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# NOTES RELATING TO THE FLORA OF BHUTAN: XXVI
## Smilacaceae: *Smilax*

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The following new taxa, combinations and synonymy in the genus *Smilax* from E Himalaya and SW China are proposed: *S. myrtillus* var. *rigida* Noltie, *var. nov.*, *S. elegans* Wall. ex Kunth subsp. *subrecta* Noltie, *subsp. nov.* of which *S. longebracteolata* Hook.f., and *S. elegans* var. *major* A.DC. are synonyms; *S. elegans* subsp. *glaucophylla* (Klotzsch) Noltie, *comb. & stat. nov.*, *S. elegans* subsp. *osmastonii* (Wang & Tang) Noltie, *comb. & stat. nov.*, *S. elegans* subsp. *microphylla* (C.H. Wright) Noltie, *comb. & stat. nov.* of which *S. microphylla* var. *angustifolia* Warb., *S. castaneiflora* H. Lév., *S. labordei* H. Lév. and *S. gracillima* H. Lév. & Vaniot are synonyms. Notes are provided on Warburg's varieties *angustifolia*, *nigrescens* and *elongata* of *S. microphylla*. *S. bockii* Warb. is reduced to synonymy of *Heterosmilax japonica* Kunth. *S. glaucophylla* Klotzsch, *S. osmastonii* Wang & Tang, *S. microphylla* C.H. Wright and *S. minutiflora* A.DC. are lectotypified; *S. elegans* Wall. ex Kunth and *S. wallichii* Kunth are neotypified.

## INTRODUCTION

There has been much confusion over the identification and nomenclature of a group of species belonging to *Smilax* section *Vaginatae* (sensu T. Koyama 1957) occurring in the Himalaya and variously called *S. elegans*, *S. parvifolia*, *S. glaucophylla* and *S. menispermoidea*, and the related Chinese species *S. microphylla*. This confusion has become evident during preparation of the account of the genus for the *Flora of Bhutan*, since the area covered by the *Flora* represents a meeting point of eastern and western elements. Much work remains to be done on the taxonomy of related Chinese plants, but a treatment is suggested for this difficult group, retaining *S. menispermoidea* as a distinct species, but including the remainder under *S. elegans*, recognizing the nodes of variation (which are geographically correlated) at subspecific level.

Notes on other Himalayan members of this section are given, together with a key to their identification.

In addition to nomenclatural difficulties and problems arising from misidentifications and misapplication of names, a genuine difficulty is found in delimiting species in this group due to the complex pattern of variation observed in herbarium specimens. The plants are phenotypically extremely plastic in terms of shape, size and texture of leaves and spininess of stems, with quite strikingly different forms of plants which apparently belong to the same species occurring sympatrically. Nevertheless, it seems counter-productive not to recognize at least some of this variation taxonomically, some of which is geographically correlated and which might be further elucidated using biosystematic or molecular approaches.

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## SECTION VAGINATAE

### NOMENCLATURAL DISCUSSION

(i) *Smilax elegans* s.l.

As with many nomenclatural problems relating to Himalayan plants, the root of the trouble lies in Wallichian specimens and their names which were not validly published (*nomina nuda*) in the Wallich Catalogue. The relevant sheets in the Wallich Herbarium (K-W) are numbered 5117A, 5117B, 5117 (additional) and 5118. Sheets with the same numbers in other herbaria (including the main herbarium at K) do not necessarily bear exactly the same species (or mixture of species!).

5117 — all sheets bear the Wallich Catalogue name '*S. elegans*'.

5117A (from Sheopore, Nepal) consists of a mixture of what are correctly called *S. elegans* Wall. ex Kunth and *S. menispermoidea* A.DC.

5117B (from Dehra Dun) consists entirely of *S. glaucophylla* Klotzsch.

An extra sheet numbered 5117 from Chusapang (?Nepal) consists of *S. elegans*.

5118 — bears the Wallich Catalogue name '*S. parvifolia*'; the specimens are from Assam (Chora Poonji, Mont. Sylhet) and represent a taxon (also occurring in SW China) the nomenclature of which is discussed below.

Kunth (1850) was the earliest author to validate one of these names when he published *S. elegans* based on a duplicate (no longer extant at Berlin) of 5117A. Whilst stating that his sheet was a mixed gathering, his description and application of the name to the small-leaved, male plant is quite unambiguous. A suitable neotype is the sheet (ex herb. Bentham) with the number 5117 in the main Kew herbarium which bears only this species without the complication of a second species (it is annotated with the name *S. parvifolia* in J.D. Hooker's writing). Kunth stated that the other species present on his sheet was either '*S. maculata*' (= *S. aspera* L.) or a female specimen of *S. elegans*. It is most likely, however, to have been the species later described as *S. menispermoidea* A.DC, which as we have seen above is present on sheet 5117A in K-W.

De Candolle (1878) accepted Kunth's *S. elegans*, but in a wide sense, also including *S.* '*parvifolia*' *Wallich* 5118 and *S. glaucophylla*. In the same work he described a var. *major* of *S. elegans* and the related species *S. menispermoidea* and *S. minutiflora*.

Hooker (1892) appears to have ignored Kunth's description of *S. elegans* and applied the name to the second element of *Wallich* 5117A (probably because one of the sheets with that number in his own herbarium, now in K, bears only this species), treating *S. menispermoidea* as a synonym for his '*elegans*'.

Hooker published (illegitimately by including earlier synonyms and in any case the name existed already for a fossil species) the name *S. parvifolia* based on *Wallich* 5118, but also included the small-leaved element from 5117A (i.e. true *S. elegans*) and 5117B (i.e. *S. glaucophylla*) in his concept.

Kunth does not seem to have seen a duplicate of 5118 and merely lists the name *S. parvifolia* as a species not seen by him.

**S. elegans**

*S. elegans* s.str. is characterized by its very zigzag lateral branchlets (see illustration in Wang & Tang (1978) as *S. glaucophylla*); leaves small, herbaceous at flowering, strongly glaucous underneath (at least when fresh or properly dried); very slender peduncles and unexpanded 'receptacles' with minute bracteoles. It has a distinct and discrete E Himalayan distribution from C Nepal to N Assam, with outliers seen from Manipur and N Burma.

**S. glaucophylla**

*S. glaucophylla* was described by Klotzsch in 1862; no locality is given in the description, but in the lists of species and itineraries given in the introduction to the book the only mention of a *Smilax* (p. 4) is from the Upper Forest Region in the valleys of Kunegar and Mundragiri, between Alacananda and Kedarnath, i.e. in Uttar Pradesh. This is almost certain to be the type locality. Unfortunately Klotzsch's types (formerly at Berlin) are lost. However, his lithograph (plate 91) is of such good quality (especially in its faithful rendering of the fine leaf venation) that it may be designated as a lectotype, unless isotype material is discovered in another herbarium at some future date. Most authors since Klotzsch (e.g. J.D. Hooker — see above) have treated *S. glaucophylla* as being conspecific with '*elegans/parvifolia*' (although the nomenclature has varied). Although specimens occasionally occur which are not easy to place, it seems to be a distinct morphological and geographical entity (W Himalayan, from Pakistan (Swat) to C Nepal) and warrants being retained at subspecific rank under *S. elegans*.

Koyama (1963) was the first to recognize the affinity of Indian plants of this group with the Chinese *S. microphylla*. He overlooked Kunth's validation of *S. elegans* and took *S. glaucophylla* to be the earliest name in the group of which he made *microphylla* a variety. Unfortunately he misunderstood Warburg's var. *elongata* of *S. microphylla* and treated this as synonymous with *S. glaucophylla* (erroneously giving *S. parvifolia* Wall. ex Hook.f. and *S. elegans* Wall. ex A.DC. as synonyms). Koyama later changed his mind and reverted to using the name *S. microphylla* var./subsp. *elongata* for E Himalayan and Chinese plants discussed below under *S.* '*parvifolia*'.

**S. osmastonii**

This species was first described in 1925 by Osmaston as *S. erecta*, an illegitimate homonym, replaced by *S. osmastonii* by Wang & Tang in 1937. It was said to differ from '*S. parvifolia* Wall.' (by which Osmaston meant *S. glaucophylla*) in its erect (vs. climbing) habit, papillose underside to the leaves and green vs. pinkish-brown flowers (an insignificant character which is dependent, at least partly, on age of flower). Osmaston cited specimens from Garhwal and Khasia without designating a type, but clearly referred chiefly to the Garhwal plant, and it is two specimens (probably duplicates since neither are annotated with the name *S. erecta*) bearing the number *Osmaston* 1076 that are in a type cover at K. It is this number to which Wang & Tang exclusively refer.

There is something of a mystery here since, despite the protologue, one of the leaves on one of these specimens bears a tendril, which suggests that the plant has the potential to climb. It therefore seems advisable to lectotypify on the other specimen which completely lacks tendrils. The specimens are extremely close to *S. glaucophylla*, differing only in the papillosity of the leaf. I have seen no other papillose material from the W Himalaya, but the Khasian specimens

form a coherent group and completely lack tendrils. Further collections are clearly needed from the W Himalaya, but in the meantime the taxon is best treated as a further subspecies of *S. elegans*, occurring mainly in Khasia, with an unexplained disjunction in Garhwal.

**S. 'parvifolia'** (*Wallich* 5118)

A problem exists over finding a suitable name and rank for *Wallich* 5118 and similar specimens occurring from Khasia (Assam) to Yunnan, for which, as we have seen, the name *S. parvifolia* cannot be used. The Chinese specimens tend to have slightly shorter peduncles than the Indian, but are otherwise identical, thus emphasizing the links between the E Himalayan flora and that of SW China.

Handel-Mazzetti (1936) was the first to apply the name *S. microphylla* C.H. Wright var. *elongata* Warb. to such specimens and was followed by Koyama (1960). Unfortunately neither seems to have seen type material of this variety, and the name turns out to have been misapplied. The holotypes of Warburg's taxa were at Berlin and most are presumed to have been destroyed, but fortunately a duplicate set of isotypes survives at Oslo. Koyama later (1975) raised *elongata* to subspecific rank and has used this name widely in determining herbarium specimens.

Wright described *S. microphylla* in 1895 from Hupeh Province (Central China), citing six specimens collected by A. Henry from Ichang. Among these are both spiny, small-leaved forms and one (*Henry* 3996) almost spineless, with larger leaves, which demonstrates the close relationship with '*S. parvifolia*'; the A duplicate of this number (which does not match the protologue very well) has an annotation 'lectotype' but this lectotypification does not seem to have been published. It is necessary to lectotypify *S. microphylla* on one of the small-leaved spiny forms and, after seeing the syntypes at K and A, I recommend selecting *Henry* 3980 as best matching the description (none of the Gray duplicates of the syntypes are annotated by Wright). However, given the variability of characters such as spininess and leaf size/shape, it seems wisest to follow Koyama's original idea of regarding *S. microphylla* as conspecific with Himalayan plants, but recognizing it at subspecific rank as *S. elegans* subsp. *microphylla*.

*S. darrisii* H. Lév., described from Kweichow (Guizhou), is spineless and has very small, rather oblong leaves rather similar to those of *S. elegans* subsp. *elegans*. It is known only from the original collections of Esquirol and Cavalerie, although a collection from Mount Omei in Sichuan (*L.Y. Tai* T162, A) perhaps belongs to the same taxon. Wang & Tang (1978) retain it as a species, but others (e.g. McKean, 1986) have treated it as synonymous with *S. microphylla*. Until more collections are seen it seems unwise to pronounce on its status, although it will probably be worth recognizing at subspecific rank under *S. elegans*.

A name is still required for the larger-leaved, spineless form, which I describe below as subsp. *subrecta*. The reasons why *elongata* cannot be used are given below.

It should be noted that this taxon appears to be currently known in China (judging from determinations on herbarium sheets and the drawing in Wang & Tang, 1978) as *S. mairei* H. Lév. A specimen of this taxon (*Tsai* 62896) at Kew bears the determination by Wang & Tang (dated 1938) *S. microphylla* var. *mairei* (Lévl.) Wang & Tang, although this combination does not seem to have been published. The name (at whatever rank), however, has been misapplied and refers to a non-climbing species with subapical leaf abscission.

**Discussion of Warburg's varieties of *S. microphylla***

Warburg (1900) described (somewhat inadequately) a series of varieties of *S. microphylla* based on sometimes inadequate material collected in Sichuan by Bock & von Rosthorn:

var. *angustifolia* does not differ enough from small-leaved, spiny *S. microphylla* to warrant any recognition.

var. *nigrescens* is probably synonymous with *S. scobinicaulis* C.H. Wright, as treated by Wang & Tang (1978), differing from *S. elegans/microphylla* in its petiole having a very short, weak wing and in the abscission point occurring part way along the upper part of the petiole (rather than at its swollen apex at the junction with the blade), the unexpanded 'receptacle' and few-flowered inflorescence.

var. *elongata* is problematic; the axillary (?inflorescence) buds have not developed and are inhabited by insect larvae, the leaves are rather strange looking — perhaps under influence from the galled buds. It can never be identified with certainty but Wang & Tang (1934) were correct in pointing out the prophyllate nature of its inflorescences. This means that it must belong to sect. *Macranthae* and they (who apparently collected material from the type locality) were probably correct in saying it is close to *S. lanceifolia* Roxb. At first they considered it a distinct species (*S. austrosinensis*) but later (1978) they reduced it to a variety under *S. lanceifolia*; in leaf shape it is identical to *S. cocculoides* Warb. var. *lanceolata* Norton (type *Henry* 12577 from Yunnan), which was also treated as a variety of *S. lanceifolia* by Wang & Tang (1978). Whatever the final conclusion on the status of this taxon it is clear that it cannot be used at any rank for plants related to *S. microphylla.*

Of Warburg's other types studied it should be pointed out that *S. bockii* is in fact *Heterosmilax japonica* Kunth. Of the two syntypes cited in the protologue, one (*Bock & von Rosthorn* 2375) survives at Berlin and the other at Oslo (*Bock & von Rosthorn* 2408).

**S. longebracteolata**

This taxon, first described as *S. elegans* var. *major* by de Candolle and raised to specific rank by Hooker, is known only from the type collections (from Khasia). Koyama (1963) regarded it as an abnormal form of '*S. glaucophylla*' (under which he included *S. elegans* and *S. 'parvifolia'*). In view of the great plasticity of these taxa I would place it under *S. elegans* subsp. *subrecta*, from which it differs only in the degree of development of its bracteoles and peduncle.

(ii) *S. menispermoidea*

This is the most widely distributed member of the group, occurring from Garhwal in the W Himalaya to Kansu in NW China. Despite the nomenclatural confusion with *S. elegans* discussed above, it is a relatively distinct species and uniform except in NW China where shrubby forms with smaller, more coriaceous leaves were described by Rehder as *S. rubriflora.* I have not seen any of the syntypes cited in the protologue, but have seen duplicates at Kew bearing the type number (i.e. Hooker's *Smilax* 7).

(iii) *S. minutiflora*

This is a clearly defined, usually shrubby species with characteristic leaves: herbaceous, underside bearing curious scurfy scales with raised edges (sometimes rubbed off) and with the cuticle forming raised lines on the veins beneath. Other characteristic features are the broad, cream, persistent petiole wings which taper upwards, the abscission from below the apex of the petiole; and the contrast between the lanceolate young leaves and ovate mature leaves which are not always developed.

It appears to be more widely distributed than hitherto realized, occurring from NE Nepal to Assam and N Burma, Yunnan and Sichuan. Further work is needed, however, on specimens from Sichuan, which are evidently closely related and possibly synonymous (including the very narrow-leaved *S. tsingchengshanensis* Wang).

(iv) *S. rigida*

The well-known name of this distinctive, ericaceous-like, dwarf shrub was shown by Mabberley (1982) to be a later homonym and some nomenclatural re-adjustment is therefore needed for the Himalayan plants. As is usual in this group the Indian plants were described before the Chinese, and, if looked at in a narrow geographical sense, delimitation of taxa seems to be clearer than it actually is. Kunth's *S. rigida* is spiny, with sessile, ovate-cordate, coriaceous leaves, and occurs mainly in E Nepal, Sikkim and Bhutan with outliers seen from Assam, N Burma and W Yunnan. De Candolle described the closely related *S. myrtillus* from Assam, which is spineless, and has rhombic-ovate (usually larger), more herbaceous leaves with a subcuneate base. However, when material from Yunnan is examined the correlation between leaf shape and spininess is by no means clear-cut, and Koyama was clearly correct in reducing the two to varietal rank (under *S. rigida*). Koyama later (1971) raised them to subspecific rank. Such striking variation, for which there must be some interesting genetic or ecological basis, despite the occurrence of intermediates, merits taxonomic recognition, but as the distributional difference is not clear-cut subspecific rank is probably not appropriate. Clearly it would be interesting to know if the two are ecologically separated where sympatric, but the sparse notes on most specimens are not an adequate basis on which to form an opinion.

The unfortunate discovery that *S. rigida* is illegitimate means that the species must be known as *S. myrtillus*, which necessitates making a new variety for the earlier described species, which becomes *S. myrtillus* var. *rigida*.

(v) *S. vaginata*

The type species of this section, *S. vaginata* Decne., is a very distinctive shrubby species with subapical leaf abscission and oblong-ovate, truncate leaf blades with rounded apices. It has a similar distribution to subsp. *glaucophylla*, i.e. restricted to the W Himalaya (Afghanistan to Uttar Pradesh) though related to the Japanese *S. stans* Maxim. and to the Chinese *S. pekingensis* A.DC, with which it has sometimes been united (e.g. Koyama, 1960).

NOMENCLATURAL SUMMARY AND SPECIMENS SEEN

(i) **S. elegans** Wall. ex Kunth subsp. **elegans** in Enum. Pl. 5: 163 (1850) — excl. female plant; A.DC., Monogr. Phan. 1: 107 (1878) — excl. *S. glaucophylla* Klotzsch; non sensu Hook.f., Fl. Brit. India 6: 305 (1892). Neotype (chosen here): Napalia, 1832, *Wallich* 5117, specimen ex herb. Bentham (K).

Syn.: *S. parvifolia* Wall. ex Hook.f., Fl. Brit. India 6: 304 (1892) nom. illegit. — p.p. excl. *S. glaucophylla* Klotzsch and Khasia plants.

*S. glaucophylla* sensu Wang & Tang in Fl. Reip. Pop. Sin. 15: 207 (1978), non Klotzsch.

Specimens seen (all):

?NEPAL. Chusapang, 18 xii 1821, *Wallich* 5117 (additional) (K-W).

C NEPAL. Sheopore, 1821, *Wallich* 5117A (E, K, K-W, BM. Note: some sheets mixed with *S. menispermoidea*). Godavari-Phulchauki, Kathmandu, 1600–2500m, 26 vi 1967, *Kanai et al.* 1019, 2692 (E, BM). Khading, 8000ft, 1928, *Dhwoj* 226 (E). Phulchoke S of Kathmandu, 7500ft, 12 v 1966, *Schilling* 794 (K). Phulchoke S of Kathmandu, 28 v 1972, *Ohashi & Ohba* 724010 (BM). Below Helumbu, Sindhu Palchok District, 2400m, 28 ix 1966, *Nicolson* 2665 (BM). S of Tharke Gyang, 2550m, 7 ix 1974, *De Haas* 2698 (BM). SE of Malemchigaoh, 2100m, 17 ix 1974, *De Haas* 2799 (BM). Gatlang, Ganesh Himal, 8000ft, 26 iv 1962, *Stainton* 3630 (BM). Ngyak, 8000ft, 9 vii 1953, *Gardner* 1188 (BM). Chipling to Latsu, 2350m, 21 viii 1969, *Kanai & Malla* 673584 (BM). Melumchee, 8000ft, 30 x 1931, *Sharma* E271 (BM). Nr Bongakhani, 6700ft, 4 v 1954, *Stainton, Sykes & Williams* 2691 (BM). Okhaldhungagaon, 9000ft, 2 vi 1954, *Stainton, Sykes & Williams* 397 (BM). Burungdi Khola, 6500ft, 20 v 1954, *Stainton, Sykes & Williams* 5331 (BM). Nr Lumsum, 7000ft, 7 ix 1954, *Stainton, Sykes & Williams* 4267 (BM). Lete, N of Dana, 8000ft, 26 v 1954, *Stainton, Sykes & Williams* 680 (BM). Khangjung, 7–8000ft, 5 vi 1949, *Polunin* 137 (BM). Between Bharkhu and Syabru, Rasuwa District, 1960m, 22 iv 1992, *Long & McDermott* 21928 (E).

E NEPAL. E Napalia, 1828, *Wallich* s.n. (BM). Tambur [= Tamar] River, 5–8000ft, 22 xi [1848], *Hooker* s.n. (K). Birwa–Yektin, 28 xi 1963, *Kanai et al.* 6300843, 6301136 (E, BM). Baroya Khimty–Thakma Khola, 16 xi 1963, *Kanai et al.* 6301143 (E, BM). Above Shidua, 2570m, 28 viii 1989, *KEKE* 39 (K, E). Amjilassa to Kyapra, Ghunsa Khola, 2600m, 6 ix 1989, *KEKE* 301 (K, E). Sinduwa, Dhankuta, 2100m, 24 x 1963, *Hara et al.* 6301139 (BM). Bhandukay to Yamphodin, 16 xi 1963, *Hara et al.* 6307405 (BM).

BHUTAN. Thimphu–Chima Khothi, 2150–2250m, 1 vi 1967, *Kanai et al.* 404 (BM). Bootan [almost certainly nr Panga, *Griffith* 1028], *Griffith* K.D. 2641, HEIC 5435 (K, BM). Ritang to Ratsoo, 1850–2000m, 23 iv 1967, *Kanai et al.* s.n. (BM). Dengchung, Khoma Chu, 7000ft, 2 v 1949, *Ludlow, Sheriff & Hicks* 18805 (BM). Below Lobnakha, 2530m, 22 vii 1991, *Noltie* 17 (E).

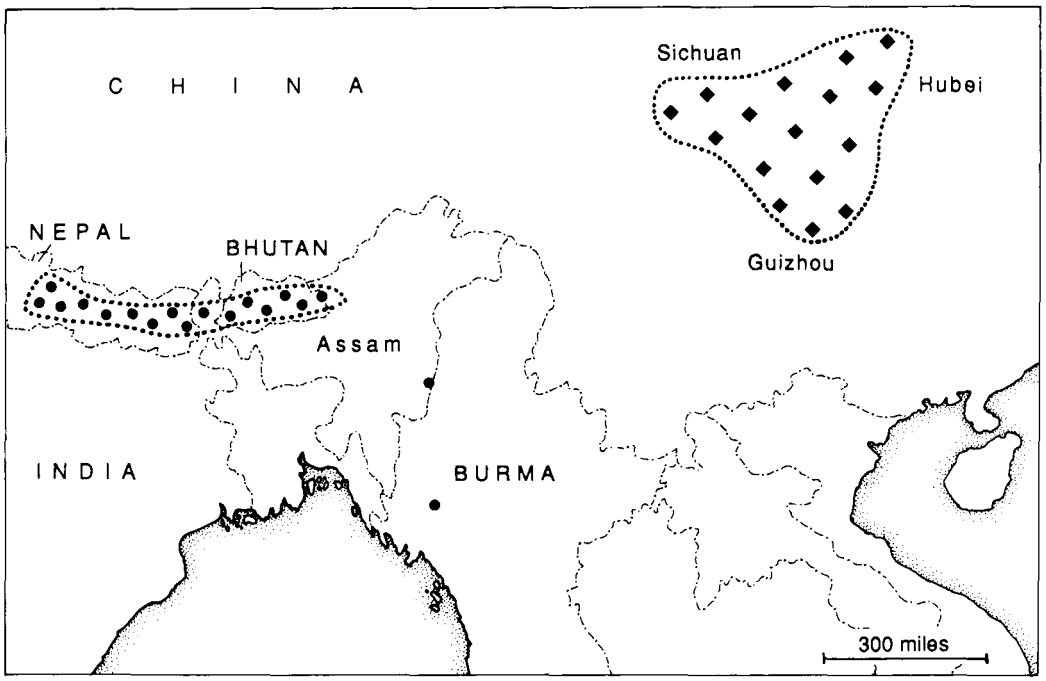
ASSAM. Shergaon, Balipara Frontier Tract, 6000ft, 5 v 1935, *Kingdon Ward* 11386 (BM).

MANIPUR. Above Pushing, Khaiyang, 6–7000ft, 19 v 1948, *Kingdon Ward* 17497 (A).

N BURMA. Mindat Ridge, 7500ft, 21 v 1956, *Kingdon Ward* 22252 (BM, E).

Distribution: E Himalaya, from C Nepal to N Assam, Manipur and N Burma; also S Tibet teste Wang & Tang (1978). Habitat: oak and pine/rhododendron forest; alt. 1520–2740m. **Map 1.**

NB. Many collections of Hara *et al.* of this subspecies from Nepal, Sikkim and Bhutan were named (by Koyama and others) as *S. menispermoidea*, *S. glaucophylla* or *S. microphylla* subsp. *elongata*.




MAP 1. •, *Smilax elegans* subsp. *elegans*; ♦, *S. elegans* subsp. *microphylla*.

**S. elegans** subsp. **glaucophylla** (Klotzsch) Noltie, **comb. & stat. nov.**

Syn.: *S. glaucophylla* Klotzsch, Bot. Reise Pr. Waldemar, p. 45; t. 91 (1862). Lectotype (chosen here): Klotzsch, t. 91.

Specimens seen (all):

PAKISTAN. Kaghan to Balakot, Hazara District, 12 v 1983, *Omer et al.* 728 (BM). Murry, NE of Islamabad, 2000m, 12 viii 1989, *Bosshard et al.* 812.11 (K). Murree Mt, 13 v 1851, *Fleming* 142 (K). Jhikka Gaki to Upper Topa, 6800ft, 28 v 1918, *Sprague* 106 (K). Malkamli, Kagan Hazara, 2 vii 1899, *Duthie* s.n. (K). Natlua, NWFP, vi 1907, *Deane* s.n. (K).

KASHMIR. Below Chikar, Azad Kashmir, 6000ft, 2 x 1960, *Nasir* 1041 (E). Kishtwar, 4500ft, 18 ix 1876, *Clarke* 31393 (BM, K). Mundi, 4800ft, 4 vii 1876, *Clarke* 28293 (K). Nr Thana, 3 v 1847, *Winterbottom* 28 (K).

HIMACHAL PRADESH. Kothama, Kangra District, 6500ft, 5 v 1901, *Hart* 539 (E). Chumba, NWH, 3200ft, 27 v 1878, *Watt* 606 (E). Salori Bridge, Bhandal, Chamba State, 4000ft, 9 v 1896, *Lace* 1349 (E). Simla, 4, 6 & 16 v 1831, *Dalhousie* s.n. (E). Simla, *Gamble* 4290A, 4926A, *Bourne* 3667, *Collett* 531 (K); 1887, *Drummond* KD 20915 (E, K). Taklech, 5000ft, 15 v 1890, *Lace* 136 (E, K). Dalhousie, 6000ft, 28 v 1917, *Stewart* 2046 (K). Kulel, Chamba, 4000ft, 26 viii 1896, *Gammie* 18439 (K).

PUNJAB. Punjab, *Drummond* KD 26082, 26084, (E, K); 26081, 26080 (K). Kulu, 4000ft, 2 vi 1952, ?SCHILPE 3205 (BM). Abbottabad, i 1902, *Drummond* 49 (K).

UTTAR PRADESH. Nynee Tal, iv 1844, vi 1845, *Thomson* 660 (E, BM). Khar Bazar, West Almora Div., Kumaon, 5 vi 1933, *Ram* 2321 (E). Mussoorie, 6000ft, v & vi 1919, *Anderson* s.n. (E). Nr Mussourie, vii 1870, *King* s.n. (E). Mussooree, *Jacquemont* 537 (K). Nr Woodstock Rocks, Naini Tal,

6800ft, 6 vi 1885, *Reid* s.n. (E). Between Pinra & Ramgarh, iv 1887, *Reid* s.n. (E). Saharunpur, *Jameson* s.n. (E). Barkot to Mandrassi, N of Massuri, x 1855, *Schlagintweit* s.n. (BM). Samkhet, Kumaon, 5500ft, *Strachey & Winterbottom* 1 (BM, K). Kamoon, *Graham* s.n. (BM). NW Himalayas, *Watt* 8874 (E). Paori, 4–6000ft, 1844, *Edgeworth* 91 (K). Chyta, Karli Himalaya, 5–7000ft, 1844, *Edgeworth* 87 (K). Deota, Tehri Garhwal, 7500ft, v 1898, *Gamble* 26732, 26694, 26863; v 1892, *Gamble* 23566 (K). Lambatach, Tehri, 7–8000ft, 13 v 1895, *Duthie* 15585 (K). Mandal, Chamoli, 4500ft, 30 ix 1970, *Naithani* 41980 (K). Kathyan, Jaunsar, 7–8000ft, 14 v 1893, *Duthie* 12943; v & vi 1891, *Gamble* 22943, 22830 (K). Kathi, United Provinces, 7–8000ft, 2 v 1939, *Legge* 12 (K).

W NEPAL. Gum nr Rara Daha, 8000ft, 14 viii 1952, *Polunin, Sykes & Williams* 5220 (BM). Shimi, 1300m, 23 vi 1974, *Dobremez* 2705 (BM). Nahapani, 1700m, 18 iv 1973, *Dobremez* 1861 (BM).

C NEPAL. Tarakhola W of Beni, 6000ft, 8 v 1954, *Stainton, Sykes & Williams* 492 (BM).

[ASSAM. Khasia, 4–6000ft, *Hooker & Thomson* s.n. (E). A distributed duplicate and almost certainly wrongly labelled.]

[A specimen at BM collected by A.P. Young bears a printed label 'Southern Maratha Country & N. Canara: Bombay Presidency'. As there are no collection details its origin must be viewed with suspicion — it exactly matches W Himalayan material.]

Distribution: W Himalaya, from N Pakistan to C Nepal. Habitat: open 'banj' forests (Osmaston, 1927); alt. 975–2440m. **Map 2.**

**S. elegans** subsp. **osmastonii** (Wang & Tang) Noltie, **comb. & stat. nov.**
Lectotype (chosen here): Garhwal, U.P., 2 ix 1919, *Osmaston* 1076 (comm. Beeson) — sheet with specimen lacking tendrils (K).

Syn.: *S. osmastonii* Wang & Tang in Bull. Fan Memorial Inst. 7: 298 (1937).
*S. erecta* Osmaston in Kew Bull. 1925: 284 (1925); non Merrill (1918).

Other specimens seen (all):

?SIKKIM: Sikkim temp., 5–7000ft, *Hooker* s.n. (K, E — distributed specimens with printed labels and no field labels so could possibly be mislabelled Assam specimens).

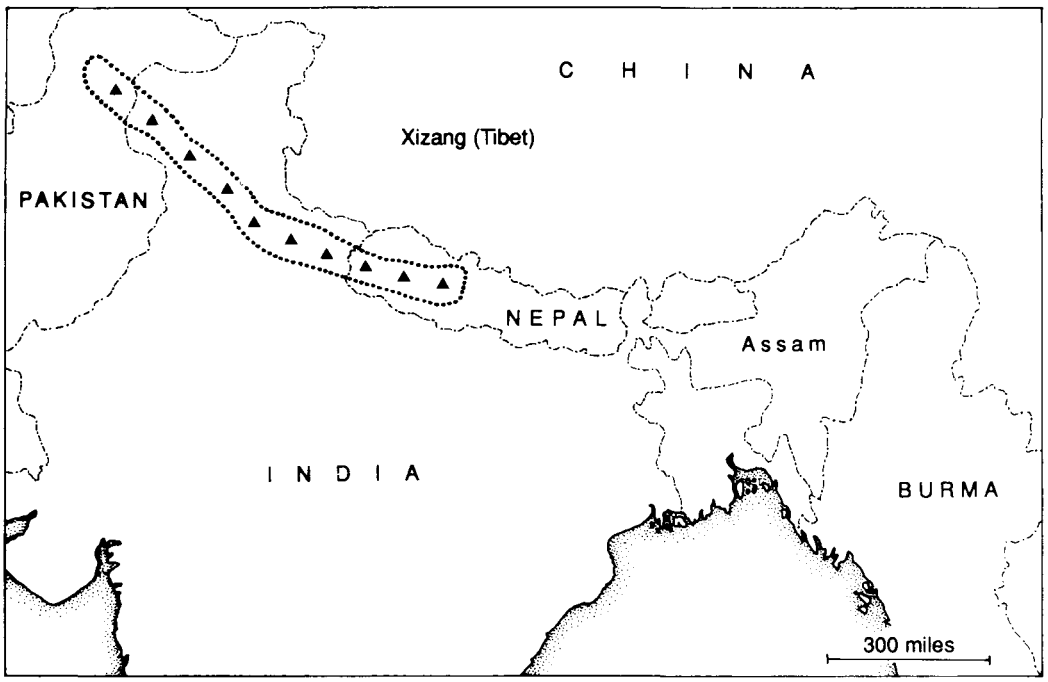
ASSAM/MANIPUR. Mishmee (towards summit), 1836, *Griffith* HEIC 5434 (K). Khasya, *Griffith* HEIC 5436 (K). Surareen, Khasia, 5000ft, 15 v 1886, *Clarke* 43891 (K). Pynursla, Khasia Hills, 5000ft, 26 xi 1946, *Kingdon Ward* 16041 (BM). Delei Valley, 6–7000ft, 3 v 1928, *Kingdon Ward* 8222 (K). Khaiyang [Manipur], 7–8000ft, 7 v 1948, *Kingdon Ward* 17418 (BM).

BURMA. Adung Valley, Upper Burma, 6000ft, 6 iii 1931, *Kingdon Ward* 9280 (BM).

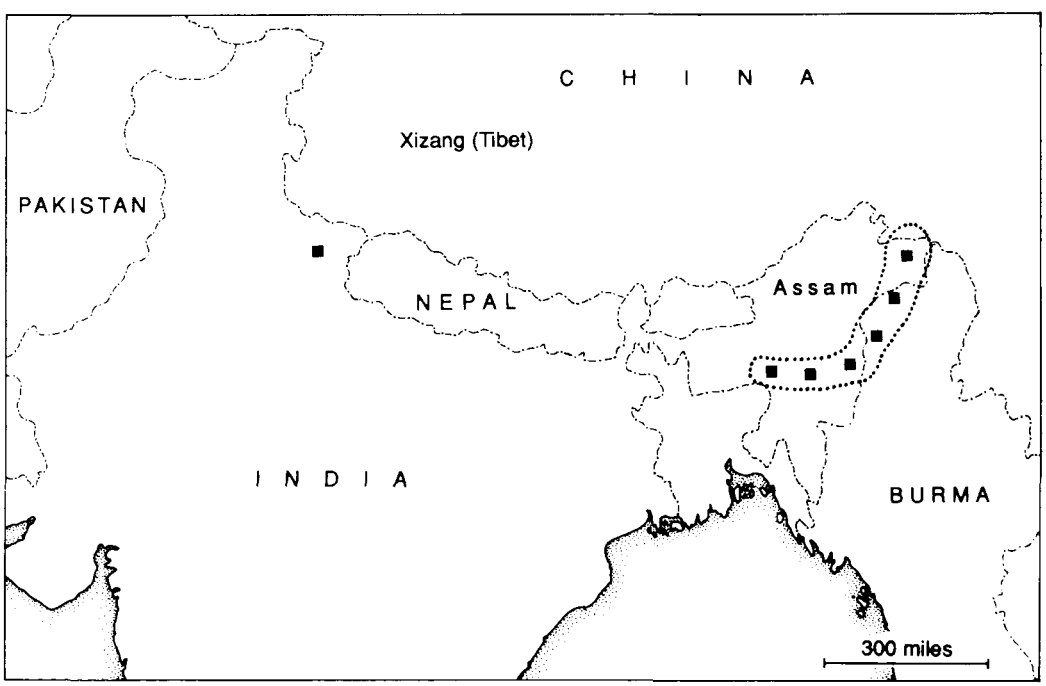
Distribution: Uttar Pradesh (Garhwal); NE India. Habitat in Garhwal: shady oak–cypress forest (according to protologue); alt. 1520–2440m. **Map 3.**

**S. elegans** Wall. ex Kunth subsp. **subrecta** Noltie, **subsp. nov.**
Holotype: India, Meghalaya, Shillong, 5200ft, 13 vi 1886, *Clarke* 44099A (K) — male plant.
Paratype: India, Meghalaya, Soyung, 5000ft, 16 ix 1886, *Clarke* 45405B (BM) — female plant.

Syn.: *S. longebracteolata* Hook.f., Fl. Brit. India 7: 305 (1892). Holotype: Khasia, Myrung, 4–6000ft, 17 x 1850, *Hooker* s.n. (K).
*S. parvifolia* Wall. Cat. no. 5118, nom. nud. (1831–32).
*S. parvifolia* Wall. ex Hook.f. p.p., Fl. Brit. India 7: 304 (1892), nom. illegit., non A.Br. in O. Heer, Die Tertiare Flora der Schweiz 1: 83 (1855) — a fossil species.
*S. elegans* var. *major* A.DC., Monogr. Phan. 1: 107 (1878). Type: Khasia, 0–3000ft, *Hooker* Smilax 12 (K).




MAP 2. ▲, *Smilax elegans* subsp. *glaucophylla*.




MAP 3. ■, *Smilax elegans* subsp. *osmastonii*.

*S. elegans* sensu A.DC. p.p., non Wall. ex Kunth.
*S. glaucophylla* p.p., sensu Koyama (1963) non Klotzsch.
*S. microphylla* subsp. *elongata* sensu Koyama, non Warb. (as var.).
*S. mairei* sensu Wang & Tang 1978, non H.Lév.

A subsp. *eleganti* ramulis lateralibus florentibus ± rectis (haud forte fractiflexis), foliis plerumque maioribus coriaceribus inferne vix glaucis, pedunculo crassiore apici ('receptaculo') conspicue tumido, bracteolis maioribus, inflorescentia mascula pluriflora.

Differs from subsp. *elegans* in its lateral flowering branchlets being more or less straight as opposed to strongly zigzag. Leaves usually larger and more coriaceous, scarcely glaucous beneath. Peduncle stouter, the apex ('receptacle') conspicuously swollen, bracteoles larger, male inflorescence with more flowers.

Other specimens seen:

BHUTAN. Bagha La, Kurmed [Mongar District], 6000ft, 26 viii 1915, *Cooper* 4598 (BM, E). Trashiyangse Dzong, 5500ft, 28 iv 1949, *Ludlow, Sherriff & Hicks* 20206 (BM).

KHASIA. Chora Poonji, Mont. Sylhet, v 1829, *Wallich* 5118 (K-W, K, BM). Shillong, 4000ft, 6 viii 1885, *Clarke* 38516 (K, BM). Shillong, 5200ft, 13 vi 1886, *Clarke* 44099 (K). Kollong Rock, 5000ft, 4 vi 1868, *Clarke* 7336 (K). Myrung, 5000ft, 12 ix 1886, *Clarke* 44758 (K). Soyung, 5000ft, 16 ix 1886, *Clarke* 45405 (BM). Nyrmai, 4500ft, 25 v 1886, *Clarke* 43996 (K, BM). Nyrmai, 5000ft, 30 x 1872, *Clarke* 19279 (K). Maophlang, 6000ft, 16 vi 1885, *Clarke* 38310 (BM). Mofling, 4–6000ft, 2 vii 1850, *Hooker & Thomson* s.n. (K). Kolapani, 4–6000ft, *Simons* 36 ex herb. Hook.f. (K). Nungkree. 13 x 1850, *Hooker & Thomson* s.n. (K). Assam, *Griffith* 1338 (BM). Churra, 4–6000ft, 17 vi 1850, *Hooker & Thomson* 1031 (K). ?Boja Panee, 4–6000ft, *Hooker & Thomson* s.n. (K). Theku bama, Naga Hills, 7000ft, 18 vi 1935, *Bor* 4458 (K).

ARUNACHAL PRADESH. Dirang Dzong, 5–6000ft, 23 v 1935, *Kingdon Ward* 11503 (BM). Dirang Dzong, 5–6000ft, 25 vi 1938, *Kingdon Ward* 13805 (BM).

MANIPUR. Ukhrul, 5000ft, 9 vi 1948, *Kingdon Ward* 17642 (BM). Khaiyang, 6–7000ft, 19 v 1948, *Kingdon Ward* 17497 (BM).

BURMA. Mount Victoria, 9000ft, 10 iv 1956, *Kingdon Ward* 21995 (BM). Mount Victoria, 8500ft, 16 iv 1926, *Unwin* 3046 (E).

YUNNAN. Shweli-Salween divide, 10,000ft, vi 1924, *Forrest* 24322 (E, K). W of Tengyueh, 5000ft, v 1912, *Forrest* 7666, 7820 (E, K). Flanks of Mingkwong Valley, 6–7000ft, v 1912, *Forrest* 7820 (E). Anning Xian, Kunming, 1850-2000m, 29 vii 1984, *Sino-american Bot. Exped.* 1439, 1444, 1450 (E). Yangbi Xian, W side of Diancang Shan, 2700m, 25 vi 1984, *Sino-american Bot. Exped.* 516 (E). Chuxiong Xian nr Longtang, 1820m, 25 vii 1984, *Sino-american Bot. Exped.* 1264, 1265 (E). Atuntze, Mt Kaakerpu, 2500m, 1 x 1937, *TT Yü* 10505 (E, BM). Atuntze, Mt Miyetzimu, 3400m, 20 x 1937, *TT Yü* 10580 (BM). Mengze, 5500ft, *Henry* 9330, 9330A (E, K). Vicinity of Yunnansen, *Maire* 1310, 1373, 1375, 2533 (E); 216, 1309, 1793 (E, K); 1306 (E, BM, K). NW Yunnan, *Monbeig* 257 (E). Chengkang, Snow Range, 2750 and 2850m, 26 and 28 vii 1938, *TT Yü* 17012, 17064 (E). Shunning, Yeuaih, 1800m, 13 v 1938, *TT Yü* 15856 (E). Shunning, Wenkuankuai, 2100m, 17 vi 1938, *TT Yü* 16332 (E). Menghua, Wepoushan, 2200m, 29 xii 1938, *TT Yü* 18284 (E). Pe ka, Kiao Kia, v 1909, *Ducloux* 1147 (E). Pe Yen Tsin, 28 iii 1916, *Ten* 64 (E). Tie so, Pe Yen Tsin, 10 vi 1916, *Ten* 180 (E). Bet. Poloti & Yung peh, 2400m, 30 vi 1914, *Schneider* 1672 (E, K). Nr Lichiang towards Taku, 3200m, x 1914, *Schneider* 3194 (K). Vallons du Tebong chan, Yunnansen, 11 vi 1905, *Ducloux* 442 (E). Marlipo: Panchiachu, 1500–1700m, 31 x 1947, *KM Feng* 12646 (A). Yunan, *HT Tsai* 62896 (K). Yunan-sen District, *Cavalerie* 7510 (K). Mengtsz, 6–7000ft, 9 vi 1895, *Hancock* 308 (K). Environs de Yunan-sen, *Ducloux* 3540 (K). Yunan-sen, vii 1897, *Ducloux & Bodinier* 212 (K). Sung Kuei, Lichiang Range, *McLaren's Coll* C222 (E, K, BM). Nr Tjintjischan, Loping, 1600m, 12 vi 1917, *Handel-Mazzetti* 10189 (K).

SICHUAN. Tienchuan Hsien: Tienchuanchow, 2500–3000ft, 9 ix 1928, *Fang* 3488 (E). Above Gaoyao, nr Ningyuen, 1650m, 14 iv 1914, *Handel-Mazzetti* 1328 (K).

TIBET. Tsekou, Thibet, 17 ix 1909, *Monbeig* s.n. (BM). Tsekou, Thibet Oriental, *Soulié* 1387 (K).

GUIZHOU. SW Kweitschou: ad viam Tschenning-Huang tsauba ... ad vic. Falang, 900m, 20 vi 1917, *Handel-Mazzetti* 10379 (A).

Distribution: NE India, SW China (Khasia, Bhutan, N Burma, Yunnan, E Tibet). Habitat: oak–pine forest; alt. 1220–3400m. **Map 4.**

**S. elegans** subsp. **microphylla** (C.H. Wright) Noltie, **comb. & stat. nov.**

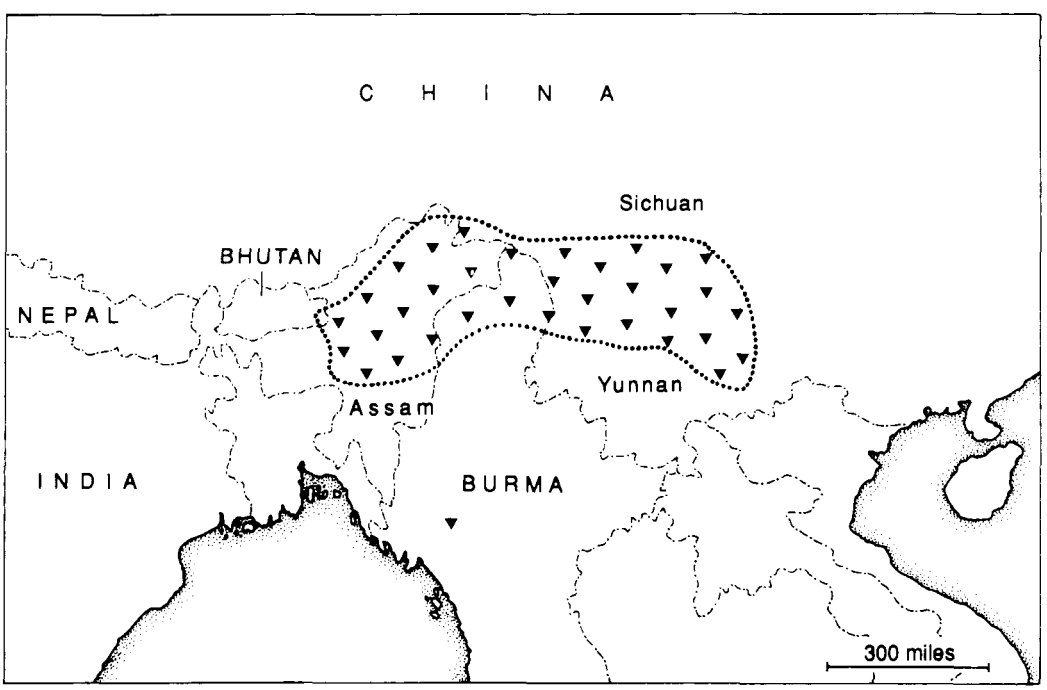
Syn.: *S. microphylla* C.H. Wright in Kew Bull. 1895: 117 (1895). Lectotype (chosen here): China, Hupeh, Ichang, *Henry* 3980 (K).

*S. microphylla* var. *angustifolia* Warb. in Bot. Jahrbuch. 29: 259 (1900). Isotype: Sichuan, Nanch'uan: Fupei-tsui, 8 x 1891, *Bock & von Rosthorn* 1160 (O!).

*S. castaneiflora* H. Lév. in Bull. Acad. Géog. Bot. 25: 39 (1915). Holotype and isotype: China, Yunnan, Tong-tchouan, 2700m, vi 1912, *Maire* s.n. (E).

*S. gracillima* H. Lév. & Vaniot in Mem. Acad. Pont. Nuovi Lincei 23: 355 (1905). Type: Guizhou, Tsin-gai, 15 vii 1903, *Cavalerie* 1156 (E, K).

*S. labordei* H. Lév. in Mem. Acad. Pont. Nuovi Lincei 23: 355 (1905). Type: Guizhou, environs de Kouy-yang, 2 vi 1898, 9 xii 1897, *Laborde & Bodinier* 2318 (E).




MAP 4. ▼, *Smilax elegans* subsp. *subrecta*.

Other specimens seen (all):

HUBEI. Patung Hsien, 3–5000ft, vi 1907, *Wilson* 3247 (A, E, K). Ichang, *Henry* 1521 (G, K — syntype of *S. microphylla*). Ichang, *Henry* 3089 (K). Ichang, *Henry* 3089A (G, K — syntype of *S. microphylla*). Ichang, *Henry* 3996 (G, K, BM — syntype of *S. microphylla*). Ichang, *Henry* 4410 (K). Nangyang Ho, 1400ft, 14 viii 1922, *WY Chun* 3866 (A, W). Hupeh, vi 1900, *Wilson* 1194 (K).

SICHUAN. Mupin, 3–4000ft, xi 1908, *Wilson* 1256 (A, E, K, BM). W Sechuan, vi 1907, *Wilson* 3247 (BM). Chengtu, 15 xii 1938, *Fang* 13200 (A). Chengtu, 4 vi 1938, *Fang* 12424 (A, W, BM). Chengtu, 1 vii 1938, *Fang* 12434 (W, BM). Chengtu, 6 xii 1943, *CY Wang* 7557 & 7357 (E). Ling-ai-ssu, Mt Omei, 3 vii 1939, *Sun & Chang* 652 (A). O-Pien Hsien, ix 1937, *Yu-Shih Liu* 2174 (A). Ching Feng Sze, nr Ya-an, 1000m, 31 vii 1939, *CY Chiao* 1296 (A). Lu-shan-hsien, 1150m, 16 x 1936, *KL Chu* 4002 (E, W, BM). Kiang-yu Hsien, Mt Kwan-yin, 1200m, *Wang* 22167, 6 viii 1920, (E). Nanch'uan: Wangt'ienling, 9 x 1891, *Bock & von Rosthorn* 1171 (O).

GUIZHOU (KWEICHOW). Jiangkou Xian, Baishuidong, 500m, 3 ix 1986, *Sino-american Guizhou Bot. Exped.* 756 (A). Jiangkou Xian, Shaoxiding, 500–650m, 2 ix 1986, *Sino-american Guizhou Bot. Exped.* 715 (A). Trinlau, 1910, *Cavalerie* 3818 (E, K).

Specimens intermediate with subsp. *subrecta*:

YUNNAN. Yung-pei-ting, 8000ft, 20 v 1921, *Kingdon Ward* 3903 (E — small-leaved but spineless).

HUBEI. W Hupeh, vi 1900, *Wilson* 1194A (K — large leaves like subsp. *subrecta*, but spiny).

Distribution: SW China (Hubei, Sichuan, Yunnan, Guizhou). Habitat unknown; alt. 430–2700m. **Map 1.**

(ii) **S. menispermoidea** A.DC., Monogr. Phan. 1:108 (1878).
Syn.: *S. elegans* sensu Hook.f., Fl. Brit. India 6: 305 (1892).

Specimens seen from Garhwal, Nepal, Sikkim, Bhutan, Assam, N Burma, Laos, Yunnan, Sichuan, SE Tibet; Kansu; [Shaanxi, Hubei, Guizhou teste Wang & Tang 1978]; [Viet-Nam teste Koyama 1983].

Records from Punjab (Koyama, 1963) almost certainly refer to *S. elegans* subsp. *glaucophylla*.

Distribution: Sino-Himalaya. Habitat: *Abies–Rhododendron* forest, 2100–3700m.

(iii) **S. minutiflora** A.DC., Monogr. Phan. 1: 109 (1878). Lectotype (chosen here): Assam, Mishmee (summit), 1836, *Griffith* HEIC 5433 (K!).

Other specimens seen:

E NEPAL. Memeng to Chyangthapu, 8000ft, 11 vi 1969, *Williams* 553 (BM). Above Yamphudin, 2380m, 26 ix 1989, *KEKE* 973 (K, E). NE of Guphar Pokhari, 2870m, 30 viii 1989, *KEKE* 107 (K, E).

SIKKIM. Chola, 8000ft, xi 1849, *Hooker* s.n. (K). Prek Chhu below Bakhim, 2400–2800m, 8 vii 1992, *ESIK* field record.

DARJEELING DISTRICT. Sandakphu–Garibans, 2600–3000m, 7 vi 1960, *Hara et al.* 1726 (BM). Sinchul, 8–10,000ft, *Hooker Smilax* 4 (K, BM — printed labels on duplicates give locality as 'Sikkim temp.'). Senchal, 2400m, 6 iv 1960, *Hara et al.* 1724 (BM). Senchal, 8500ft, x 1879, *Gamble* 7269 (K). Senchal, v 1878, *Lister* s.n. (K). Sonada, 7000ft, 19 vi 1876, *Clarke* 28089 (BM, K). Sonada, 6500ft, 14 vi 1877, *King* 4760 (K). Tonglo, 9000ft, 1913, *Ribu & Rhomoo* 6295 (E). Tonglo, 10,000ft, vii 1882, *Gamble* 10388 (K). Khursiong, 7000ft, 28 ix 1884, *Clarke* 36011 (K). Ging, 5000ft, vi 1874, *Gamble* 1131A (K). Darjeeling, 9000ft, 3 ix 1875, *Clarke* 27383 (K). Above Nursery, Rungbool, 7000ft, viii 1875, *Gamble* 1130A (K). Bet. Ghoom and Tiger Hill, 2460m, 5 vii 1992, *ESIK* 38 (E).

BHUTAN. Bootan, *Griffith* K.D. 2640 (K, BM). Thimphu–Dochu La, 2250–3050m, 30 v 1967, *Kanai et al.* 759 (BM, E). Chabley Khola above Sham Khara, 1800m, 3 vi 1979, *Grierson & Long* 1589 (E). Jumudag to Tala, 2060m, 22 ii 1982, *Grierson & Long* 3139 (E).

ASSAM. Patkari (summit), *Griffith* s.n. (K).

N BURMA. Sumpra Bum, 3500ft, 10 ii 1953, *Kingdon Ward* 20539 (BM). Uring Bum, 7500ft, 3 xi 1953, *Kingdon Ward* 21548 (BM). 27°35'N, 97°40'E, 3–4000ft, 5 xii 1937, *Kingdon Ward* 13542 (BM). Janrawng Bum, Sumprabum, 7–9000ft, 7 i 1962, *Keenan et al.* 3147A and 3156 (E). Kachin Hills, *Toppin* s.n. (K).

YUNNAN. Mengzi, 5500ft, *Henry* 9415A (E).

SICHUAN. Kuan-hsien: Mt Tsing-cheng, 25 ix 1938, *Fang* 13116 (BM, W).

Distribution: E Himalaya, SW China. Habitat: oak forest; alt. 1070–3050m.

(iv) **S. myrtillus** A.DC. var. **rigida** Noltie, **var. nov.**

Syn.: *S. rigida* Wall. ex Kunth, Enum. Pl. 5: 164 (1850), nom. illegit, non Solander in Russell, Nat. Hist. Aleppo (Ed. 2) 2: 271 (1794). Type: Nepal, 1821, *Wallich* 5120 (iso. E!).

A var. *myrtillo* caulibus spinosis et foliis coriaceis ovatis cordatis (haud subherbaceis rhomboideo-ovatis subcuneatis) differt.

Distribution: Primarily E Himalaya (C Nepal, Sikkim, Assam, Bhutan); specimens also seen from N Burma and W Yunnan. Habitat: oak–rhododendron forest; alt. 2130–2900m.

KEY TO HIMALAYAN SPECIES OF SECT. *VAGINATAE* AND SUBSPECIES OF *S. ELEGANS*

It is difficult to write a dichotomous key to this group due to extreme plasticity, especially of leaf characters. Leaf shape and size is especially variable and there are often differences between vegetative and flowering shoots. Leaf texture is also very variable, with leaves of normally herbaceous species sometimes becoming coriaceous (due to habitat or perhaps climatic or seasonal effects). Flower colour seems to be of no value, with all species varying from greenish to brown or purple.

1. Shrubs completely lacking tendrils ____ 2
\+ Climbers with tendrils developing from apex of petiole sheaths ____ 6

2. Leaves subsessile or sessile ____ 3
\+ Leaves distinctly petiolate ____ 4

3. Stems spiny; leaves sessile, ovate-cordate, coriaceous ____ **S. myrtillus** var. **rigida**
\+ Stems spineless; leaves subcuneate at base, usually herbaceous ____ **S. myrtillus** var. **myrtillus**

4. Leaf abscission from swollen apex of petiole; lower leaf surface papillose ____ **S. elegans** subsp. **osmastonii**
\+ Apex of petiole not swollen, leaf abscission above apex of petiole sheath, but below base of leaf blade; leaves not papillose beneath ____ 5

5. Leaf blade truncate, oblong-ovate, apex ± blunt ____ **S. vaginata**
\+ Leaf blades not truncate, blades of upper leaves narrowly lanceolate, apex abruptly acuminate ____ **S. minutiflora**

6. Stems spiny; peduncle shorter than subtending petiole ___ **S. elegans** subsp. **microphylla**
\+ Stems spineless; peduncle shorter to longer than petiole ____ 7

7. Petiole wings narrowly triangular, gradually narrowing from base to apex; leaves ovate ____ **S. menispermoidea**
\+ Petiole wings oblong; leaves lanceolate ____ 8

8. Leaves glaucous beneath; branchlets strongly zigzag; receptacle not swollen ____ **S. elegans** subsp. **elegans**
\+ Leaves not glaucous beneath; branchlets ± straight; receptacle swollen ____ 9

9. Leaves drying pale greyish-green, finely reticulate above; bracteoles minute; peduncle slender usually greatly exceeding petiole ____ **S. elegans** subsp. **glaucophylla**
\+ Leaves drying olive-brown (sometimes darker), coarsely reticulate above; bracteoles conspicuous; peduncle conspicuously flattened, shorter than to equalling petiole (occasionally longer) ____ **S. elegans** subsp. **subrecta**

## SECTION MACRANTHAE

*S. wallichii*

There has also been confusion over the correct name for an E Himalayan *Smilax* belonging to section *Macranthae* Kunth emend. Koyama, which occurs from C Nepal to Sikkim. It is characterized by its large, coriaceous, acuminate, narrowly ovate leaves; narrow petiole wing; large, many-flowered umbels borne singly on long, stout, bracteate peduncles; elongate receptacles; and conspicuously large flowers. Specimens have been determined as belonging to at least 8 different taxa! I propose to use the name *S. wallichii* Kunth for this taxon, which is close to *S. orthoptera* A.DC. and perhaps to *S. blumei* A.DC.

*S. wallichii* was based by Kunth on a duplicate (no longer extant at Berlin) from the Wallich herbarium numbered 5124B; he evidently realized that more than one taxon was distributed under that number as he adds 'ex parte'. In fact none of the 12 specimens numbered 5124 (and all belonging to either *S. prolifera* Roxb. or *S. ovalifolia* Roxb.) in K-W fits his description. In distributing this number even more errors must have occurred than usual, since there are specimens at K and E labelled 5124D, which do not agree with any specimens in K-W (according to de Candolle, specimens in herb. Delessert numbered 5124D were '*S. ovalifolia*' = *S. prolifera*). Kunth's plant appears to have been male and it was de Candolle who suggested that a specimen in Hooker's herbarium (now in the general herbarium at Kew) labelled *Wallich* 5124D was probably the female of *S. wallichii*. As he had seen Kunth's type, it seems reasonable to accept his opinion. Although as in all cases of this sort there must always remain some uncertainty I would thus recommend adopting this specimen as a neotype, allowing the name to be used for a distinctive and widespread E Himalayan species.

**S. wallichii** Kunth, Enum. Pl. 5: 246 (1850).
Neotype (chosen here): Napal, [Wallich] 5124D (K — specimen ex herb. Hooker, annotated by A.DC. 'Smilax wallichii Kunth? (femina)').

Other specimens seen:

NEPAL. Nepal, *Wallich* 5124D (K, E), (non K-W). Nepal, 1821, *Wallich* s.n. (K). Between Ghanpokhara and Lamjung, 6000ft, 2 v 1954, *Stainton, Sykes & Williams* 5150 (BM). Hills round Nepal Valley, 4–8000ft, 17 ii 1954, *Proud* 225 (BM). Nagarjong, Nepal Valley. 5000ft, 2 iii 1967, *Stainton* 5666 (BM). NW slope of Nagarjung, Bagmati Zone, 1500m, 2 iii 1967, *Nicolson* 2942 (BM). Phulchoke, S of Kathmandu, 6000ft, 20 ii 1966, *Schilling* 739 (K). Godavari, 5500ft, 18 iii 1975, *Stainton* 7314 (E). Narainhetty, 7 ii 1803, *Buchanan Hamilton* s.n. (BM). Phulchoki, N side, 6000ft, 15 ii 1967, *Pradhan et al.* 6744 (BM). Sooryavinayak, 5000ft, 15 vi 1957, *Fell* 50 (BM).

DARJEELING DISTRICT. Sikkim Trop., 1–5000ft, *Hooker* s.n. (K, BM). Rangirun, 6000ft, 9 iv 1903, *Lace* 2671 (E). Kursiong, 4000ft, 29 ii 1876, *Clarke* 27052 (K, BM). Ambiokh, 2000ft, iii 1875, *Gamble* 1140A (K). Mamring, 4000ft, 20 ii 1912, *Ribu & Rhomoo* s.n. (E).

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