

Field keys

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Field Key G – Climbing species with cirrus, knee present

Field keys

Before using these keys familiarise yourself with the main [parts of a rattan](#). Then look carefully at the rattan you want to identify. They are not simple plants. They are long-lived and the climbing species have a complicated life history because their rapidly extending stems start life in the moist, shady forest understorey then climb into hot, brightly sunlit areas high in the canopy. If a tree or branch falls the rattan may drop back into the shade and have to begin climbing again. Big, old clumps have often been affected by harvesting, disease or other catastrophes. Some species (in the genera *Korthalsia*, *Myrialepis*, *Plectocomiopsis* and *Plectocomia*) also experience a great change when the stem stops extending and prepares for a single massive flowering effort before dying.

All this means that different parts of the same plant can look very different. You need to look at all parts of the plant and apparently similar plants nearby to gain an understanding of which features are unvarying and which have a wide range of variation, depending on age, environment and genetic differences. Concentrate on the upper 'adult' part of the stem rather than seedlings and young shoots.

There is an initial checklist of features which you should note for any rattan. The first four points are given special prominence at the top of each species account:

- **is it stemless, erect or a climber?**

A young climber may look erect, but should have long internodes with tubular sheaths.

Climbing organs should appear by the time the stem is 2-3 m tall.

- **is it clustering or solitary?**

Check that all the stems come from one plant and not two close together. The first stem may be a few metres long before it produces new shoots.

- **what climbing organ does it have, if any?**

- **is there a knee and is it prominent?**

The next thing to look at is the **arrangement, shape, size and colour of the leaflets**. With all this information you should already be quite close to a successful identification.

First look at the list of rare special features below. These may help you get close to the correct name in one step. The next stage is to work through the keys, checking additional features of the plant as required. This should lead you to one or two probable names. From there go to the relevant species accounts and decide whether the more detailed information all fits the plant you are looking at. Check the list of similar species under '**Compare**'.

If the description sounds wrong you may be looking at another species, so read the accounts for all the similar species or try going back to the keys. If there are points where you are not sure which option to choose, try all of them. If you still don't feel confident that you know what the species is, leave it unidentified. Don't guess! It could be an unusual individual or a species not in the book.

When you begin, identification will take a long time but as you get to know each species you may be able to identify it without the keys, simply by remembering the 'character' of each species – the distinctive combination of colour, shape, texture and size. These things are as difficult to describe in words as your best friend's face; the only way to learn them is to see them. Don't forget to collect herbarium specimens to add to our knowledge. For more information see the section on [how to make a specimen](#).

Special features of some rattan species

Numbers refer to species accounts. Brackets mean the feature is only present sometimes.

Habit and climbing organs

No stem: 1

Stem erect, not climbing: 2-2b, 3-3b, 4a

Climber without climbing organ: 17, 17a

Flagellum only: 4, 5-15a (not 8a), 18-21

Cirrus only: 8a, 22-31a

Short cirrus and flagellum: 16

Stem solitary: 2, 8, (9), 12, possibly others

Inflorescence

Only 1-branched: (1), (2), (2a), (13)

Ocrea

Long, papery: 1, 4a, 7, 29

Bristly collar (≤ 2 cm): 5a, 9, 15, 15a, 17a, 18

Lacerate, spiny collar or a pair of 'ears'

(2-5 cm): 2, 2b, 3, 4a, 19

Net-like: 27-27b

Upper leaves

Petiole very short (≤ 3 cm): (5), (6a), 9,

10, (12), (13), (15a), (29), 30-30b, 31

White or grey indumentum under

leaflets: 2a, 6a, 17, 17a, 18, 27-27b, 30-30b, 31a

Leaflet veins stop at the edges, not the

tip: 9b, 27-27b

Leaflets diamond shaped: 27-27b

Leaflets end in a hair-like tip (≥ 5 cm): 28,

29, 31

Habitat

Planted for shoot production in Lao: (4),

(5), 6, (26)

Grows in dry, open habitats: 1, 4, 26

Grows in very wet places: 6, 6a

Can grow above 1800 m: 2b, 9, 23, 31

How the keys work:

Each column gives you a choice of two or more alternatives. Start in the first column of Field Key A and choose the row with the alternative that fits your rattan best. This eliminates all the other options, and so all the other rows of the table. Go across to the right. This may take you to another choice. At each choice take the row which fits best and eliminate the others. When you reach the last column you will find the names of one or two species, or perhaps you will be taken to another, more detailed key.

Some species appear in more than one place because they have more than one arrangement of leaflets. The keys are designed for people working in the field so we have not used the appearance of the inflorescences unless it is necessary – they are sometimes hard to find or too high in the trees to reach.

Example

1. We have found a rattan in the forest. We go to the first column of Field Key A. It has no climbing organ, so we go to the right from here, eliminating the rest of the table.
2. In column 2 we see that the option 'stem erect, stiff, ≥ 0.5 m tall' fits best. This doesn't identify the species but instead leads us to a new key, Field Key B.
3. In column 1 of Key B we see that 'leaflets not white below' fits our plant best, so we choose the second option.
4. In column 2 we choose the first option, because the leaflets are about 70 cm long.
5. Our last choice is easy because the petiole clearly has complete rings of 10 cm long spines around it – so this is probably *Calamus erectus*, species 3.
6. To check whether this is right we look at the species account. The photograph, measurements and other details make it clear that we have picked the right species.

Field Key A – General

	no stem		<i>C. acanthophyllus</i> 1
no climbing organ on sheath or leaf	stem erect, stiff, ≥ 0.5 m tall		see Field Key B
	stem climbing, thin and flexible	ocrea smooth, leaflets smooth on the faces, last pair of leaflets ≥ 5 cm	<i>C. hypoleucus</i> 17
ocrea bristly, leaflets spiny, last pair ≤ 4 cm		<i>C. salicifolius</i> 17a	
cirrus and flagellum, both ≤ 20 cm			<i>C. bimaniferus</i> 16
only a flagellum, ≥ 30 cm	leaflets strongly grouped or irregular		see Field Key C
	leaflets regularly pinnate		see Field Key D
	leaflets interrupted pinnate		see Field Key E
only a cirrus, ≥ 30 cm	knee absent	leaflets lanceolate	see Field Key F
		leaflets diamond-shaped	<i>Korthalsia</i> spp 27-27b
	knee present		see Field Key G

Field Key B – Erect species

leaflets white below			<i>C. oxycarpus</i> 2a
	leaflets ≥ 50 cm	petiole spines ≥ 5 cm, in neat rings all around petiole	<i>C. erectus</i> 3
		petiole spines ≤ 3 cm, solitary or in pairs	<i>C. dongnaiensis</i> 3a
		leaflets regular, all lying in one plane	<i>C. harmandii</i> 2
leaflets not white below	leaflets ≤ 40 cm	leaflets grouped, all lying in one plane	leaflets up to 24×1 cm, rachillae curved back, fruit with long conical point <i>C. sp A</i> 2b
			leaflets up to 40×2 cm, rachillae pressed against axis, fruit spherical <i>C. sp B</i> 3b
		Leaflets grouped, pointing in many different planes	<i>C. thysanolepis</i> 4a

Field Key C – Climbers with flagellum only, leaflets strongly grouped or irregular

Leaflets plumose, lying in many different planes	Sheath $\varnothing \geq 3.5$ cm, densely covered in flat spines		<i>C. laensis</i> 18 and <i>C. longisetus</i> 18a	
	Sheath $\varnothing \leq 2.5$ cm, with scattered slender spines		<i>C. viminalis</i> 4	
Leaflets not plumose, lying in one plane	Leaflets irregularly arranged	Petiole ≤ 3 cm, leaflets ≤ 20 cm long, sheath spines with crescent-like bases	<i>C. godefroyi</i> 6a	
		Petiole ≤ 15 cm, largest leaflets ≥ 40 cm, sheath spines needle-like.	<i>C. kingianus</i> 15	
		Ocrea bristly, upper surface of leaflet with three lines of bristles, last 2 leaflets not joined.	<i>C. dioicus</i>	
	Leaflets neatly grouped, usually in 2s on each side, with a terminal group of 4	Ocrea without bristles, upper surface of leaflet with few bristles, last 2 leaflets joined 20-60%	Clustering First partial inflorescence ≤ 11 cm long, barely or not branched	<i>C. oligostachys</i>
			Solitary stem First partial inflorescence ≥ 40 cm long, well branched	<i>C. solitarius</i>
			Clustering First partial inflorescence 10-40 cm long, well branched	<i>C. tetradactylus</i> 14

Field Key D – Climbers with flagellum only, leaflets regularly pinnate

Leaflets oval or diamond-shaped	Petiole 1-3 cm, leaflet veins finish at the leaflet tip, ocrea spiny.		<i>C. acanthospathus</i> 9
Stem solitary or clustering	Petiole 6-20 cm, veins finish along leaflet margins, ocrea not spiny		<i>C. bousigonii</i> 9a
Leaflets linear (much longer than wide)			<i>C. poilanei</i> 8
Stem solitary		Sheath spines black, leaflets with three lines of bristles above, petiole spiny above	<i>C. rhabdocladus</i> 21
	Sheath $\varnothing \geq 3$ cm	Sheath spines paler at the base, leaflets with one line of bristles above, petiole smooth above	<i>C. flagellum</i> 19 and <i>C. rudentum</i> 20
Leaflets linear or lanceolate (much longer than wide)		Ocrea forms papery tassels up to 10 cm	<i>C. guruba</i> 7
Stem clustering		Ocrea a short bristly collar	<i>C. walkeri</i> 5a
	Sheath $\varnothing \leq 2.5$ cm	Spines yellow with red tips, petiole ≥ 7 cm	<i>C. siamensis</i> 5
		Ocrea tiny, unarmed	<i>C. tenuis</i> 6
		Spines green with black tips, petiole ≥ 8 cm	
		Spines green with black tips, petiole ≤ 3 cm	<i>C. godefroyi</i> 6a

Field Key E – Climbers with flagellum only, leaflets interrupted pinnate

Sheath $\varnothing \geq 4$ cm,
thickly covered in
long, dark, paper-
thin, triangular
spines

C. rhabdocladus 21

Petiole 0-3 cm.
Spines ≤ 0.5 cm
with swollen
bases and
short points

C. gracilis 10

Sheath $\varnothing \leq 3$ cm,
with other types
of spines

Petiole 5-25 cm
Spines ≥ 1.5 cm,
without swollen
bases and with
long points

Some sheath spines
broad, brownish green
with lots of brown
indumentum.
Inflorescence branches
pressed against the axis
Sheath spines slender,
yellow-brown
with red-tips, bases
curved, little
indumentum.
Inflorescence branches
spreading from the axis

C. henryanus 11

C. siamensis 5

Field Key F – Climbing species with cirrus, knee absent

Ocrea ≥ 5 cm
long, papery
Leaf surface with
golden bristles

*Plectocomiopsis
geminiflora* 29a

Lower sheaths
with broad
spines ≤ 5 cm
long, in combs

*Myrialepis
paradoxa* 28

Ocrea ≤ 0.5
cm long

Leaflets never white
below, with a hair-
like tip ≥ 5 cm.

*Plectocomia
himalayana* 31

Leaf surface
without bristles
Lower sheaths
with needle-like
spines ≤ 3 cm,
scattered or
in combs

Leaflets initially
white below,
without a long
hair-like tip

Petiole ≤ 3 cm,
sheath spines
scattered or in
rows of ≤ 10 .
Fruit not bristly
30-30b

*Plectocomia
pierreana* and
close relatives
*Plectocomia
elongata* 31a

Petiole ≥ 10 cm,
sheath spines in
neat rows of \geq
10. Fruit bristly

Field Key G – Climbing species with cirrus, knee present

	All leaflets strongly grouped Sheath spines mixed long/short, ≤ 3 cm Fruit ≤ 1.2 cm long, perianth not remaining tubular, scales unchannelled	<i>C. palustris</i> 22
Sheath spines slender or triangular and thick, green, red or yellow	Leaflets strongly grouped in the middle of the rachis, sometimes regular at the base Sheaths with many short and long spines up to 4 cm Fruit ≥ 2.5 cm long, perianth remains partly tubular, scales channelled	<i>C. nambariensis</i> 23 and <i>C. obovoideus</i> 23a
Inflorescence erect with widely spread branches and narrow tubular bracts which never fall off	All leaflets strongly grouped Sheath spines all or nearly all long, up to 9 cm Fruit ≤ 2.2 cm long, perianth remains partly tubular, scales channelled	<i>C. platyacanthus</i> 24
NOTE – species 22-25 are variable and can be difficult to identify. Read the species accounts carefully.	Leaflets perfectly regular Some lower sheaths with stripes of white indumentum and all spines tiny and swollen like the teeth of a rasp. Longest spines ≤ 4 cm. Fruit size ≤ 2.0 cm long, perianth remains partly tubular, scales channelled.	<i>C. wailong</i> 25
Sheath spines triangular, thick, bent down. Inflores- cence long with a pendulous, clawed axis.		<i>C. ceratophorus</i> 8a
Sheath spines flat, paper-thin, black Inflorescence short with crowded branches, covered by big over- lapping boat-shaped bracts until the flowers open		<i>Daemonorops jenkinsiana</i> 26
Sheath spines flat, paper- thin, straw coloured. Inflorescence longer, each partial inflorescence covered by its own bract which falls off before flowering		<i>Daemonorops</i> sp A and sp B 26a & b

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