

NOTES RELATING TO THE FLORA OF BHUTAN: IV The weeping cypress, *Cupressus corneyana* Carr.

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ABSTRACT. The first collection in Bhutan of authenticated wild material of *Cupressus corneyana* Carr. (Cupressaceae) is reported and previous records of cultivated and wild plants are discussed.

The first published reference to the presence of the genus *Cupressus* in Bhutan was made by Griffith (1839) describing his travels there during the preceding year, in which he reported seeing weeping cypresses in four localities, firstly at Dewangiri [Deothang 26°52' N, 91°28' E]: 'Both to the east and west of Dewangiri there is a picturesque religious edifice, with ornamented windows. Their effect is much heightened by the presence of the weeping Cypress, which situated as it was here, gave me an idea of extreme beauty'; the second at Roongdoong [Rontung 27°16' N, 91°33' E] 'and still lower we came upon a picturesque temple, over which a beautiful weeping cypress hung its branches'; the third at Tassangsee [Tashi Yangtshi 27°34' N, 91°28' E] 'very fine specimens of weeping cypress occur near this place'; and fourthly at Tchinjipjee [Chendebi 27°27' N, 90°20' E] 'Tchinjipjee is perhaps the prettiest place we saw in Bootan; our halting place stood on fine sward, well ornamented with (*Quercus semecarpifolia*?) very picturesque oaks, and two fine specimens of weeping cypress'.

Significantly, all of these reports indicate the close proximity of the trees to habitation, the first two a particular association with religious buildings. Some years later, when his complete journals were posthumously published (Griffith, 1847) no fewer than twelve localities were listed for the cypress, most of these near to villages or towns. At Phalang, S of Tashi Yangtshi, he noted (*l.c.*, p. 236), 'On some cultivated spots the pendulous cypress with its sombre head and branches covered with snow, was also remarkable, altogether a beautiful scene'.

He collected herbarium material from the plants at Dewangiri (Griffith, 1848, itinerary No. 27), Roongdoong (itin. No. 529 p.p.) and Lhuntse (itin. No. 679a) and described the second of these, commenting 'it is a sacred tree', under the name *Cupressus pendula* in his Itinerary Notes (Griffith, 1848) and figured it under the name *Cupressus torulosus* (Griffith, 1854, t. 372). As indicated by Franco (1969), neither of these names can be used for the Bhutan plant as both were validly published for other species at earlier dates.

In 1848, ten years after Griffith's exploration of Bhutan, the same plant was encountered around religious buildings in Sikkim by J. D. Hooker (Hooker, 1854) who noted at Tassiding, 'Here I saw for the first time the funeral cypress, of which some very old trees spread their weeping limbs and pensive brachlets over the buildings. It is not wild in Sikkim but imported there and into Bhotan from Tibet: it does not thrive well above 6000 feet elevation. It is called "Tchenden" by the Lepchas, Bhoteeas, and

Tibetans, and its fragrant red wood is burnt in the temples'. For this plant he used the name *Cupressus funebris* Endlicher under which it was later treated in the *Flora of British India* (Hooker, 1888), with the comment 'Planted near Buddhist temples in Nepal, Sikkim and Bhotan, alt. 4–8000 ft.—Distrib. Wild in China'.

In 1867 Carrière described a new *Cupressus* under the name *C. cashmeriana*, based on a cultivated specimen which he reported had been introduced in 1862 from Tibet, ascribing the name to Royle. It was described as having pendulous branches and pale green glaucous foliage, as well as being frost sensitive. Elwes & Henry (1910) and Camus (1914) included one of Griffith's Bhutan collections, no. 27 from Dewangiri, under *C. cashmeriana*, whilst following Hooker they placed Griffith's other specimens under *C. funebris*.

Examination of Griffith's herbarium at Kew suggests that all his specimens from Bhutan belong to one species: a view first expressed by Franco (1969) in his detailed study of the Himalayan and Chinese cypresses. In this work he presented a strong argument for applying the name *C. corneyana* Carr. to all cultivated Bhutan and Sikkim plants and treated *C. cashmeriana* as a later synonym of this name. It is clear, however, that all Bhutan and Sikkim plants lack the pale glaucous foliage of the plant cultivated in Britain under the name *C. cashmeriana* and that the latter almost certainly did not originate in Bhutan. Franco's treatment of *C. cashmeriana* as a synonym of *C. corneyana* would therefore appear to remain open to question. Franco (1969, p. 186) also rightly pointed out that the name *C. funebris* Endl. applies only to a quite distinct Chinese species and is unknown as a wild or cultivated plant in the Himalayas. Unfortunately, the origin, wild or cultivated, of Carrière's type of *C. corneyana* is unknown, but as he was clearly describing a very young specimen in 1855 it is possible that it originated from seed collected by Hooker in Sikkim in 1848.

Up to the present day, the problem of the wild origin of the cypress now known as *C. corneyana* has remained unresolved. Several travellers to Bhutan since Griffith's time have commented on the cultivated cypresses there, referring to the huge dimensions which these trees attain, e.g. White (1909, 1910) and Bailey (1924)—White (1909, p. 167) offering an explanation for the religious importance of the tree. The statement by Elwes & Henry (1910) that White had reported seeing natural cypress in Bhutan cannot be substantiated, but a later reference to wild trees in Bhutan by Cooper (1933, p. 75), whilst describing his botanical exploration of the Pho Chu valley NE of Punakha in 1915, must be quoted: 'Many huge specimens of *Cupressus funebris* Endl. (the weeping Cypress) occur on steep exposed slopes, and glimpses of extensive forests of this or an allied species had been seen through binoculars in the further reaches of the valley (beyond Dongaysam) which could not be approached. These forests are said to be at the sole disposal of the Maharaja of Bhutan and the timber used mostly in replacing the main beams of the Gompas or temples'. Unfortunately no specimen exists to substantiate Cooper's claim of natural *Cupressus* forest but the fact that he was familiar with the tree and collected cultivated specimens of it in the other localities, adds considerable credibility to his report.

On being granted permission to travel through Bhutan in 1979 to undertake field work for the Flora of Bhutan project, Mr A. J. C. Grierson and I enquired of Dasho C. Dorji, Director of Forests in Thimphu, of the existence of truly wild plants of *Cupressus* in Bhutan, and were assured that such forests existed not only in the Pho Chu valley as described by Cooper but also in the more accessible district around Norbding, W of the Pele La.

On the journey from Wangdu Phodrang to Tongsa on 16 May 1979 we were able to stop very briefly in this area and establish beyond doubt that wild plants of *C. corneyana* occur in Bhutan, and collect at about 2550 m a small specimen from these trees (Grierson & Long 1979)—material which agrees in all respects with the cultivated plants. Fairly extensive stands of the same species were visible on other hillsides in the district, and also just below the summit of the Pele La at about 3000 m, where the trees were mixed with *Abies densa* Griff. and arborescent *Juniperus pseudo-sabina* Fisch. & Mey. It is significant that the Pele La and Norbding lie on the main trans-Bhutan route between Thimphu and Tashigang, followed in the past by most botanical explorers of Bhutan, all of whom must have overlooked the cypresses, with the probable exception of the earliest, Griffith, who in his journals (1847, p. 278) recorded *Cupressus pendula* without comment in a list of plants seen by the Gnee River [Tang Chu, W of Pele La]. The other plants contained in the list suggest that this was quite natural forest; no mention was made of any associated habitation. This locality must be very close to where natural *Cupressus* forest was seen in 1979.

It was unfortunately not possible to obtain seed from these wild specimens in 1979, but viable seed was collected by us on an earlier visit to Bhutan, in 1975, from the cultivated tree at Dukye Dzong, Paro (Grierson & Long 234) and several vigorous young trees are now in cultivation at the Royal Botanic Garden, Edinburgh.

SYNONYMY RELEVANT TO BHUTAN

(cf. Franco, 1969, p. 192)

Cupressus corneyana [Knight & Perry Syn. Conif. 19 (1850). *nom. nud.* ex] Carrière, *Traité Gén. des Conifères* 128, (1855).

Syn.: *C. torulosus* Griff. *Icones Pl. Asiat.* t. 372 (1854) *hom. illeg.* non D. Don (1824).

C. pendula Griff. *Itin. Notes* p. 131 (No. 529 p.p.), 143 (No. 679a) (1848) *hom. illeg.* non Thunb. (1783).

C. funebris sensu Hook. f., *Fl. Brit. Ind.* 5:645 (1888) non Endl. (1847).

C. cashmeriana sensu Camus, *Les Cypres*, 63 (1914) p.p., ? non Carrière (1867).

SPECIMEN CITATIONS

Wild Material

BHUTAN. Norbding, below Pele La, 2550 m. In mixed forest on steep slope, 16 v 1979, Grierson & Long 1079 (E). 'Tall trees up to 20 m, forming ± pure stands on several hillsides in the district. Adult and seedling foliage. Local name Chendey. Also abundant on Pele La, c. 3000 m'.

Cultivated specimens additional to those cited by Franco, 1969 p. 193

BHUTAN. Chalimarphe, Timpu, 2285 m, 11 v 1915, *Cooper* 3886 (E); Anjor, Kurted, 1829 m, 23 vii 1915, *Cooper* 4174 (E); Dukye Dzong, NW of Paro, 2800 m, 11 vi 1975, *Grierson & Long* 234 (E); *ibid.*, 16 x 1974, *B. Bartholomew* 113 (E).

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