Summary. *Sinobambusa tootsik* (Makino) Makino ex Nakai, the Chinese Temple Bamboo, is described and illustrated from material flowering at Kew. Its distribution is given and suggestions for its cultivation are provided.

For botanists and gardeners alike, the sight of a flowering bamboo can be a once in a lifetime experience. So when the Chinese Temple Bamboo, *Sinobambusa tootsik*, was spotted flowering in the Temperate House for what was the first time on record at Kew, its inclusion in this magazine seemed both timely and justified.

*Sinobambusa* is a relatively small genus comprising 12 species (Clayton et al., 2006) ranging from the southern and south-eastern provinces of China, the islands of Hainan and Taiwan, to northern Vietnam. In China, *Sinobambusa tootsik* can be found growing in the provinces of Fujian, Guangdong and Guangxi (Zhengyi & Raven, 2006), and it has become naturalised in Japan, India and Hawaii (Meredith, 2001).

The genus *Sinobambusa* first appeared in print as part of a volume on the flora of Japan in 1918 by the eminent Japanese botanist Tomitaro Makino (1862–1957). Makino had originally published the name *Arundinaria tootsik* (Makino, 1905) having transferred it from *Bambusa tootsik* which, in accordance with current nomenclatural rules, was invalidly published by Siebold in 1830. Makino (1918) then moved the species into his new genus *Sinobambusa* thus creating a new combination stating that ‘the diagnosis [of *Sinobambusa*] will appear in the forthcoming number’. However, in an error echoing that of Siebold, the generic description never appeared so the name *Sinobambusa tootsik* became a *nomen nudum* and therefore, like the genus itself, was invalidly published. Seven years after Makino’s invalid publication, Takenoshin Nakai (1882–1952) picked up on the error stating that ‘Mr. Makino...has cleverly separated... *Sinobambusa* from *Arundinaria*, though he has not given any descriptions, but there are sufficient reasons for distinguishing the genera’. Nakai (1925) thus provided the necessary description highlighting the ‘exceedingly elongated internodes’ and ‘deciduous culm...
sheaths’ as key characters for separating *Sinobambusa* from *Arundinaria*. In doing so Nakai also validated the name *Sinobambusa tootsik* hence the authority of this species, and indeed the genus, is Makino ex Nakai.

The etymology of the epithet ‘tootsik’ is from the Japanese word ‘Tô-chiku’ i.e. a Chinese Temple bamboo (Makino, 1905; Ohrnberger, 1999) referring to its introduction from China during the Tang Dynasty more than a millennium ago (Meredith, 2001). Its common name is therefore rather apt, given its association with temples and monasteries (Whittaker, 2005). It is also the most commonly grown of all the *Sinobambusa* species, a mark of the aesthetic qualities it possesses. When fully grown, its tall culms arch outwards while its long slender pale green inflorescences grow upwards from the nodes creating a statuesque arching appearance when viewed from a distance. Its characteristically tufted foliage also creates a distinctive pompom effect, especially with trimming of the shorter branches, making it very popular as an ornamental cultivar (Crompton, 2006). However, as elegant as this sight may be, in a warm sunny position the plant can spread very rapidly and take over the surrounding area if left unchecked. McClure (1993) highlights a particular example in Honolulu where the bamboo was introduced and prized as a garden ornamental but, having escaped from cultivation, has now become a troublesome weed, dominating many hectares of once pure native vegetation.

The illustration and line drawing represent the specimen grown in the Temperate House at Kew, but there is very little information about its origin. The Living Collections Database shows it was grown as long ago as 1920 and was positively identified, as *Sinobambusa tootsik*, by Dr. McClure on February 21, 1958. The plant is represented in the herbarium as sterile collections made by an unknown collector in 1920, by J. Souster in 1954 and 1961, and by C. E. Hubbard in 1968. It is unlikely, therefore, that the plant has flowered in this period as any inflorescences would surely have been collected. In the Kew Herbarium there are only two sheets of flowering material, both collected from Japan, representing different collections from 1952 to 1968.

Since the flowering phase of a bamboo is innately fixed for each species, and all the individuals of the species will flower synchronously
within a period of several years regardless of how widely they are dispersed (Renvoize, 1991), it can be inferred that *Sinobambusa tootsik* has a flowering cycle of approximately 50 years. The apparent non-flowering of the Temperate House specimen until now could be an example of sporadic flowering, where only a few clumps flower at any one time and do not synchronise themselves across the range of the species (Renvoize, 1991). However, more information on the species as a whole would be needed to verify this. What is certain is that this is the first recorded flowering at Kew of this attractive bamboo and as such makes for a valuable addition to the herbarium collection.

**Cultivation.** *Sinobambusa tootsik* is a species that lives in its own microclimate. This means there is no hard and fast rule on ideal growing conditions, since the extent of its growth is highly dependent on the climatic conditions in which it finds itself. If grown in a warm sunny location, it can be very invasive, but if it is cold and windy then rhizome growth will be restricted. It is therefore best to choose an area where rapidly spreading rhizomes will not cause problems. One way of keeping them in check would be to encircle the clump with a polypropylene barrier. This should be dug in to a depth of 1 m protruding 10 cm above the surface. Pot growing is not a good idea since the rhizomes will quickly encircle the container and burst through the sides. Moreover, a bamboo grown in a pot will, within a matter of three years, exhaust its reserve of nutrients and water even if it’s receiving a steady supply. However, if container growing is the only option, then always keep it well fed, with regular dividing and re-potting into fresh compost every three years.

Because of its elegant habit of growth, the best position to grow this bamboo would be in moist but well-drained soil, in full sun or partial shade, in a bed surrounded by lawn. Regular thinning of the canes is recommended, preferably in spring, not just to improve the plant’s appearance, but also to allow sunlight and rain to get through to the new shoots. However, care should be taken when carrying out such maintenance as the clump can get quite dense, and young shoots might get damaged during access to the inner parts of the clump, so it is advisable to carry out pruning before the new shoots emerge. (The above notes are by Raymond Townsend, Arboretum and Woody Collections manager in the Arboretum & Horticultural Services Section at Kew).
Sinobambusa tootsik. A, spikelet, × 3; B, lower glume, × 7; C, upper glume, × 7; D, lemma, × 7; E, palea, × 7; F, ovary with lodicules, × 8; G, ovary and stamens, × 6; H, lodicules, × 12. Scale Bar; A = 7 mm; B, C, D, E = 3 mm; F = 2.5 mm; G = 3.3 mm; H = 1.6 mm. Drawn by Lucy T. Smith from cultivated specimens growing at Kew.


Bambusa tootsik Siebold in Syn. Pl. Econ. 5 (1827), nom. nud.
Arundinaria tootsik Makino in Bot. Mag. (Tokyo) 19: 63 (1905), based on the above.
Arundinaria dolichantha Keng in Sinensia 7: 418 (1936) Type: China, Foochow, Tang 4551.


Description. Rhizomes with running stems. Culms solitary, erect but slightly arching towards the top, 6–8 (−12) m tall, 2–4 (−6) cm diameter, walls 4–10 mm thick, internodes 30–50 cm long, terete but lower ones with slight indentation, striate, lower internodes scaberulous becoming smoother above, initially musty green turning yellowish with maturity, nodes 6 mm thick, with a ring of brown irritant hairs projecting outwards above the node, and white bloom above and below the node; branch complement three, in a horizontal line with subequal branches thinner than the culm. Culm leaves deciduous; sheaths 42–45 cm long, up to 12.5 cm wide, ovate-lanceolate, initially reddish brown particularly in the centre, turning beige-brown with maturity, coriaceous, with a covering of patent purple-brown hairs, particularly on the adaxial surface, densely covered with purple-brown hairs at the base; abaxial surface with a glossy sheen, margins ciliate, apex broadly rounded, auricles c. 0.8 cm long, 0.5 cm wide, slightly rounded but with flattened apex, and with long stiff brown hairs, sheath blade reflexed, up to 10 cm long, c. 5 mm wide, linear to linear-lanceolate. Branch leaves 3–6 (−9) per ultimate branch; petioles 3–5 mm long; blades 15–20 cm long, 1–2 cm wide, glabrous, broadly lanceolate, base attenuate, abaxial surface glaucous, 10–13-nerved with cross nerves, margins spinulose, apex acuminate. Spikelets in clusters of 1–3 (−5), each cluster subtended by numerous overlapping bracts, some of these long, green and striate, becoming shorter, imbricate, papery and beige-brown towards the base of the branch; spikelets 150 mm long, 1.5–2 mm wide comprising up to 15 florets, laterally compressed, green; lower glume up to 10 mm long, 1.5 mm wide, 7-nerved, glabrous, broadly ovate, apex acute, mucronate; upper glume up to 10 mm long, 1–2 mm wide, 5–7-nerved, glabrous, broadly ovate, apex acute, mucronate; lemma 9 mm long, 3–4 mm wide, strongly 7–9-nerved with cross-nerves, glabrous, lower half of the lemma margins wrapped tightly round the rachilla, upper half of the lemma margins open exposing the back of the palea, broadly ovate, apex sub-acute to acute, mucronate; palea up to 8 mm long, 1–2 mm wide, 2-keeled, weakly 2–3-nerved with faint cross-nerves, narrowly elliptic, margins ciliate, slightly inrolled, apex obtuse, ciliate; lodicules 3, large and bract-like, the broader lodicule 2.5 mm long, 1 mm wide, with 7 dark brown-orange nerves, the 2 narrower lodicules 3 mm long, 0.8 mm wide with 3 dark brown-orange nerves, upper part of the margins ciliate; ovary 2.5 mm long, oblong-cylindrical; style very short, stigma, plumose and 3-branched; anthers 3, 4 mm long, yellow, exserted.
**Distribution.** Southeast China, Fujian, Guangdong and Guangxi Provinces. North Vietnam. Japan (introduced from China; cultivated in the central and southern parts.) Also introduced in Hawaii, India and Korea.

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**REFERENCES**


