

Chusquea – mountain bamboo of Latin America

**GIB COOPER gives an overview
of the available species and cultivars
and encourages gardeners to try
some recent introductions**

BAMBOOS ARE POPULAR PLANTS loved by many in the West for the exotic touch these giant grasses offer in the garden. There are about 1,400 species with about one third being native to the Americas. These 460 species range from the southeastern United States to the tip of South America. This group is divided into the herbaceous bamboos with about 115 species and the woody bamboos with 22 genera and approximately 350 species.

Within the woody bamboo group is the spectacular genus *Chusquea* (from the native Andean name chusque), the most widely grown hardy American bamboo in our gardens. More than 40 percent of American bamboo species belong to *Chusquea*. The habitat of the genus is predominately the Andes and the other mountain ranges dividing the American continents into eastern and western slopes. These mountains stretch from Mexico to the inland borders of Argentina and Chile, and over to eastern Brazil. However, some *Chusquea* species live in the warmer tropical lowlands and hills.

Among gardeners familiar with bamboo, most love the look and utility of the chusqueas. Many Asian bamboos such as *Phyllostachys*, *Pleioblastus* and *Semiarundinaria* are also beautiful but may create a maintenance problem with underground rhizomes that relentlessly spread away from the plant and cause the loss of precious garden space to a bamboo grove. *Chusquea* are favoured for their well-behaved, clump-forming habit. However, several Asian genera such as *Borinda*, *Fargesia*, *Himalayacalamus* and *Thamnocalamus* are similarly well-behaved. ➤

Chusquea gigantea has been masquerading in cultivation under other names. This specimen is in a UK garden; it will grow taller than *C. culeou*

David Wilkes

GENUS PROFILE

Genus characteristics

Most chusqueas are relatively new to horticulture, but others like *C. culeou* were first introduced in the late 19th and early 20th centuries. Thanks to the scientific collection activities of Friedrich Schlegel-Sachs, Lynn Clark, Gilberto Cortés and Gerald Bol, many additional species are now growing in European and North American gardens.

The basic characteristics defining the genus are solid culms, multiple and dimorphic branch buds at each node, culm leaves lacking both fimbriae and auricles, and a base chromosome number of $x = 10$ (Clark 1997). The group is divided further into subgenus *Chusquea*, subgenus *Rettbergia* and subgenus *Swallenochloa*. The last contains the hardy species familiar to most gardeners, native to the rugged high-altitude terrain and southern latitudes of South America. This subgenus contains three species complexes – the *C. heterophylla* group, the *C. nudiramea* group and the *C. culeou* group. However, the taxonomy is still volatile.

The *Chusquea culeou* species complex

This complex consists of three generally recognised but closely related species: *C. culeou*, *C. andina* and *C. gigantea*. All of these are – or may have been – cultivated in Western gardens. Native to higher elevations in the deep southern Andes in both Argentina and Chile, they are some of the hardest species. The species are separated primarily on differences in size and branching types, as the flowering structures are very similar. However, assessment of branching characteristics in a garden situation, especially on young plants, is not an easy way of determining identity. Other factors appear to influence the apparent variation



Federico Gonzalez

Chusquea andina is usually seen in the wild as a short species that thrives above the snowline. In cultivation it becomes a taller, more substantial plant and it is expected to be very hardy

observed in the field and garden, notably, altitude, latitude, wind, moisture, soil type, temperature and whether growing in full sun or shade.

As a result, the naming of species in this group is rather confused due to misidentifications and incorrect usage of some names. Also, the botanical status of these species is still in a state of flux. A recent article by Triplett & Clark (2003) describing the difficulties of differentiating between the species speculatively summed it up, ‘The question remains as to whether the named entities of the *C. culeou* group are variants within a species or independent lineages that should be considered distinct species.’ More recently, Dr Lynn Clark (pers, comm.) surmised, ‘What I think is that we are seeing a highly variable species in the process of ecological differentiation, that is, speciation. Based on all the data so far, the southernmost chusqueas (at least some of them) probably got there

fairly recently (in geological terms) and thus haven’t had as much time to evolve. This is not unlike the situation with *C. foliosa*, *C. tomentosa* and *C. subtilis* in Costa Rica.’ She feels the topic needs more research and fieldwork in Argentina and Chile.

This article deals with the species and variants from the *C. culeou* complex currently recognised in horticulture, along with a few other hardy and not so hardy species.

■ *Chusquea andina*

This species is always found above the tree line at some of the highest elevations in the Andes. Skiers at several Chilean and Argentine resorts may see this small 1m-high shrubby grass poking through the snow or growing in patches of open ground.

Whorled around each culm is a tight mass of short branches and leaves. The thick leaves are a striking pale blue-green. However,



Photos Horticultural

Chusquea culeou is the species most familiar to UK gardeners. It forms a handsome specimen with culms potentially reaching a height of 7m and the many small leaves giving a foxtail effect

in cultivation it forms a larger plant with larger leaves and branches. While still new to horticulture, it is expected to be very cold-hardy.

■ *Chusquea culeou*

Typically reaching a height of 4m or more in gardens, and up to 7m in ideal conditions, this is best described as the medium-sized representative of this group of three species. Its common name is foxtail bamboo. For many years it has been the commonest *Chusquea* in gardens, and now even more so since the raising of thousands of seedlings from the mid to late 1990s. These resulted from the flowering of imports brought to the USA and Europe a few years earlier.

The general habit is of an erect, vase-shaped clump – imagine an arched foxtail or upright feather-duster arranged in a vase. The medium-dark green foliage is thickly arranged on the culm, borne on whorls of 20–30 equal

size branches at each node. The new shoots emerging from the soil vary from green to burgundy-red and the first-year culms may be purplish-black, ruby and green with tan lines after the culm sheaths have changed to white and fallen off. The culms mature to a light yellow-green with dark green nodes, a common feature of many chusqueas.

Leaf kill hardiness is considered to be -16°C, but this may vary in the newer plants raised from seed. Synonyms include *C. breviglumis* and *C. argentina*.

C. culeou ‘Caña Prieta’

This cultivar is sometimes described as a black bamboo due to the roasted coffee colour of the culms and contrasting white sheaths. It can grow to a height of 5m or more. The leaves are a darker shade of green than the typical species, closer to a pine green than any other bamboo. This is a very ornamental *Chusquea* and deserves high positioning in the

horticultural bamboo hierarchy.

This bamboo has been incorrectly listed as *C. montana* and *C. nigricans*; the latter is probably a synonym of the former.

C. culeou Hillier’s form

This group of seedlings were raised in the US from seed of the most recent flowering in the UK. They have been singled out due to their short branches and compact foliage. It is believed they will remain short in stature and reach no higher than 3m. Other similar seedlings may become named cultivars.

C. culeou f. *longiramea*

This form is very similar to the species but tends to have longer-necked rhizomes, creating more space between culms. This results in a clump with a grove-like appearance. At present it is only cultivated in a few locations in the US.

C. culeou ‘Tenuis’

In the UK this is a short cultivar to about 1.2m and the name may cover more than one clone. In the US, plants similar to this may be grown as Hillier’s form. However, plants grown as ‘Tenuis’ in the US have distinctive erect leaves when grown in full sun. They are also a darker shade of green, approaching that of ‘Caña Prieta’.

C. culeou ‘Purple Splendour’

This cultivar is noted for its purple culm colour. It was selected by UK bamboo expert David Crompton from a batch of seedlings. There are several other selections with this attribute and time will separate out the best performers.

■ *Chusquea gigantea*

This recently recognised species is considered to be the largest, erect (non-scandent) *Chusquea*. ➤

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It is reputed to reach a height of 15–18m with culm diameters of 5–6cm in its native Chile. The culms age to an attractive yellow. In contrast to *C. culeou*, at each node there are usually 2 to 3 longer branches. Like *C. culeou* it is very hardy, but new shoots have been damaged by frost.

It is faster growing than *C. culeou* and would need more space. Once established and maintained, the resulting grove is both beautiful and utilitarian as a producer of fine poles. There is a thriving cottage industry in Chile using this species for furniture and parquet floor material.

The name *C. breviglumis* has been misapplied to this species and it has also been listed as *C. aff. culeou*. The current name was coined by Demoly (1999), based on material grown in France.

Other hardy species

Several other *Chusquea* species are reasonably hardy and worth trying in the UK. Most make desirable plants but the scandent species, though interesting, are in most cases too overwhelming for the average garden. The following are all classified within subgenus *Chusquea*, except for *C. montana* which is a member of section *Swallenochloa*. No members of subgenus *Rettbergia* are currently known in cultivation.

■ *Chusquea cumingii*

This is a densely blue-green foliaged *Chusquea* with a spidery, vine-like habit. The leaves are small, thick and sharply pointed. A hedge of this species is likely to be wider than tall, assuming a mound shape, with new culms arching up and out like spider legs. It is a terrific plant for open spaces, the coast and places needing an impenetrable privacy barrier like that of a holly hedge. It is also likely that a few new seedlings will be entering the trade.



Photographs: G.H. Cooper

The culms of *Chusquea culeou* 'Caña Prieta' age from orange-red to an attractive coffee brown and contrast effectively with the pale sheathes of the new culms. The leaves are darker green than typical *C. culeou*

■ *Chusquea macrostachya*

The true plant has an arching habit, soft leaves and one larger branch at each node. It somewhat resembles *C. quila* and the leaves are longer and narrower than those of *C. culeou*. It is often mislabelled *C. culeou* but taxonomically it is more closely related to *C. uliginosa* than *C. culeou*. It is very difficult to propagate – large divisions are the most successful. Check your sources before attempting to acquire this species.

■ *Chusquea montana*

In nature this species is usually found growing as an understory plant. Its notable features are the somewhat swollen nodes and short stubby branches. Very few specimens are in cultivation and it is reported to be difficult to propagate.

A specimen believed to be this species was seen by Dr Lynn Clark growing in Peter Addington's bamboo collection at Stream Cottage, West Sussex, UK.

■ *Chusquea quila*

This is a scandent species not often found in cultivation. It is closely related to *C. valdiviensis* yet is densely foliaged like *C. cumingii*. Most plants labelled as this may be *C. culeou*.

■ *Chusquea uliginosa*

This is an arching species with long, thin culms and small leaves. It colonises large areas by growing over other plants and, if grown in the garden, it should be carefully sited. The species recently flowered and a few seedlings may be available.



Chusquea cumingii forms a dense mound from which emerge long thin culms that arch over if not supported by other vegetation

enthusiasts in West Coast USA and the UK. This is because of its delicate little leaves held on short branches in whorls around slender culms. The pompom look that these create is an attribute found only in this genus and a couple of others. *Chusquea coronalis* is very cold-sensitive, making it a conservatory plant for aficionados.

A surprise from southern Brazil is *C. mimosa* subsp. *australis*, a new subspecies showing some potential in colder climates. Reports from the UK and USA are encouraging in that it has survived -7°C . It has a vase-like habit with arching, 5m culms. The central branch at each node is much longer than the others and the fine leaves held on pink-tinged branches lead it to resemble the less-hardy *C. coronalis*.

Though only a little less hardy, *C. acuminata*, *C. circinata*, *C. foliosa*, *C. glauca*, *C. longifolia*, *C. pittieri*, *C. subtilis*, *C. sulcata* and *C. tomentosa* thrive in moist, maritime climates as long as the temperature does not drop below -4 to -5°C .

Cultivation

Chusquea culeou, *C. gigantea* and *C. andina* are hardy throughout the UK and West Coast and Mid Atlantic USA. The other species mentioned in this article will thrive in gardens with a maritime influence but their tolerance of inland sites is less well known. The factors that might limit them include summer heat with its attendant warm nights and hot soil. All prefer a fertile, slightly acidic soil.

Another factor to consider is the ultimate size of the plant in respect to garden space. A space of 3x3m will allow for the expanse of foliage in relation to a smaller footprint ▶



■ *Chusquea valdiviensis*

This species is not as hardy as those listed above but is reputed to thrive in mild, west coast gardens in the UK and would be worth trying in sheltered spots inland. It is the largest of the scandent chusqueas in cultivation – the culms can reach 25m in length. It has the ability to sprout recurved branches from the nodes, these allow the culms to grope through trees and hang on. This species is best planted near a cliff-side or a large tree suitable to support it. However, it is impossible to pull out of a tree once it has established in the canopy – not for faint-hearted gardeners!

Less hardy species

In the less hardy group, the dainty *C. coronalis* has fascinated a few

Chusquea foliosa is a less hardy species that has survived -4°C in the US. Several of the more tender species have narrow leaves



Photographs: Gill Cooper

on the ground. With heights typically ranging from 3 to 6m, treat them as a tall shrub in the overall garden plan. The upright growing species can be planted as a specimen, a background shrub or as an understory plant to the tree line.

They also make a good hedge along boundaries and walls. The scandent species need vertical support to inhibit sprawling on the ground.

Because of the slow spread of the rhizomes, chusqueas do not colonise new territory in leaps and bounds. The new culms tend to direct themselves away from the centre of the plant in small steps ranging from 5 to 30cm. Over the years the diameter of the clump expands and may reach a larger size than originally allotted.

Once established, watering requirements are minimal, however

Chusquea tomentosa has also survived -4°C in the United States and has fine narrow leaves

additional moisture when needed and fertiliser will improve overall appearance. Being a grass, the recommended fertiliser mix should be higher in nitrogen and lower in phosphorus and potassium, and applied during the growing season.

New culms arising between spring and autumn will take a year to mature and branch out their foliage. Older culms will gradually turn a yellow green. If a clump is to be thinned, culms should be pruned out in the autumn. The culms from several species make excellent garden stakes, trellis or fencing material. These should be trimmed and bundled to dry slowly.

Propagation

The best method of propagation is division in the growing season. Select

a portion of the plant that includes an older culm and new shoots just breaking ground. Prune the older culm down to 5–6 lower nodes, retaining the foliage. It is recommended that this is done several months head of digging. If this pruning is not carried out, the division may defoliate from the loss of roots in transplanting. Using a mattock, clear a circular trench around the desired section. Then carefully separate it from the main clump using an extra strong spade capable of sustaining hammer blows or better yet a sliding-handled piston spade. A strong tool is desirable as the rhizomes and roots are very tough. Once the vertical sides are cut, it is necessary to undercut the clump under the rhizomes to detach the remaining roots. Pry the clump



Chusquea valdiviensis is one of the most vigorous species, sending out long climbing culms into trees

up with a digging bar using a block of wood as a fulcrum. Try to keep the root ball intact and damage to new shoots at a minimum. Small single rhizomes and culm divisions are more likely to rot and die. Be careful not to over-water the new division or allow it to dry out.

Chusqueas can be propagated from seed when it is available. It should be sown onto pots or trays of sterile, mid-grade vermiculite, about 6–7cm in depth, and just covered with a sprinkling to hide the seeds from view. These should be placed on a warm heat mat at 22–24°C. This usually has them germinating in 21 days. Keep the medium moist and misted in partial light during this period. Transplant the seedlings into small containers after 3–4 leaves appear. Take care to protect

them from birds and rodents.

Bamboos flower after periods ranging from 25 to 100 years and will only do this at the end of a long life. Generally, when a bamboo flowers it is expected to die. A recently imported clone of *C. culeou* flowered only a few years ago resulting in thousands of seedlings available for gardeners. This species is believed to have a 45-year life cycle but less is known about the other species. However, sporadic flowering of different clones and groups does occur at different times.

Conservation

Many chusqueas are native to small geographical areas or restricted to isolated or specialist habitats. As human activity encroaches upon and disturbs these habitats, often

in mountains, there is a danger to vulnerable species. An organisation dedicated to taking action for the conservation of native American bamboos is Bambués de las Américas (BOTA, www.bambooftheamericas.org). The group assists conservationists in Latin American countries in developing national collections and training students to learn more about the culture and utility of endangered bamboo species.

Conclusion

Chusqueas bring to the garden an exotic, evergreen foliage effect unmatched by other plant species. They range in habit from a shrubby vase shape to tall and erect or tall and arching, or even scandent. The leaves come in a number of colours from blue-green to pine green. These large plants are easiest to grow in maritime-influenced climates although they may require muscular maintenance from time to time in cramped locations. ■

GIB COOPER operates Tradewinds / Bamboo Direct Nursery in Oregon, USA. Website: bamboodirect.com

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