Cornus macrophylla, and Some Asiatic Congeners

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10 cm. longa, 2·5 cm. lata, glabra; nervi laterales conspicui, patentes, utrinque prominentes, marginales crassi. *Capitula* ad ramos terminalia, sessilia, 6·5 cm. diam.; bracteae extus tomentosae, dense ciliatae, exteriores ovatae, 6 mm. longae, interiores oblanceolatae, 4 cm. longae, 6 mm. latae. *Perianthium* 4 cm. longum, dense ferrugineo-pilosum, pili basilares 8 mm. longi. *Antherae* lineares, 6 mm. longae, apice mucrone brevi subulato instructae. *Styli* 4·5 cm. longi, triangulares.

PORTUGUESE EAST AFRICA. Moramballa Mountain, 910 m. *Kirk.*

1049. Protea trichanthera, *Baker* [Proteaceae-Proteeae]; species *P. madiensis*, Oliv., affinis, nervis lateralibus foliorum patentibus differt.

Frutex. Rami pubescentes. *Folia* brevissime petiolata, oblonga, 13–15 cm. longa, 6–7·5 cm. lata, obtusa, basi deltoidea vel rotundata, rigide coriacea, supra viridia glabraque, subtus pallidiora denseque pubescentia; nervi laterales tenues, utrinque prominentes, intra marginem arcuatim connexi. *Capitula* globosa, 8 cm. diam.; bracteae extus sericeae, apice demum glabrae, exteriores breves, late ovatae vel suborbiculares, intimae oblongae vel oblanceolatae. *Perianthium* 5 cm. longum, parte inferiore glabrum, parte superiore densissime villosum; lobi acuti. *Antherae* lineares, 1·5 cm. longae, obtuse mucronatae. *Ovarium* ovoideum, pilis ferrugineis 1·5 cm. longis vestitum; stylus apice attenuatus.

BRITISH CENTRAL AFRICA. Nyasaland: Tanganyika Plateau; Fort Hill, 1070–1223 m., *Whyte.*

1050. Monadenium invenustum, *N. E. Brown* [Euphorbiaceae]; affinis *M. Goetzei*, Pax, sed foliis multo brevioribus orbiculare-ovatis vel subrhomboideo-ovatis marginibus crenulatis vel crispulis differt.

Caulis 15–35 cm. (vel ultra ?) altus, glaber. *Folia* utrinque pilis minutissimis adspersa; petiolus 4–5 mm. longus; lamina 1·2–3 cm. longa, 1·2–2·5 lata, orbiculari-ovata vel subrhomboideo-ovata, apice acuta, basi cuneata vel subrotundata, marginibus crenulatis vel crispulis. *Cymae* axillares, nutantes, 1·2 cm. longae, involucros 3 gerentes. *Pedunculi* 4–5 mm. longi, recurvi. *Bracteae* in cupulam 6 mm. longam, obliquam, antice apertam, apice breviter bifidam dorso bicarinatam connatae, microscopice puberulae. *Involucrum* 4–5 mm. longum, truncatum, antice ad medium apertum. *Ovarium* microscopice puberulum, angulis crispulis.

BRITISH EAST AFRICA. Kibwezi, *Kässner*, 717; Simba *Kässner*, 729.

XLVI.—CORNUS MACROPHYLLA, AND SOME ASIATIC CONGENERS.

W. BOTTING HEMSLEY.

In connection with the figuring of *Cornus macrophylla*, Wall., for the Botanical Magazine, Mr. Bean called attention to the fact that the species cultivated under this name at Kew and elsewhere in the United Kingdom is different from the one known as

such on the Continent, which is the same as the one known here under the name of *brachypoda*. A comparison of the Kew *C. macrophylla* with the original type specimens confirmed the correctness of the name adopted. Against this it was found that the Kew *brachypoda* was incorrectly named. Briefly stated, two species, or, according to the views of some botanists, three species are concerned in this confusion. In the following classification, the forms in question are placed under two species, one having opposite leaves, the other alternate. How or where the error originated is unimportant, but Dr. E. Koehne is responsible for describing *C. macrophylla*, in the place cited below, as having alternate leaves, and also for describing the genuine *C. macrophylla* under the new name of *C. corynostylis*. Thus, the species having alternate leaves is without a name, and for this species the name *controversa* is here proposed. It is only fair to repeat here that the late Mr. C. B. Clarke, in the Flora of British India, included specimens having alternate leaves under *C. macrophylla*, Wall., and this may have led Dr. Koehne, and others, to the conclusion that this name belonged properly to the species having alternate leaves. In the synonymy below of *C. macrophylla* and *C. controversa* it has not been considered necessary to include references to every place in which incorrect names are on record. Incidentally it may be added that the flowers of *Cornus* offer no striking modifications, and the species are based largely on vegetative characters.

Cornus macrophylla, Wall. in Roxb. Fl. Ind., Carey & Wallich edition, 1820, vol. i., p. 433; Wall. Cat. 469; C. B. Clarke in Hook. f. Fl. Brit. Ind., vol. ii, p. 744, excl. exempl. foliis alternis et var. *Stracheyi*; Collett, Fl. Siml., p. 219; Brandis, For. Fl., p. 252, t. 32; Hemsl. in Journ. Linn. Soc. Bot., vol. xxiii., p. 345, excl. *Cornus sp. affinis C. alternifoliae*, S. Moore, et exempl. ex Amoy, Fortune, 2; J. H. Veitch in Journ. R. Hort. Soc., 1902–3, vol. xxvii., p. 861, cum habitus figura; Hemsl. in Bot. Mag. t. 8261. *C. brachypoda*, C. A. Mey. in Mém. Acad. St. Petersb., vol. vii. (1845), p. 223; Rehder in Sargent Trees and Shrubs, vol. i., p. 81, t. 41; Koehne in Gartenfl., vol. xlvi., p. 94. *C. sanguinea* et *C. alba*, Thunb. Fl. Jap., pp. 62, 63, non Linn., et *C. glauca*, Blume ms. *C. Thelicanis*, Lebas in Rev. Hort. 1875, p. 394, f. 64. *C. Theleryana* et *C. Religiana*, Hort. *C. crispula*, Hance in Journ. Bot., 1881, vol. xix., p. 216. *C. ignorata*, Shirasawa, Ic. Ess. For. Jap., vol. i., p. 121, t. 77, ff. 1–12. *C. corynostylis*, Koehne in Gartenfl., 1896, vol. xlv., p. 286, f. 51, et Mitt. der Deutschen Dendrol. Gesellsch. 1903, pp. 33, 36, 44.

C. macrophylla, Wall., as here limited, ranges from the North-west Himalayas to China and Japan, though it does not appear to have been collected in the Eastern Himalayas. Throughout this wide range there is the same kind and extent of variation as in *C. controversa*, described in the account of that species below; but there are equally highly developed conditions of *C. macrophylla* from Kumaon, Hupeh, Ningpo, and Nagasaki, all having leaves, 15–20 cm. long on the flowering branches, glaucous beneath, and all having large inflorescences. Specimens in the Kew Herbarium, received from Leyden in 1865 and 1867, and labelled *Cornus brachypoda*, C. A. M., Japonia, may perhaps be accepted as

correct. They are undistinguishable from cultivated specimens named *C. Thelerjana*, and characterised by having smaller leaves, pale but not decidedly glaucous on the under surface, and by the calyx-teeth being larger than in typical *C. macrophylla* from Kumaon, and as figured in the Botanical Magazine, t. 8261. *C. glauca*, Blume (ined.?), received by Bentham from Leyden in 1853, is the same, as well as a specimen from Zuccarini's herbarium labelled *Cornus* (*sanguinea*, Thb.), Legit in Japonia de Siebold. Communicavit Zuccarini, anno 1843; the last sentence in Bentham's handwriting.

There are other specimens, both wild and cultivated, more or less intermediate in dimensions and other characters, so that it is impossible to sort them into two groups. For example, cultivated specimens received from Mr. B. E. C. Chambers, of Haslemere, in 1900, have leaves about 10 cm. long, pale on the under surface, except the brown nerves, and are neither typical *C. macrophylla*, Wall., nor typical *C. brachypoda*, C. A. M. It is of importance and great interest to know whether there have been importations both from India and the far east.

INDIA: Murree, *Thomson*, *Bellew*; Hazara, *Stewart*; Kashmir, *Clarke*, *Edgeworth*; Simla, *Lady Dalhousie*, *Collett*; Garhwal, *Jameson*; Kumaon, *Wallich*, 469, *Strachey & Winterbottom*, *Thomson*, *Madden*.

CHINA: Szechuen, Mt. Omi, *E. H. Wilson*, 4951A, 4952; Hupeh, various localities, *A. Henry*, 725, 5506, 6266, 7434; *E. H. Wilson*, 1152, 1935, 1935A, 2268; Ningpo mountains, *Faber*, 77.

JAPAN: Yokohama and Nagasaki, *Maximowicz*; Nagasaki, *Oldham*, 467; without locality, *Siebold*.

The *Cornus scabrida*, Franch. in Nouv. Arch. Mus. Hist. Nat. Par., sér. 2, vol. viii., p. 250, is of this affinity, but I have seen no authenticated specimen.

Cornus ulotricha, C. K. Schn. et Wang. in Fedde Repert. 1909; Schneider, Handb. der Laubholzk. vol. ii., p. 445.

CHINA: Hupeh; without exact localities, *E. H. Wilson*, 984, 2174, 2341.

This differs from *C. macrophylla*, Wall., in the curled hairs on the under surface, especially of the leaves, and in the disk and style being hairy. Whether intermediate conditions exist is uncertain.

Cornus controversa, *Hemsl.*, species hucusque cum *C. macrophylla*, Wall. (*C. brachypoda*, C. A. Mey.) ab auctoribus nonnullis confusa, a qua differt tamen imprimis foliis alternis longe graciliterque petiolatis.—*Corni species* 2 alternifoliae gerontogeae nondum (ut apparet) descriptae, S. Moore in Journ. Bot. 1877, vol. xv., p. 292. *C. macrophylla*, Koehne in Gartenfl., 1896, vol. xlv., p. 285, cum drupae figura; Shirasawa, Ic. Pl. Jap., vol. i., t. 77, ff. 13–23, non Wall. *C. brachypoda*, Hort., praecipue anglic., non C. A. Mey.; Koehne, Dendrol. 1893, p. 435. *C. macrophylla*, C. B. Clarke in Hook. f. Fl. Brit. Ind., vol. ii., p. 744, quoad exempl. foliis alternis.

So far as I know only one other species of *Cornus* with alternate leaves has been described, namely, *C. alternifolia*, Linn. f., a North American shrub or small tree, bearing smaller leaves, sparsely

clothed on the lower surface with simple hairs and relatively small cymes of flowers. Koehne seems to have been the first to publish a description of the Asiatic species having alternate leaves, though unfortunately under a wrong name ; but Mr. Spencer Moore, when naming Bisset's Japanese plants upwards of thirty years ago, marked some of the specimens in the Kew Herbarium as " species nova," and published a note on the same in the place cited above. His note runs as follows :—" Vidi in Herb. Kew. *Corni* species 2 alternifoliae gerontogeae nondum (ut apparet) descriptae. Harum altera in regione Sinensi a Fortune et Japonia a Maingay necnon nuper a cl. Bisset referta, ab altera Sikkimensi et Bhotanensi praecipue calyce urceolato (haud campanulato) differt. Ambae C. alternifoliae, Linn. f. sunt affines, sed cymis laxis facile distinguendae. Vidi etiam C. brachypodae, C. A. Mey. (C. macrophyllae, Wall. ?) specimen ex Herb. Lugd. Bat. comm., in quo fortasse sint folia interdum alterna. Exsistit autem hoc loco quaedam quaestio difficilis ; num haec species sint vere semper alternifoliae."

I have extracted this note in full, because with much additional material under observation I am unable to distinguish two species, and Dr. Koehne also combines the Indian and Chinese specimens under one name.

C. controversa, Hemsl., has nearly as wide a range as *C. macrophylla*, Wall., but it has hitherto not been found in the Western Himalaya. Specimens from different localities, and especially those from the open as compared with those from shade are very dissimilar in aspect, yet I think that all those enumerated below may be classed as one and the same species. In its most highly developed condition, as represented by Wilson's specimens from Hupeh and Szechuen, 233 and 4,951, it is perhaps the most ornamental species of the genus. Briefly described this state is :—

Arbor 9–12 m. alta, ramis florigeris graciliusculis glabrescentibus rubescentibus vel nigrescentibus. *Folia* alterna, longe petiolata ; lamina ovata, elliptica vel orbicularia, 10–15 cm. longa, acuminata, acuta, basi rotundata vel subcuneata, supra cito glabrescentia, viridia, nitida, infra glauca, pilis obscuris medio affixis arctissime appressis instructa, nervis primariis utrinque saepius 6–8 sat conspicuis arcuatis ; petiolus gracilis, 3–7 cm. longus. *Cymae* terminales, percompositae, laxae, maximae usque ad 18 cm. diametro, breviter stipitatae, ramis pedicellisque puberulis. *Flores* albi, numerosi, circiter 10–12 mm. diametro. *Calycis tubus* ecostatus, pilis argenteis densissime vestitus. *Petala* anguste oblonga, subobtusa. *Stamina* petala excedentia. *Stylus* cylindricus, glaber, quam petala dimidio brevior. *Drupa* globosa, 6–8 mm. diametro, pilis paucis argenteis medio affixis conspersa, apice excavata.

As here understood *C. controversa*, Hemsl., includes the specimens as cited :—

India : Sikkim, *Hooker*, 4 ; *C. B. Clarke*, 27747 ; Bhotan, *Griffith*, 893 and 3392, Kew Distribution ; Manipur, *G. Watt*, 6850.

China : Yunnan ; Red River valley, near Manpan, at 600 m., *A. Henry*, 10747A ; Fengchenlin, at 1,800 m., *A. Henry*, 10747B ;

Szechuen, *A. Henry*, 8970; Mount Omi, *Faber*, 156; same locality, *E. H. Wilson*, 233, 4951.

COREA: Seoul, *Sontag*.

JAPAN: Various localities, *Bisset*, *Buerger*, *Elwes*, *Maingay*, *Maries*, *Maximowicz*, *Siebold*, *Takeda*.

The investigations connected with *C. macrophylla*, and *C. controversa* brought to light several apparently new species, descriptions of which follow.

Cornus Stracheyi, *Hemsl.*, species cum *C. macrophylla*, Wall., adhuc confusa, a qua tamen bene distincta, imprimis inflorescentiae ramis ferrugineo-pubescentibus, calycis tubo ecostato et dentibus conspicuis.

Rami floriferi validi, striati, glabrescentes, ut videtur atropurpurei. *Folia* semper opposita, petiolata; lamina tenuis, ovata vel ovato-lanceolata, 10–20 cm. longa, acute acuminata, basi rotundata, nervis primariis lateralibus utrinque circiter 8 supra impressis subtus elevatis; petiolus 2–4 cm. longus. *Cymae* terminales, erectae, breviter stipitatae, foliis breviores, circiter 10 cm. diametro, densae, multiflorae, fere planae, ferrugineo-pubescentes, ramis crassiusculis; pedicelli brevissimi. *Flores* expansi non visi; alabastra bene evoluta circiter 5 mm. longa, acuta. *Calyx* ecostatus, pilis simplicibus et biradiatis intermixtis vestitus; dentes lineares, 1–1·5 mm. longi. *Drupa* globosa, 4–5 mm. diametro.—*C. macrophylla* var. *Stracheyi*, C. B. Clarke in Hook. f. Fl. Brit. Ind., vol. ii., p. 744.

INDIA: Kathi, Kumaon, at 2,250 m., *Strachey* and *Winterbottom*; *T. Thomson*, 715.

Cornus Mombeigii, *Hemsl.*; inter species sinenses ob folia rotundato-cordata pilis longis biramosis crispulis mollibus praecipue subtus dense vestita insignis.

Rami ultimi cymas ferentes crassiusculi, cito glabrescentes, purpurascentes, lenticellis parvis instructi. *Gemmae* elongatae, teretes, angustae, circiter 1 cm. longae. *Folia* opposita, petiolata; lamina orbiculari-cordata, 4–9 cm. diametro, acuminata, acuta, basi cordata vel interdum fere rotundata, subtus inter nervos albido-tomentosa, nervis ferrugineis, supra viridia, puberula, nervis primariis utrinque 7–9 arcuatis sat conspicuis; petiolus 1·25–2 cm. longus. *Cymae* terminales, breviter stipitatae, folia vix excedentes, 7–10 cm. diametro, densae, multiflorae, ramis pedicellisque crassis ferrugineo-villosulis. *Flores* circiter 12 mm. diametro. *Calyx* ut petala extra villosulus, dentibus fere filiformibus circiter 0·5 mm. longis. *Petala* ovato-oblonga, obtusiuscula. *Stamina* petala superantia. *Discus* carnosus, prominens. *Stylus* petalis brevior, cylindricus. *Drupa* non visa.

CHINA: Yunnan; Tsekou, *Père Mombeig*.

Cornus poliophylla, *C. K. Schn. et Wang.*, in Fedde Repert. 1909; Schneider, Handb. der Laubholzk. vol. ii. p. 447.

CHINA: Hupeh; Fang, *E. H. Wilson*, 2167, 2341.

This is allied to *C. Mombeigii*, Hemsl., differing in the much slenderer inflorescence and denser tomentum of the foliage and other characters. Some of the leaves of Wilson's 2341 are indeed very like those of the species in question.

Cornus Hemsleyi, *C. K. Schn. et Wang.*, in Fedde Repert. 1909; Schneider, Handb. der Laubholzk. vol. ii., p. 446.

CHINA: Hupeh, *E. H. Wilson*, 1385.

In consequence of the fruiting and flowering specimens of *C. Hemsleyi* and *C. poliophylla*, having been intermixed in the distribution of the specimens collected by Wilson, some difficult points arose, which the discovery of the mistake has cleared up. *C. Hemsleyi* has closely appressed hairs on the underside of the leaf, whilst in *C. poliophylla* the hairs are curled and projecting.

Cornus Wilsoniana, *Wang.*, in Fedde Repert. vol. vi. (1908), p. 97; Schneider, Handb. der Laubholzk. ii., p. 444. *C. Walteri*, Wang., in Fedde Repert. vi. (1900), p. 99.

CHINA: Hupeh; Nanto and mountains to the northward, *A. Henry*, 3891, 4555; without exact locality, *E. H. Wilson*, 764.

With copious specimens before me, I have no hesitation in reducing Dr. Wangerin's *C. Walteri*, and Dr. Schneider agrees with me, I believe, on this point.

Cornus Fordii, *Hemsl.*, species *C. Wilsonianae*, Wang., similis sed foliis crassioribus late ovatis vel ellipticis obtusis, nervis primariis utrinque 3 vel 4 tantum et cymis parvis foliis brevioribus differt.

Arbor 5–10 m. alta, novellis, praecipue foliis floribusque, pilis argenteis arctissime appressis medio affixis instructis. Rami fructigeri graciles, internodiis quam foliis multo brevioribus. *Folia* opposita, petiolata, cinerea; lamina subcoriacea, ovato-elliptica, rarius lanceolato-oblonga, 5–12 cm. longa, obtusa, utrinque attenuata vel basi subrotundata, margine obscure crenulato-sinuolata, nervis primariis utrinque saepius 4 tenuibus supra inconspicius subtus elevatis; petiolus gracilis, 1–2 cm. longus. *Flores* non visi. *Cymae* fructigerae axillares vel terminales, subtrichotomae, 5–10 cm. diametro, laxiusculae, foliis breviores, ramis pedicellisque gracilibus. *Drupa* globosa, circiter 7 mm. diametro.

CHINA: Kwangtung; without locality, *C. Ford*, 297 and 300, 1887; Hupeh; Changyang, *A. Henry*, 7751.

Cornus paucinervis, *Hance* in Journ. Bot. 1881, p. 216; Hemsl. in Journ. Linn. Soc., vol. xxiii., p. 346.

This is one of the species having well-developed calyx-teeth, and an authenticated specimen of *C. quinquenervia*, Franch. in Journ. de Bot. 1896, p. 307, leaves no doubt of its being conspecific.

In addition to those enumerated in the Linnean Society's Journal, the following specimens are of this species, namely: A. Henry, 10800 and 10800A, typical; and A. Henry, 1683A; E. Faber, 282 and 637, var. foliis latioribus nervis minus conspicuis. E. H, Wilson's, 495 from Western Hupeh, and his 4950 from Mount Omi. also belong here.

Cornus oblonga, *Wall.* in Roxb. Fl. Ind., ed. Carey & Wall., vol. i., p. 432; Fl. Brit. Ind., vol. ii., p. 744.

The Chinese specimens bearing the following numbers belong to this species: Yunnan, Delavay, 4609; A. Henry, 9930, 11161; G. Forrest, 382; E. H. Wilson, 2241.

Cornus Bretschneideri, *L. Henry* in Le Jardin, 1899, vol. xiii., p. 309, ff. 154, 155.

Kew possesses living plants bearing this name, but no authenticated specimens. Mr. Bean states that it is of bushy habit, throwing up annually new shoots from the base. Dr. A. Henry's 6696, from Fang, Hupeh, must be very near this species if not the same. It is closely allied to *C. alba*, L., and characterised by having pedicels considerably longer than the ovary.

Cornus chinensis, *Wang.*, in Fedde, Repert., vol. vi., p. 100.

This is closely allied to *C. Mas*, Linn. and *C. officinalis*, Sieb. et Zucc. (Fl. Jap., vol. i., p. 100 t. 50). Indeed, I cannot follow Dr. Wangerin in treating the Chinese specimens as specifically different from the latter. He states that *C. chinensis* differs from both of the species named in having much longer calyx-teeth, and from *C. officinalis* in having tufts of pale grey hairs in the axils of the veins on the underside of the leaves; whereas they are of a rusty brown colour in *C. officinalis*. There are numerous specimens at Kew, both from China and Japan, and the characters on which Dr. Wangerin relies are more or less inconstant, especially the relative size of the calyx-teeth. As for the tufts of hairs in the angles of the veins, they vary considerably, both in quantity and colour. A Japanese specimen, collected by Bisset (n. 1093), has white hairs in quite small tufts. On the other hand they are brown or white on different leaves of the same branch.

I have now no doubt that I incorrectly referred Wilford's 945 from Port Chusan, Corea, to *C. macrophylla*, Wall. in Journ. Linn. Soc., vol. xxiii., p. 345. Dr. Wangerin has since described it (Fedde, Repert., vol. vi., p. 97) under the name of *C. coreana*. It is also closely allied to *C. alba*. Père Faurie's 4353 (1889) "Montagnes de Managata," Japan, is another specimen of the same affinity; but as I have not studied the group to which *C. alba* belongs I must leave these specimens unnamed. *C. australis*, C. A. Mey., belongs to the same group. *C. Schindleri*, Wang., in Fedde, Repert., vol. iv., p. 337, is unknown to me.

XLVII.—TREES NOTED IN DEVONSHIRE.

W. Dallimore.

The contribution of an exhibit to the Forestry section of the "Bath, West of England and Southern Counties Agricultural Show," by the Director of the Royal Botanic Gardens, Kew, furnished the object of my visit to Exeter in June. While in the neighbourhood, I was able to pay visits to a few gardens of interest, where some fine specimens of trees were noted.

Strete Ralegh.

Amongst other interesting trees growing at Strete Ralegh, the S. Devon estate of Mr. H. Imbert-Terry, the following are specially noticeable on account of their size and rarity, *Larix Griffithii*, *Tsuga Brunoniana*, and *Saxegothea conspicua*. It is considered that these particular examples are some of the original introductions to the British Isles, and that they found their way to Strete Ralegh