. Very resistant. Interior work, furniture, polished work. Has the same uses as the Guatambú amarello.

Specific gravity: 680 kgs.

Grows in the North of the State.

A tall tree, branching freely and with good foliage. Bark thin, rough and red. Leaves small.

Oity.

SYNONYMS: Aiti. Guayti.

CLASSIFICATION: Moquilea tomentosa Benth.

Family: Rosaceae. Order: Rosiflorae.

DESCRIPTION: Trunks from 8 to 10 metres in length and 60 to 80 cms. in diameter.

SPECIFIC GRAVITY: From 652 to 792 kgs.

RESISTANCE: To crushing: 536 kgs.


HABITAT: Sierra del Mar. North of the State.

Oleo pardo.

CLASSIFICATION: Myrocarpus frondosus F. Allem.
Oleo de Copauva.
Order: Leguminosae.

DESCRIPTION: Trunks from 6 to 8 metres in length and 60 to 80 cms. in diameter.

Colour light-brown, with dark and yellowish patches. Grain fine and straight, forming pleasing tracery in cross section. Rather hard to carve.

SPECIFIC GRAVITY: From 730 to 992 kgs.

RESISTANCE: To crushing: 670 kgs.; to bending: 716 kgs.


HABITAT: North of the State. Sierra del Mar.

OBSERVATIONS: The timber of the *Oleo pardo* is one of the most handsome in the world. The wood-work of old churches obtained from the *Oleo pardo* is renowned for its fine qualities.

**Oleo Vermelho.**

SYNONYM: Bálsamo.

CLASSIFICATION: *Myrocarpus Erythoxylum F. All.?*

Order: Leguminosae.

DESCRIPTION: Trunks from 8 to 10 metres in length and 60 to 80 cms. in diameter.

Colour light-red, with darker patches. Grain fine, straight and disposed in layers, forming handsome markings in cross section.

Layer of alburnum. Hard to cut.

SPECIFIC GRAVITY: From 777 to 1,064 kgs.

RESISTANCE: To crushing: 868 kgs.; to bending: 790 kgs.


HABITAT: Valley of the Parahyba. Sierra del Mar.

OBSERVATIONS: The same may be said of this tree as was stated of the *Oleo pardo*.

**Orindeúva.**

SYNONYMS: Aroeira preta. Urundeuva.

CLASSIFICATION: *Astronium Urundeuva Engl.*


DESCRIPTION: Trunks from 6 to 8 metres in length and 40
to 60 cms. in diameter. Colour light or dark brown, with varying colours on the surface. Grain very coarse and netted. Layer of alburnum. Hard to cut.

**SPECIFIC GRAVITY**: From 1,055 to 1,278 kgs.

**RESISTANCE**: To crushing: 661 kgs.; to flexion: 1,170 kgs.

**USES**: Scaffolding, posts. Damp situations. Is the best timber of S. Paulo for work exposed to the action of water. It is not suitable for use in small dimensions on account of shrinking. The bark has medicinal properties and is used also for tanning. Beautiful surface for polishing.

**HABITAT**: Valley of the Mogy-Guassú and in the western part of the State. Sierra del Mar.

**OBSERVATIONS**: In Mogy-Guassú and in Ubatuba, districts differing entirely in the quality of soil, climate and altitude, one may meet with huts or humble dwellings constructed of the timber of the Orindeúva more than a century ago and the wood is still in perfect condition.

**Pão Brasil.**

**VARIETIES**: Pão Brazil claro.

" " escuro.


**CLASSIFICATION**: Caesalpina echinata Lamck.

Order: Leguminosae.

**DESCRIPTION**: Trunks from 6 to 8 metres in length and 60 to 80 cms. in diameter.


**SPECIFIC GRAVITY**: Pão Brasil claro: From 891 to 981 kgs.

Pão Brazil escuro: From 1,029 to 1,340 kgs.

**RESISTANCE**: Pão Brazil claro: To crushing: 714 kgs. Pão Brazil escuro: To crushing: 648 kgs.


**HABITAT**: Sierra del Mar. Grows as far as the boundary of the State of Rio de Janeiro.

**OBSERVATIONS**: The coast-lands of Brazil are so rich in trees of this species that the name given to the timber, Brazil, i. e. the colour of fire, spread through the whole of the enormous territory discovered by Pedro Alvares Cabral, in 1500. Even at the present time there is an abundance of the species in the Sierras.
It is a tree of normal growth, branching freely and with good foliage. Bark of an ashen colour and spongy. Leaves oval and in two wing-like halves. Flowers odorous, red and yellow in clusters. The fruit is a legume or pod. The tree is of slow growth.

Pão d’Arco.

SYNONYM: Cavantan.
CLASSIFICATION: Bignoniaceae and other botanical families.
DESCRIPTION: Trunks from 8 to 10 metres in length and 60 to 80 cms. in diameter. Colour brown or pinkish, with veinings and patches of yellowish tint.
Grain straight. Hard to carve.

SPECIFIC GRAVITY: From 700 to 850 kgs.
RESISTANCE: To crushing: 758 kgs.
The bark is medicinal against ulcers.
HABITAT: Sierra del Mar. Rare in other districts.
OBSERVATIONS: A very high tree. Bark very hard. Leaves glossy, broad and compound. The fruit is a pod with two cavities. At times the tree appears entirely covered with flowers which hide the leaves.

Pão-Ferro.

SYNONYMS: Ytú. Quiripyrranga.
CLASSIFICATION: Apuleia ferrea Mart.
Order: Leguminosae.
DESCRIPTION: Trunks from 10 to 12 metres in length and 60 to 80 cms. in diameter.
Colour almost black with thin yellowish patches. Grain very fine and netted. Layer of sap-wood or alburnum, useful in building.
Hard to cut.

SPECIFIC GRAVITY: From 1,086 to 1,270 kgs.
RESISTANCE: To crushing: 951 kgs.; to flexion: 1,442 kgs.
USES: Scaffolding, posts, beams, damp situations, first-rate quality. Best used of large dimensions on account of tendency to shrink a little. The bark is medicinal for piles and rheumatism.
HABITAT: Sierra del Mar. Valley of the Ribeira.
OBSERVATIONS: A high tree, of pyramidal shape. Very branching and leafy. Leaves green, oval and acutely dentated. Flowers pink, very small and clustered. The fruit is a brown pod, rounded and edible.

Pão Rosa.

SYNONYMS: Pão cravo. Sebastião de Arruda.
DESCRIPTION: Trunks from 5 to 6 metres in length and 40 to 50 cms. in diameter.
Colour yellow with longitudinal red veins.
Grain very regular. Hard to cut.
SPECIFIC GRAVITY: From 736 to 1,031 kgs.
HABITAT: North of the State. Sierra del Mar.
OBSERVATIONS: A tree of ordinary growth. Flowers red with scales at the base. Leaves oval with five sharp prolongations.
Fruit round.

Pão Setím.

DESCRIPTION: Trunks from 6 to 8 metres in length and 80 cms. in diameter. Colour light-yellow, very uniform. Grain straight and very fine. Easily carved.
SPECIFIC GRAVITY: From 698 to 764 kgs.
RESISTANCE: To crushing: 714 kgs.
Is a very handsome wood for all articles de luxe.
HABITAT: North of the State. Valley of the Piracicaba.
OBSERVATIONS: A rare wood.

Passariúva.

This tree grows in the valleys of the Parahyba and Tieté. It is suitable for interior work only. It has a layer of alburnum, its sp. gr. is 622 to 695 kgs., its resistance to crushing is 370 kgs., and to flexion, 794 kgs.
Marfim.
Passuaré.

There are three varieties: the preto, rôxo and the vermelho, the only one suitable for building construction being the preto, which is of third-rate quality for interior work, flooring, etc. These varieties are met with in abundance in the valley of the Parahyba and Sierra del Mar. The bark of the Passuaré rôxo is spinous.

Peito de Pomba.

A handsome wood for cabinet-work, turning and for polished work. Very resistant. Colour uniformly white. Especially serviceable for work subject to violent strain. The bark is used for tanning. Its habitat is the valley of Mogy-Guassú and in nearly all the West of the State.

Pequiá Bravo.

SYNONYMS: Pequi. Piquiá.
CLASSIFICATION: Caryocar brasiliense St. Hill.
Family: Caryocaraceae.
DESCRIPTION: Trunks from 6 to 8 metres in length and 60 to 80 cms. in diameter. Colour light satin-yellow, very uniform. Grain very fine and straight. Easily carved.
SPECIFIC GRAVITY: From 785 to 836 kgs.
RESISTANCE: To crushing: 621 kgs.
The bark is used to make black ink.
HABITAT: In the North and West of the State. Sierra del Mar.
OBSERVATIONS: Tree of large growth but very twisted and crooked; leaves oval. Flowers pink and abundant. Fruit oval, fleshy and divided into six cavities. Is purgative.

Pequiá Marfim.

SYNONYMS: Páo liso. Páo marfim.
CLASSIFICATION: Balfourodendron Riedelianum Engl.
DESCRIPTION: Trunks from 6 to 8 metres in length and 60 cms. in diameter. Colour yellow with very faint veins and
patches giving to the wood an ivory appearance. When it is quite dry the wood becomes very similar to old ivory. Grain fine, straight and inconspicuous. Hard to cut.

**SPECIFIC GRAVITY:** From 868 to 1,148 kgs.

**Pereira.**

**VARIETIES:** Pereira amarella. Pereira vermelha.

**SYNONYMS:** Pão pente. Pão pereira. Camará de bilro.

**CLASSIFICATION:** Platyciamus Regnellii *Benth. Order:* Leguminosae.

**DESCRIPTION:** Trunks from 8 to 10 metres in length and 0.80 to 1 metre in diameter. Colour yellow or bright red, very uniform. Grain coarse and disposed symmetrically in transverse section.

Layer of alburnum. Hard to cut.

**SPECIFIC GRAVITY:** Pereira amarella: From 745 to 790 kgs.
Pereira vermelha: From 816 to 904 kgs.

**USES:** Scaffolding, beams and exterior work. Damp situations. first-rate quality. Casks, barrels. Coarse flooring. Bark febrifuge. Produces "Pereirina".

**HABITAT:** Valley of the Mogy-Guassú.

**OBSERVATIONS:** A tree of normal growth, contorted branches, covered with downy hairs of brown colour. Bark coarse, very furrowed and of a whitish colour.

Leaves pink or yellowish. Branches without odour. Fruits few, oval, fleshy and of an ashen gray colour.

**Peroba.**

**VARIETIES:** Peroba graúda amarella.

```
,,,, parda.
,,,, preta.
,,,, rosa.
,,,, vermelha.
,,,, do campo.
,,,, miuda.
,,,, péca.
,, rajada.
,, reversa.
,, tremida.
```

Perobinha.
Peroba.
SYNONYMS: Peroba gráuda or Peroba-Assú.  
" póca or Peroba branca.  
" miuda or Peroba mirim.

Peroba póca: Leucomelium sp. Perobinha: Electrolobium elegans.?

Order: Leguminosae.

The Perobas named above are of the Family: Apocynaceae, Order: Contortae, except the Perobinha.

DESCRIPTION: Peroba gráuda: Trunks from 12 to 15 metres in length and 0.80 to 1.20 metre in diameter. Colours very various, indicated by their names, with veins and patches of darker colour, the Peroba preta having very conspicuous black veins. Grain coarse. Layer of alburnum. Hard to cut.

Peroba miuda: Trunks from 10 to 12 metres in length and 60 to 80 cms. in diameter. Colour red, with darker patches. Grain fine and very netted. Layer of alburnum. Hard to cut.

Peroba do campo:Trunks from 6 to 8 metres in length and 60 to 80 cms. in diameter. Colour yellow or reddish, uniform. Grain fine and straight. Hard to cut.

Peroba póca: Trunks from 8 to 10 metres in length and 60 cms. in diameter. Colour white, grain coarse and straight. Layer of alburnum. Easily carved.

Peroba rajada: Trunks from 10 to 12 metres in length and 60 to 80 cms. in diameter. Colour light-red with large black patches. These patches form most beautiful markings. Grain fine and netted. Hard to carve.

Peroba reversa: Trunks from 8 to 10 metres long and 80 cms. in diameter. Colour yellow or brown with dark veinings. Grain fine, dark, very meshed, forming knots and twisting in various directions. Very hard to cut.

Peroba tremida: Trunks from 6 to 8 metres in length and 60 to 80 cms. in diameter. Colour yellow with lighter patches, almost golden in colour. Grain coarse and undulating. Hard to cut.

Perobinha: Trunks from 6 to 7 metres in length and 40 to 60 cms. in diameter. Colour light-yellow with reddish patches. Grain fine and straight. Very hard to carve.

833 kgs. **Peroba póca**: From 680 to 739 kgs. **Peroba rajada**: 690 to 788 kgs. **Peroba reversa**: From 773 to 1,018 kgs. **Peroba tremida**: From 765 to 825 kgs.

**RESISTANCE:** **Peroba graúda amarela**: To crushing: 668 kgs.; to flexion: 617 kgs.

**Peroba graúda parda**: To crushing: 607 kgs. **Peroba graúda rosa**: To crushing: 804 kgs.; to flexion: 616 kgs.

**Peroba mirim**: To crushing: 739 kilogs.; to flexion: 744 kgs.

**USES:** **Peroba graúda amarela**: Interior work. This is of inferior quality compared with the others.

**Peroba graúda parda**: Interior work, flooring. It is superior to the **Peroba graúda amarela**, but inferior to the others. Cabinet-work. Carriage-building.

**Peroba graúda preta**: Cabinet work, turning. Good surface for polishing. Handsome surface with capricious designs or markings. Interior work. Boards for flooring.


**Peroba graúda vermelha**: The same uses as the **Peroba graúda rosa**.

**Peroba do campo**: Exterior work. Dry situations. General interior work.

**Peroba miúda**: Interior work. Exterior work, damp situations. Is suitable only in pieces of large size. Sleepers of first quality.

**Peroba rajada**: The same uses as the **Peroba miúda**, presenting handsome surface for polishing.

**Peroba reversa**: Exterior work, damp situations, first-rate quality. Not suitable for small work on account of shrinking.

**Peroba tremida**: Surface beautifully marked, with undulating grain, fine wood for polished work. Furniture, cabinet-work, turning.

**Perobinha**: Scaffolding, beams, first-rate quality. Flowers medicinal against syphilis. All the **Perobas** have bark rich in tannin, used for leather-tanning and currying, giving to the leather a beautiful yellow colour.

**HABITAT**: Common throughout the State.

**OBSERVATIONS**: The timber of the **Perobas** represents an enormous wealth to the State of S. Paulo. It is used in all kinds of building construction, both civil and naval, and is in great abundance. The slender trees, with their sparse

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Group of Perobas.
Group of Perobas.
foliage and wrinkled bark, stand out in the landscape clearly marked by their majestic appearance.

**Pindahyba.**

Xylopia emarginata *Mart.* **Family:** Anonaceae. **Order:** Polycarpicae. Pindahyva. Pindahuba. There are two varieties, the **Pindahyba** and the **Pindahyba preta.** This is a tree of great height, with horizontal branches, lanceolate leaves and large white flowers. The timber is used for interior work, boxes, etc. The bast is used for making ropes. Is found in all parts of the State.

**Pinho.**

Araucaria brasiliana *Lam.* **Family:** Pinaceae. **Order:** Coniferae.
These are large and beautiful trees, growing in the wild uncultivated parts of the State, and are found almost throughout the **Campos do Jordão,** over an area of more than 30,000 hectares, and altitudes of 2,200 metres above the level of the sea; they form the chief vegetation of the **Campos da Bocaina,** reaching the same altitude, and flourish up to an altitude of 400 metres in the **Campos de Itapetininga.** They produce timber, tar and turpentine. Their bark is very rich in potash.

The quality of the timber is equal to that of the Swiss pine and is superior to the pine of America.

There are two varieties of the **Pinho,** the **branco** and the **vermelho,** the **branco** suitable for boxes, boarding, etc. only, while the **vermelho** is of very good quality and may be used for general interior work, flooring, frame-work, beams and rafters. At altitudes between 400 and 2,200 metres the pine reaches full development in 20 years with a height of 30 metres and 1.50 metre diameter.

**Pinho Bravo.**

Of the two varieties, the **branco** and the **vermelho,** the **vermelho** only may be used to advantage for fencing, posts, rafters, and beams. They are small trees with little foliage and crooked growth.
Piúna.

SYNONYM: Peúna.  
DESCRIPTION: Trunks from 4 to 5 metres in length and 40 to 50 cms. in diameter. Colour white, very uniform, grain straight. Easy to carve.  
USES: Beams, bridges, posts, damp situations. Sleepers of first-class quality, lasting eleven years.  
HABITAT: North of the State. Valley of the Tieté.  

Piúva.

SYNONYM: Peúva.  
DESCRIPTION: Trunks from 8 to 10 metres in length and 60 to 80 cms. in diameter. Colour dark brown with darker patches. Grain coarse and in regular layers. Large layer of alburnum. Very hard to cut.  
SPECIFIC GRAVITY: From 956 to 1,046 kgs.  
USES: Scaffolding. Beams. Posts, exterior work, damp situations, second-rate quality. Sleepers of second class. The bark has medicinal properties, being anti-diuretic and cathartic.  
HABITAT: North of the State, but is also met with in other regions.  
OBSERVATIONS: A very high tree with many branches and good foliage. Leaves yellow, very large and numerous. In the North of the State several Ipés are called Piúva.  

Quaresma.

Tibouchina mutabilis Cogn.  
Quina.


Raposeira.

Raposeira graúda and Raposeira miúda. Timber of inferior quality, used for interior work. Sp. gr. 770 kgs. Found in the North of the State and **Marinhas**.

Roxinho.

A high and very spreading tree, producing a handsome timber of dark pink colour, used for exterior work, bridges and posts. Damp situations. A wood suitable for furniture and cabinet-work **de luxe**. Is met with in the valley of the **Ribeira**.

Saguaragy.

**SYNONYM:** Sobragy.  
**CLASSIFICATION:** Colubrina rufa **Reiss.** **Family:** Rhamnaceae. **Order:** Frangulinae.  
**DESCRIPTION:** Trunks from 8 to 10 metres in length and 60 to 80 cms. in diameter. Colour yellow or light-red, with very pronounced red patches. Grain straight and fine. Large layer of alburnum. Hard to cut.  
**SPECIFIC GRAVITY:** From 0.843 to 1,000 kgs.  
**RESISTANCE:** To crushing: 812 kgs.  
**HABITAT:** Common throughout the State.  
**OBSERVATIONS:** A tree of upright growth, few branches and little foliage. Bark smooth and thin. Leaves thin, small and compound. Flowers yellow, large and in racemes. Fruit round and very small.

Sapucaia.

**VARIETIES:** Sapucaia branca. Sapucaia vermelha.
CLASSIFICATION: Lecythis sp.  
**Family:** Lecythidaceae.

**DESCRIPTION:** Trunks from 10 to 12 metres in length and 0.80 to 1 metre in diameter.

Colour white or brown with very conspicuous patches and veins of a red tint. Grain straight coarse and very distinct. Hard to cut.

**SPECIFIC GRAVITY:** 
- **Sapucaia branca:** From 827 to 1,026 kgs.
- **Sapucaia vermelha:** From 956 to 1,077 kgs.

**RESISTANCE:** 
- **Sapucaia branca:** To crushing: 658 kgs.  
- **Sapucaia vermelha:** To crushing: 729 kgs.


The bast is used for making ropes and tow for calking. Both varieties are put to the same uses. The plant yields a dye used by textile manufacturers.

**HABITAT:** Sierra del Mar.

**OBSERVATIONS:** A tall tree. Bark coarse and furrowed. Leaves lanceolate and large. Flowers in small clusters, white and pink. Fruit round and large, coriaceous, and opening in the upper part, lid-fashion.

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**Sapuva.**


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**Sucupira.**

**VARIEDGES:** Sucupira-assú. Sucupira-mirim.  
**SYNONYMS:** Sucupira. Sibipira.  
**Sucupira-mirim** or Sucupira d'água.

**CLASSIFICATION:** Bowdichia virgiloides H. B. et K.  
**Order:** Leguminosae.

**DESCRIPTION:** Trunks from 8 to 10 metres in length and 60 to 80 cms. in diameter. Colour uniformly brown.

The Sucupira-assú has coarse grain and in layers. Hard to cut.

The Sucupira-mirim has very fine grain, hard and irregular. Is very hard to carve.

**SPECIFIC GRAVITY:** 
- **Sucupira-assú:** From 944 to 990 kgs.  
- **Sucupira-mirim:** From 863 to 1,064 kgs.


The Sucupira-assú is inferior to the Sucupira-mirim but is of very good quality.

The Sucupira-mirim is a very flexible timber and has a large quantity of water in the stem. Makes sleepers of first-class quality, lasting eleven years.

Both have bark with tonic and anti-rheumatic properties. Their seeds are roasted and ground in the same manner as coffee and act as excitants to the lymphatic system.

HABITAT: Sierra del Mar. Valley of the Parahyba and other parts of the State.

OBSERVATIONS: High, branching and leafy trees. Branches very uneven in length and form, as also the leaves whose forms are very diverse.

Bark spotted, very furrowed, coarse and irregular.

Tajuba.


SPECIFIC GRAVITY: From 971 to 1,019 kgs.
RESISTANCE: To crushing: 968 kgs.
HABITAT: South of the State. Mogy-mirim.

Tambory.


DESCRIPTION: Trunks from 10 to 12 metres in length and 1.20 to 1.50 metres in diameter.

Colour of very uniform brown. Grain fine and straight. Very easy to carve. Layer of alburnum.

SPECIFIC GRAVITY: From 373 to 531 kgs.
RESISTANCE: To flexion: 531 kgs.
USES: Boarding for floors and scantlings. Skirting-boards. The planks keep their colour well. Serves the same purposes.
as the timber of the Cedro vermelho. Yields a poisonous resin found in the bark and roots.

**HABITAT:** West of the State.

**OBSERVATIONS:** A tree of large growth, very leafy. Branches thick and much sub-divided. Bark thin and smooth and of a brownish colour. Compound leaves with very small leaflets of light colour on the back. White flowers in clusters. The fruit is a twisted pod, black and shaped like an ear, containing very small seeds.

**Tapiá.**

Alcornea Iricurana *Cas.* **Family:** Euphorbiaceae. Timber of inferior quality, used for interior work and boxes. Trunks from 4 to 5 metres in length and 30 to 40 cms. in diameter. Sp. gr. 680 kgs. Is met with in the Marinhas and in the North of the State.

**Tapinhoan.**

**CLASSIFICATION:** Silva Navalium F. All. **Family:** Lauraceae. **Order:** Polycarpicae.

**DESCRIPTION:** Trunks from 6 to 8 metres in length and 60 to 80 cms. in diameter.


**SPECIFIC GRAVITY:** From 864 to 996 kgs.

**RESISTANCE:** To crushing: 698 kgs.; to flexion: 492 kgs.


**HABITAT:** Is general throughout the State.

**Taruman.**

**VARIETIES:** Taruman pardo. Taruman vermelho.

**SYNONYMS:** Taruman pardo or Taruman do Norte. Taruman vermelho or Taruman amarello, or Grataúba.

**CLASSIFICATION:** Vitex montevidensis Cham. **Family:** Verbenaceae. **Order:** Tubiflorae.

**DESCRIPTION:** Trunks from 6 to 8 metres in length and 60 to 80 cms. in diameter.

- Hard to cut.

**SPECIFIC GRAVITY:** From 688 to 805 kgs.
Tambory (attaining a circumference of 10 metres).
RESISTANCE: To crushing: 599 kgs.
USES: Exterior work, damp situations. Bridges, posts, etc. Carriage-building. Furniture. Sleepers of first-rate quality, lasting 10 years. The fruit yields a medicinal oil against arthritic, or joint complaints, and the roots are used for the preparation of a remedy for syphilis.

The Taruman vermelho is much inferior to the Taruman amarelo.

HABITAT: The valley of the Parahyba. Sierra del Mar.

OBSERVATIONS: A tree of small growth, with good foliage and branching freely. Leaves broad, round and very rough. Fruit small, black and edible.

**Tatú.**

**VARIETIES:** Tatú pequeno. Tatú graúdo.

**CLASSIFICATION:** Eugenia axillaris Vell. Family: Myrtaceae. Order: Myrtiflorae.

**DESCRIPTION:** Trunks from 8 to 10 metres in length and 60 to 80 cms. in diameter.


**SPECIFIC GRAVITY:** Tatú pequeno: From 989 to 1,100 kgs. Tatú graúdo: From 810 to 960 kgs.

**RESISTANCE:** Tatú pequeno: to crushing: 449 kgs.

**USES:** Tatú pequeno: Exterior work. Work exposed to the action of salt water. Is not suitable for use of small dimensions on account of shrinking.

Tatú graúdo: Interior work. Not suitable where shrinkage is to be avoided.

**HABITAT:** Maríñas.

**OBSERVATIONS:** A tree of small growth and with twisted and gnarled branches. Leaves small and lanceolate, of a dark colour. Bark coarse, brown and rugged.

The Tatú graúdo often has small holes in the wood which is not the case with the Tatú pequeno.

**Tayúva.**

**SYNONYM:** Amoreira.

**CLASSIFICATION:** Chlorophora tinctoria (Lin.) Gaudich. Family: Moraceae. Order: Urticinae.
DESCRIPTION: Trunks from 4 to 5 metres in length and 50 to 60 cms. in diameter. Colour dark-yellow, very uniform. Grain fine and netted. Large layer of alburnum. Hard to cut.

SPECIFIC GRAVITY: From 860 to 957 kgs.

RESISTANCE: To bending: 1,468 kgs.


HABITAT: Common throughout the State.

OBSERVATIONS: A tree of crooked growth, few branches and leafy. Leaves large, oval and coarse. Bark thin and smooth, spotted and bearing spines. The fruit is a green pod.

Ubatinga.

SYNONYMS: Batinga. Vatinga.


DESCRIPTION: Trunks from 8 to 10 metres in length and 60 to 80 cms. in diameter.

SPECIFIC GRAVITY: From 880 to 1,054 kgs.

RESISTANCE: To crushing: 859 kgs.


HABITAT: In the valleys of the Parahyba and Tieté.


Urucurana.

VARIETIES: Urucurana. Urucurana mirim.

SYNONYMS: Urucurana mirim or Urucurana de prégo. Urucurana or Urucurana de leite.


DESCRIPTION: Urucurana mirim: Trunks from 10 to 12 metres in length and 1 metre in diameter. Colour light-yellow very uniform, or pinkish with patches. Grain coarse, straight with light shades. Large layer of alburnum. Easily carved.

SPECIFIC GRAVITY: Urucurana: From 707 to 1,034 kgs. Urucurana mirim: From 849 to 939 kgs.

RESISTANCE: Urucurana: To crushing: 851 kgs.

A saw-mill of the "Gavião Peixoto" Colony.
The *Urucurana de leite* is superior to the *Urucurana mirim* and supplies a sleeper of first-rate quality, lasting twelve years. Produces a pink dye and a medicinal resin.

**HABITAT:** Sierra del *Mar.* Valley of the *Parahyba.*

**OBSERVATIONS:** Trees of large growth. Fine aspect. Leaves regular, red and round. Bark rough and red in colour. Fruits, small black and edible.

**Vassourinha.**

*Dodonaea viscosa* **Lin.** **Family:** Sapindaceae. **Order:** Sapindinae.

A tree of small growth producing a wood of dark-brown colour, with black veins and markings, grain very even and straight. Is employed for boarding for floors, etc., and for interior work, making good thin planks. Is often confused with the *Vinhatico.* Is met with in the valley of the *Parahyba.*

**Vinhatico.**

**VARIETIES:** *Vinhatico.*

,, de algodão.
,, de boi.
,, do campo.

**SYNONYMS:** *Vinhatico algodão* or *Vinhatico orelha de macaco.*

*Vinhatico de boi* or *Vinhatico testa de boi.*

**CLASSIFICATION:** Enterolobium ellipticum *Benth.*

**Order:** Leguminosae.

**DESCRIPTION:** Trunks from 6 to 8 metres in length and 80 cms. in diameter. Colour dark-yellow or brown with tones of bright-yellow. Grain fine and regular. Layer of alburnum. Easily carved.

**SPECIFIC GRAVITY:** *Vinhatico:* From 482 to 705 kgs.

*Vinhatico do algodão:* From 460 to 567 kgs.

*Vinhatico de boi:* From 595 to 757 kgs.

**RESISTANCE:** *Vinhatico:* To crushing: 570 kgs.

**USES:** Ship-building. Ordinary furniture and furniture de luxe. Turning. Scantlings. Flooring.

The *Vinhatico algodão* and the *Vinhatico testa de boi* present most handsome surfaces for polishing.

**HABITAT:** Is common throughout the State.

**OBSERVATIONS:** A tree freely branching and with spreading, high top. Bark white. Leaves long.
NOTES.

Sierra de Mantiqueira: A range of mountains which separates a part of the State of S. Paulo from the State of Minas Geraes. The summit of the range forms extensive and undulating plains, especially suitable for stock-farming, particularly for sheep; there are pinewoods (araucaria brasiliensis) and tracts of land admirably fitted for cultivation of the vine, wheat and other plants of Southern Europe.

Campos de Jordão: A plain in the Sierra de Mantiqueira 2,000 metres above the level of the sea. It has a magnificent climate equal to that of Madeira and the S. of Europe generally. A sanatorium has been built here for the treatment of tuberculosis.

Virgin forests: Forests which have never been felled by man.

Heart-Wood: The interior wood of the trunk next to the alburnum; this is usually the only part applicable to constructive purposes, but there are some trees in which the alburnum is equal in quality with the heart-wood.

Alburnum, or Sap-Wood: Is that part of the stem which lies between the heart-wood and the bark, bast, etc. It is light in colour (hence its name), carries the root-sap upwards and consists of a variable number of the last-formed annual rings of wood. It is generally of poor quality, only on special occasions is it applicable to constructive purposes.

Specific Gravity: The mean specific gravity is calculated in kilogrammes per cubic metre; for timber of sp. gr. over 900 kgs. this varies 10 %, and for those of lower sp. gr. the variation is 15 %.

North: That part of the State which extends from the Capital, the city of São Paulo, to the boundaries of the State of Rio de Janeiro in the direction East of that State and of the Atlantic Ocean to the State of Minas, in a northerly and southerly direction.

It is the geographical East of the State.

Serro do Mar: The range of mountains which follows the coastline of the State of São Paulo forming the border of the central plain which constitutes the main part of the Paulist
country, with a height varying from 300 to 800 metres above the level of the sea.

**West:** This part of the State is noted for its great production of coffee which reaches the extraordinary average of 72,000 tons per year. The district is served by the Paulista, Mogyana, Araraquara, Ituana and North-West Railways, in connection with which are many branch railways belonging to the large proprietors of coffee-plantations.

It is the geographical North of the State.

**Valley of the Mogy:** A large river which flows through the West of the State in a direction from East to West. It is navigable for the greater part of its course and is much used for carriage by the Paulist and Sorocabana districts.

**Valley of the Ribeira:** A large river formed by the waters of the rivers Iguape, Juquiá, San Lorenzo and others of the South of the State between the Sierra del Mar and the Atlantic Ocean. This is a very fertile region and is still covered by immense forests.

The Ribeira and its tributaries are used by the Sul-Paulista Navigation Company which is interested in the formation of a line of railway from the Capital to the Ribeira district.

**Valley of the Tieté:** A river which flows through the whole of the State, rising in the Sierra del Mar and having on its banks fifteen important towns in addition to the Capital.

It is navigated for the greater part by the boats of the Sorocabana and Ituana Company.

**Valley of the Piracicaba:** A river flowing through the western part of the State. It has some large waterfalls which are used for the production of motor force for several paper and textile works and for electric lighting. It is a river noted for the beauty of its banks.

**Marinha:** The region lying between the Sierra del Mar and the Atlantic Ocean forming the litoral or shore-lands.
GLOSSARY: containing most of the untranslated Portuguese words in the text.

açafrão  saffron
alecrim  rosemary
algodão  cotton
alto -a  high
amarelo -a  yellow
amargoso -a  bitter
amendoa  almond-tree
arco  arc, bow
azeite  oily
batalho -a  battle
boi  ox
branco -a  white
bravo -a  wild
brinco -a  sporting
café  coffee
campo  field
canella  cinnamon
canellinha  little cinnamon
canudo  pipe, tube
capitão-mór  great chief
carne de vacca  cow-beef
carvalho  oak
cascudo -a  thick-rinded, thick bark
cavallo  horse
cedro  cedar
cheirosa  odorant
chibatão  rod, switch
clara  light in colour, bright
cóco  cocoa
cosido -a  clinging
cravo -a  pink
doce  sweet
escuco -a  dark
espinho -a  thorny
ferro  iron
gato -a  cat
goiabeira  guava-tree
grande  large, great
grávido -a  grainy, fibrous
jacarandá  violet-wood
jacaré  crocodile
larangeira  orange-tree
leite  milk
limão  lemon
louro  laurel
macaco  monkey
mandioca  manioc
mangue  mangrove
mar  sea
marfim  ivory
matto -a  wood, forest
milho  maize
miúdo -a  slender, thin, small
norte  north
oleo  oil
onça  jaguar, ounce
orelha  ear
pão  bread, food
papagaio  parrot
pardo -a  gray, brown, dark
pedro -a  rocky, stony
peito  heart, breast
pente  comb
pequeno -a  little, small
pereiro  pear-tree
pimento -a  coloured
pinho  pine
piolho -a  lousy
pipo  lilac tree
poco -a  little
pombo  dove, pigeon
prego -a  drooping
preto -a  black
puante  stinking
purga  purge
quina  bark
rajado -a  rayed, striped
reverso -a  opposed, contrary
ribeira  stream, river
rigido -a  stiff, rigid
rosado -a  rosy, pink
roso -a  rose, pink
roxo -a  violet
ruivo -a  reddish, russet
<p>| santo -a | holy |
| sassafras | saxifrage |
| sebo -a | tallow, suet |
| sertão | prairie |
| setim | satin |
| sierra | mountain-range |
| sul | south |
| tabaco | tobacco |
| testa | head |
| tremido -a | trembling |
| vassourinha | small broom |
| veado -a | stag |
| velho -a | old, ancient |
| verdadeiro -a | true |
| vermelho -a | red |
| vidrado -a | glassy, vitreous |
| vinhatico | Brazilian yellow-wood |
| violeto -a | violet |
| virgem | virgin |</p>
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