

NON-WOOD FOREST PRODUCTS

20

**Fruit trees and
useful plants
in Amazonian life**

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People
and plants
International



Fruit trees and useful plants in Amazonian life

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Cat's claw

Uncaria tomentosa (Willd. ex Roem. & Schult.) D.C. and
Uncaria guianensis (Aubl.) J.F. Gmel.



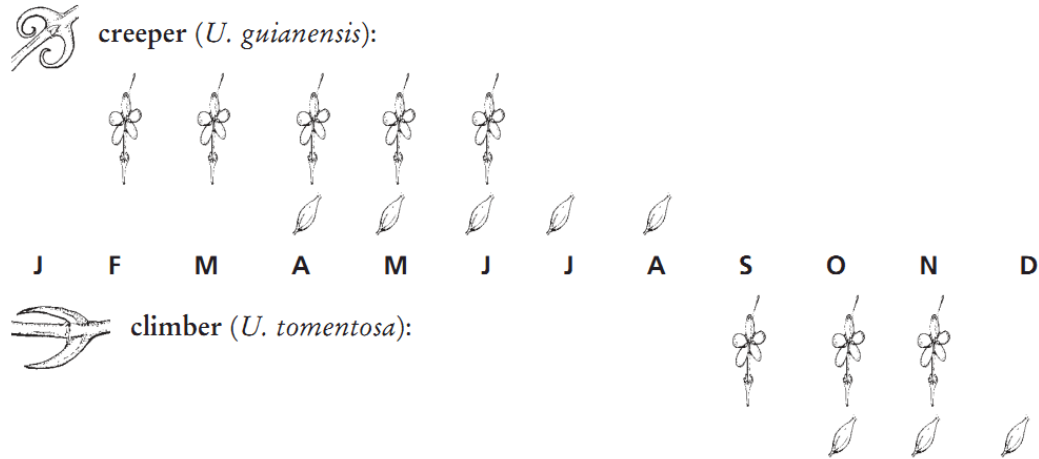
Elias Melo de Miranda

Thousands of years ago, indigenous Peruvians discovered the medicinal power of a spiny Amazonian forest vine: cat's claw (unha-de-gato). However, this locally well-known vine only gained widespread popularity in Peru after it first became famous in Europe.¹ Studies of the bark, roots and leaves have established the presence of alkaloids that stimulate the body's immune system against tumours, inflammations, viruses and ulcers. Today, cat's claw is used throughout Amazonia and has growing domestic and international markets.

There are a great variety of species known as cat's claw. The two most famous belong to the genus *Uncaria*. The main characteristics of these vines are the claw-like spines from which the name is derived. The cat's claw climber, *U. tomentosa*, is large and has semi-curved spines, which enable it to wind its way up tree trunks. The creeper, *U. guianensis*, is smaller and has difficulty climbing because it has sharply curved spines, like goat's horns, which do not easily grip onto other plants. Both are found in the tropical regions of Brazil, Peru, Venezuela, Colombia, Bolivia, Guyana and Paraguay.

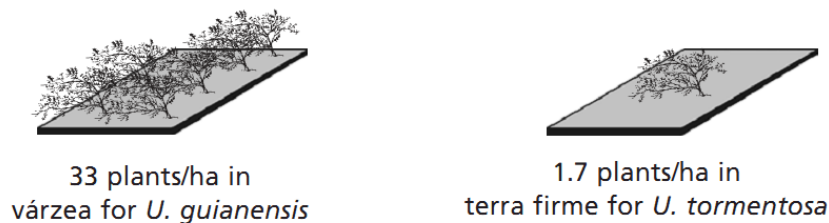
ECOLOGY

Flower and fruit seasons



The two species have different fruiting seasons. The creeper, *U. guianensis*, flowers first, from February to June, and produces fruit from April to August. The climber, *U. tomentosa*, flowers from September to November, and produces fruit from October to December.²

Density



A study of the two species in the state of Acre, Brazil determined that cat's claw occurs more frequently in várzea (33 vines/ha) and in secondary forest (11 vines/ha) than in terra firme (1.7 vines/ha).³ But the two species exhibit differences in the habitats they prefer. The climber, *U. tomentosa*, prefers closed forest or forests with small openings and generally occurs in low densities. The creeper, *U. guianensis*, develops best in secondary forest, along riverbanks or roadsides where it can form large concentrations.

Production

On average, it is possible to extract about 0.5 kg of bark/m of vine. Creeping cat's claw reaches between 5 and 10 m in length, and in 1 ha it is possible to find 15 individuals over 5 cm in diameter that can furnish approximately 60 kg of bark. In contrast, climbing cat's claw grows from 10 to 30 m in length but occurs in low densities, approximately 1 vine/ha, yielding approximately 10 kg of bark. Since the climbing *U. tomentosa* individuals provide more bark, collectors in Peru tend to concentrate their collection efforts in the upland forest. In order to satisfy demand in 1995, Peruvians collected vines from a 20 000 ha area.²



Creeper
4 kg of
bark/vine



Climber
10 kg of
bark/vine

ECONOMIC VALUE

In Peru, the world's largest producer of cat's claw, exports peaked in 1995 at 726 tonnes. From 1996 to 1998, between 275 and 350 tonnes were exported.⁴ Peruvian export businesses can purchase 1 kg for US\$0.90 and sell it for US\$3.90. In the United States of America, 1 kg transformed into capsule form is worth between US\$200 and US\$500. Brazil exports less, but it is easy to find cat's claw in Amazonian markets. In 2008, at the Ver-o-Peso market in Belém, 150 g of bark sold for between US\$1.20 and US\$2.40. For US\$1.20, a packet of 50 g of powdered cat's claw, 20–30 g of leaves, or 50 g of the vine could also be purchased.

1 kg of bark: the value for the collector, the exporter, and the price in the United States of America (in 2003)



USES



Bark: The bark of cat's claw is used to make teas as it possesses properties which stimulate the immune system and, in a few tests, demonstrated antiviral and anti-inflammatory effects.³



Roots and leaves: The roots and leaves can be used in medicinal teas.



Vine: Fresh, drinkable water is released when the vine is cut. Rattan-type furniture is also produced from the vine.





Preparing the vine for market

After harvesting the vine, scrape off the moss and dirt using a large knife. The moss on the climbing cat's claw is often black, while the moss on the creeping cat's claw frequently has an off-white colour. To remove the bark, simply tap one piece of vine against another until it comes loose. Set the bark in a shady spot to dry for three to five days during the dry season. Next,



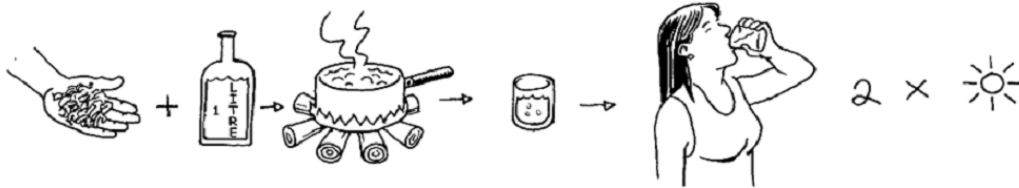
cut the bark into sizes preferred by the consumers. To protect the bark from humidity and to make the product more attractive to customers, place the bark in labelled bags.

Know the differences between the two principal types of cat's claw

	 Climbing (<i>U. tomentosa</i>)	 Creeping (<i>U. guianensis</i>)
Length	10–30 m	5–10 m
Diameter	5–40 cm	4–15 cm
Spine	semi-curved	curved
Habitat	openings in the primary forest	secondary forest, riverbanks and roadsides
Occurrence	high altitudes, 400–800 m	low altitudes, 200 m
Density	few/ha	can be found in great numbers

The different types of cat's claw also vary in their chemical composition. The level of alkaloids, for example, appears to be different from species to species. Within the same species, the levels can also vary significantly, depending on the age and the habitat of the plant.² The effects of the tea may also vary from person to person and plant to plant.

Recipe for medicinal tea



To brew tea, using the bark or root, local users offer the following recipe: Boil 20–30 g of bark or root of cat's claw cut in small pieces in 1 litre of water for 20–30 minutes. This tea can be taken every eight hours, between meals. If using the leaves, boil 15–20 g in 1 litre of water for 15–20 minutes; strain and drink every six hours.

Is cat's claw truly medicinal?

Because of its strong history of traditional use, the sale of cat's claw took off prior to scientific confirmation of its effectiveness. Some researchers maintained that the medicinal properties of cat's claw had not been adequately proven, but recent phytochemical studies have identified beneficial properties in the bark.⁵ In Peru, together with copaíba (*Copaifera* spp.) and sangre-de-grado (*Croton lechleri*), cat's claw continues to be among the most widely sold medicinal plants. In the remote rural areas of Pará, Brazil, it is known as jupindá, and many families use it to make a tea to strengthen the body against malaria. In 2001, of 30 families with cases of malaria, only two used medicine from the national health service, SUCAM. All the other villagers utilized cat's claw tea mixed with species such as veronica (*Dalbergia* spp.), cedro (*Cedrela odorata*), pau d'arco (*Tabebuia impetiginosa*) and escada-de-jabuti (*Bauhinia guianensis*).

The efficacy of other plants of the genus *Uncaria* has been confirmed in other regions of the world, including China, Taiwan Province of China and Africa. The flavonoids (antioxidants) found in a number of *Uncaria* species have also been used by the pharmaceutical industry to treat vascular diseases.²



MANAGEMENT



germination
5–20 days



growth
1 cm/year



production
5–10 years

Seeds germinate in 5–20 days, and the seedlings can be planted from six months to two years later.² When the vine is cut, the finer shoots can also be stuck in the ground and grown (the same way manioc is planted). Cat's claw has the advantage of being fire-resistant, and it grows well in open areas. The vine can reach 5 cm in diameter in five years, and it is ready to be harvested in 5–10 years.² Both the vine and the root are used frequently by local populations in the Amazon. However, it is better to collect only the vine, cutting it after it bears fruit, while leaving about 50 cm to 1 m of vine so that the plant can regenerate. Covering the cut with clay will help to keep the vine from losing water. Since the vines of the forest-dwelling *U. tomentosa* are large and provide substantial quantities of bark, it is worthwhile to take special care when harvesting them because these vines are less abundant. Plantations in open areas produce many thin vines along the ground, but scant bark.

¹ Jones, K. 1995 & Alexiades, M.N. 2002a

² Alexiades, M.N. 2002a

³ Miranda, E.M., Souza, J.A. & Persira, R.C.A. 2001

⁴ Hughes, K. & Worth, T. 1999

⁵ Heitzman, M.E. *et al.* 2005

