

## Some New Asiatic Rhododendrons discovered by Kingdon Ward

BY

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**Rhododendron circinnatum** Cowan et Ward. Sp. nov.

Species Seriei Taliensis Subseriei Adenogyni foliis infra continue tomentosis, indumento lanato ex pilis ramosis (ramulis manifeste circinnatis) composito facile distinguitur.

Frutex vel arbor parva ad 8 m. alta ramis nodosis contortis. Ramuli 7-8 mm. diam. indumento fulvo-lanato vestiti. Alabastrorum perulae fulvae, anguste ovatae vel ovato-oblongae, margine ciliatae extra densius pubescentes. Folia crasse coriacea elliptico-lanceolata vel angustissime oblonga, 10-14 cm. longa, 3-4 cm. lata, apice obtusa vel rotundata brevissime et abrupte acuta, nunc longe nunc brevius apiculata, basi rotundata vel oblique subcordata, supra olivacea glabra sed in sulco costae mediae (praecipue basin versus) pilorum vestigiis notata, infra cum costa media elevata continue fulvido-tomentosa, indumento lanato ex pilis ramosis (ramulis manifeste circinnatis) composito, petiolo robusto 2-3 cm. longo dense tomentoso suffulta.

Flores in umbellam circa 12-floram dispositi; pedicelli circa 2 cm. longi dense floccosi et glandulosi. Calyx parvus lobis 5 obscuris. Corolla tubuloso-campanulata, 2.5-3 cm. longa, lobis 5 emarginatis circa 1 cm. et longis et latis. Stamina 10 inaequalia, corolla breviora vel fere aequantia, filamentis puberulis. Discus pilis fasciatis albidis dense obtectus. Gynaeceum 2.5-3.5 cm. longum; ovarium cylindrico-conoideum truncatulum, glandulis longe stipitatis (nunc basin versus pilis intertextis) dense obsitum; stylus glaber.

A shrub or small tree up to eight metres high with gnarled and twisted branches, young shoots 7-8 mm. in diameter with a thick buff or greyish-buff indumentum. Scale leaves of the foliage buds rich cinnamon-brown, narrowly ovate to ovate-oblong, ciliate on the margin and on the outside densely pubescent. Leaves thickly coriaceous, elliptic lanceolate to narrowly oblong, 10-14 cm. long, 3-4 cm. broad, towards the apex tapering or somewhat rounded, very shortly and abruptly acute with a rather long apiculate tip, rounded or obliquely cordulate at the base, upper surface glabrous except in the groove of the midrib, primary veins obscure, slightly impressed, 14-15 pairs; under surface yellowish-brown (Ridgway III, 17, k), the midrib prominent, primary veins obscure, completely covered with a dense woolly tomentum, composed of a dense mass of shortly-stalked hairs which

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divide into many spreading interlacing branches curiously curled and contorted; petiole stout, round, scarcely grooved, 2-3 cm. long, densely covered with grey woolly tomentum. Flowers in many-flowered (about 12) terminal umbels, rhachis about 1 cm. long, with a dense ferrugineous tomentum. Pedicels robust, about 2 cm. long, densely floccose and glandular, expanding below the calyx. Calyx a mere rim, densely glandular and floccose. Corolla tubular campanulate, 2.5-3 cm. long, lobes 5, rounded, emarginate, about 1 cm. long and broad. Stamens 10, unequal, nearly as long as or shorter than the corolla, the longer about 2.5 cm. long, the shorter 1.5 cm. long; filaments puberulous at the base to about one-third of their length. Disk densely covered with white fasciate hairs. Gynaeceum 2.5-3.5 cm. long, as long or longer than the corolla; ovary about 1 cm. long, cylindric-conoid, grooved, densely covered with long stalked glands, mixed with a few hairs towards the base. Style glabrous, expanding into a discoid lobulate slightly lipped stigma.

"S.E. TIBET.—Bimbi La. Alt. 13,000-14,000 ft. A stout little tree up to 20-25 ft. high, but rarely erect. Often a large bushy shrub with gnarled trunk and writhing branches. More or less gregarious. Leaves with thick cinnamon-coloured indumentum. In fruit. At and above the tree line. On sheltered slopes, mixed with the *Rh. lacteum* and *Rh. Wardii*. 12.vii.35." F. Kingdon Ward, No. 11964.

This interesting and distinct species in the Taliense Series is placed in the subseries Adenogynum because of its glandular ovary. It lacks the large calyx which is usual in this subseries, but is not the only exception in this respect. It may be closely related to *Rh. Bureavioides*. The name *Rh. circinnatum*—"curly-haired"—refers to the curious contortions of the branching hairs. This is a quite unusual feature which I have hitherto noticed only in *Rh. lanatum*, but not so markedly as in *Rh. circinnatum*. In "Species of Rhododendron," in the introductory remarks to the Taliense Series, mention is made of the difficulty of finding definite characters to separate this series from the Campanulatum Series. *Rh. circinnatum* is a case in point, which proved to be of interest as a very definite link between these two series. Firstly, with its dense woolly tomentum it recalls *Rh. lanatum*, which is itself exceptional in the Campanulatum Series, having a densely tomentose ovary and not a glabrous ovary. The glandular ovary is the chief character which separates our species from *Rh. lanatum* and so from the Campanulatum Series. *Rh. circinnatum* by its geographical distribution links the members of the Taliense Series, found mainly in the Western Provinces of China (Yunnan, Szechuan and Kansu) with the members of the Campanulatum Series which are typically Himalayan.

**Rhododendron pankimense** Cowan et Ward. Sp. nov.

Species ex affinitate *Rh. Kendrickii* Nutt. sed foliis tenuioribus margine planatis, floribus in umbellam laxè dispositis, corolla carnosa kermesina maculata recedit.

Arbor parva; ramuli tenues circa 2 mm. diam. flavidi decorticantes. Folia lanceolata chartacea, 7-10 cm. longa, 2-2.5 cm. lata, longiuscule et nonnunquam oblique acuminata, apice ipso obtuso, basi late cuneata vel subrotundata, supra atro-viridia omnino glabra, costa impressa, infra olivacea glabra, costa media elevata primo pilis floccosis induta, nervis utrinque 17-19-paribus; petiolus gracilis ad 1 cm. longus, profunde sulcatus. Flores in racemo-umbellas 8-12-floras terminales dispositi, rhachi 1-1.5 cm. longa dense pubescente; bractee mox deciduae; pedicelli inaequales 0.5-1 cm. longi, floccosi. Calyx parvus c. 1 mm. latus, 5-lobatus margine membranaceus parcissime glandulosus. Corolla kermesina, maculis pluribus notata, campanulata 5-gibbosa, circa 3 cm. longa, lobis rotundatis 1 c. longis, 1.8 cm. latis, margine subcrenulatis. Stamina 10 inaequalia, 2.5-3 cm. longa; filamenta glabra, longiora corollam stylumque fere aequantia. Discus fere glaber. Gynaecium 0.3 cm. longum; ovarium tenue cylindricum, c. 7 mm. longum pilis et longis et floccosis nunc ramosis plus minusve dense vestitum eglandulosum; stylus glaber.

A small tree, young branches slender, about 2 mm. in diameter, bark greyish-fawn, more or less splitting and peeling. Bud-scales obovate to oblong, light brown, pubescent on the outside, smooth and shining within, shortly ciliate on the margin and with a short keeled tip. The leaves lanceolate chartaceous, 7-10 cm. long, 2-2.5 cm. wide, entire or with a very narrow minutely crenulate rarely slightly recurved margin, at the apex acuminate, often oblique, blunt at the tip; at the base broadly cuneate or almost rounded, on the upper surface dark green, glabrous, the midrib deeply impressed, nerves 17-19 pairs distinct, on the lower surface the midrib raised, covered with brown flocculent hairs which eventually fall off, otherwise glabrous; petioles slender, deeply grooved, about 1 cm. long. The flowers arranged in a racemose umbel, the rhachis about 1.5 cm. long, more or less densely pubescent. Pedicels unequal, 0.5-1 cm. long, distinctly floccose, eglandular. Calyx small with 5 membranaceous lobes sparsely and minutely gland-frilled. Corolla crimson marked with numerous darker spots without a blotch at the base, about 3 cm. long, the lobes about 1 cm. long, 1.8 cm. broad. Stamens 10, unequal, 2.5-3 cm. long, filaments scarcely expanding at the base, glabrous. Gynaecium about 3 cm. long, the ovary slender, almost cylindric, truncate, about 7 mm. long, covered with numerous long flattish hairs which are sometimes branched and mixed with shorter flocculent hairs, eglandular. Style glabrous.

"ASSAM.—Pankim La. Alt. 8,000-9,000 ft. Balipara Frontier Tract. A small tree, trunk covered in moss, growing more or less gregariously at the summit of the pass. Flowers small, crimson, mostly over. Young leaves expanding, reddish; upper surface and midrib of under surface covered with loose flocculent hairs which quickly fall. 3.v.35." F. Kingdon Ward, No. 11378.

*Rhododendron pankimense* is in the Irroratum Series, Irroratum sub-series, allied to *Rh. Kendrickii* from Bhutan, a species which is not very closely linked with the Chinese members of the series. This new species also recalls the Bhutan *Rh. papillatum* and *Rh. epapillatum* and belongs to a rather aberrant group in the Irroratum subseries. From *Rh. Kendrickii* Nutt., to which it is most closely related, it is distinguished by its much less leathery leaves, flat not waved on the margins and with fewer nerves, and by having fewer less fleshy flowers to a truss. From *Rh. tanastylum* it differs in its less coriaceous leaves and hairy ovary, while *Rh. Ramsdenianum* has larger coriaceous leaves, an unspotted corolla marked by a single dark crimson blotch and a glabrous ovary.

***Rhododendron parmulatum* Cowan. Sp. nov.**

Species Seriei Sanguinei, foliis subtus papillas ceriferas gerentibus, floris colore, calyce cupuliforme, valde distincta.

Frutex 1-1.5 m. altus. Rami crassi glabri vel nunc hic et illic minime setulosi. Folia breviter petiolata, 3.5-7 cm. longa, 1.5-3.5 cm. lata, ad apicem ramorum aggregata; lamina coriacea rigida ovalis, apice rotundata vel late obtusa apiculato-mucronulata, margine cartilaginea, basi rotundata, supra laete viridis glabra, costa media sulcata, venis primariis utrinsecus 12-14 impressis, subtus griseo-olivacea papillis ceriferis dense vestita, glabra vel nunc ad costam mediam elevatam sparse floccosa; petiolus 2-4 mm. longus glabrescens. Flores flavido-albidi maculis atropurpureis bene notati, in inflorescentiam umbellatam 3-5-floram laxè dispositi; pedicelli glabri, 1.5-2 cm. longi. Calyx glaber cupuliformis nitenti-glaucescens, 5-7 cm. longus, vix lobatus. Corolla tubuloso-campanulata ad 6 cm. longa, tubo basi 5-gibboso saturate atropurpureo, lobis 5 rotundatis emarginatis late obovatis 2.5 cm. latis. Stamina 10 inaequalia gynaeceo breviora, antheris nigris, filamentis glabris vel ad basin puberulis. Gynaeceum c. 4.5 cm. longum, corollam fere aequans; ovarium oblongo-truncatum, et pilis sebaceis fasciatis ascendentibus et setulis glanduliferis intermixtis plus minusve sparse obtectum, nunc fere glabrum. Stylus glaber.

"S.E. TIBET.—Doshong La. Alt. 11,000-12,000 ft. Flowers white, upper lobe speckled with crimson and with 5 crimson honey glands at the base of the long corolla. Scrub plant of 3-4 ft. with ascending stems, growing on steep rocky slopes amidst a dense growth of other species. Fairly abundant. The reddish papery bark peels off, exposing the tawny smooth trunk. The corollas were filled with a struggling mass of small flies, sucking honey from the cup-shaped glands. In many flowers these glands had been bitten through as though pinched out all round the base. 29.vi.24." F. Kingdon Ward, No. 5875.

A small compact shrub about one metre high. Branches stout, bark smooth, brown on the current year's wood, grey to greyish-brown on the older wood, sometimes with a few bristles here and there, but



usually glabrous. Leaves leathery, 3.5-7 cm. long, 1.5-3.5 cm. broad, the upper surface dark olive-green, shining, glabrous, the lower surface somewhat glaucous, densely covered with minute waxy pegs or papillae, margin cartilaginous, midrib and primary veins raised, glabrous or with traces of hair on the midrib. Inflorescence umbellate with 3-5 flowers, pedicels glabrous 1.5-2 cm. long. Calyx cup-shaped, fleshy, more or less glaucous (as in *Rh. Thomsonii*), 5-7 mm. long, glabrous and shining, margin undulate. Corolla 4.5-6 cm. long, and broad, pale creamy-white, marked on the posterior side with numerous small dark plum-coloured markings, with 5 basal nectar pouches tinged a dark plum colour, tube about 3 cm. long, lobes 5 emarginate broadly obovate 2.5 cm. broad. Stamens 10 unequal 2.5-3.5 cm. long, anthers dark, filaments glabrous or puberulous. Pistil about 4.5 cm. long almost equalling the corolla, ovary oblong-truncate sparsely clad with glands and hairs or glabrous, style glabrous.

An interesting and very distinct species, unique in the series in its colour of flower, but in habit and leaf shape typical of the Sanguineum subseries. The calyx is cup-shaped as in *Rh. Thomsonii* or in *Rh. scyphocalyx*. The distinct papillae suggests affinity with *Rh. glaphyrum*.

Plants flowered in April 1936 in Col. Stephenson Clarke's garden at Borde Hill, Haywards Heath, Sussex, and in the Royal Botanic Garden, Edinburgh.

***Rhododendron Ramsdenianum* Cowan. Sp. nov.**

Affine *Rh. Kendrickii* Nutt. sed foliis latioribus, floribus nisi ad basin emaculatis, capsulis multo crassioribus inter alia distinctum.

Arbor c. 10 m. alta. Rami juniores tenues, sparsissime tomentosi deinde glabri. Folia petiolata ad 12 cm. longa; lamina coriacea, late lanceolata vel oblongo-lanceolata, 8-10 cm. longa, 2-4 cm. lata, apice acuta, margine cartilaginea paulo recurvata, basi obtusa, supra glabra atro-viridis, costa media sulcata, venis primariis impressis utrinsecus 16-20, subtus pallidior, nitens, nisi ad costam elevatam indumento tenui plus minusve praeditam glabra; petiolus 1-2 cm. longus, robustus; glaber vel sparse pubescens. Flores atro-kermesini in inflorescentiam umbellatam 12-15-floram laxè dispositi, rhachi ad 3 cm. longa; bractee subulatae, 1-1.5 cm. longae; pedicelli 1 cm. longi, glabri vel sparse floccosi. Calyx parvus glaber minute 5-lobatus, lobulis margine membranaceis. Corolla tubuloso-campanulata 3.5-4 cm. longa, crassa, atro-kermesina, tubo basi 5-gibboso in parte posteriore macula nigra notato, lobis 5 rotundatis emarginatis, 1.5 cm. longis, 2 cm. latis. Stamina 10, inaequalia, corolla multo breviora, filamentis glabris. Gynaeceum c. 3.5 cm. longum; ovarium conoideum, 8 mm. longum glabrum vel nunc minute pubescens; stylus glaber; stigma parvum. Capsula cylindrica, atrobrunnea, 1.5-2 cm. longa, 5 mm. diam. omnino glabra vel hic illic minute tomentosa.

A small bushy tree up to 35 or 40 feet in height (teste Ward); young

branches slender with vestiges of hair flocks, later glabrous. Buds broadly ovoid, bud-scales reddish-brown, rounded and mucronate, faintly wrinkled, sparsely pubescent or glabrous. Leaves on a short, rather stout, glabrous or minutely floccose, grooved petiole, 1-2 cm. long, lamina coriaceous, broadly-lanceolate to oblong-lanceolate, 8-10 cm. long, 2-4 cm. broad, apex acute, margin cartilaginous; base widely cuneate, scarcely rounded, upper surface at maturity mat, glabrous, midrib grooved, primary veins 16-20 on each side impressed, under surface paler shining, often with traces of hair flocks on the prominent midrib, otherwise glabrous. Inflorescence a short raceme of 12-15 flowers, rhachis 2-3 cm. long, slender, glabrous, with a few persistent or semi-persistent subulate, silky-pubescent bracts, 1-1.5 cm. long. Pedicels short, 1 cm. long, glabrous or sparsely floccose. Calyx small, a fleshy minutely 5-lobed cup with a pentagonal membranaceous margin, glabrous. Corolla tubular-campanulate, 3.5-4 cm. long, fleshy, scarlet-crimson, unspotted with 5 nectar pouches at the base, the posterior largest and marked with a small dark crimson blotch; lobes 5, rounded, emarginate, 1.5 cm. long, 2 cm. broad. Stamens 10, unequal, 2-2.5 cm. long; filaments glabrous. Gynaeceum about 3.5 cm. long; ovary narrow, 5-chambered, conoid, 8 mm. long, glabrous or sparsely clad with floccose hairs; style glabrous; stigma small.

"S.E. TIBET.—Tsangpo Gorge near Pemakochung. Alt. 8,000 ft. Medium-sized tree 30 feet high in mixed forests. Fruits turn black when ripe. 19th November 1924." F. Kingdon Ward, No. 6284.

On the label Ward has added the notes: "The most abundant tree *Rhododendron* in this part of the forest. The leaf has a cartilaginous margin. 20th November 1924. Flower buds opening; flowers deep crimson, 25th November 1924. Capsule dark brown, cylindric, faintly grooved, 1.5-2 cm. long, 5 mm. diameter."

A species very closely allied to *Rh. Kendrickii* Nutt., but easily distinguished from it by its flowers, which have a dark blotch at the base but are unspotted on the tube and lobes; at the same time the seed capsules of *Rh. Ramsdenianum* are much stouter. *Rh. Ramsdenianum* is accordingly placed in the *Irroratum* Series. From *Rh. tana-stylum* it differs in foliage and in its many flowered truss, and from *Rh. venator* it is at once distinguished by the absence of a stellate tomentum upon the ovary. All these species have at the same time an affinity with members of the *Arboreum* Series, and at first glance our plant might suggest a loose-trussed *Rh. arboreum*.

Discovered by Kingdon Ward in 1924 in S.E. Tibet, *Rh. Ramsdenianum* is the most abundant *Rhododendron* throughout the Tsangpo Gorge and in this region it forms practically pure forest. Ward's original herbarium material is somewhat scanty, and he collected no flowers but only fruit, and in the dried state, without flowers, his plant

was easily confused with the Bhutanese *Rh. Kendrickii*. When, however, plants raised from seed flowered in 1934 in the garden of Sir John F. Ramsden, Bart., at Muncaster, it became evident that they were quite distinct from *Rh. Kendrickii*. It is in his honour that the plant is named. It should be noted that in the Muncaster plant the ovary and pedicels are quite glabrous, whereas in Ward's type the ovary, as in *Rh. Kendrickii*, is distinctly hairy. Most specimens of the true *Rh. Kendrickii* in British gardens have been raised from seed which was collected by Mr. R. E. Cooper in 1913. I have compared living plants of his No. 4978 with living plants of *Rh. Ramsdenianum*, and the leaves alone will serve to distinguish the two species; those of *Rh. Kendrickii* are very distinctive, with a texture similar to that of *Rh. insignne*.

***Rhododendron silvaticum* Cowan. Sp. nov.**

Species affinis *Rh. nivei* Hook. f. sed foliis majoribus nitentibus, indumento bistrato e pilis ramosis robustis composito, corolla kermesina differt.

Arbor parva 7-8 m. alta; ramuli hornotini circa 5 mm. diam. dense griseo-floccosi annotini glabrescentes tandem rufo-brunnei. Alabastrorum ovoideorum perulae exteriores late ovatae vel orbiculares plus minusve tomentosae. Folia coriacea, oblonga vel oblongo-lanceolata, 10-25 cm. longa, 3.5-7.5 cm. lata, apice obtusa vel rotundata, mucronulata, basi cuneata vel rotundata, supra viridia juniora nitentia vetustiora sub-nitentia et sparse et minutissime floccorum vestigiis notata, costa profunde sulcata, venis primariis utrinsecus circa 20 impressis, subtus indumento griseo- vel flavido-albido persistente compacto bistrato (pilis stipitatis ab apice horizontaliter et radiatim ramosis), stratis inferioris pilis brevioribus densius intertextis, stratis superioris pilis longioribus plus minusve deterrentibus, costa elevata sparse tomentosa, venis primariis prominentibus, petiolo robusto ad 2 cm. longo sparse tomentoso suffulta. Flores plurimi in umbellam veram dispositi, rhachi floccosa; pedicelli circa 1 cm. longi tomentosi. Calyx subobsoletus, margine undulatus. Corolla campanulata kermesina, 3.5 cm. longa, basi sub-5-gibbosa, lobis 5 rotundatis profunde emarginatis, circa 1.8 cm. et longis et latis. Stamina 10, 2.5 cm. longa filamentis glabris. Gynaeceum circa 3.5 cm. longum; ovarium conoideum, albido-tomentosum; stylus glaber. Fructus non visus.

A large shrub or small tree 7-8 metres high, shoots of the current year densely grey-floccose, one-year-old shoots green, becoming chestnut-brown. Buds ovoid, outer scales broadly ovate to orbicular, more or less tomentose. Leaves leathery, oblong to oblong-ob lanceolate, 10-25 cm. long, 3.5-7.5 cm. broad; apex obtuse or rounded, mucronulate; base cuneate or somewhat rounded; upper surface dark green, that of the young leaves very shiny, of the older leaves more mat, apparently glabrous but under magnification seen to be covered with

the vestiges of scattered hairs, midrib deeply grooved, primary veins 16-20 on each side, impressed; under surface whitish-grey on young leaves, older leaves light cinnamon-brown to olive-brown, with a thin more or less compact persistent indumentum of two layers of branched hairs, the lower shorter and densely packed, the upper looser and more or less detersile; midrib raised, sparsely tomentose, primary veins prominent; petiole stout, about 2 cm. long, grooved above, somewhat tomentose. Inflorescence a rounded compact truss of about 18 flowers or more; pedicels about 1 cm. long, tomentose. Calyx a mere rim, lobes minute; corolla campanulate, 3.5 cm. long, dark magenta to reddish-purple, with 5 nectar pouches at the base, lobes 5, rounded and notched, about 1.8 cm. long and broad; stamens 10, 2.5 cm. long, filaments glabrous. Gynaeceum 3.5 cm. long; ovary conoid, whitish tomentum; style glabrous.

"S.E. TIBET.—Pemako. Alt. 9,000-10,000 ft. Small tree or large shrub up to 20 ft. high, forming dense thickets on the Southern slope of the valley or scattered in the rain forest. 24th October 1924." F. Kingdon Ward, No. 6258.

A species in the Arboreum subseries nearly related to *Rh. niveum* Hook f., but distinguished by its larger, more shining leaves, with duller indumentum composed of stouter branching hairs. At the same time the flowers of the two species are very different in colour. It is probable that in cultivation we shall find two distinct species under Ward's Nos. 6258 and 6258A, one *Rh. silvaticum*, the other one of the Grande Series. The type specimen K.W. 6258 at Kew and the specimen marked 6258A at Edinburgh are both, however, *Rh. silvaticum* and agree with the majority of plants I have seen in cultivation. On the label of the Kew plant there is a note added later:—

"Tsangpo Gorge, 1st December 1924. Tree of 30 feet in Abies forest, with big leaved Fulvum, Grande, etc. Alt. 11,000 feet." (6258A.)

The inflorescence and flowers are described from specimens raised by Sir John Ramsden, at Muncaster.

**Rhododendron trichocladum** Franch. var. **longipilosum** Cowan. Var. nov.

Varietas *Rh. trichocladum* Franch. a quo foliis supra haud pubescentibus sed potius pilis longis dense obtectis satis recedit.

"S.E. TIBET.—Alt. 10,000-11,000 ft. On rocks on open places, flowers passing over. 6.viii.35." F. Kingdon Ward, No. 11915.