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Contents

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Abstract : Statistical measurements of cones collected on several living trees with pendulous foliage show meaningful differences incompatible with the placement of all those trees in the same species as several other cypresses with pendulous foliage. Comparisons with herbarium material of the 19th century allow for the attribution of cones collected on young trees in southern Europe to the species described by Carrière (1855) as *Cupressus corneyana*. Differences from other Himalayan cypresses (*C. tortulosa* and *C. torulosa*) are discussed and highlighted. The taxonomic rank is evaluated. A neotype is selected among the first available material and paratypes are chosen among the best early herbarium sheets in France, England, Germany and Switzerland. Finally the necessary corrections from previous articles are listed as completely as possible. A photo gallery shows the phenology of the pollen and seed cones from pollination to maturity.

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Cover photo: *Cupressus corneyana*. Seed cones, cult., France. 2024.09.16. © CCP.

Cupressus corneyana rediscovered

The name *Cupressus corneyana* appeared in 1850 in England in the nursery catalogue of Knight & Perry (pp. 19-20, cf. Appendix A, p. 20). Under the same name, this new species was validly described by Carrière in May 1855 in the first edition of his *Traité général des conifères* (cf. Appendix B, p. 20). The same year in June, Duchartre gave a more detailed description including pollen cones (cf. Appendix C, p. 20). In 1858, Gordon placed it as a variety of *Juniperus chinensis* (no seed cone was available at that time in England – cf. Appendix D, p. 20). In his *Supplement to the Pinetum* published in 1862, Gordon, after receiving seed cones, understood that it was indeed a cypress. He made the first (short) description of those cones (cf. Appendix E, p. 21). In 1867, Carrière in the second edition of his *Traité* reduced *corneyana* as a variety of *C. torulosa*. Contrary to Gordon who mistakenly placed the origin of this species in Japan and northern China (no *Cupressus* species are growing wild in those areas), Carrière (1867) wrote rightfully that its origin is Himalaya (its origin being unknown in 1855) and that it was introduced around 1847 (cf. Appendix E, p. 22). The main striking characteristic of that species mentioned by those first authors is its pendulous foliage, which lead later to considerable confusion.

There are several *Cupressus* species with pendulous foliage (origin):

- *Cupressus nootkatensis* D.Don[1] (1824, north-west coast of North America).
- *Cupressus funebris* Endlicher (1847, southern China).
- *Cupressus tortulosa* Griffith (1854, Bhutan).
- *Cupressus corneyana* Carrière (1855, Himalaya, unknown locality).
- *Cupressus cashmeriana* Carrière (1867, South Tibet, aka W Arunachal Pradesh, India).

At different times many of these were confused with each other because of the pendulous foliage[2] and this confusion persists till today, with superfluous synonyms also being added (mainly by Silba, e.g. *C. assamica* & *C. pseudohimalaica*). At the beginning of the 20th century it was still understood that *C. funebris*, *C. cashmeriana* and *C. corneyana* were distinct taxa, if not at the species level, at least as varieties of *C. torulosa* (Kent 1900; Elwes & Henry 1910, see appendices J and K, pp. 24-26). The only remaining confusion was between *C. cashmeriana* and *C. tortulosa* after the introduction of the latter in England from Italy (Rovelli Nursery, cf. the Isola Madre tree[3]), under a wrong name, during the last years of the 19th century (see Maerki 2013)[4].

Then in 1969 (187), Franco wrote:

> "From what above explained, *Cupressus corneyana* Carr. (1855) must be taken as the correct name for the weeping cypress also known as *C. pendula* W. Griff. (1848), non Thunb. (1783), and *C. cashmeriana* Carr. (1867). As no type-specimen is available, I should propose as neotype the specimen, in fruit, from the herbarium George Gordon, preserved at Kew and labelled « *Cupressus Corneyana* »."

In his very interesting article about the history of the discoveries of cypresses in Bhutan, Long (1980) endorsed the epithet *corneyana* proposed by Franco (with the exception of *C. cashmeriana*, accepted as a distinct species by Long). "In this work he [Franco] 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" (Long 1980: 312). Unfortunately it is impossible to see any "strong argument" in Franco's article, for he based his opinion on dry herbarium material and mainly, if not exclusively, on shoots. His only remark about cones for the pendulous cypresses, apart from *C. funebris* cones[5], reads (Franco 1969: 187):

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[1] See illustrations Figs 59 & 60, pp. 55-56.

[2] For instance Masters proposed the name *C. funebris* var. *glauca* for the recently introduced blue cultivar of *C. tortulosa* from Italy into England (Masters 1896: 336). Why the cones were never studied statistically is a mystery.

[3] Note: there is a second *C. tortulosa* on Isola Madre, with green foliage, labelled *C. funebris*. But no one gave it any attention to this day. The famous *C. tortulosa* of Isla Madre which was rescued after having been uprooted by a tornado is a glaucous blue cultivar. The foliage is variable and treacherous.

[4] This confusion persists until today, cf. Terry *et al.* 2018.

[5] "From its characters, the Chinese species is much better placed in the genus *Chamaecyparis* Spach, where its specific name is the combination *Ch. funebris* (Endl.) Franco (1941)." (Franco 1969: 186.) *C. funebris* is a *Cupressus*, of course.

> "There is no specimen of CARRIÈRE'S plant, but, as to GORDON'S synonym, its description well agrees with *Cupressus pendula* W. Griff., except in the slightly larger size of the cones."

Considering the very few cones available, this comparison could not then be validly supported. Gordon is known for several mistakes like attributing first the *corneyana* species to *Juniperus* or considering *C. corneyana* as "no doubt the real weeping Cypress of China" (Gordon 1862: 24).

It followed that Grierson & Long attributed the specific name *corneyana* to the Tsenden[6], the sacred tree of Bhutan (*Flora of Bhutan* 1982: 52-53), an error also made more recently by the very author of the present article (se the list of the necessary corrections below, p. 10).

Those botanists thus failed to distinguish *C. corneyana* from *C. tortulosa*. The present article is designed to correct all previous errors some of which were published in previous issues of this Bulletin. At this point it is worth emphasising once more the remark by Gordon (1862: 23):

"Wherefore by their fruits ye shall know them."

And also to add the following advice:

> "Aristotle taught me, among other maxims, that to understand things properly, you have to see them being born and growing. If I want to acquire a complete and exhaustive knowledge of an insect, it is not enough for me to dissect it, for then I have before my eyes only a corpse, a frozen mechanism that has become something quite different from the real insect: in order to see it, not only as a machine, admirable though inert, but as a moving, unexpected being, directing itself and subject to laws that are more complicated than those of mechanics, I must observe it alive, watch it live – that is to say, to come into being, to develop and to act. Aristotle is right."[7]

Of the four Asian species with pendulous foliage mentioned above, *C. funebris* is clearly distinct from the three others by its much smaller cones and fewer scales. It is also the only one with a distribution range away from the Himalaya.

In a previous article (Maerki 2014c: 104), a statistical analysis was proposed. Here are the summarised current pertinent data with the number of seeds by cone and by scale:

Table 1: Seeds/cone & seeds/scale
After Maerki 2014: 104, Tab. 4 & 5

		C. tortulosa				***C. torulosa***
		Italy		France	Switzerland	Italy
		Isola Madre	Old tree	Young tree	Young tree	Old tree
	Tree	#5	#7	#8	#11	#12
Number of seeds/cone	**Average**	**119**	**104**	**120**	**72**	**69**
	Max.	131	141	159	89	96
	Min.	107	50	72	50	47
	Sample size	*2*	*118*	*43*	*26*	*64*
Number of seeds/scale	**Average**	**9.9**	**10.3**	**11.2**	**6.8**	**7.0**
	Max.	10.9	13.8	15.5	8.7	9.6
	Min.	8.9	5.0	7.2	5.0	4.7
	Sample size	*2*	*118*	*43*	*26*	*64*

It should have been obvious from those results that the tree #11 is different[8] and that the data of Tab. 1 place it closer to *C. torulosa* than to *C tortulosa*. This tree is nowadays cultivated in the same area where a sample was collected in 1870 (cf. Figs 7 & 8, p. 15-16). This sample is available at the herbarium of Geneva with the label of *C. corneyana*. The extant tree is too young to have contributed to that collection back in the 19th century[9]. Another tree, found in Italy #10, was not mentioned in the 2014 study because of its very limited sample size (2 cones). It falls nevertheless inside the limits of the tree #11. The real eye opener was the discovery of three cultivated trees in

[6] Also known during that period as Griffith's *C. pendula*, an invalid name according to the nomenclatural rules.
[7] Bottéro *et al.* 1996, translated from French.
[8] Before 2014, it was commonly referenced as *C. cashmeriana* because of its pendulous foliage.
[9] A second tree was destroyed when a building was enlarged. Those cypresses are easily propagated by cutting and grafting.

the south of France. All of them were grafted and purchased from a nursery which is no longer in active[10]. The tree #13 is the oldest of the three with a height of 15 m. Like for the Swiss tree #11, it was first identified erroneously – without further analysis! – as *C. tortulosa* by the author. The two other (#14 & #15) are much younger (sizes: 15 and 6 m.). The availability of cones within hand reach allowed an easy collection and new statistical data were established (see Tab. 2):

Table 2: Seeds/cone & seeds/scale

		Tree #11 Switzerland	Tree #10 Italy	Tree #13 France, Var	Trees #14 & #15 France
Number of seeds/cone	**Average**	**72.1**	**66.0**	**59.3**	**62.6**
	Max.	89	69	83	98
	Min.	50	63	29	33
Number of seeds/scale	**Average**	**6.79**	**6.08**	**4.95**	**5.67**
	Max.	8.70	6.90	7.20	8.50
	Min.	5.00	5.25	2.42	3.25
	Sample size	*26*	*2*	*27*	*42*

The differences with *C. tortulosa* are obvious (cf. Tab. 1). In consequence those trees, which are neither *C. cashmeriana*, nor *C. tortulosa,* are in need of a Latin name. So far we have only the main character: the pendulous foliage. What about the cones?

Carrière at the time of his description of *C. corneyana* had no cone available. In French herbaria, cones appear in 1857 and 1859 collections (cf. Figs 4 & 10, p. 12 & 18), that is two years after the publication of the first edition of the *Traité*. In England cones became available after 1858 and before 1862 by Gordon's testimony.

The first descriptions of the cones were made by Gordon (1862) and by Parlatore (1864)[11]. Unfortunately Gordon and Parlatore omitted to give the sample sizes of their observations.

Gordon (see Appendix E, p. 21): "*cones*, globular [...] from half to three-fourths of an inch in diameter, [width from 12.7 to 19.05 mm; the length is not given], and generally composed of ten scales in opposite pairs[12]; *scales*, irregularly shield-shaped, four or five-sided, and rising in the centre to a broad point, those nearest the apex of the cone being the smallest, most acute, and much more elevated than the rest; *seeds*, numerous under each scale [no number is provided]."

Parlatore gave a more detailed description of the cones (see Appendix G, p. 22), briefly summarised here: cones oval or subglobose, to 10 scales, scales peltate with a short sharp tip, 4-6 seeds/scale[13]. A species related to *C. torulosa* from which it differs especially by the completely pendulous branches and twigs. Cones 15-20 mm long, 10-14 mm wide.

Although these descriptions are minimal, they will be useful for comparison with the cones of the extant trees 'in search of their Latin name'. Note already the presence of small mucrones with an acute tip, which can be considered as a specific character, absent from *C. tortulosa* and *C. torulosa* cones.

Another available test is to compare the cones of the extant trees mentioned in Tab. 2 with the ones on the herbarium sheets where the material was collected very close to the taxon introduction. Two 19th century sheets[14] are available for that test: they are among the closest to the introduction of *C. corneyana* in 1847-1850. The name *corneyana* seems to have disappeared in herbaria soon after 1912. Herbarium sheets from more recent dates (after Franco) could have been victim of the confusions mentioned above with the other pendulous cypress species or with *C. torulosa*.

For the method used to measure the cones, see Figs 1, 1bis & 2 next page.

[10] So that the source of the scions remains a mystery. It is evidence that this taxon is hardy in southern France (like the *C. cashmeriana* described by Carrière in 1867). Research is ongoing to try to locate the original tree. The grafted plants were sold under the name *C. cashmeriana*.

[11] Koch gave a minimal description of the cones, pointing that they are "slightly elongated". See Appendix I, pp. 22-23.

[12] At least one cone on Gordon's collection (K000777640) has 6 pairs of scales.

[13] To be compared with the data of Tab. 2.

[14] Unfortunately a centimetre ruler is present only on those two sheets. Not all cones are measurable, several being partially hidden by the foliage.

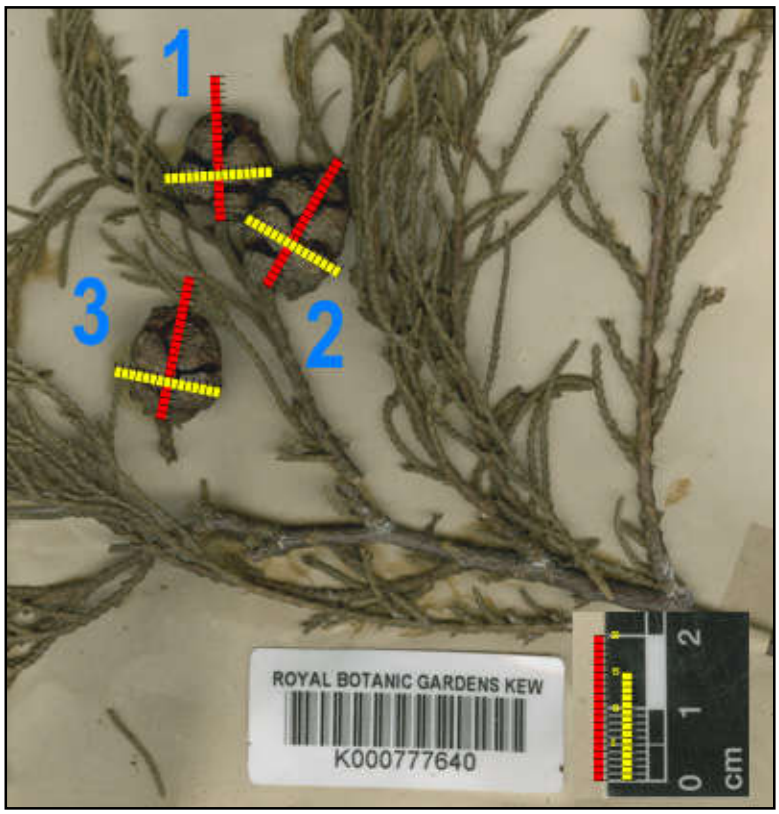


Fig. 1: *C. corneyana*, herbarium sheet K000777640 (partial).

Gordon collection.

Date unknown, after 1858, but before Gordon's description in 1862.

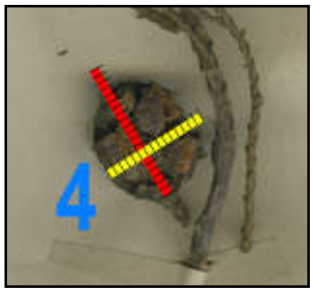
The red strips are 20 mm long (lengths), the yellow ones, 15 mm (widths). Those strips allow evaluating roughly the sizes of these open cones.

Scale: ~1x.

Complete sheet: Fig. 5, p. 13.

Fig. 1bis: Detail of K000777640

Scale: ~1x.



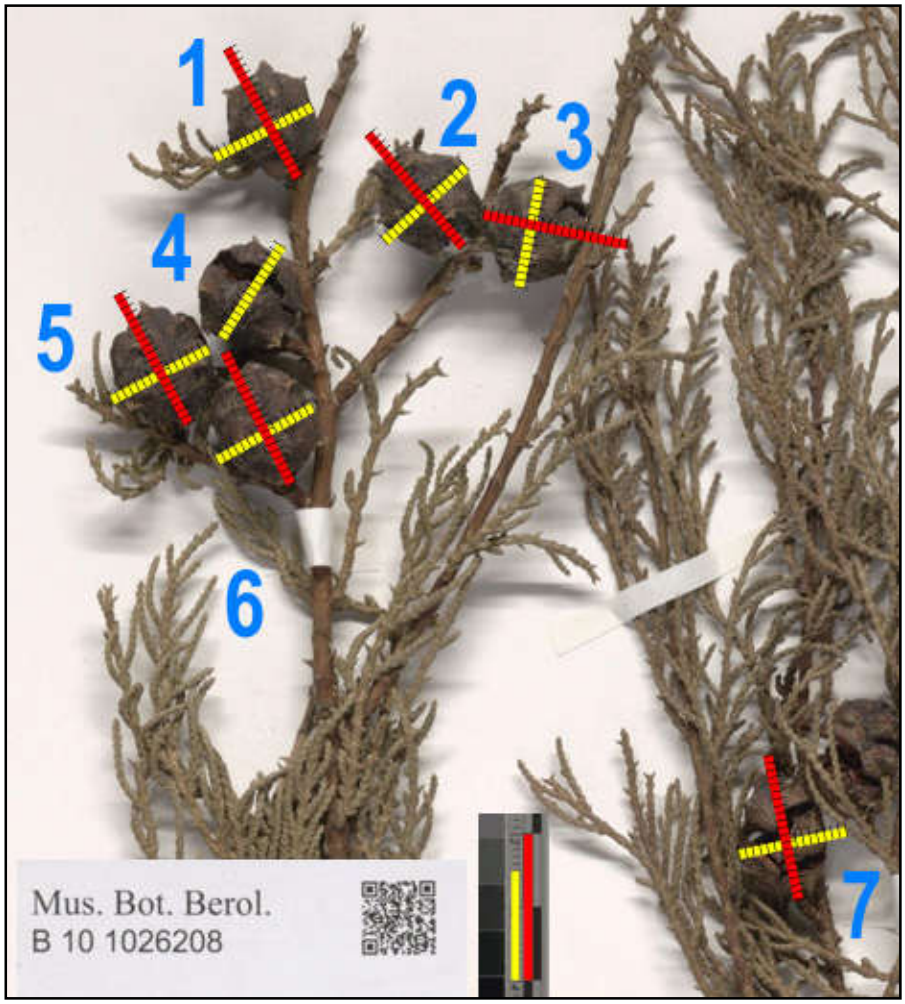


Fig. 2: *C. corneyana*, herbarium sheet B 10 1026208.

This sample belongs to K.Koch herbarium.

See the complete sheet as Fig. 6, p. 14, and p. 15 for the explanation of the possible collection date.

Scale: ~1x.

Results of the measurements on Tab. 3, p. 7.

The estimate measurements of those eleven cones from the two herbarium sheets are summarised in Tab. 3.

Unit of the measurements for lengths and widths in Tables 3, 4 & 5: mm.

Table 3: Cone measurements on two herbarium sheets of the 19th century (cf. Figs 1 & 2, p. 6).

C. corneyana				
K00077640				
#	Length	Width	Ratio L/W	Scales
1	15	13	1.15	10
2	18	14	1.29	12
3	16	13	1.23	10
4	16.5	13.5	1.22	10
B 10 1026208				
#	Length	Width	Ratio L/W	Scales
1	15	12	1.25	10
2	15.5	13.5	1.15	10
3	14	14	1.00	10
4		13.5		
5	16	13.5	1.19	10
6	17	14	1.21	12
7	16	12	1.33	12
Average	**15.90**	**13.27**	**1.20**	**10.60**
Sample size	*10*	*11*	*10*	*10*

And here are the results of cone measurements of the trees 'in search of their Latin name'.

Table 4: Cone measurements

		***Cupressus* species**			
		Tree #11 Switzerland	Tree #10 Italy	Tree #13 France, Var	Trees #14 & #15 France
Cone length	**Average**	**16.61**	**16.68**	**15.42**	**16.63**
	Max.	20.75	19.84	18.02	22.85
	Min.	10.31	13.25	13.00	11.02
Cone width	**Average**	**16.09**	**16.36**	**14.41**	**15.85**
	Max.	19.99	18.84	16.14	22.22
	Min.	11.29	12.57	12.50	10.68
Cone length/cone width	**Average**	**1.03**	**1.02**	**1.07**	**1.05**
	Max.	1.17	1.17	1.19	1.21
	Min.	0.91	0.89	0.95	0.90
	Sample size	*52*	*52*	*27*	*81*

The comparisons of the two sets of data as well as the cone first descriptions by Gordon and Parlatore show no important discrepancy.

For instance Parlatore gave the shape and the sizes of the cones, the number of scales and the number of seeds/scale (cf. Appendix G, p. 22). These numbers fall within the ranges of the extant cypresses reported here (cf. Tab. 3 & 4 above).

The few differences can be easily explained. Interesting that Gordon wrote about globular cones when the ones on his herbarium sheet show elongated cones with a ratio length/width equal or

superior to 1.15. The main differences between the cones of the herbarium sheets and the cones collected on the live trees is that most measures in the latter case were done on closed cones. Another explanation is that the measures on herbarium sheets are approximate.

It leads to accept the species described by Carrière as *C. corneyana* for those five trees 'in search of their Latin name'. The sizes and shapes of the dry cones (cf. Figs 4-12) match with the living ones (cf. Figs 46-54), and all these living trees display the characteristic very pendulous foliage in one or two flat sprays (in that latter case at an angle of 90° – see Fig. 18, p. 30).

Which rank for this taxon?

Although the numbers of seeds/cones and seeds/scale show a great similarity with *C. torulosa* (cf. Tab. 1), the shape of the cones (small acute mucrones on the distal scales *versus* none or much smaller ones, convex scales *versus* a depression on the lateral scales, subglobose *versus* globose cones (cf. Tabs 5 & 6 and the comments) and their colour during the first year (blue or glaucous grey *versus* green or glaucous-white) – apart from the pendulous foliage and the presence of flat sprays at 90° – allow the acceptance of *corneyana* as a valid species and not as a variety of the former. The colour of the foliage is also different; yellowish-green for *C. torulosa versus* glaucous-blue when young, turning darker green when older (see Fig. 57, p. 54 and its explanation) for *C. corneyana*.

The following Table 5 summarised the cone differences between the two taxa.

Table 5: Cone measurements of *C. torulosa* and *C. corneyana*.

		C. torulosa		*C. corneyana*			
		Rivara	Pallanza	Tree #11	Tree #10	Tree #13	Trees #14 & #15
	Average						
Cone	Length	18.62	17.99	16.61	16.68	15.42	16.63
	max width	18.77	18.07	16.09	16.36	14.41	15.85
	length/width	0.99	1.00	1.03	1.02	1.07	1.05
	min width	17.96	16.98	15.11	15.53	13.72	14.99
	max/min width	1.05	1.06	1.07	1.05	1.05	1.06
	Index	6.28	5.52	4.04	4.24	3.05	3.95
	Scales/cone	9.32	9.87	10.54	10.77	12.15	11.14
	Sample size	*19*	*99*	*52*	*52*	*27*	*81*

Table 6: Weight of dry cone and seeds of *C. torulosa* and *C. corneyana*.

		C. torulosa	*C. corneyana*	
		Rivara	Tree #13	Trees #14 & #15
	Unit: g			
Dry cone	average weight	1.152	0.737	0.727
	max weight	1.318	1.072	1.019
	min weight	0.958	0.513	0.442
	Sample size	*18*	*27*	*16*
	Unit: mg			
Seed	average seed weight	5.639	2.438	2.043
	aver max seed weight	6.234	3.191	2.346
	aver min seed weight	4.663	1.473	1.500
	Cone sample size	*18*	*24*	*16*

The main differences from Tab. 5:

- the average length of *C. torulosa* cones is over 17 mm, and under that for *C. corneyana*;
- the average maximum width of *C. torulosa* is over 18 mm, while it is under 17 mm for *C. corneyana*;
- the average length/maximum width ratio of *C. torulosa* is equal to or under 1, and always above 1 for *C. corneyana*;
- the average minimum width of *C. torulosa* is over 16 mm, while it is well under 17 mm for *C. corneyana*;
- the index (= length*maximum width*minimum width/1000) for *C. torulosa* is over 5.5, and under 4.5 for *C. corneyana*;
- the average number of scales by cone is below 10 on *C. torulosa*, and above 10 on *C. corneyana*.

The differences from Tab. 6:

- the dry cones of *C. torulosa* are significantly heavier than those of *C. corneyana*;
- the average weight of *C. torulosa* seeds is about the double of the average weight of the *C. corneyana* ones.

It is thus possible to distinguish those two species clearly by statistical study of their cones and by observing the seed cones, especially during the first year after pollination.

The origin of *C. corneyana* remains a mystery. It is obvious that it is not present in Bhutan or in western South Tibet. Its affinities with *C. torulosa* (number of seeds/cone) could place it from Central Nepal to Himachal Pradesh in India, but it is only a hypothesis based on the data of Table 2. It could also be present in remote valleys in northern or eastern South Tibet (aka Arunachal-Pradesh). It could also be extinct in the wild. The pendulous foliage is an indicator of a moist climate while *C. torulosa* is adapted to a drier environment part of the year (monsoon climate).

In the south of France, other specimens could have been sold by the nursery which grafted the extant young trees. In private properties their access could be a further difficulty.

The localities of the five known living *C. corneyana* are currently being withheld for their protection. A program of grafting is underway to multiply that species.

Several trials to reproduce that taxon by seeds completely failed so far with only one exception. But even that sapling went dry over the years when still in the nursery. Those failures could be explained by self-pollination. Hybridisation is unlikely as this taxon pollinates at the end of December, when most other cypresses release pollen much later (*C. sempervirens*, *C. glabra*, etc.).

Its hardiness should be evaluated. The current information is that all the known living trees are in a Mediterranean climate with limited frost or in a microclimate with the same characteristics. Until demonstrated otherwise the *C. corneyana* introduced in the British Islands were either destroyed by adverse meteorological conditions or had their name changed along the 20th century. Too often the variety name is dropped in favour of the specific name, leaving in that case only the name *torulosa*[15]. There is only one mention of a specimen of this taxon (as a variety) by Elwes & Henry (1910: 1160 - cf. Appendix K, p. 25-26):

> "At Melbury there is a tall fine tree of var. *Corneyana*, bearing fruit near the summit, which was 65 ft. by 4 ft. 11 in. in 1908."[16]

The trees mentioned by Mitchell (cf. Appendix L, p. 25) need to be seriously verified. In his description of *C. torulosa* var. *corneyana* (1972: 109), the author gives the following description of the foliage: "the foliage differs from the type in being duller, more yellowish green, more distantly branched and spreading, on branches which do not curve upwards. The ultimate shoots are 3-4 mm across; branchlets not flattened;

[15] Further common examples where the variety rank is dropped are *C. arizonica* var. *glabra*, *C. guadalupensis* var. *forbesii*, *C. goveniana* var. *pigmaea*, *C. lusitanica* var. *benthamii*. And the consequences are that *C. glabra* specimens are labelled *C. arizonica*, *C. forbesii* are labelled *C. guadalupensis*, *C. pygmaea* are labelled *C. goveniana* and *C. benthamii* are labelled *C. lusitanica*. These mistakes are quite common in the botanical gardens and arboreta.

[16] Correspondence with Melbury returned the answer that there is currently no such tree more than a century old in the park area.

curled at shoot-ends." No mention is made of the main foliage feature of the *corneyana*, the strikingly pendulous foliage. Moreover the foliage is not "yellowish-green", the branches do curve upwards, and the branchlets are completely flattened on the pendulous shoots. In those conditions it is impossible to trust Mitchell's specimen list. The foliage description matches *C. torulosa*.

Neotypification

In 1969 (187), Franco wrote:

"As no type-specimen is available, I should propose as neotype the specimen, in fruit, from the herbarium George Gordon, preserved at Kew and labelled «*Cupressus Corneyana*»."

According to nomenclatural authority Khanchi N. Gandhi, that "proposition" with a conditional tense is not enough to validate the chosen material as a neotype. A further problem is that the sheet of Gordon's collection displays three samples of at least two different cypress species with three different bar codes: K000777640, K000777678 and K001090476. Thus the neotype proposition remains ambiguous and it becomes necessary to designate an unequivocal sample. As the description of the binomial was done by Carrière with French material[17], a sample is selected among the sheets present in a French herbarium and which represents a very early collection.

Neotype: *Cupressus corneyana*, *Leroy s.n.*, 1859; **P01637180, *hic designatus***. Cf. Fig. 4, p. 12.

This sample is the most complete with eleven seed cones (several of which with 12 scales), pollen cones, the typical foliage in flat sprays, and seeds. Also Koch (1873: 161) acknowledged the presence of this taxon in Leroy's nursery in Angers (France)[18].

In support of the neotype designed above (which does not show a centimetre ruler), four paratypes are chosen: three allow measurements directly on the photographs while the last one displays seed cones perfectly preserved with seeds still inside. All paratypes were collected less than 15 years after Carrière's description.

Paratypes:

- *Cupressus corneyana*, *K.Koch herbarium*, inside B herbarium; unknown collector; exact date unknown, between 1858 and 1862; locality unknown; **B 10 1026208**, ***hic designatus***. This sample displays 12 seed cones and foliage. Some cones are not completely mature. Cf. Fig. 6, p. 14.
- *Cupressus corneyana*, *Gordon s.n.*, exact date unknown, between 1858 and 1862; exact locality unknown. As they are two different cypress taxa present on the same sheet, it is necessary to precise exactly which material belongs to the barcode K000777640:
  - the three cones on the lower part of the sheet with the foliage around them;
  - the cone attached to a shoot on the right upper side of the sheet.

  Thus delimited, **K000777640**, ***hic designatus***. Cf. Fig. 5, p. 13.
- *Cupressus corneyana*, *Shuttleworth Herb., E/13*, 1862-12-23, Hortus Huber, Hyères, France. **BM15153379**, ***hic designatus***. The material on the sheet presents numerous mature pollen cones and two globular seed cones, thus showing the variability accounted by the first authors. Cf. Fig. 9, p. 17.
- *Cupressus corneyana*, *Barbey-Boissier herbarium*, inside G herbarium (without a barcode, not yet digitalised); 1870-04-08; Jardin du Rivage, Vevey, Switzerland; ***hic designatus***. This sample displays 6 seed cones and foliage. The cones are in perfect condition. Cf. Figs 7 & 8, pp. 15-16.

Corrections

Previous studies by the current author which identified *C. corneyana* as a synonym of *C. tortulosa* are errors in need of correction. The following articles published in the *Bull. Cupressus Conservation Proj.* must be thus corrected[19].

- Maerki 2013: Interestingly there are a few sheets from cultivated material labelled *Cupressus corneyana* in the Paris herbarium. The oldest collection dates from 1857. These specimens are perfect matches for the Tsenden growing in the Villa Thuret (collection by H.Ern in 1982, origin Paro, Bhutan, cover page [top], fig. 8 & 9, p. 60, fig. 27, p. 69). [This is an error, and the tree in Villa Thuret from H.Ern collection poses further problems which will be dealt in

[17] The same was done with *C. cashmeriana* with a sample collected on a live tree inside the Jardin des Plantes in Paris (see Maerki 2014e).

[18] "Selbst die unter dem Namen *C. Corneyana* bei A. Leroy in Angers im Freien kultivirten Exemplare möchten nicht die ächte Trauer-Cypresse der Ostasiaten, sondern eine Form der *C. torulosa*, sein [...]."

Even the specimens cultivated outdoors under the name *C. corneyana* by A. Leroy in Anger could be not the genuine mourning cypress of East Asia, but a form of *C. torulosa* [...].

[19] Quotes from previous articles appear in blue. Corrections in red when along the previous text.

another study.] As the material available in France at the time of Carrière in the 1850s points to exactly the same taxon and as the proposed neotype of Franco belongs rightfully here and was misidentified by Farjon for *Cupressus torulosa* (not realizing that the Tsenden foliage when not a cultivar can be confused with the one of the Himalaya Cypress and that it is necessary to have a close look at the cones [not only at the cones, but also at the number of seeds by cone and by scales, cf. Tab.1], the conclusions by Franco, and Grierson & Long and Rushforth assigning the Latin name *Cupressus corneyana* to the Tsenden are thus correct. This whole assessment is today an error, as *C. corneyana* is demonstrated in this study as being different from the Tsenden. The trees of Figs 7, 13 & 14 are *C. corneyana* as well as the cones of Fig. 34.

- Maerki 2014a: If it is true that no original material of *Cupressus corneyana* survives, this is not the case for *Cupressus cashmeriana*. It appears now that *C. corneyana* survived at least in the south of France, in Switzerland and in Italy. The quest is now to locate the mother tree of those too young French trees to be from the first introductions of the 19th century.
- Ditto: quoting Farjon: *Cupressus corneyana* Carrière remains incertae sedis and its usage in Flora of Bhutan (Grierson and Long, 1983) is incorrect. This assessment Farjon was/is correct.
- Ditto: The neotype of *Cupressus corneyana* proposed by Franco is a perfect match with the specimen growing in France from seed collected in Bhutan. *Cupressus corneyana* is the Cypress of Bhutan, only that *Cupressus tortulosa* has priority under the ICBN rules. Same error as above introduced by Franco and copied by Grierson & Long and by the author.
- Maerki 2014b: It is necessary to stress again that the Bhutanese themselves never use the name *Cupressus cashmeriana*, but systematically *Cupressus corneyana* Carrière for their national tree. They claim that *Cupressus cashmeriana* is a different taxon of Indian origin. This is still currently true. But following the present study, the name of *corneyana* for the national tree of Bhutan has to be dropped. See next article p. 55.
- Maerki 2014c: See Tab. 1, p. 4 above, when two specimens (trees #10 & #11) were wrongly attributed to *C. tortulosa*. In the same article, the following figures belong to *C. corneyana*: Figs 8, 10-12, 14, 32-34, 40-41.
- Maerki 2017: The same error identifying *C. corneyana* as the Bhutan Cypress following Franco. In the synonym list of *C. tortulosa* (p. 47), *C. corneyana* must be removed.

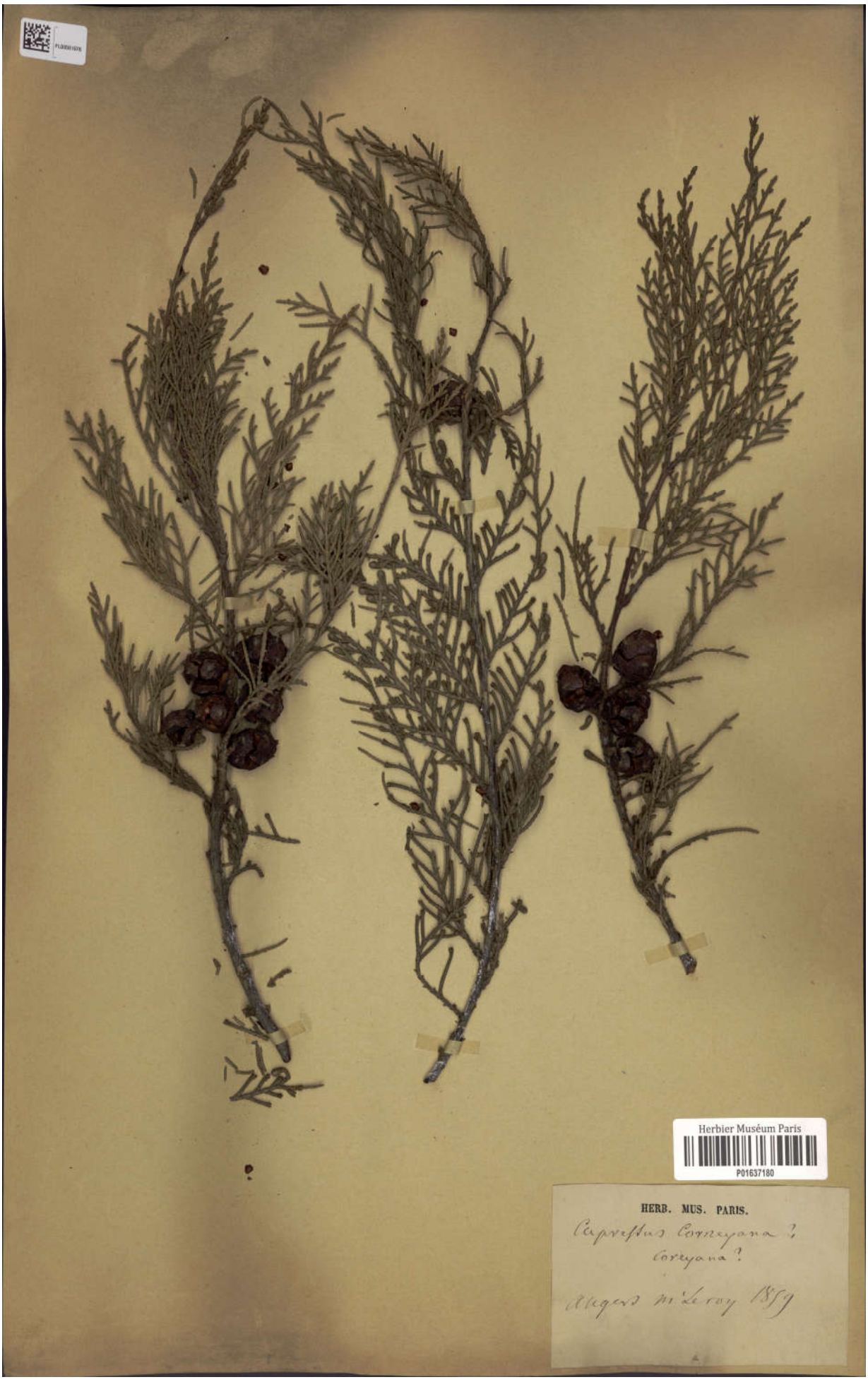
Fig. 3: Ultimate branchlet bearing seed and pollen cones. Usually this order is reversed. Tree #14. 2024-12-20.

Complementary description

- Cotyledons: 2 (Dangeard 1892: 177).
- Pollen cones: 8-11 pairs of scales.
- Pollen colour: white (cf. Fig. 58, p. 54).
- Seed cones appear on the tip of spreading branches as well as on the pendulous shoots generally in clusters of several cones.
- Pollen release begins after mid December to mid January and can vary according to the local meteorological conditions.

Conclusion

After having discovered young *C. corneyana* trees, the task is now to try to find the parent(s) of those trees. Himalayan cypresses are long lived; there are multiple examples of such trees able to live several centuries provided that the climatic conditions are favourable. This seems to be the case in the south of France, where *C. cashmeriana* for instance could be established since at least the beginning of the 20th century, or in northern Italy, where two *C. tortulosa* planted in the 1860s are stil alive and growing despite several hazards. Misidentifications are an option which will be investigated and several leads are already open. The quest goes on.


Herbier Muséum Paris
P01637180
HERB. MUS. PARIS.
Cupressus Lawsoniana ?
Coreyana ?
Alger M.r Le roy 1859

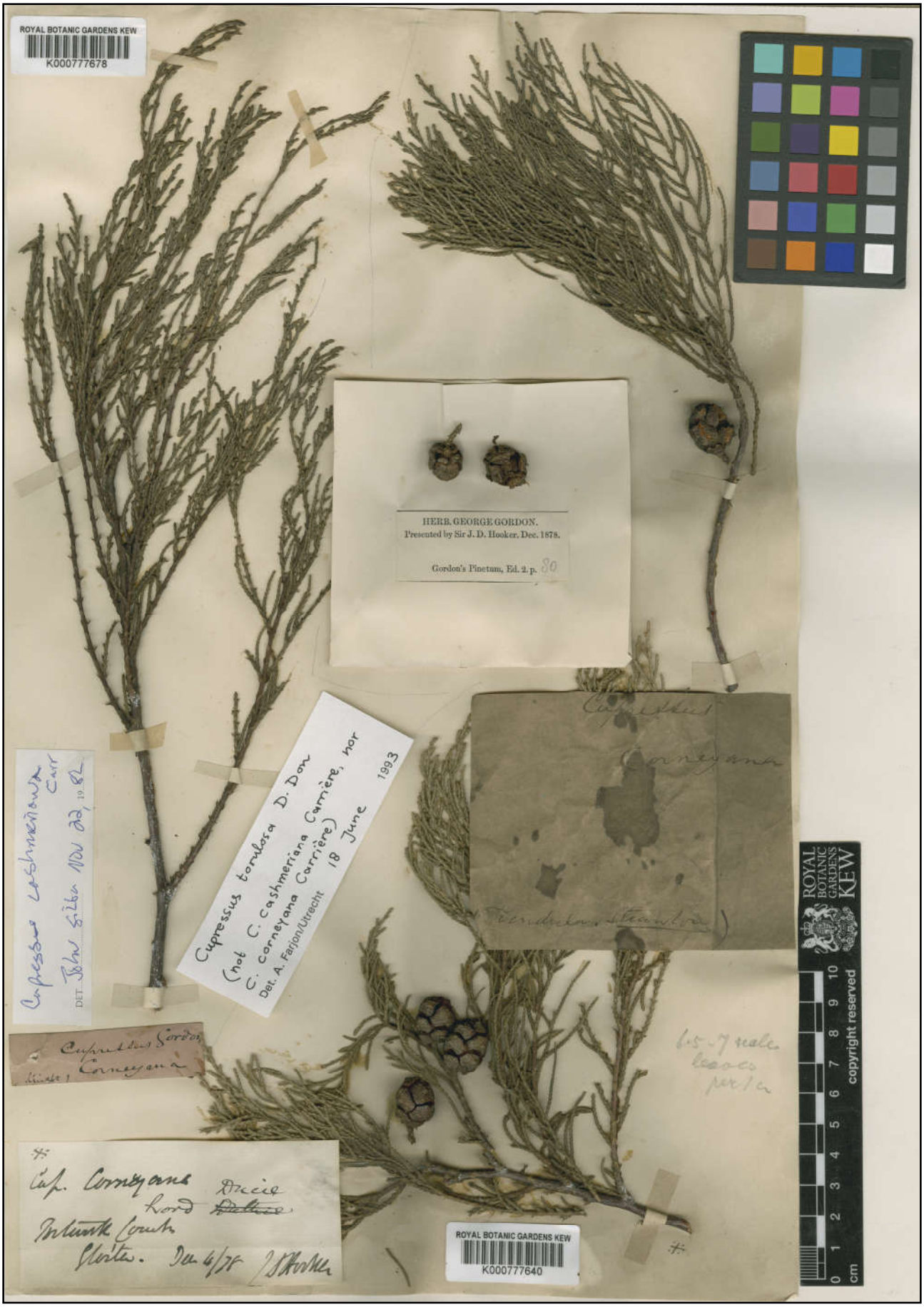


Fig. 5: *C. corneyana*, Gordon's collection, between 1858 and 1862. **Paratype**, K000777640. © K.

Fig. 4 (p. 12): *C. corneyana*, *Leroy s.n.*, Angers, 1959. **Neotype**, P01637180. © P.

Fig. 6: *C. corneyana*. *K.Koch s.n.*, between 1858 and 1862. **Paratype**, B 10 1026208. Scale: 0.6x. © B.

Fig. 4, p. 12: © Musée National d'Histoire Naturelle, Paris (P01637180).
Fig. 5, p. 13: © Kew Herbarium, Royal Botanic Gardens, UK (K000777640).
Fig. 6, p. 14: © Botanic Garden and Botanical Museum Berlin (B 10 1026208).
Figs 7 & 8, pp. 15 & 16: © Catalogue des herbiers de Genève (CHG), CJB Genève.
Fig. 9, p. 17: © British Museum of Natural History, London (BM015153379).

Comment on Fig. 6: The handwritten label on the left side of the sheet was deciphered by Katharina Rabe (herbarium B). It reads (in German):

> "*Cupresus corneyana*
> Ist nach Carrière und nach seinen einzigen Exemplaren der *C. torulosa* sehr nahe stehend. Nach Gordon selbst soll es aber *Juniperus chinensis* femina sein."
>
> *Cupresus corneyana*
> Is according to Carrière and according to his unique specimens of *C. torulosa* very close to the latter. But according to Gordon himself, it should be the female form of *Juniperus chinensis*.

Thus Koch (1809-1879) was aware of the identification of *corneyana* as a *Juniperus* published in by Gordon in 1858, but not of the correction published in the *Supplement* in 1862. It places his collection between those two dates or a little later.

The same reasoning is of course also valid for the approximate date of Gordon's collection (Fig. 2, K000777640), necessarily in this case before the publication of the *Supplement*.

Fig. 7: *C. corneyana*, Herbier Barbey-Boissier, Jardin du Rivage, Vevey, Switzerland. 1870-04-08. Detail of the cones with their typical shape, scale numbers and small acute mucrones. For the complete herbarium sheet, see Fig. 8, next page. © Herbarium sheet CJB Geneva: © Photo CCP.

Fig. 8: *C. corneyana*, Herbier Barbey.Boissier. Jardin du Rivage, Vevey, Switzerland. 1870-04-08. **Paratype**. © Herbarium sheet CJB Geneva, © Photo CCP.

Fig. 9: *C. corneyana*, *Shuttleworth Herb.*, *E/13*, 1862-12-23, Hortus Huber, Hyères, France.

Paratype, BM015153379. The previous identifications are erroneous: *C. lusitanica* does not have shoots in flat sprays and the seed cones are too small for *C. torulosa* (cf. Tab. 5, p. 8).

Fig. 10: *Leroy s.n.*, 1857; the earliest collection. © P01643089.

Fig. 11: © P01643090.

Figs 10 to 13: © Musée National d'Histoire Naturelle, Paris.

Fig. 12: *C.Baenitz s.n.*, 1901. © P01655826

Fig. 13: Agricultural School, 1912. © P01643090

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Fig. 14: *C. corneyana*, pollen cones. Tree #14. On the south side of the tree most pollen cones are open, while on its north side, the cones are still closed. 2024-12-20. Cf. Figs 3, p. 11 and 22-25, pp. 34-35.

Appendix A: Knight & Perry 1850: 19-20.

p. 19:
C. Corneyana. - This species forms a very elegant and beautiful drooping tree, promising to rival even the far-famed Funebral Cypress (*C. funebris*). It is not certain whence it has been introduced, but it is supposed to be a native of either Japan or the North of China.

p. 20:
Corneyàna *Hort*. Mr. Corney's Cypress China

Appendix B: Carrière 1855: 128.

12. CUPRESSUS CORNEYANA, *Hort.*

CUPRESSUS CORNEYANA, *Hort. in* Knight, *Syn. Conif.* 20.
CUPRESSUS GRACILIS, *Hort. aliq.*

DESCR. *Écorce* gris cendré, lisse. *Branches* alternes, étalées ou déclinées ; les supérieures ascendantes. *Rameaux* nombreux, minces, pendants. *Ramules* distiques, effilés, très-grêles, légèrement comprimés ; couverts de *feuilles* squamiformes, étroitement imbriquées, ovales, courtement rétrécies en une pointe souvent aiguë, à peine écartées au sommet, même sur les vieux rameaux.

OBSERV. Celle espèce, dont l'origine est inconnue, a paru dans les cultures vers 1847 **;** elle a beaucoup de rapport avec le *C.torulosa*, et se rapproche surtout de la variété *viridis* : elle pourrait donc bien n'en être qu'une autre encore de cette dernière espèce.

Appendix C: Duchartre 1855: 327.

12 C. Corneyana Hort. Écorce gris cendré, lisse; branches étalées, cylindr., ram. alternes, grêles, flexibles, pendantes; ram. alternes; ramilles distiques, courts, très légèrement comprimés, petits, d'environ 1 mill, de diamètre, couverts de feuil. squamiformes, petites, très fortement appliquées, ovales, acuminées en un mucron court, aigu, à peine étalées au sommet sur les vieux ramules; chatons mâles terminant des ramilles courts renflés, composés d'écailles noirâtres extérieurement, verdâtres à l'intérieur.

Appendix D: Gordon 1858: 117.

There is the following variety:—

JUNIPERUS CHINENSIS CORNEYANA, *Gordon*, Mr. Corney's Juniper.
Syn. Juniperus cernua, *Roxburgh*.
„ Cupressus Corneyana, *Knight*.
„ „ gracilis, *Hort*.

This distinct variety belongs to the female form of the Chinese Juniper, but with much longer, slenderer, and straighter branches, and more attenuated, spreading, and longer branchlets, but in all other respects the same. How Mr. Knight could have mistaken it for a Cypress, is a mystery.

Appendix E: Gordon 1862: 23-24.

CUPRESSUS CORNEYANA, *Knight*, Mr. Corney's Chinese Cypress.

Syn. Cupressus gracilis, *Hort*.
„ „ cernua, *Hort*.
„ „ pendula, *Staunton*.
„ Juniperus Corneyana, *Hort*.
„ „ Chinensis Corneyana,* *Gordon*.
„ „ gracilis, Hort.

Leaves, scale-formed, in opposite pairs, very small,stem-clasping at the base, somewhat oval in shape, more or less pointed, rounded on the outside, with a slight depression in the centre, and closely imbricated in four rows ; bright green on the adult branchlets, while those on the younger shoots are more acute, transparent on the margins, and with a slight glaucous appearance; branches, slender, alternate, and spreading, with the lower ones somewhat drooping, while those on the upper part of the plant are more or less ascending, and all of a reddish-brown colour ; branchlets, long, slender, more or less pendent, cylindrical, quite straight, numerous, regularly two-rowed, and thickly covered with small, bright, glossy, green scale-like leaves, sometimes a little glaucous in appearance on the young shoots and shaded parts; cones, globular, mostly solitary, and terminal on the shorter branchlets, from

* I have to thank Mr. Robert Pince, of the great Exeter Nursery, for cone-bearing specimens of this Cypress, and for first drawing my attention to having placed it among the Cypress-like Junipers in the Pinetum ; a circumstance which arose from the plant never having previously produced cones in England, and to the neglect of that infallible rule, "Wherefore by their fruits ye shall know them."

half to three-fourths of an inch in diameter, and generally composed of ten scales in opposite pairs ; *scales*, irregularly shield-shaped, four or five-sided, and rising in the centre to a broad point, those nearest the apex of the cone being the smallest, most acute, and much more elevated than the rest ; *seeds*, numerous under each scale, more or less angular, and furnished with a membranaceous wing on the margins ; *seed-leaves* in twos.

A very elegant small tree, with slender drooping branches and branchlets, very similar in appearance to those of the female form of the Chinese Juniper (Juniperus Chinensis), especially when young and before fruiting.

It is found in Japan and the northern parts of China, where it is called "Fi-moro" (slender or pendulous), and no doubt the real weeping Cypress of China; Fortune's funebrial Cypress being so considered is an error.

Appendix F: Carrière 1867:

Cupressus torulosa Corneyana.

CUPRESSUS CORNEYANA, Knight, *Syn. Conif*. 19. Carr. *Tr. gén. Conif*. 128.

CUPRESSUS GRACILIS, Gord. Pinet. 117. *Suppl*. 23 (excl. syn. *pendula*, Staunt.), non Endl.

CUPRESSUS CERNUA, *Hort. ex* Gord. *Pinet. Suppl*. 23.

JUNIPERUS CHINENSIS CORNEYANA , Gord. *Pinet*. 117 (excl. syn. Roxb.).

CUPRESSUS TORULOSA GRACILIS, *Hort*.

Diffère du type par ses branches plus grêles, par ses ramilles moins compactes, plus effilées et plus allongées, tombantes. Ses strobiles, un peu plus petits que ceux du type, sont de même forme, brun foncé ou noirâtres.

Cette variété est très-voisine de la précédente, dont elle diffère cependant par ses ramifications plus ténues, plus allongées et plus réfléchies.

Habite l'Himalaya. — Introduit vers 1847.

Appendix G: Parlatore[1] 1868: 470.

C. CORNEYANA (Knight Conif. p. 20), monoica, arbor, ramis ramulisque primariis teretibus elongatis pendulis, ramulis seçundariis alternis patuiis subdistichis elongatis gracilibus a foliis omnino tectis compresso-tetragonis viridibus, foliis decussatim oppositis, ramorum et ramulorum primariorum approximatis brevibus maxima ex parte adnato-decurrentibus, apice libero ovato-acuminato mucronato-subpungente demum patulo, dorso convexis et glandula oblongo-lineari vix aut ne vix notatis, ramulorum secundariorum squamæformibus quadrifariam imbricatis adpressis ovato-rhombeis vel ovato-acuminatis obtusiusculis mucronulatis convexiusculis glandula oblonga vix manifesta notatis, amentis masculis in ramulo longiusculo erectis ovalibus vel oblongis obtusis, bracteis quadrifariam imbricatis ovato-orbicularibus apice acutiusculis margine integris dorso convexiusculis, antheris 3-4, strobilis ad basin ramulorum sæpe 2-3 approximate subsessilibus vel in ramulo brevissimo erectis ovalibus vel ovali-6 subglobosis (castanei coloris, supra mucronem squamarum glaucis), squamis sub-10 quadrifariam oppositis subinæqualibus peltatis orbiculari-angulatis in medio mucronatis, mucrone ex apice bracteæ lato brevi acuto et subpungente incurvo efformato, nuculis 4-6 in quavis squama ovoideis utrinque convexis et angulatis cum ala latiuscula fere orbicularibus. In China et fortasse in Japonia secund. Gordon, — Carrière Conif. p. 128; Gord.! Pin. Suppl. p. 23; Henk. et Hochst., Nadelhölz. p. 245.

C. gracilis et cernua hort. Juniperus Chinensis Corneyana Gord.! Pin. P. 117. Juniperus gracilis et pendula hort. aliq. Cupressus torulosa Corneyana Carr. Conif. edit. 2. p. 121. Species C. torulosæ affinis a qua præsertim ramis ramulisque omnino pendulis, glandulis foliorum vix conspicuis, strobilisque sæpius ovalibus, haud umbonatis sed tantum apice bracteæ adnatæ libero incurvo mucronatis et supra mucronem tantum glaucis videtur distincte. Strobili 15-20 mill. longi, 10-14 mill. lati. Specimina culta tantum vidi ideoque de patria ejusdem speciei respondere non possum. (v. v.)

[1] In De Candolle, 1864-1868.

Appendix H: Henkel & Hochstgetter 1865: 245-246.

170. **Cupressus Corneyana** Knight. Corney's Cypresse.

Knight, Syn. Conif. 20.; Carr. Tr. gen. des Conif. 128.; _Gord. Pinet. Suppl. 23.
Cupressus gracilis Hort. alig.
" cernua Hort.
Juniperus Corneyana Hort.
" chinensis Corneyana Gord.
" gracilis Hort.

Blätter vierreihig, sehr dicht dachziegelig gestellt, sehr klein, länglich oval, mehr oder weniger zugespitzt, an der Aussenseite gerundet und in der Mitte leicht eingedrückt, bei älteren Pflanzen dunkelgrün, bei jüngeren leicht graugrün. Zapfen kugelförmig, einzeln, seltener zu mehreren beisammen, ½—¾" breit. Fruchtschuppen gewöhnlich zehn an der Zahl, unregelmässig schildstielig, vier oder fünfseitig, in der Mitte mit einer breiten Spitze versehen. Samen mehr oder weniger kantig, an dem Rande häutig geflügelt.

Ein kleiner, sehr schöner Baum, welcher 20—30' hoch wird, mit zierlich hängenden Aesten und Zweigen bekleidet, welcher sich durch die sehr kleinen glänzenden, hellgrünen, im Alter ganz dunkelgrünen, dicht angepressten Blätter charakterisirt.

Vorkommen: In Japan und Nord-China, wo diese Cypresse „Fi-moro" (dünn oder hängend) genannt wird; Gordon erblickt in dieser Art die eigentliche Thränencypresse China's. (?)

Appendix I: K.Koch 1873: 160-162.

9. C. funebris Endl. syn. conif 58 (1847), nec Lindl. Et Gord. u. der Gärten.
péndula Staunt. ambass. of the Earl Mäcartn. to the emp. of Chin. II, 525, tab. 41 (1797), nec Thunb.
Corneyana Knight syn, conif. 20 (1850).
torulosa Corneyana Carr, trait. gen. d. conif. 2. ed. I, 151 (1867).
? Juniperus quaternata Miqu. cat. hort. bot. Amstel. 20 (1857), ohne Beschreibung, nur der Name.
Juniperus chinensis Corneyana Gord. pinet. 117 (1858).

Trauer - Cypresse.

J. Corneyana wurde zu Ehren eines englischen Kaufmanns in China genannt, der Samen der Trauer - Cypresse und vieler anderen Pllanzen an die damalige Handelsgärtnerei von Knight und Perry (jetzt James Veitch and Sons) in Chelsea gesendet hatte.

In Japan und in China.
Blüht im Sommer.

Ein ziemlich hoher Baum mit länglicher Krone und überhängengenden Aesten ; Zweige lang, wenig grau-grün, stielrundlich, oder etwas viereckig, wie die letzte Verästelung in 2 Reihen gestellt; Haupt- oder wenigstens Nebenäste überhängend; Blätter rautenförmiglänglich , spitz , auf dem Rücken konvex ; Beerenzapfen meist etwas länglich, aus 10 Fruchttellern bestehend; zahlreiche Stempel.

Nach Einigen ist diese eigenthümliche Art mit hängenden Aesten, welche eine lange Zeit mit *Juniperus chinensis* verwechselt wurde, nur eine Abart der *C. torulosa*. Ich bezweifle es um so mehr , als man in den Gärten häufig eine Form der C. torulosa mit schlaffen Zweigen als *C. Corneyana* kultivirt und weil die ächte *C. funebris* vielleicht gar nicht mehr, wenigstens auf dem Festlande, in den Gärten zu sein scheint. Selbst die unter dem Namen *C. Corneyana* bei A. Leroy in Angers im Freien kultivirten Exemplare möchten nicht die ächte Trauer - Cypresse der Ostasiaten, sondern eine Form der *C. torulosa*, sein , da sie in keiner Weise mit überhangenden Aesten versehen sind, wie es die bereits angeführte Abbildung von Staunton sowohl, als von Lambert (descr. of the gen. pin. 2. Ed. II, 111, tab. 50), zeigt. Möglicher Weise könnte sie aber bei späterem Alter doch das Ansehen eines Trauerbaumes erhalten. Nach der Abbildung eines Zweiges der *C. funebris*, welchen Lambert selbst von Staunton erhielt, steht aber wohl die ostasiatische Trauer-

Cypresse der auf dem Festlande kultivirten *C. Corneyana* sehr nahe. Bevor man jedoch nicht wiederum Original - Exemplare der *C. pendula* Staunt. direkt aus China erhalten hat und Kulturversuche machen kann, möchte ein bestimmtes iJrtheil kaum abzugeben sein. Auf jeden Fall ist aber die jetzt in den Garten befindliche *C. funebris* eine ganz andere Pflanze (vergl. S. 164).

Appendix J: Kent 1900: 233-234.

Cupressus torulosa.

A large tree attaining a height of 70—80 or more feet with a girth of trunk of 6—8 feet, and occasionally larger. Bark thin, peeling off in numerous long, narrow, dark grey strips, the inner cortex reddish brown. Branches spreading horizontally, forming a broad pyramidal crown which in old age is flattened or round-topped. Under cultivation in Great Britain, a sub-fastigiate or flame-shaped tree with all the primary branches more or less ascending and much ramified at the apical end. Branchlets tetrastichous or distichous, very slender, drooping and much divided, the ultimate growths short, straight and parallel. Leaves in decussate pairs, on the axial growths oblong-deltoid, acute ; glandular, appressed, often free at the tip ; on the slender lateral growths, minute, scale-like, triangular-ovate, and concrescent. Staminate flowers club-shaped and tetragonal, about 0.35 inch long, composed of two — three pairs of pale yellow anthers. Strobiles clustered or solitary, globose, 0.5—0.75 inch in diameter, on short footstalks produced on branchlets two to three years old, and consisting of four, rarely five, decussate pairs of ligneous, rugose-umbonate, oblong or oblong-rhomboidal scales of which the upper and lowermost pairs are usually sterile. Seeds five—seven to each scale, small, compressed with a narrow orbicular wing.

Cupressus torulosa, Don, Prodr. Fl. Nep. 55 (182.5). Lambert, Genus Pinus, ed. 2, Vol. II. 113 (1828). London, Arb. et Frut. Brit. IV. 2478, with figs. (1838). Endlicher, Synops. Conif. 57 (1847). Carriere, Traité Conif. ed. II. 150. Parlatore, D. C. Prodr. XVI. 469. Gordon, Pinet. ed. II. 97. Lawson's Pinet. Brit. II. 201, t. 35). Brandis, Forest Fl. N.W. India, 533. Hooker fil. Fl. Brit. Ind. V. 645. Masters in Journ. Linn. Soc. XXXI. 335 ; and Tourn. R. Hort. Soc. XIV. 208.

var.—Corneyana.

Branches and branchlets pendulous, the latter more distant and covered with minute, concrescent, scale-like leaves that are not free at the apex ; strobiles larger, often of oval shape with the umbo of the scales less or not at all developed.*

C. torulosa Corneyana, Carrière, Traité Conif. ed. II. 151. Kent in Veitch's Manual, ed. I. 239. Masters in Journ. Linn. Soc. XXXI. 336. C. Corneyana, Parlatore, D. C. Prodr. XVI. 470.

var.—kashmiriana.

Branchlets very slender, elongated and pendulous; branchlet systems more slender in all their parts and the ramifications more distinctly tetragonous. Leaves as in the type but all free at the acute tip.

C. torulosa kashmiriana. *supra*. C. cashmeriana, Rovle ex Carriere, Traité Conif. ed. II. 161.

Cupressus torulosa was first discovered by Dr. Buchanan-Hamilton during his journey through Nepal in 1802—1803, and from his specimens it was described by David Don in the "Prodromus Florae Nepalensis," published in 1825. Seeds were first sent to England in 1824 by Dr. Wallich, and consignments of them have reached this country from time to time ever since. According to Sir Dietrich Brandis, *C. torulosa* is found only on the outer Himalayan range from Nepal to Chamba at about 75° east longitude, mostly, but not always on dry slopes, more local and much less common than other Himalayan Conifers ; its vertical range is from 3,500 to 8,000 feet. The wood is white tinged with red or yellow, deeper in the centre, even grained, easy to work but not strong ;it is occasionally used for joinery and indoor fittings.†

On Cheena, in Kumaon, at an altitudi; of upwards of 8,000 feet and where the rainfall exceeds 150 inches annually, *Cupressus torulosa* is a strikingly handsome tree attaining a height of 150 feet with a trunk 15 feet in circumference near the ground, and much resembling in habit the Japanese species *C. obtusa* and *C. pisifera*. In the cemetery near the foot of the mountain are preserved many superb specimens which once formed a part of the forest that covered the district.‡

The Himalayan Cypress cannot be called a satisfactory tree for arboricultural purposes in this country, for although it is sufficiently hardy to withstand average winters, it succumbs to exceptionally severe ones so that very few trees more than twenty years old are now to be seen in Great Britain. Those that survive are all of the fastigiated or sub-fastigiate form of which there are beautiful specimens at Bicton and Killerton in Devonshire, Tortworth Court in Gloucestershire, and other places in the south-west of England.

The variety *Corneyana* was in cultivation prior to 1850 by Messrs. Knight and Perry of the Royal Exotic Nursery, Chelsea, who supposed it to be a native of Japan or North China which has not been verified. The variety *kashmiriaua*, a very beautiful one, is in cultivation in the Temperate House at Kew and a few other places.

* Communicated from the Royal Gardens at Kew, and the Marehese Hanbury's garden at La Mortola.
† Forest Flora of North-west India, p. 534.
‡ Maries in the Journal of the Royal Horticultural Society, Vol. XXII. p. 462

Appendix K: Elwes & Henry 1910: 1158-1161.

CUPRESSUS TORULOSA, Himalayan Cypress

Cupressus torulosa, Don, *Prodr. Fl.Nepal.* 55(1825); Lambert, *Genus Pinus*, ii. 18 (1824) ; Loudon, *Arb. et Prut. Brit.* iv. 2478 (1838); Lawson, *Pinet. Brit.* ii. 201, t. 35 (1867); Hooker, *Fl. Brit.Ind.* v. 645 (1888); Masters, in *Journ. Linn. Soc.* (*Bot*.) xxxi. 335 (1896); Kent, Veitch's *Man. Conif*. 233 (1900); Gamble, *Indian Timbers*, 696 (1902); Collett, *Fl. Simlensis*, 483 (1902); Brandis, *Indian Trees*, 693 (1906).
Cupressus Tournefortii, Tenore, in Mem. Soc. Ital. Sc. Modena, xv. pt. 2, p. 194 (1855) (not Audibert).
Cupressus pendula, Hopf, in Regel, Gartenflora, iii. 279 (1854) (not Thunberg).
Cupressus majestica, Knight and Perry, *Syn. Conif*. 20 (1850).
Cupressus Corneyana, Knight and Perry, *Syn. Conif*. 20 (1850).

[...] We have not been able to distinguish, in England, var. *majestica*,[2] Carrière, *Conif*. 118 (1855); but the following variety is noteworthy:
Var. *Corneyana*, Carrière, Conif. 151 (1867).
Cupressus Corneyana, Knight and Perry, *Syn. Conif*. 20 (1850).
Cupressus funebris, Koch,[3] 2 *Dendrologie*, ii. pt. 2, p. 160 (1873) (not Endlicher).

Branches and branchlets pendulous. Branchlet systems irregularly arising at varying angles, and not so distichous as in the type, forming a more diffuse and not flattened mass of foliage. This variety was first put into commerce by Knight and Perry, who stated that : "It is not certain whence it has been introduced, but it is supposed to be a native of either Japan or the north of China," and acting on this belief they named it after Mr. Corney, a merchant in China, who occasionally sent seeds to their nursery at Chelsea ; but they never

[2] *Cupressus majestica*, and also *Cupressus flagelliformis*. Knight and Perry, *Syn. Conif*. 20 (1850). A specimen of *C. majestica* cultivated at Montpellier is identical with typical *C. torulosa*.
[3] Both Gordon, *Pinet. Suppl*. 24 (1862), and Koch, *loc. cit*., erroneously considered this variety to be the weeping cypress of China.

affirmed that it was raised from Chinese or Japanese seed. Doubtless it originated in the Chelsea nursery, as it differs in no respect, except in habit, from the type ; and C. torulosa is unknown in China and Japan. […]

Remarkable Trees

[…] At Melbury there is a tall fine tree of var. *Corneyana*, bearing fruit near the summit, which was 65 ft. by 4 ft. 11 in. in 1908. […]

In the nursery of Rovelli Freres, at Pallanza, I measured in 1906 a very handsome tree, with stouter branchlets than usual, 80 ft. by 9 ft., which was bearing cones, and may be the variety described as var. *majestica*.

Appendix L: Mitchell 1972: 109.

Cupressus torulosa D.Don. Bhutan cypress; Himalayan cypress
Western Himalaya and Szechwan [sic], South West China.
[…]
var. corneyana (Knight and Perry) Carriere. Himalaya.
Introduced in 1847. Even less common than the type except perhaps in Ireland. Broadly conic in the crown with level branches; the foliage differs from the type in being duller, more yellowish green, more distantly branched and spreading, on branches which do not curve upwards. The ultimate shoots are 3-4 mm across; branchlets not flattened; curled at shoot-ends.
Specimens. Kew Royal Botanic Gardens, planted 1931, 51ft × 2ft 8in (1965); Leonardslee, 38ft × 2ft 0in (1969); Batsford Park, 51ft × 4ft 0in (1964); Fota 73ft × l0ft 5in; 66ft × 8ft 4in; 58ft × 6ft 9in (1966); Powerscourt 85ft × 6ft 7in; 74ft × 6ft l0in (1966). (The last three, at least, are more likely to be the type.)

Fig. 15, p. 27: *Cupressus corneyana*, tree #13, 15 m high, planted in 1987. Notice the dull colour of the foliage due to the low quality of the soil. See for more explanations Fig. 57, p. 54.

Fig. 16: *C. corneyana*, tree #14. 2021-04-01. All photos © CCP except otherwise indicated.

Fig. 17: *C. corneyana*, tree #15. 2021-07-24. Height: 15 m. Planted in 2006 as *C. cashmeriana*.

Fig. 18: *C. corneyana*, tree #14. 2021-04-01.Pendulous foliage, shoots in flat sprays.

Fig. 19: *C. corneyana*, tree #15. 2021-04-01. Bark.

Fig. 20: *C. corneyana*, tree #14. 2021-10-23.Pendulous shoots with immature pollen cones

Fig. 21: *C. corneyana*, tree #13. 2024-11-24. Long pendulous shoots with immature pollen cones.

Figs 22 & 23: Tree #14. Parts of pendulous shoots with pollen cones.

The cones at the top are already open while the ones below are still closed.

2024-12-20.

Scale: 1x

Fig. 24 (below): Detail and close-up of Fig. 21, showing 6 inconspicuous seed cones, with the ovules still closed between the scales while the first male cones have already begun to shed their pollen.
2024-12-20. Scale: 3x.

Fig. 25: *C. corneyana*. 2024-12-20.

Figs 26 & 27: *C. corneyana*, tree #14. 2022-01-06. Pollen and seed cones soon after pollination.

Figs 28: *C. corneyana*, tree #14. 2022-02-12. Pollen and seed cones one month and a half after pollination. Notice that the seed cones appear on the drooping shoots as well on the tip of the main branch.

Fig. 29: Detail of Fig. 26.

Fig. 30: *C. corneyana*, tree #14. 2022-02-12. Pollen and seed cones on pendulous shoot.

Fig. 31, p. 39: *C. corneyana*, Branch with one spreading shoot and several pendulous shoots. Both kind of shoots bear pollen and seed cones. Tree #15. 2025-02-20.

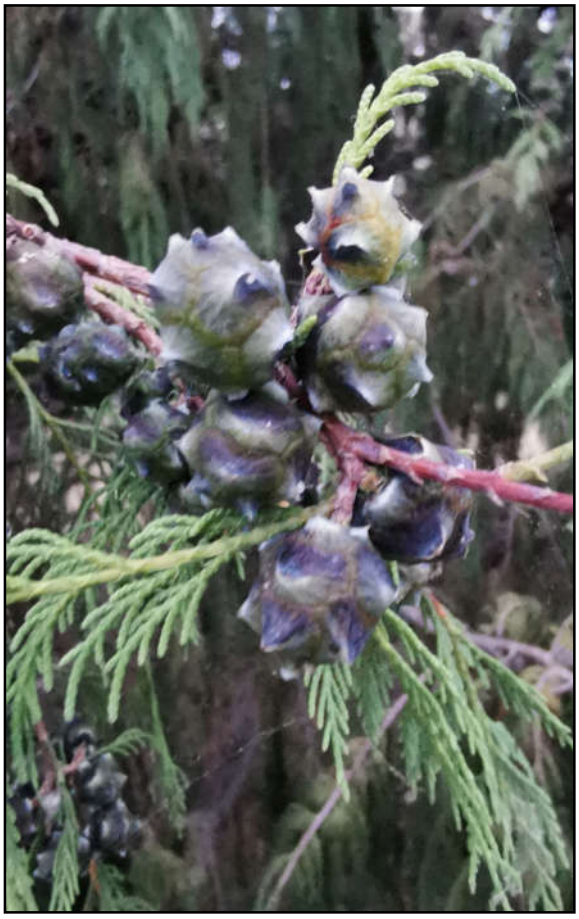
Fig. 32:
C. corneyana,
Spreading shoot.
Pollen cones are all
empty.
Tree #15.
2025-02-20.

Fig 33: New seed
cones of
C. corneyana on a
pendulous shoot.
Tree #15.
2025-02-20.

Figs 34 to 36: *C. corneyana*, tree #14. 2021-04-01. Seed cones some three months after pollination.

Figs 37 & 38: *C. corneyana*, tree #15. 2022-04-13. Seed cones some three months and a half after pollination. Spider on the biggest cone.

Fig. 39: *C. corneyana*, tree #14. 2022-06-20.



Figs 40 & 41: *C. corneyana*, tree #14. 2021-07-02. Seed cones some six months after pollination.

Fig. 42: *C. corneyana*, tree #14. 2022-07-06. Seed cones some six months after pollination.

Fig- 43: *C. corneyana*, tree #14. 2022-07-06. Seed cones some six months after pollination. Cones from the previous year on the left with a greyish colour.

Fig. 44: *C .corneyana*, tree #14. 2021-10-23. Cones some ten months after pollination.

Fig. 45: *C. corneyana*, cones about one year after pollination. Tree #13. 2024-12-13. Notice the small acute mucrones. © T. Madern. **Fig. 46:** *C. corneyana*, tree #14. One year after pollination. 2024-12-20.

Fig. 47: *C. corneyana*, tree #14. 2022-01-06. One cone one year after pollination. ~~Cf. also Fig. XX.~~

Fig. 48: *C. corneyana*, tree #15. Cones some 14 months after pollination. 2023-02-17.

Fig. 49: *C. corneyana*, tree #14. 2021-04-01. Cones in the foreground are some 15 months after pollination. The open cones, some 27 months after pollination.

Fig. 50: *C. corneyana*, tree #15. 2021-07-24. Pendulous shoots with seed cones some 19 months old. The first cones begin to open.

Fig. 51: *C. corneyana*, tree #15. 2021-07-24. Pendulous shoots with seed cones some 19 months old.
Fig. 52: *C. corneyana*, tree #15. 2021-08-11. Seed cones some 19½ months old. The green colour has completely disappeared and a few cones begin to open.

Fig. 53: *C. corneyana*, tree #14. 2021-10-23. Seed cones some 22 months after pollination. Not all cones open at the same time depending on the cone vascularisation. Seeds easily fall after cone opening.

Fig. 54: *C. corneyana*, tree #14. 2021-10-23. Cone some 22 months after pollination.

Fig. 55: *C. corneyana*, tree #13, South of France. 2024-10-29. Figs 55 to 57: © T. Madern.

Fig. 56: *C. corneyana*, tree #13. 2024-11-24.

Fig. 57: Scion from tree #13 grafted on a *C. macrocarpa* rootstock. The colour of the old foliage of the mother tree turns at places to a dull colour, especially on the lower shaded shoots, but after a successful graft, the bright colour is restored. Compare with Fig. 56.

Fig. 58: *C. corneyana*: pollen colour.

Some *Cupressus nootkatensis* photos to show parallel evolution in cypress crown shape in similar high rainfall climate conditions.

Fig. 59: *C. nootkatensis*. Same tree as Fig. 60. Some pendulous shoots are longer than 1 m. 2024-11-24.

Fig. 60: *Cupressus nootkatensis*, pendulous form. Cultivated, Geneva, Switzerland. 2021-06-12. Most wild trees display similar pendulous foliage, e.g.: *Cupressus nootkatensis*, SE of Myrtle Lake, WA, USA.