

DISTRIBUTION OF CHAMAECYPARIS FUNEBRIS (ENDL.) CARR.
AND CUPRESSUS CHENGIANA HU. (CUPRESSACEAE).

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The distribution and nomenclature of Chamaecyparis funebris (Endl.) Franco and Cupressus Chengiana Hu has often been incorrectly classified in several texts. The former was recognized as a taxon of Cupressus L. by Silba (Phytologia 49:394. 1981) on the basis of chemical and cultivation research. Its distribution in texts has included a distinct species, Cupressus Corneyana Carr. The distribution of C. Chengiana Hu has included another distinct species, namely C. gigantea Cheng & Fu (Franco, Portug. Acta Biol. 9: 190. 1969 and Silba, Baileya 21: 144. 1981) and a recent synonym, C. jiangeensis Zhao.

CHAMAECYPARIS FUNEBRIS (Endl.) Franco, Agros 24: 93. 1941. Cupressus funebris Endl., Syn. Conif. 58. 1847.

The distribution given by Franco (1941) included Nepal, Sikkim, Bhutan and China. However, Franco (Portug. Acta Biol. Ser. B. 9:183-195. 1969) later determined that the Western populations represented Cupressus Corneyana Carr and true C. funebris was only known from central China.

Cupressus Corneyana Carr. was only recently discovered wild, in Norbding, Bhutan (Long, Notes R.B.G. Edinb. 38: 311-314). Some commercial seed firms in India still market C. Corneyana as C. funebris. It is interesting to note that according to my research (Phytologia 49:390-399. 1981), C. Corneyana is the only Old World cypress that has seedlings with 3-5 cotyledons. A collection labeled as C. Corneyana by Franco (1969) from Panchen, Monyul District, S. Tibet, Ludlow & Sherriff 1254, March 1936 (BM) is located at 27°41' N. by 91°48' E. near the border of Bhutan [Stearn, Bull. Brit. Mus. (Nat. Hist.) Bot. 5: 243-268. 1976], may represent a wild collection. Cheng et Fu (Fl. Reip. Pop. Sin. 7: 332. 1978) state that C. torulosa Don (a native of the Western Himalayas) is also found in south and east Tibet on limestone region. It seems evident, however, that the Cupressus referred to by Cheng et Fu is in all probability C. Corneyana Carr.

The Kashmir cypress, C. torulosa cv. 'cashmeriana' was formerly regarded as a separate species described from Tibet (Royle ex Carr., Tr. Conif., 2:161. 1867). However this taxon has never been found wild and the only collection recorded by Franco (1969) by Royle is from Tehri Garhwal, N.W. India and rightly belongs

to C. torulosa Don. It may be possible that 'cashmeriana' resulted as a 'sport' from this seed. Similarly, several cultivars of Chamaecyparis pisifera Endl. bear juvenile foliage that never seems to change to adult foliage. These were once classified under a separate genus, Retinospora Sieb et Zucc., until it was discovered they were distinct cultivars of Chamaecyparis Sp.

I was unaware in *Phytologia* 49: 390-399. 1981 that the specimen examined by Zavarin (*Phytochem* 6:1387-1394. 1967) came from N. India and that some cultivated plants I observed also originated from N. India. Thus these are really C. Corneyana. In light of these facts I have reviewed the taxonomy of C. funebris and conclude that its characteristics fit the genus Chamaecyparis Spach more closely than Cupressus L.

The statistics of cotyledons given under C. funebris by Silba (*Phytologia* 49: 394. 1981) were from material collected in North India, so those statistics really belong under C. Corneyana. In late 1981 I obtained a seed lot of C. funebris collected in Changsha, Hunan from Dr. P. Chih Kang of the Chinese Academy of Forestry, Peking, China. Seedlings of this lot bore 2 bluntly acute cotyledons 7-9 mm. long by 1-1.2 mm. wide, not 3-5 as C. Corneyana.

Chamaecyparis funebris shares some parallel features with C. nootkatensis Spach. [Pringle s.n., Oregon, U.S.A., 1881 (NY)] in branching and leaf characteristics, which are comparatively close to Cupressus L. However, both species have small cones (usually less than 15 mm.), which shed their seeds upon maturity. Whereas, most Cupressus L. have cones over 20 mm. long that remain closed after ripening.

Chamaecyparis funebris is widely distributed in China from Anhwei to Yunnan along the Yangste River drainage (Harrison. 1966. *Hanb. Conif.*). It is also known from Szechuan [Fang 3356, 1928 (NY)] and occurs as far inland as Mount Omei, Szechuan.

CUPRESSUS CHENGIANA Hu, *Taiwania* 10:57. 1964.

Synonymy: Cupressus fallax Franco, *Portug. Acta Biol.* 9: 190. 1969.- Cupressus jiangensis Zhao, *Acta Phytotax. Sin.* 18: 210. 1980.- Cupressus Chengiana var. jiangensis (Zhao) Silba, *Phytologia* 49: 394. 1981.

Cupressus Chengiana Hu is fairly widespread in

S.E. Kansu and N.W. Szechuan along the Min River drainage, whose borders are quite close to populations of *Chamaecyparis funebris*.

In *Phytologia* 49: 395. 1981 there is a photograph of the type tree of *C. jiangeensis* Zhao surrounded by trees of *Chamaecyparis funebris* at Jiange Xian, Huaying Shan, Szechuan (30°24' N. by 107°20' E.). It seems rather odd that *C. jiangeensis* is only represented in the wild by one individual tree in the middle of a forest of another unrelated species of *Chamaecyparis*. Rather, it seems more logical that the lone specimen of *C. jiangeensis* in Huaying Shan is actually a specimen of *C. Chengiana* that was introduced by the Min River drainage, or by bird, or by man. Since this lone specimen is surrounded by another species it's cones and seeds are most likely to produce the first bigeneric hybrid in the wild. Zhao (1980) distinguishes *C. jiangeensis* from *C. Chengiana* by it having an ovoid cone with 12 scales, whereas the latter has globose cones with 8-10 scales. However, *C. Chengiana* Hu, H. Smith 13387, 11-13-1934 from Kangting, Szechuan (NY) has both globose and ovoid cones with 8-12 scales. The description of *C. jiangeensis* Zhao (1980) seems to fit well in the characters of *C. Chengiana* [Meyer 1981 & Cheng 2073 (NY)] and is here reduced to synonymy with it.

The specimen listed by Franco (1969) as *Ludlow, Sherriff & Elliot 13345* from Nye, Tsangpo Valley, Kongbo, S.E. Tibet (BM) is located at 29°01' N. by 93°17' E. (Stearn, 1976). The type specimen of *C. gigantea* Cheng & Fu cited as *Qing Zang 3318* from Nang Xian, Tsangpo Valley (PE) in *Acta Phytotax. Sin.* 13: 86. 1975 is located at 93°05' E by 29°02' N. Obviously then, the specimen collected by Ludlow, Sherriff & Elliot is really *C. gigantea*. I believe the name '*gigantea*' refers to the size of the tree and not the foliage or cones. *Cupressus Duclouxiana* Hickel was recently discovered wild [Ludlow, Sherriff & Elliot 12130, 1-11-1947 (BM)] near Trulung, Pome, S.E. Tibet at 30°03' N by 95°03' E. Thus *C. gigantea* occurs west of *C. Duclouxiana*, which occurs west of *C. Chengiana*. *Cupressus gigantea* is cultivated as *Ludlow, Sherriff & Elliot 13345* at the Univ. Washington, Seattle; Univ. Berkeley, Calif. and Hilliers Arboretum, Winchester, England. In late 1981 I obtained seeds of *C. Chengiana* collected from Kangding, Szechuan from Dr. P. Chih Kang and was able to distribute this to all the arboreta listed in *Phytologia* 49: 419-420. 1981 besides Seattle.



Silba, John. 1982. "Distribution of *Chamaecyparis funebris* (Endl.) Carr. and *Cupressus chengiana* Hu (Cupressaceae)." *Phytologia* 51(2), 157–160.

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