TEMPERATE RHODODENDRONS

Julian Taylor-Whall

- Volume Four -
Subgenus Hymenanthes (Part Two)

Temperate Rhododendrons:

- the species and hybrids established outdoors in the leading woodland gardens of England, Scotland and Wales;

- the species curated in accordance with scientific advances and field study evidence published in the three decades since the 1996 Edinburgh revision of the classification;

- the hybrids selected and assessed with the benefit of hindsight rather than hype, disposition and floral beauty the key determinants for inclusion, not their commercial availability.

The texts are illustrated with over 3000 photographs taken by the author.

Volume One reviews and amends the classification of Genus *Rhododendron* to conform with the molecular phylogeny studies of 2005 and 2010, as well as taking account of recent work on polyploidy. A visual guide to help identify the various species follows this updating, along with a glossary of the scientific terminology and a listing of the various seed collecting expeditions.

Volume Two considers Subgenus *Therorhodion* and the species placed within Subgenus *Azaleastrum*.

Volumes Three and Four document the taxa assigned to Subgenus *Hymenanthes*.

Volume Five examines the rhododendrons within the three sections of Subgenus *Lepidorrhodium*.

Volume Six evaluates the Natural Hybrids, plants that have arisen in the wild from undirected pollination and established stabilised populations, as well as the host of seed pan rogues germinated in cultivation.

Volumes Seven and Eight survey the Azaleodendrons, Deciduous and Evergreen Azaleas, Lepidote and Elepidote Hybrids created through directed pollination.

TEMPERATE RHODODENDRONS

Julian Taylor-Whall

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Section Leiorrhodium

Section *Leiorrhodium* Subsection *Neriiflora* Series *Floccigera:*



R. floccigerum (AC 1863)



Taxa:

R. euchroum
R. floccigerum
- *R. floccigerum* ssp. *floccigerum*
- *R. floccigerum* ssp. *sperabile*
- *R. floccigerum* ssp. *sperabiloides*

R. neriiflorum
- *R. neriiflorum* ssp. *neriiflorum*
- *R. neriiflorum* ssp. *phaedropum*

R. weihsiense

Taxonomic Revision:

Over the course of the last forty years, extensive field study has shown that in the wild, the rhododendrons of Subsection *Neriiflora* 'grow together, merge and hybridise freely'.

That succinct appraisal of the random and disorganised on-the-ground free-for-all - lifted from the pages of *The Encyclopedia of Rhododendron Species,* which was written and published by Peter and Kenneth Cox in 1997 - explains why the Edinburgh Revision botanists decided to reduce the plethora of species, subspecies and varieties previously described within that cornucopia, to a much more tightly defined assortment.

Yet minor character differences that in other subsections would have been ignored or incorporated into the feature range of a single taxon, without further delineation, were here, still allowed to single-out what are no more than intermediate or extreme forms of the same plant, or in numerous cases, obvious natural hybrids.

That many of these selections from the potpourri are, in their own right, fine garden plants, is not in question.

That they might, over time, consolidate their populations and speciate, is also accepted, though the majority presently occur or have been plucked from areas that are host to a veritable hybrid swarm.

They should, however, be identified for what they currently are, and their epithets either preceded with a small 'x', or where synonymy is applied, given RHS Group status if deemed of significant horticultural value.

What they should not be allowed to do, is wrongly populate and complicate a classification of already established species.

The approach taken here has been to remove the natural hybrids from consideration, and to tighten or expand the individual species descriptions where necessary. This has either excluded the clines of intermediates, or incorporated taxa within a single entity where, for instance, only flower colour had been causing a division, a process that occurs by rote in the 1996 classification's other subsections. It has also allowed a more precise keying to be applied to the subsection's membership, effectively dividing it into two groups:

Plants displaying an ovary that tapers relatively smoothly into the style
have been assigned to Series *Floccigera.*

Those with an impressed junction, grouped in Series *Haemaguinea.*

The taxa of the old Forrestii Subseries have been transferred to Subsection *Thomsonia*
as evidenced by their chloroplast DNA, this set out in the *Milne et al* 2010 study,
a placement that also better accommodates their glabrous lower leaf surface.

With regard to the choice of filing cabinet folder nomenclature,
the old Neriiflorum Series epithet almost certainly has botanical precedence,
but the use of Series *Floccigera* in its stead,
avoids duplication, along with any 'historic' confusion.

Series Morphology:

Low shrubs to small tress,
compact, spreading, rounded, lax or broadly upright, 0.3 to 6m high;
branchlets thin and slender,
whitish, rufous, fawn or brown floccose- or stellate-tomentose,
often stalked-glandular or setulose-glandular;
bark rough to smooth, fawn to cinnamon-brown, striate, sometimes peeling,
the underbark greenish-brown, smooth.

Leaves coriaceous, narrowly oblong, elliptic through oblanceolate to lanceolate,
3 to 14.7cm long by 0.8 to 5cm wide,
their apex acute, acuminate, rounded or obtuse, and apiculate or mucronate,
their base cuneate, rounded or obtuse;
upper surface green or dark green, rugose or rugulose, rarely smooth,
glabrous at maturity or with the vestiges of a juvenile indumentum,
the midrib grooved, the veins deeply impressed, the margins often revolute;
lower surface glabrous or with a thick to thin indumentum,
of white, fawn, rufous or cinnamon-brown rosulate, dendroid or ramiform hairs,
this covering continuous or discontinuous, compacted or woolly, unistrate or bistrate,
the midrib and veins raised, sometimes prominently so, or concealed.

Leaf anatomy comprises a 2- or 3-layered upper epidermis,
with the cells of similar size in each layer;
the cuticle is between half and as thick as the cells are deep; water tissue is absent;
the lower epidermis cells are often prolonged into papillae,
which are large and usually conspicuous.

Petiole 5-27mm long, occasionally slightly winged,
variably whitish, fawn, or brown floccose-tomentose,
often stalked-glandular or setulose-glandular.

Inflorescence terminal, a racemose umbel, lax or tight,
the corollas often hanging between the leaves, 3-8-12-16-flowered.

Rhachis 2-12mm long,
variably whitish, fawn, rufous or brown floccose- or stellate-tomentose,
often eglandular, sometimes stalked- or setulose-glandular.

Pedicel 5-20mm long,
variably whitish, fawn, rufous or brown floccose-tomentose,
often eglandular, sometimes stalked- or setulose-glandular.

Calyx minute to well-developed,
often cupular and coloured, rarely an undulate rim, 5-lobed,
these 1-3-11-18mm long, rounded, ovate, oblong or irregular, often unequal,
their outer surface and margins usually tomentose, often glandular.

Corolla 2.3 to 4.5cm long, 5-lobed, fleshy, tubular-campanulate,
red, scarlet or crimson, sometimes tawny-orange or straw yellow, more rarely two-toned,
with 5 basal nectar pouches.

Stamens 10, unequal, shorter than the corolla;
filaments glabrous or pubescent at the base.

Ovary conoid or oblong, tapering into the style, 4-10mm long, 5-locular,
densely fawn, rufous or brown floccose- or stellate-tomentose,
often stalked- or setulose-glandular, the hairs intermixed.

Style glabrous, sometimes tomentose at the base or along the lower half,
or sometimes with glandular hairs.

Capsule slender, 10-30mm long, slightly to moderately curved,
usually rufous, brown or cinnamon-brown floccose-tomentose,
often short-stalked glandular.

Seeds elongate, winged (occasionally narrowly)
and each end with appendages (occasionally quite small).

R. neriiflorum

R. neriiflorum* ssp. *neriiflorum

Hardiness:
H4-5.
Flowering Period:
April-May.
Distribution in the wild:
S Tibet; W Yunnan, China; Arunachal Pradesh, India; NE Upper Myanmar.
Growing in mixed, pine, rhododendron or bamboo forest, in thickets,
amongst scrub on hillsides and rocky slopes, at elevations of 2,100-3,600m.

Identification:
Shrub or small tree, compact, rounded or loose, bushy or upright, 0.6 to 6m high;
branchlets sparsely white or fawn floccose-tomentose,
or glabrous, eglandular.
Leaves elliptic through oblong to obovate,
3 to 9cm long by 1 to 3.5cm wide;
lower surface white, glabrous,
the epidermis markedly glaucous-papillate, waxy,
the midrib sometimes floccose or with vestiges of a juvenile indumentum.
Inflorescence 4-8-12-flowered.
Pedicel eglandular.
Calyx cupular, rarely an undulate rim, fleshy when large, coloured,
the lobes often deeply divided, 2-18mm long,
their outer surface and margins tomentose or glabrous, eglandular.
Corolla 2.8 to 4.5cm long, crimson through light red.
Ovary densely tomentose, eglandular.
Style glabrous or tomentose at the base.
Capsule tomentose or with the vestiges of such.



R. neriiflorum (AC 705)

Seed Collections:

F 6780	1910	L&S 1676	1936
F 8939	1912/1914	L&S 1677	1936
F 12096	1912/1914	Yu 19709	1937
F 15663	1917/1919	LS&T 3702	1938
F 15779	1917/1919	LS&T 6626	1938
F 17626	1917/1919	KW 234	1938/1939
F 17950	1917/1919	KW 286	1938/1939
F 17996	1917/1919	KW 312	1938/1939
Farrer 877	1919	KW 445	1938/1939
KW 3040	1919	KW 448	1938/1939
KW 5480	1922	KW 20843	1953
R 6335	1923/1924	KW 21086	1953
R 6744	1923/1924	SBEC 172	1981
R 7650	1923/1924	SBEC 184	1981
R 7666	1923/1924	SBEC 473	1981
F 24091	1924/1925	SBEC 507	1981
F 24220	1924/1925	AC 705	1993
F 26046	1924/1925	KR 2682	1993
F 26449	1924/1925	KR 2731	1993
F 26487	1924/1925	CNW 819	1994
F 27466	1924/1925	CNW 906	1994
F 27637	1924/1925	P&M 47	1994
F 28301	1930/1931	P&M 70	1994
F 29545	1930/1931	AC 1356	1996
KW 9382	1931	AC 1397	1996
KW 9506	1931	JN 1028	1999
McLaren C 44	1932/1939	C&N 5862	2007
L&S 1257	1936	JN 11051	2011
L&S 1352	1936	JN 12178	2012

Agetum Group:

F 17851	1917/1919
F 27358	1924/1925
AC 4501	2000
AC 4502	2000

The first member of Series *Floccigera* to be encountered by a Western plant hunter was actually an aberrant with regard to its then undiscovered cohorts, for it possessed an abaxial leaf surface that was white and glabrous, the epidermis itself, glaucous-papillate and waxy.

Guided by his God, Abbé Jean-Marie Delavay stumbled upon *R. neriiflorum* in the spring of 1883, the meeting taking place on Mount Tsang-chan, in the Cangshan mountain range close to Tali (Dali), in western Yunnan. Dried specimens from the group of plants he found were despatched to Paris where Adrien Franchet at the Muséum National d'Histoire Naturelle wrote the botanic description that appears in Volume 33 of the *Bulletin de la Société Botanique de France,* published in 1886. Credit for the introduction of the species into British gardens however, goes to George Forrest, whose premier gathering of seed under F 6780 is officially recorded as arriving in 1910. Four gatherings of the species had been made earlier, on the Scotsman's first expedition to China between 1904 and 1906, with the dried material successfully returned to Edinburgh Botanic despite the decidedly unfriendly predations of marauding Tibetan monks during their 1905 rebellion, but if viable seed accompanied any one of those consignments, live plants did not subsequently emerge from the Bees Limited nursery on the Wirral Peninsula.

The lower leaf surface of *R. neriiflorum* will swiftly key the taxon from all the other members of the series, though a scattering of floccose hairs, usually the remains of a juvenile indumentum, may remain on the raised abaxial midrib. Cleaving *R. neriiflorum* from its now subspecies sister *R. phaedropum* relies on the absence of any sticky glands on the branchlets, petioles, pedicel, calyx and ovary.

Within the assemblage of wild collections returned to the UK, some plants were found to have clearly visible reticulations along the lower leaf surface - interlacing lines of pits or cavities. These alveoli, large or small, result from many of the white and waxy, elongated papillae on the *R. neriiflorum* epidermis being held almost horizontal to the surface, though they might also have developed in response to the abaxial veins becoming more prominent. Specimens that display these reticulations were first given specific status as *R. agetum* in 1920, soon after their discovery on plants collected off the eastern flank of the N'Maikha-Salween Divide in western Yunnan by George Forrest during May 1919 (Balfour and Forrest, *Notes from the Royal Botanic Garden, Edinburgh,* Volume 13). Currently, their station in life is dependant upon which author is being consulted, with H. H. Davidian opting for varietal status - in *The Rhododendron Species,* Volume 3, 1992 - and David Chamberlain - responsible for the Edinburgh Revision's Subgenus *Hymenanthes* update of 1982 vintage - assigning them subspecies ranking.

Davidian defines *R. neriiflorum* var. *agetum* as having leaves that are smaller than the type, these 3.1 to 7cm long by 1 to 2cm wide (even though a few paragraphs earlier in his text, a Forrest gathering of the specific species is reported as having leaves 3 to 4cm long). More significantly, he documents the presence or absence of alveoli as a characteristic of the specific species, meaning some specimens will have them, others will not and this deficit-surfeit does not require the taxon to be split.

Chamberlain assigns all plants with reticulations to *R. neriiflorum* ssp. *agetum* stating, in *The Rhododendron Handbook,* 1997, that the difference between an alveolate and non-alveolate surface is striking. Two Forrest seed collections detailed in the same publication under F 17851 and F 27358 are supposedly the only introductions of reticulated leaf forms of the species into British gardens (the latter field number having previously been listed as *R. euchaites* in the 1967 edition of the *Handbook*).

Other authors opt for subspecies status on the basis of an apparent niche distribution along the border between Myanmar and Chinese-occupied Tibet, but unfortunately, the herbarium plates on which this assessment is likely to have been based - KW 9506, collected in the Adung Valley during May 1931 - are now considered to be the type species and two Alan Clark reticulated-leaf gatherings, from Sirchem La, Tibet, made in the autumn of 2000 - AC 4501 and 4502 - rather drive a coach and horses through their argument.

The position adopted herein, is that until such time when on the ground field study has properly assessed the plant populations and determined the taxonomic significance of the alveoli and their biogeography, group status should be adopted, this reflecting Davidian's approach to the reticulations - who, after all, was an acknowledged arch-splitter. This allows the epithet to be maintained and specimens in UK cultivation to be positively identified.

R. euchaites was found by Forrest on the western flank of the Shweli-Salween Divide during August 1912, and introduced from Yunnan later that year under the field number F 8939. The plant hunter described the find jointly with Sir Isaac Bayley Balfour, again in Volume 13 of *Notes,* published in 1920. These specimens later proved to be identical to plants that Reginald Farrer had collected and introduced from Upper Myanmar in 1919, under Farrer 877. Named *R. phoenicodum* and described from Farrer's field notes by Bayley Balfour in a later-published part of *Notes* - still Volume 13, but printed in 1922 - both gatherings differed from the Delavay type specimen of *R. neriiflorum* only in that they were taller growing, eventually developing into small, upright trees, a facet that, despite their undoubted beauty, could not prevent full synonymic absorption, though Euchaites Group preserves the appellation in horticultural circles.

Cultivated forms of *R. neriiflorum* ssp. *neriiflorum* develop over time into rounded, dome-shaped shrubs around 2m high, or if gifted with Euchaites genes, bushy trees to 6m. Either type will often completely cover themselves with crimson, scarlet or deep red flowers during April-May and a grouping of mature specimens - such as those found at Crarae in Argyll, Scotland - make an arresting sight when in bloom, although specimens gifted rose-coloured flowers are not quite as showy. The newly extending shoots and leaves on all the clones in cultivation are decidedly alluring, oft-times starting life creamy-white or reddish-brown in colour. Hardiness is good, allowing the species to be planted in all but the coldest of UK gardens, though a touch of extra cosseting will be needed for east coast and inland sites. Wherever set however, drainage must be swift, and despite the best protection, Spring frosts will, on occasion, mar the floral display.

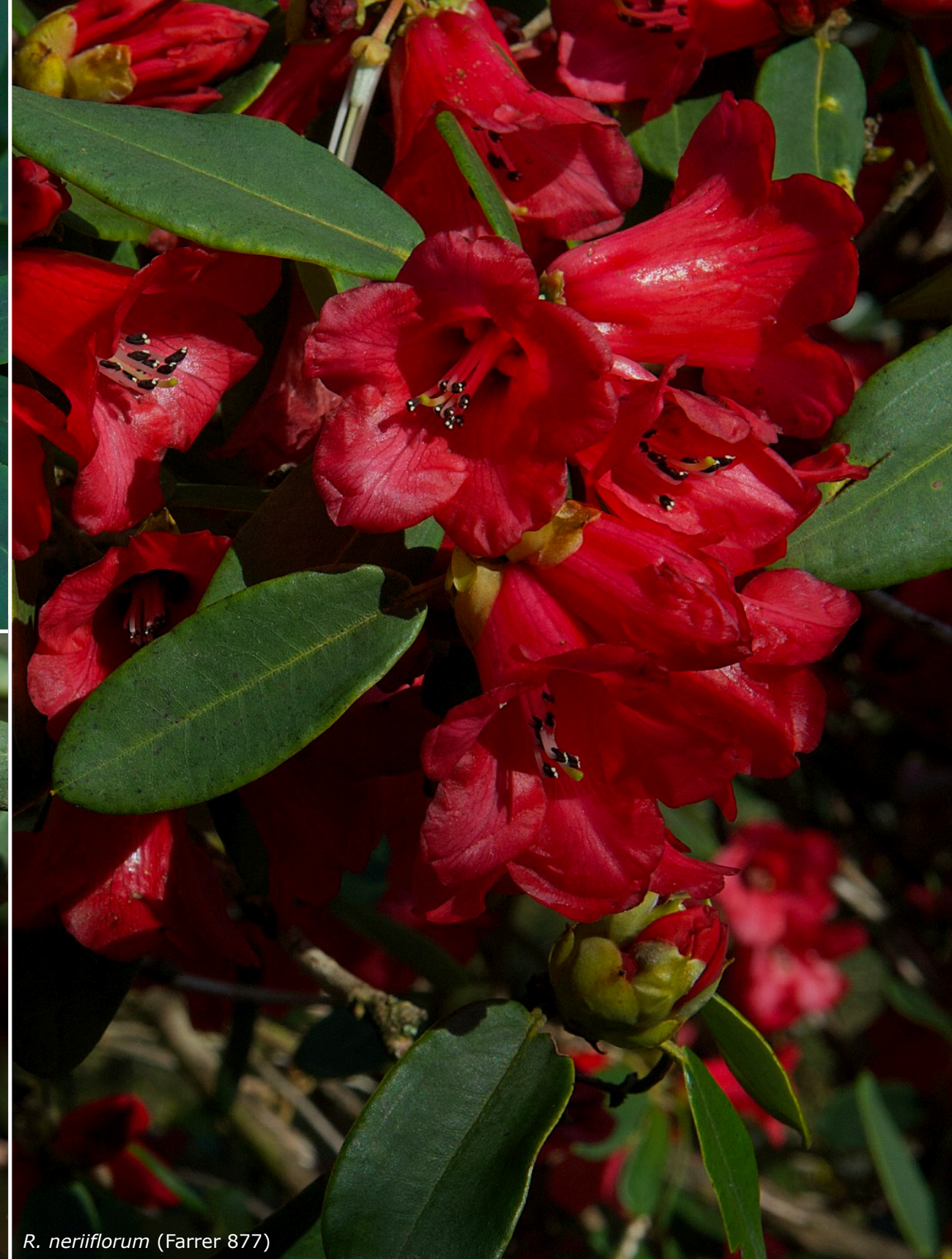
Franchet's chosen Latin epithet references the flowers, comparing them with those borne on a *Nerium oleander*.



R. neriiflorum Euchaites Group


R. neriiflorum (F 6780)


R. neriiflorum (L&S 1352)


R. neriiflorum (Farrer 877)



R. neriiflorum

R. floccigerum* ssp. *floccigerum

Hardiness:
H4-5.
Flowering Period:
March-May.
Distribution in the wild:
SE Tibet; NW Yunnan, China; NE Upper Myanmar.
Growing in open conifer forest, rhododendron thickets and mixed scrub,
on open rocky slopes and cliffs at elevations of 2,300-4,300m.

Identification:
Shrub, compact or lax, rounded, leggy in shade, 0.3 to 3m high;
branchlets slender, usually densely floccose-tomentose, the hairs brown or whitish,
sometimes setulose-glandular.
Leaves narrowly oblong through narrowly elliptic to lanceolate,
3.5 to 12cm long by 0.9 to 2.7cm wide;
lower surface variably tomentose,
the unistrate rufous covering thick and woolly,
but discontinuous, patchy, speckled and loose,
composed of ramiform hairs with medium-length ribbon-like branches,
the epidermis glaucous papillate,
the midrib exposed, the veins partially covered.
Inflorescence 4-8-flowered.
Calyx lobes 1-11mm long,
their outer surface glabrous or sparsely tomentose, their margins usually ciliate.
Corolla 2.5 to 4.3cm long,
scarlet through deep crimson to rose, more rarely orange, yellowish, pink or two-toned.
Ovary densely stellate-tomentose, eglandular.
Style glabrous, or tomentose at the base or along the lower third.
Capsule tomentose.

Seed Collections:

F 12893	1914	F 21779	1921/1922	R 18465	1929	Yu 22971	1937
F 13299	1914	F 21780	1921/1922	R 18469	1929	R 10	1948/1949
F 13440	1914	F 22803	1921/1922	R 22121	1932	R 32	1948/1949
F 13935	1917/1919	F 22804	1921/1922	R 22126	1932	R 49	1948/1949
F 15023	1917/1919	F 22805	1921/1922	R 22301	1932	R 144	1948/1949
F 16533	1917/1919	F 22806	1921/1922	R 22303	1932	AC 1863	1996
F 19769	1921/1922	F 22807	1921/1922	R 23495	1932	AC 1898	1996
F 20321	1921/1922	F 22809	1921/1922	R 23506	1932	AC 1920	1996
F 21681	1921/1922	F 22810	1921/1922	R 23588	1932	BASE 9579	2000
F 21702	1921/1922	R 10959	1923/1924	Yu 20834	1937	DGEY 233	2001
F 21703	1921/1922	R 10996	1923/1924	Yu 20897	1937	OJL 10-62	2010
F 21704	1921/1922	R 10999	1923/1924	Yu 22958	1937	JN 12140	2012
F 21777	1921/1922	R 11073	1923/1924	Yu 22966	1937	BE 13-19	2013

In encounter order, *R. floccigerum* was the second member of the series to be found, Abbé Jean-Andre Soulié, clearly chaperoned by a higher power, making the discovery near Tsekou (now Chigu), in the valley of the Mekong River, northwestern Yunnan, during April 1895. His herbarium specimens were returned to Paris, where Adrien Franchet described the find in Volume 12 of the *Journal de Botanique,* published in 1898.

On-the-ground field study has now shown that the wild populations of *R. floccigerum* merge with those of *R. sperabile* and *R. sperabiloides,* but not with *R. weihsiense,* which is reported as being geographically isolated and in consequence, treated herein as a specific species. The other two subsection members however, require their ranking to be reduced to that of subspecies and placed under the first of the trio to be described.

R. floccigerum ssp. *floccigerum* differs from *R. floccigerum* ssp. *sperabile* in having a usually patchy, discontinuous rather than continuous abaxial leaf surface indumentum, plus an ovary that is never glandular. From *R. floccigerum* ssp. *sperabiloides,* which is usually lower growing and adorned with shorter, but wider leaves, the key difference is the obvious presence of waxy papillae beneath the indumentum on the ssp. *floccigerum* leaf blade, this giving the underside a glaucous-white appearance that is visible due to the gappy and fragmentary nature of the covering. The epidermis of ssp. *sperabiloides,* without such, is pale green in hue, but the indumentum will need to be stripped away to reveal this characteristic. The taxon is believed to be the linking species with the Series *Haemaguinea* rhododendrons and this can be seen in the ovary-style jointing, which is tapering where ssp. *sperabiloides* merges with ssp. *floccigerum,* but becomes truncate as the plant populations progress northward.

George Forrest takes credit for introducing *R. floccigerum* into British gardens, the accepted date usually being given as 1914 and applying to field numbers F 12893, F 13299 and F 13440. However, dried herbarium material from the 1904-1906 expedition arrived at Edinburgh Botanic under F 505, which means seed might also have been gathered and received at A. K. Bulley's horticultural emporium. If so, no record of it exists today.

The presence of waxy papillae on the underside of the *R. floccigerum* leaf blade clearly makes it an ally of *R. neriiflorum,* but with the latter having shed its juvenile abaxial indumentum to go completely glabrous, mistaking one for the other is unlikely on close acquaintance.

Fifty-two documented seed collections of the subspecies have been introduced into British gardens since 1914, with the germinated offspring developing into compact or lax, usually rounded or domed shrubs between 2 and 3m high. Established specimens offer a diverse range of hues: scarlet through deep crimson to rose; orange, yellowish or pink; and a few that boast stunning two-toned corollas. But not all are available commercially and some clones sport decidedly muddy blooms. The best are those with deep red trusses.

Cultivated individuals labelled *R. floccigerum* that have a truncate ovary apex should be regarded as seed-pan-rogue natural hybrids, crosses with either one of the *R. forrestii* varieties or a member of Series *Haemaguinea* that 'escaped' detection prior to sale.

The species epithet - 'bearing flecks of wool' - is of course descriptive of the leaf abaxial indumentum.


R. floccigerum



R. floccigerum



R. floccigerum (R 10999)



R. floccigerum (F 19769)



R. floccigerum (R 49)



R. floccigerum (R 18465)



R. floccigerum



R. floccigerum (F 20305)



R. floccigerum (AC 1863)



R. euchroum

R. euchroum

Hardiness:
H4.
Flowering Period:
Late March-April.
Distribution in the wild:
NE Upper Myanmar; W Yunnan, China.
Growing as an undershrub in thickets, on slopes and on granite ridges,
at elevations of 3,000-3,400m.

Identification:
Shrub, procumbent or spreading, 0.3 to 0.6m high;
branchlets whitish floccose-tomentose and short-stalked setulose-glandular.
Leaves elliptic through oblanceolate to lanceolate,
4 to 7.5cm long by 1 to 3cm wide;
lower surface densely indumented, the covering thick, woolly, continuous and bistrate,
the upper layer fulvous or brown, spongy,
composed of ramiform (foliaceous) hairs with very short flattened branches,
the lower layer adpressed, whitish, composed of rosulate hairs,
the epidermis epapillate,
the midrib and veins concealed.
Inflorescence 4-5-flowered.
Calyx lobes 1-2mm long,
their outer surface and margins densely long-stalked glandular and tomentose.
Corolla 2.3 to 3cm long,
bright brick-red through scarlet.
Ovary stellate-tomentose and densely long-stalked glandular.
Style tomentose and stalked-glandular at the base.
Capsule floccose-tomentose and long-stalked glandular.

Seed Collections:

KW 3267	1919
KW 6991	1926

Frank Kingdon-Ward was the first Western plant hunter to come upon *R. euchroum,* the encounter on July 14th, 1914, taking place on a ridge leading to Naung-Chaung, a peak in the Nwai Divide of northeastern Upper Myanmar. Only dried material for the herbarium was collected that day, but Ward returned to secure seed in 1919, and again in 1926, these two gatherings the only capsules secured to date, although Chinese botanists subsequently reported the species distribution extending into western Yunnan. Volume 9 of *Notes from the Royal Botanic Garden, Edinburgh,* holds the description of *R. euchroum,* this jointly penned by Kingdon-Ward and Sir Isaac Bayley Balfour, and published in 1916.

The species is closely related to *R. floccigerum* ssp. *sperabile* and might be considered a dwarf form of that taxon were it not for the two-layered indumentum on the abaxial leaf surface, plus an absence of minute pimples - papillae - on the epidermis. The hairs that comprise the upper layer of this covering are foliaceous in form, being very short with flattened branches, while those populating the lower layer are standard rosulate. In contrast, the ssp. *sperabile* unistrate tomentum is composed of long, filamentous hairs, which have very narrow branches.

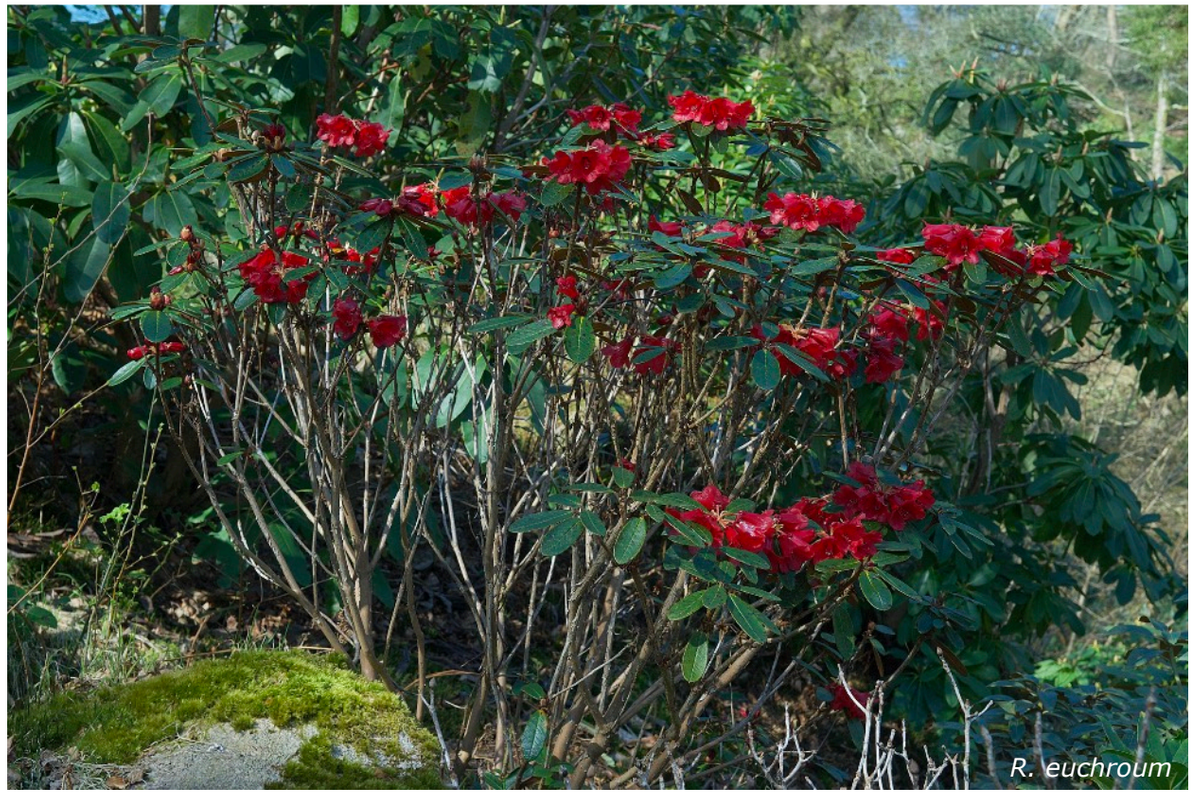
R. euchroum has also been associated with *R. albertsenianum,* cultivated plants of which are treated as natural hybrids herein. This taxon, collected in northwest Yunnan by George Forrest during July 1917, and described by him in 1919 (*Notes,* Volume 11), has also been gifted a bistrate abaxial indumentum and an epapillate epidermis, but it is a much taller growing plant, reaching to between 1 and 2m in height. It also lacks the sticky glandular hairs found on the branchlets, petiole, rhachis, pedicel, calyx, ovary and capsule of *R. euchroum,* and moreover, the dried material and seed returned under F 14195, included specimens that were later designated as affinity forms of *R. sperabile*. Equally, no other plant collector - Western or Chinese - has found *R. albertsenianum* in the wild since that premier encounter over a century ago.

Yet the bad news does not stop there, for the cultivated plants of *R. albertsenianum* do not match the type herbarium specimen. Specifically, they have a truncate ovary apex and a discontinuous indumentum on the lower leaf surface, though this is still bistrate. Expert opinion is hedging its bets, split between maintenance of the status quo vis-à-vis ranking, or treatment as either a larger-growing non-glandular version of *R. euchroum,* an intermediate between *R. euchroum* and *R. floccigerum* ssp. *sperabile,* or a natural hybrid between the latter and *R. floccigerum* ssp. *floccigerum*. Should the 2010 Nagoya Protocol CBD supplementary ever permit such, future expeditions might of course rediscover the original plant population on the Mekong-Salween Divide, but the 'true' species - if such exists - has clearly not been introduced into UK gardens, where all the cultivated plants are clearly rogues, each of which is believed to have originated from the same selected clone. They also require a new epithet, plus a small 'x' to be placed in front of it.

Surviving specimens of *R. euchroum* from the two Kingdon-Ward introductions are today found in only a handful of UK gardens and most experts concede that the true species may in fact no longer be in cultivation. This is because those currently extant have a more upright growth habit than the botanic description allows, forming 1m high domes with ascending stems where the foliage is clustered at the branch tips, although this might be a consequence of a less hostile environment.

An encounter with a specimen of *R. euchroum* in late March-April will also reveal that it has a more populous inflorescence than officially documented, often with 6-7 corollas in the truss, and calyx lobes that are glabrous and eglandular, all of which means that if their origin can indeed be traced back to the capsules collected under KW 3267 or KW 6991, the pollen that set things in motion came not from another plant of *R. euchroum,* but from a different species growing nearby.


R. euchroum


R. euchroum

R. floccigerum* ssp. *sperabile

Hardiness:
H4.
Flowering Period:
April-May.
Distribution in the wild:
NE Upper Myanmar; NW Yunnan, China.
Growing in thickets and scrub, on screes and cliffs, at elevations of 2,600-3,700m.

Identification:
Shrub, compact, lax or upright, bushy or leggy, 0.9 to 2.4m high;
branchlets densely whitish stellate-tomentose and long-stalked setose-glandular,
the hairs intermixed.
Leaves elliptic through lanceolate,
3.8 to 10.5cm long by 1 to 3.3cm wide;
lower surface densely tomentose,
the unistrate yellowish-fawn through cinnamon covering thick and woolly,
continuous and loose,
composed of ramiform hairs with many long, filamentous, very narrow branches,
the epidermis glaucous-papillate,
the midrib setulose-glandular, the veins usually concealed.
Inflorescence 3-5-flowered.
Calyx cupular, coloured, the lobes 1-3mm long,
their outer surface and margins usually glandular-ciliate.
Corolla 2.6 to 4.5cm long, crimson through scarlet.
Ovary densely tomentose and stalked setulose-glandular.
Style glabrous, or tomentose and glandular at the base or along the lower half.
Capsule tomentose and glandular.

Seed Collections:

Farrer 888	1919	F 27581	1924/1925
F 25474	1924/1925	F 27595	1924/1925
F 25920	1924/1925	F 27601	1924/1925
F 26434	1924/1925	F 27635	1924/1925
F 26435	1924/1925	F 27639	1924/1925
F 26442	1924/1925	R 18469	1929
F 26446	1924/1925	R 23495	1932
F 26465	1924/1925	R 23506	1932
F 27469	1924/1925	CCHH 8197	1997

R. sperabile was discovered growing in a ravine along the route to the Hpimaw Pass in the Kachin Hills of northeastern Upper Myanmar during May 1919. Reginald Farrer was the plant hunter who found the species, returning dried material and seed to the UK later that same year. Unfortunately, the expedition would prove fatal for the Yorkshireman, because while still exploring the mountains along the then Burmese-Chinese border just seventeen months later, he succumbed to diphtheria and died at Nyitadi on October 17th, 1920. Regrettably, an alternative account to that detailed in Euan Cox's 1926 book *Farrer's Last Journey* - given verbally to Joseph Rock by one of the biographee's native assistants some years later - suggests alcohol poisoning to be the real cause of death. Farrer was buried at the hillfort village of Kwanglang Po (Konglu), some thirty miles from the border with Yunnan, but half a world away from his birthplace and home in Clapham, at the foot of Ingleborough in the Dales, where rhododendrons he planted from an earlier trip can still be seen today growing in the woods nearby.

Sir Isaac Bayley Balfour posthumously incorporated Farrer's field notes into the botanic description for *R. sperabile* that was included within Volume 13 of *Notes from the Royal Botanic Garden, Edinburgh,* published in 1922, with the chosen epithet translating as 'to be hoped for'.

Although it has a continuous rather than patchy abaxial leaf surface indumentum, *R. sperabile* is effectively a more glandular version of *R. floccigerum,* an association now evidenced by the discovery of merged populations on the ground in western Yunnan. This has led to the loss of its specific status and assignment as a subspecies under the latter taxon. However, those plants with longer and wider leaves, with a continuous whitish tomentum on the mature leaf underside, plus a more populous inflorescence of up to sixteen corollas, which were previously classified as *R. sperabile* var. *weihsiense,* have been found to have a disjunct population, located to the north of the ssp. *sperabile* distribution. Chinese botanists have therefore proposed the assignment of specific ranking, accepted herein as *R. weihsiense*.

Outwardly, *R. floccigerum* ssp. *sperabile* may also appear similar to the much lower growing species, *R. euchroum,* but it has a unistrate rather than bistrate leaf tomentum and the cells of its abaxial epidermis are elongated into papillae, giving the surface a glaucous-white sheen beneath the continuous covering of indumentum (rather than a pale green colouration), a distinction that applies equally to *R. floccigerum* ssp. *sperabiloides.* This is also a smaller-growing shrub, but it has a much thinner and very discontinuous leaf indumentum, as well as a lack of any sticky glands on the young shoots, petioles and ovaries, and calyx lobes that may be up to 8mm long.

The Farrer introduction of 1919 was soon followed by a slew of George Forrest collections and a trio from Joseph Rock that arrived in the UK between 1924 and 1932. In modern times, the species has only been found once - on the Shweli-Salween Divide in western Yunnan, by a team comprising David Chamberlain, Peter Cox, Steve Hootman and Peter Hutchison, viable capsules being secured in the autumn of 1997. Cultivated plants are usually dome-shaped bushes between 1 and 1.5m high, lower than in the wild, generally quite bushy, but leggier when grown in too much shade. For some east coast and inland gardens however, such conditions are a necessary bugbear, as *R. sperabile* has proven to be vulnerable to late spring frosts, resulting in quite serious bark-split, and has developed the reputation of being one of the most tender members of the entire subsection. The species will certainly be found in far fewer gardens than its much showier and somewhat hardier ex-variety.



R. sperabile





R. sperabile

R. sperabile

R. neriiflorum* ssp. *phaedropum

Hardiness:
H4.
Flowering Period:
April-May.
Distribution in the wild:
S Tibet; C & E Bhutan; W Yunnan, China; Arunachal Pradesh, India.
Growing in or at the margins of mixed, pine, Abies or rhododendron forests,
and amongst rocks or in thickets on cliffs,
at elevations of 2,000-3,600m.

Identification:
Shrub or small tree, compact, rounded or loose, bushy or upright, 0.6 to 6m high;
branchlets sparsely white or fawn floccose-tomentose, or glabrous,
eglandular or sparsely through moderately long-stalked glandular,
occasionally setulose-glandular.
Leaves oblong through oblong-lanceolate to lanceolate,
4 to 14.3cm long by 0.8 to 4.5cm wide;
lower surface white, glabrous,
the epidermis markedly glaucous-papillate, waxy,
the midrib sometimes floccose or with vestiges of a juvenile indumentum.
Inflorescence 4-8-flowered.
Pedicel usually stalked- or setulose-glandular.
Calyx cupular, rarely an undulate rim, fleshy when large, coloured,
the lobes often deeply divided, 2-18mm long,
their outer surface and margins tomentose or glabrous,
eglandular or medium- or long-stalked glandular.
Corolla 2.6 to 4.5cm long,
crimson through light red, salmon-rose, tawny-orange or straw-yellow,
sometimes two-toned.
Ovary densely tomentose,
eglandular or moderately through densely stalked-glandular,
sometimes densely setulose-glandular.
Style glabrous or tomentose at the base, occasionally stalked glandular at the base.
Capsule tomentose or with vestiges of such.

Seed Collections:

KW 5483	1922	L&S 1720	1936	KR 1778	1990
F 21531	1922	L&S 3025	1937	CCHH 8125	1997
KW 6738	1926	LS&T 3656	1938	AC 5273	2004
KW 6854	1926	LS&T 6563	1938	AC 5328	2004
KW 8112	1927/1928	LS&H 20239	1949	AC 5490	2004
KW 8521	1927/1928	LS&H 20582	1949	AC 5522	2004
KW 9263	1931	LS&H 21290	1949	AC 5525	2004
KW 9293	1931	C&H 422	1965	KR 8035	2005
KW 9483	1931	AC 112	1990	KR 8421	2006
KW 9561	1931	C&S 1659	1990	KR 9308	2008
		Kinmouth 94	1990		



R. phaedropum (C&H 422)

R. phaedropum was another of Reginald Farrer's discoveries, made in northeast Upper Myanmar on May 2nd, 1920. Tree-like plants were encountered, growing in the alpine woodland around Nyitadi, but only herbarium material was gathered under the field number Farrer 1530. Capsules and seed would have been secured in the autumn, for the author, rock-gardening expert, traveller and plant hunter had remained in the vicinity, but a *Corynebacterium diphtheriae* infection put paid to those plans, resulting in his death on the Kachin Hills in mid-October.

Isaac Bayley Balfour used the plant hunter's field notes and specimens to compile a botanic description of the new species that in 1922 was published in Volume 13 of *Notes from the Royal Botanic Garden, Edinburgh,* but before the decade was out, its specific status had been reduced to subspecies ranking by Harry Tagg, the RBGE botanist who wrote the evergreen elepidote descriptions for *The Species of Rhododendron,* published by the Rhododendron Society in 1930. This downgrading reflected the geographic distribution, where ssp. *phaedropum* had been observed to take the place of ssp. *neriiflorum* across the western reaches of the range.

When differentiating between the two taxa, the presence of sticky glands on the pedicel, calyx and ovary of *R. neriiflorum* ssp. *phaedropum* will quickly key it from ssp. *neriiflorum,* and this tactile check will often work with the young shoots and petioles as well. In cultivation, straw-yellow or tawny-orange corollas will confirm that a correct identification has been made, though red shades predominate across the wild populations. The slightly longer yet narrower leaves, often with a pointed rather than obtuse apex, are a useful supplementary criterion, though not decisive in their own right. Instead, it is their glabrous and glaucous lower surface that provides a clear demarcation from the remaining members of the series.

On occasion, the branchlets, petioles and ovaries of ssp. *phaedropum* may be found with small sticky bristles instead of the more usual soft hairs and glands, a state indicating that the specimen being examined was formerly covered by the 'appropinquans' epithet, which has now been made synonymous. George Forrest first encountered this plant on the Chienchuan-Mekong Divide in northwest Yunnan during July 1922 and described it jointly with Harry Tagg in 1927 (*Notes,* Volume 15), and while a few diehard botanical texts may still be found designating these shrubs as either *R. floccigerum* var. *appropinquans* or *R. neriiflorum* var. *appropinquans,* referencing the taxon as such is an error, especially if the earlier-described ssp. *phaedropum* has wrongly been made synonymous under it. Indeed, even RHS Group status is undeserved, despite some forms of 'appropinquans' having delightful two-toned flowers of creamy-yellow flushed pink.

Frank Kingdon-Ward was the first plant hunter to introduce seed of the type species into the UK late in 1922, though George Forrest's collection of 'appropinquans' may have arrived a month or so earlier. Cultivation requirements for the subspecies mirror those for ssp. *neriiflorum,* though it is fractionally less hardy and requires a more sheltered planting site in gardens along the east coast, as well as those inland. Yet despite the alluring tawny-orange and straw-yellow flowers borne on some clones, *R. phaedropum* is grown in far fewer British gardens than its subspecies sister.



R. phaedropum (KW 5483)



R. phaedropum (C&S 1659)



R. phaedropum (KW 8521)



R. phaedropum (C&H 422)

R. floccigerum* ssp. *sperabiloides

Hardiness:
H4-5.
Flowering Period:
April-May.
Distribution in the wild:
SE Tibet; NW Yunnan, China.
Growing in pine woodland, alpine thickets and scrub, and on rocky slopes,
at elevations of 2,800-4,000m.

Identification:
Shrub, compact and spreading, rounded or broadly upright, 0.6 to 2m high;
branchlets pale rufous stellate-tomentose, becoming glabrous, eglandular.
Leaves oblong-elliptic through oblanceolate,
3 to 8.5cm long by 1.4 to 2.6cm wide;
lower surface sparsely tomentose,
the unistrate rufous covering thin and patchy, discontinuous,
composed of ramiform and sub-rosulate hairs,
the epidermis epapillate,
the midrib and veins at least partially exposed.
Inflorescence 4-6-flowered.
Calyx cupular, coloured, the lobes 4-8mm long,
their outer surface sparsely tomentose, their margins ciliate.
Corolla 2.5 to 3.8cm long, deep red through crimson.
Ovary conoid or conoid-truncate,
more or less tapering into the style to near truncate,
densely tomentose, eglandular.
Style glabrous or tomentose at the base.
Capsule tomentose.

Seed Collections:

F 20003	1921
F 20825	1921
F 21824	1922
F 22900?	1922
R 21994	1932
R 22122	1932
R 125	1948/1949

R. floccigerum ssp. *sperabiloides* is almost certainly the linking species with the Series *Haemaguinea* rhododendrons because the ovary-style join changes from tapering, where it merges with ssp. *floccigerum,* to truncate, as its populations progress northward. The species can be identified from all the other residents of Series *Floccigera* by the thin and scattered indumentum on the abaxial leaf surface combined with an absence of any waxy white papillae on the lower epidermis, this lack giving the underside of the leaves a green colouring. The subspecies has larger, crimson-coloured calyx lobes than its closest relatives, these often extending to 8mm long, and the total dearth of any sticky glands on the branchlets, petioles and ovaries is also telling. Foliage length and width, plus the shrub's mature height in the wild, may also assist with keying, but only marginally, as such features are not decisive within the *Floccigera* grouping.

In UK cultivation, plants labelled as *R. sperabiloides* with between 6 to 11 corollas in the flower truss and a lower leaf surface that is glaucous beneath the tomentum are in fact seed-pan-rogue natural hybrids, these regrettably responsible for the non-provision of any accompanying photographs.

It was George Forrest who first discovered the species, finding plants on the Salween-Kiu Chiang Divide in southeastern Tibet during July 1921, and he sent seed and herbarium specimens back to the UK later that same year, then described the taxon with Harry Tagg in 1927 (*Notes from the Royal Botanic Garden,* Edinburgh, Volume 15). Joseph Rock would add a trio of gatherings to the quartet sourced by Forrest, but not a single documented reintroduction has occurred since 1948, although dried material for the herbarium has been collected as recently as May 2004.

R. sperabiloides forms a rounded, upright dome around 1m high in British gardens, with the plants generally free flowering and hardy, but they require good drainage and a position sheltered from the wind to perform best. Colder sites will also need to provide additional protection from Spring frosts to prevent bark-split, as well as to preserve the blooms undamaged.

The true species is now a very rare find, absent from even most specialised botanic rhododendron collections, outnumbered by its more corolla-profligate doppelgänger.

R. weihsiense

Hardiness:
H4-5.
Flowering Period:
April-May.
Distribution in the wild:
NW Yunnan, China.
Growing on cliffs and rocky slopes at elevations of 3,900-4,200m.

Identification:
Shrub, compact, lax or upright, bushy or leggy, 0.9 to 2.4m high;
branchlets densely whitish stellate-tomentose and long-stalked setose-glandular,
the hairs intermixed.
Leaves elliptic through narrowly oblong,
3.8 to 14.7cm long by 1 to 5cm wide;
lower surface densely tomentose,
the unistrate whitish or rarely pale fawn covering moderately thick and woolly,
continuous and loose,
composed of ramiform hairs with many long filamentous and very narrow branches,
the epidermis glaucous-papillate,
the midrib setulose-glandular, the veins usually concealed.
Inflorescence 3-7-16-flowered.
Calyx cupular, coloured, the lobes 1-4mm long,
their outer surface and margins usually glandular-ciliate.
Corolla 2.6 to 4.5cm long, crimson through scarlet.
Ovary densely tomentose and stalked setulose-glandular.
Style glabrous, or tomentose and glandular at the base or along the lower half.
Capsule tomentose and glandular.

Seed Collections:

F 25447	1924	R 18468	1929
F 25481	1924/1925	F 30912	1930/1931
F 25569	1924/1925	McLaren D 07	1932/1939
F 25919	1924/1925	KW 11035	1933
F 25923	1924/1925	R 177	1948/1949
F 25935	1924/1925	KW 19405	1950
F 26453	1924/1925	CNW 551	1994
F 26478	1924/1925	CNW 564	1994
F 27605	1924/1925	CNW 570	1994
KW 7124	1926	CNW 571	1994
R 18466	1929	CNW 572	1994
R 18467	1929	AC 1915	1996

R. weihsiense was another Forrest find and the last member of Series *Floccigera* to be discovered to date.

Collected off the mountains of the Mekong-Salween Divide in northwestern Yunnan, seed and herbarium specimens under F 25447, gathered during May 1924, were quickly consigned to the expedition's sponsors back in the UK and the plant described jointly with Harry Tagg in 1927 (*Notes from the Royal Botanic Garden, Edinburgh,* Volume 15).

The taxon entered the classification lexicon as *R. sperabile* var. *weihsiense,* an association detailed in Forrest's field notes, and until very recently, no one had thought to challenge that ranking. Field study however, has now shown that the endemic populations are distinct and disjunct; because they grow at higher altitudes and are geographically separated to the north of what is now the *R. floccigerum* ssp. *sperabile* distribution. Those observations have additionally indicated that a closer relationship with *R. floccigerum* itself might be more apropos. However, Chinese botanists have suggested a ranking upgrade to specific status, and given the niche distribution, that advice is adopted herein.

R. weihsiense is clearly related to *R. floccigerum* ssp. *sperabile,* but the plant can quickly be identified from it and from all the other members of the series by the thinner coating of indumentum on the leaf underside, which is continuous and unistrate, but even more significantly, is whitish when mature (although very occasionally, the hairs will have a hue nearer to pale fawn). Those blades are also longer and much wider - 3.8 to 14.7cm long and 1 to 5cm wide, as opposed to the ssp. *sperabile* dimensions of 3.8 to 10.5cm, and 1 to 3.3cm - while the *R. weihsiense* inflorescence is populated by a far higher number of corollas - 3-7-16, as opposed to just 3-5 - these held in a tight, rather than lax truss.

All the forms of *R. weihsiense* grown in British gardens reach to around 2m in height when mature, with some specimens broadly upright, others lax. Gifted a H4-5 rating, they are generally hardier than *R. sperabile,* and certainly showier, instant eye-catchers in fact when covered from top to toe in blazing red corollas. Though strangely, the species has yet to catch the attention of the hybridising fraternity.


R. weihsiense

R. weihsiense



R. weihsiense (KW 7124)



R. weihsiense (KW 7124)



R. weihsiense (KW 19405)



R. weihsiense (KW 19405)

R. weihsiense

Section *Leiorrhodium* Subsection *Neriiflora* Series *Haemaguinea:*



R. beanianum



Taxa:

- *R. aperantum*
- *R. beanianum*
  - *R. beanianum* ssp. *beanianum*
  - *R. beanianum* ssp. *piercei*
- *R. citriniflorum*
  - *R. citriniflorum* ssp. *citriniflorum*
  - *R. citriniflorum* ssp. *horaeum*
- *R. coelicum*
  - *R. coelicum* ssp. *coelicum*
  - *R. coelicum* ssp. *pocophorum*
- *R. dichroanthum*
  - *R. dichroanthum* ssp. *apodectum*
  - *R. dichroanthum* ssp. *dichroanthum*
  - *R. dichroanthum* ssp. *herpesticum*
    - *R. dichroanthum* ssp. *herpesticum* var. *herpesticum*
    - *R. dichroanthum* ssp. *herpesticum* var. *scyphocalyx*
  - *R. dichroanthum* ssp. *septentrionale*
- *R. didymum*
- *R. haematodes*
  - *R. haematodes* ssp. *catacosmum*
  - *R. haematodes* ssp. *chaetomallum*
  - *R. haematodes* ssp. *haematodes*
- *R. mallotum*
- *R. microgynum*
- *R. parmulatum*
- *R. sanguineum*
- *R. temenium*
  - *R. temenium* var. *dealbatum*
  - *R. temenium* var. *temenium*

Taxonomic Revision:

Series *Haemaguinea* only contains those members of Subsection *Neriiflora* where the style is impressed into the ovary apex or the join is truncate.

In the wild, across virtually the entire series distribution,
extensive natural hybridisation involving most of the taxa listed above has taken place,
with many introduced selections from those swarms previously given
specific, subspecific or varietal ranking in the published classifications.

Nowhere was this more apparent,
than in the once disordered brawl that embraced the *R. sanguineum* taxon,
peppered as it was with a horde of personates, even after the Edinburgh Revision cull.

Most knowledgeable experts would agree that much more work is needed on the ground,
in Myanmar, Tibet and Yunnan,
before a full and accurate picture of many of these species can be painted,
but where that field study evidence is already to hand,
such taxa have herein been assigned their correct hybrid status.

For instance, a small ‘x’ has been placed in front of the epithets
of the three *R. eudoxum* varieties, which are in fact crosses with *R. selense*.

Post publication of the Edinburgh Revision texts, a number of authors have divided these
rhododendrons into two unofficial groups or alliances
- on the basis of their mature height, leaf size and indumentum thickness -
the intention being to keep the contents of each pigeonhole numerically manageable,
as all were lumped together with no differentiation
to match the old Balfourian subseries compartments.
By removing the host of natural hybrids, such artificial division is no longer required.

However, as the new filing cabinet folder will contain taxa previously placed in both the
Haematodes Subseries and the Sanguineum Subseries of the Neriiflorum Series,
an appellation combining these two monikers would be appropriate and informative,
hence the Series *Haemaguinea* epithet.

Series Morphology:

Dwarf or low shrubs to small trees,
compact and bushy, spreading or rounded, to broadly upright,
sometimes becoming open and straggly with age,
0.1 to 3m high, more rarely to 6.5m;
branchlets tomentose or glabrous, sometimes stalked-glandular,
often setose, setulose or with stalked-glandular bristles;
bark pale brown or brown, greenish-, yellowish-, greyish- or reddish-brown,
striate or peeling in oblong flakes.

Leaf bud scales usually deciduous, but sometimes persistent.

Leaves coriaceous, thick or thin,
lanceolate, oblanceolate, obovate, oblong, elliptic or oval,
2 to 16cm long by 1 to 8cm wide,
their apex obtuse or rounded, more rarely acute or acuminate,
and apiculate through mucronate,
their base tapered, cuneate, rounded or obtuse, sometimes decurrent on the petiole,
retained for 1-2 or more rarely 3-4 years;
upper surface pale through dark green, sometimes rugulose or rugose,
usually glabrous at maturity or with the vestiges of hairs,
the midrib grooved, the veins impressed, sometimes deeply so,
the margins usually recurved through revolute;
lower surface tomentose, the indumentum thick or thin,
woolly, plastered or compacted, bistrate or unistrate,
usually continuous, but sometimes glabrous,
or occasionally glaucous with a waxy-papillate epidermis,
the midrib prominent and often tomentose,
the veins raised, but often fully or partially concealed.

Leaf anatomy is variable, but usually comprises a 2- or 3-layered upper epidermis,
with the cells of similar size in each layer
(*R. haematodes* ssp. *catacosmum* having larger cells in the lower layer);
the cuticle is between half and as thick as the cells are deep;
water tissue is absent;
the lower epidermis cells are not prolonged into papillae,
except for *R. aperantum, R. parmulatum* and *R. temenium,*
where they are large and often conspicuous.

Petiole 3-36mm long, often grooved above,
the margins sometimes ridged or winged,
tomentose or glabrous,
often setose, setulose or with stalked-glandular bristles.

Inflorescence terminal, a racemose umbel, usually loose,
the flowers often hanging between the leaves, but sometimes dense or compact,
2-10-20-flowered.

Rhachis 2-15mm, tomentose or glabrous,
often setose or setulose, rarely setulose-glandular.

Pedicel 6-32mm long, floccose-tomentose, sometimes stalked-glandular,
often setose, setulose or with stalked-glandular bristles.

Calyx minute to well-developed, often cupular and coloured as the corolla,
the base often fleshy, 5-lobed, rarely 4-lobed,
these often unequal or irregular, rounded, oblong, ovate or triangular,
sometimes divided to the middle or the base, sometimes deflexed,
each 0.5-20mm long,
their outer surface glabrous, eglandular,
hairy or stalked-glandular, occasionally setulose-glandular,
their margins glabrous, ciliate or ciliate-glandular, rarely setulose-glandular.

Corolla 2.2 to 5cm long, 5-lobed, often fleshy,
tubular-campanulate or campanulate (rarely),
red, scarlet or crimson, but also orange and yellow,
or white, pink, deep carmine, rose, rose-crimson, black-crimson or bicoloured,
with 5 nectar pouches at the tube base.

Stamens 10, rarely 11-12, unequal, shorter than the corolla;
filaments glabrous or pubescent at the base.

Ovary oblong, conoid or ovoid, 3-7mm long, 5-8-locular, rarely to 10-celled,
tomentose or glabrous,
sometimes stalked-glandular, occasionally setulose-glandular.

Style impressed or truncate,
glabrous, rarely tomentose at the base.

Capsule oblong to oblong-oval, 6-28mm long,
straight or sometimes slightly curved, usually tomentose,
with or without short-stalked glands,
sometimes setose, setulose or setulose-glandular.

Seeds elongate, winged (occasionally narrowly)
and each end with appendages (occasionally quite small).

R. haematodes* ssp. *haematodes

Hardiness:
H5-6.
Flowering Period:
May-June.
Distribution in the wild:
NW & W Yunnan, China.
Growing in alpine thickets and in rocky, moist or open valley sites
along or above the tree line, at elevations of 3,200-4,000m.

Identification:
Shrub, compact and dense, spreading and rounded,
open and upright in shade, 0.6 to 1.8m high;
branchlets densely tomentose, the hairs dark brown, brown or whitish,
sometimes sparsely setose,
the bristles slender when present but more often completely absent.
Leaf bud scales deciduous or persistent.
Leaves thick, obovate through oblong,
3.5 to 11cm long by 1.6 to 5.5cm wide,
apex obtuse or rounded, base cuneate through rounded;
upper surface dark green, smooth, shiny;
lower surface densely tomentose,
the bistrate indumentum thick, woolly, spongy and continuous,
brown, dark brown, cinnamon- or reddish-brown,
the upper layer thick, matted, continuous, composed of dendroid hairs,
the lower layer thin, continuous, composed of whitish, compacted rosulate hairs.
Petiole 5-14mm long, grooved above,
densely tomentose, the hairs dark brown, brown or whitish,
sometimes sparsely setose,
the bristles slender when present but more often completely absent.
Inflorescence compact, 4-12-flowered.
Rhachis 3-5mm long, moderately through densely brown-tomentose.
Pedicel 10-23mm long, densely brown-tomentose,
moderately through densely setose or without bristles, rarely setose-glandular.
Calyx cupular, often crimson, the lobes 3-15mm long,
their outer surface usually glabrous, their margins ciliate or not.
Corolla 3 to 5cm long, fleshy, tubular-campanulate,
scarlet through deep crimson.
Stamens 10, occasionally 11-12;
filaments pubescent at the base or glabrous.
Ovary densely tomentose, the hairs brown, dark brown or rufous,
rarely short-stalked glandular.
Style sometimes floccose at the base.
Capsule 9-24mm long, moderately through densely tomentose.

Seed Collections:

F 6773	1910	R 18382	1929	EN 2451	> 1985
F 15521	1917/1919	F 28351	1930/1931	CLD 1283	1990
F 21753	1921/1922	F 30535	1930/1931	CLD 1427	1990
F 21759	1921/1922	McLaren C 01	1932/1939	CLD 1522	1990
F 21853	1921/1922	McLaren S 124a	1932/1939	CLD 1533	1990
F 22670	1921/1922	McLaren S 131	1932/1939	SSNY 371	1992
F 22671	1921/1922	McLaren T 107	1932/1939	AC 667	1993
R 6269	1923/1924	KW 20924	1953	AC 693	1993
R 6364	1923/1924	SBEC 343	1981	KGB 802	1993
R 10948	1923/1924	SBEC 364	1981	CNW 830	1994
R 11210	1923/1924	SBEC 561	1981	JN 1040	1999
F 25877	1924/1925	SBEC 585	1981	ZH-G 084	2006
		SBEC 586	1981		



R. haematodes (EN 2451)

R. haematodes

The first member of the series to be encountered by a Western plant hunter was *R. haematodes,* the Catholic missionary priest Père Jean-Marie Delavay making the discovery in 1885, on Mount Tsang-chan, a peak in the Cangshan mountains of western Yunnan close to Tali (modern-day Dali).

Over the course of his three proselytising sojourns in China, beginning in 1861 and concluding in 1895 - when he finally succumbed to bubonic plague, having first contracted and survived the disease in 1888 - Delavay despatched over 200,000 dried herbarium plant specimens, along with some seed, back to his native France, and amongst these were 1500 new-to-science species. The majority were assessed by Adrien Franchet at the Muséum National d'Histoire Naturelle in Paris, whose botanic description of *R. haematodes* may be found in Volume 33 of the *Bulletin de la Société Botanique de France,* published in 1886.

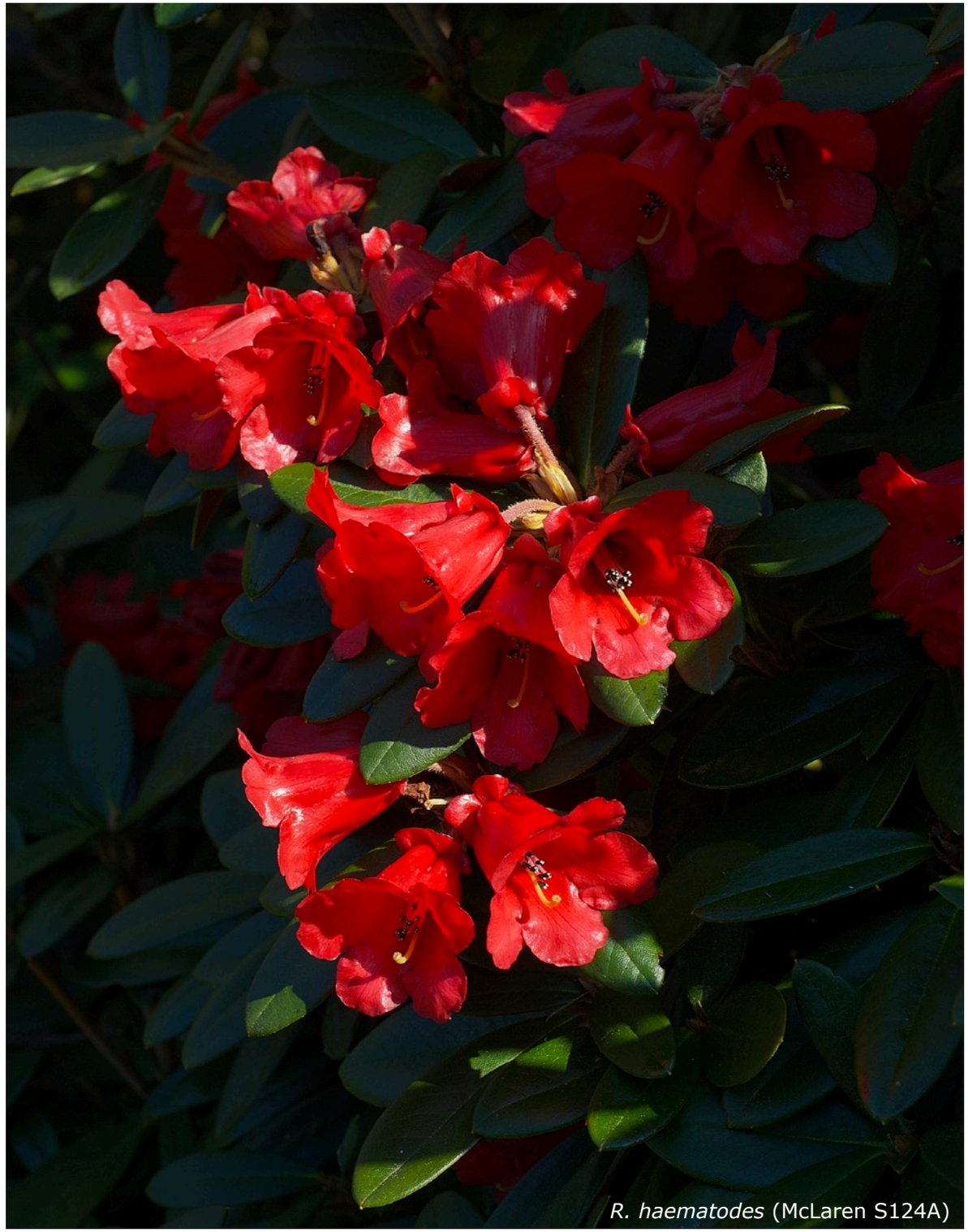
The endemic populations of *R. haematodes* have been found to merge with those of *R. chaetomallum,* the character set transforming from one species into the other as the distribution is tracked from western Yunnan into the southeast of neighbouring Tibet, where the morphology reflects pure *R. chaetomallum.* Subspecies status under the first described taxon better reflects the situation found on the ground, and this ranking was formally adopted when the concluding Edinburgh Revision text - *The Genus Rhododendron: its classification & synonymy* - was published in 1996. Essentially, the relative proportions of hard to soft hairs on the stems and the leaf stalks determine which species is to hand: a dense cloak of tomentose hairs and few if any stiff bristles equals ssp. *haematodes;* while a densely setose covering with only a sparse scattering of supple hairs, ssp. *chaetomallum.* The latter is also a taller growing plant, with a more open habit that bears larger, more wrinkled leaves, with a woolly rather than woolly-spongy abaxial indumentum.

R. haematodes ssp. *catacosmum* is midway between the two, with the habit, leaf size and abaxial indumentum of ssp. *chaetomallum,* combined with the setose-to-tomentose hair count of ssp. *haematodes.* The calyx lobes of ssp. *catacosmum* are also larger than those displayed by either of its sisters - sometimes extending to 25mm; never smaller than 13mm; and so distinctive that they give the corollas an almost hose-in-hose appearance.

R. haematodes ssp. *haematodes* has quite thick leaves, smooth and shiny above, plus the shrub lacks any glands on the branchlets and in most cases the ovary, features that quickly distinguish the species from all the other Series *Haemaguinea* rhododendrons.

George Forrest was the first collector to introduce the plant into British gardens, with seed documented under F 6773 arriving in 1910. But mention must again be made of dried material gathered on the Scotsman's 1904-1906 expedition - under F 4130 and F 4161 - which might also have returned the contents of viable capsules. The herbarium specimens, of course, went to Edinburgh Botanic and were duly listed in the catalogue prepared by Professor Ludwig Diels, *Plantae Chinenses Forrestiannae,* published in Volume 7 of *Notes from the Royal Botanic Garden, Edinburgh,* in 1912. But the seed - if any - went to the trip's principal sponsor, A. K. Bulley, owner of the Wirral-based Bees Ltd, whose employees - according to no less an authority than J. C. Williams - appear to have lacked the required skills needed to first germinate and then successfully raise the fruit of Forrest's endeavours. At least, with regard to any of the rhododendrons.

Cultivated plants of *R. haematodes* will either be low growing and tightly compact, so perfect for the rock garden, or broadly upright to 1.5m, adopting a rounded dome shape over time. Both cover themselves annually with a blaze of scarlet flowers once mature, but require close to a decade to achieve this state. Hardiness is sufficient to allow the species to be grown across the whole of the country wherever the soil is suitable, but drainage must be excellent and siting should not be in full sun, especially in the hotter climes of southern England.



R. haematodes (McLaren S124A)



R. haematodes (SBEC 585)



R. haematodes



R. haematodes (SBEC 586)



R. haematodes

R. sanguineum

Hardiness:
H5-6.
Flowering Period:
March-May.
Distribution in the wild:
SE Tibet; NW Yunnan, China; Arunachal Pradesh, India; NW Myanmar.
Growing at forest margins and in woodland clearings,
amongst bamboo and on open slopes, at elevations of 3,000-4,500m.

Identification:
Shrub, rounded, 0.3 to 1.2 to 2.5m high;
branchlets thinly white-tomentose.
Leaf bud scales deciduous.
Leaves obovate through oblong-obovate to oblong,
2.4 to 10.5cm long by 1 to 3.5cm wide,
apex rounded or obtuse,
base obtuse or tapered, somewhat decurrent on the petiole;
upper surface dark green, matt, the margins flat or somewhat revolute;
lower surface tomentose,
the indumentum unistrate, continuous, thin and plastered,
white, fawn, brown or dark brown,
composed of rosulate hairs with usually short arms,
the epidermal waxy papillae poorly developed,
the midrib sometimes thinly tomentose.
Petiole 3-10mm long, the margins narrowly winged or ridged,
thinly white-tomentose.
Inflorescence loose, 3-5-flowered.
Rhachis 2-5mm long, dark brown tomentose.
Pedicel 10-36mm long, moderately through densely brownish tomentose.
Calyx not cupular, the base fleshy, coloured as the corolla,
the lobes divided to the base, each 1-4-7mm long,
their outer surface and margins glabrous or hairy.
Corolla 2.4 to 4cm long, fleshy, tubular-campanulate,
deep crimson, crimson, carmine or scarlet,
more rarely white tinged rose, yellow flushed pink or rose, orange-red,
pink, rose or rose-crimson.
Stamen filaments pubescent at the base or glabrous.
Ovary densely tomentose, the hairs branched or unbranched.
Capsule 7-22mm long, straight,
moderately through densely tomentose.

Seed Collections:

F 13304	1912/1914	R 10928	1923/1924	R 22204	1932	Yu 22930	1937
F 14012	1917/1919	R 10934	1923/1924	R 22293	1932	R 11	1948/1949
F 14269	1917/1919	R 10938	1923/1924	R 23524	1932	R 18	1948/1949
F 19008	1917/1919	R 10945	1923/1924	R 23529	1932	R 23	1948/1949
F 19009	1917/1919	R 11002	1923/1924	R 23563	1932	R 24	1948/1949
F 19169	1917/1919	R 11011	1923/1924	R 23580	1932	R 27	1948/1949
F 20891	1921/1922	R 11018	1923/1924	R 23622	1932	R 46	1948/1949
F 20893	1921/1922	R 11024	1923/1924	R 23628	1932	R 59	1948/1949
F 20905	1921/1922	R 11029	1923/1924	R 23631	1932	R 106	1948/1949
F 20910	1921/1922	R 11039	1923/1924	R 23641	1932	R 112	1948/1949
F 20911	1921/1922	R 11158	1923/1924	R 23643	1932	R 125b	1948/1949
F 21739	1921/1922	R 11161	1923/1924	R 23650	1932	R 126	1948/1949
F 21782	1921/1922	R 11176	1923/1924	R 23664	1932	R 136	1948/1949
F 22676	1921/1922	R 11178	1923/1924	KW 11050	1933	R 149	1948/1949
F 22705	1921/1922	R 11181	1923/1924	KW 13416	1937	R 150	1948/1949
F 22725	1921/1922	R 11183	1923/1924	Yu 8610	1937	KW 19588	1950
KW 5416	1922	F 25518	1924/1925	Yu 19037	1937	Cox 6056	1992
KW 5432	1922	F 25521	1924/1925	Yu 19049	1937	Cox 6101	1992
KW 5433	1922	F 25543	1924/1925	Yu 19310	1937	KGB 699	1993
R 10893	1923/1924	F 25906	1924/1925	Yu 20247	1937	Cox 6521	1994
R 10894	1923/1924	F 25942	1924/1925	Yu 20623	1937	AC 1735	1996
R 10897	1923/1924	KW 6945	1926	Yu 20705	1937	AC 1749	1996
R 10899	1923/1924	KW 7185	1926	Yu 20714	1937	CC 7562	1996
R 10900	1923/1924	KW 8293	1927/1928	Yu 20812	1937	DGEY 239	2001
R 10901	1923/1924	R 22064	1932	Yu 20909	1937	DGEY 253	2001
R 10902	1923/1924	R 22198	1932	Yu 20910	1937	DGEY 356	2001
R 10922	1923/1924	R 22201	1932	Yu 22191	1937	BE 09-15	2009
R 10926	1923/1924	R 22202	1932	Yu 22228	1937		
R 10927	1923/1924	R 22203	1932	Yu 22791	1937		

R. sanguineum

As defined by the Edinburgh Revision, *R. sanguineum* consisted of two subspecies, one of which was further divided into five varieties. Each of the latter, apart from the crimson-flowered *R. sanguineum* ssp. *sanguineum* var. *sanguineum,* contained up to three other sunken taxa and the result of these mergers, was a bloating of the combined botanic description, which led to incorrect statements and keys suggesting that only the colour of the corollas distinguished most of these individuals from the formerly specific-ranked plants the 1996 classification had filed under var. *sanguineum*.

Field study carried out prior to and post-publication of that tour de force, has now documented the actual situation on the ground, reporting that all these rhododendrons are found along a quite narrow geographic corridor, and that they interbreed with each other and nearby relatives in a free-for-all that would make rabbits blush. Separating-out the plethora of hybrids from the true species and any bona fide intermediates therefore, requires a change of focus - a return to the individual botanic descriptions. These have been set out by H. H. Davidian in Volume 3 of his *The Rhododendron Species,* published in 1992, and the accuracy of his technical detail remains unquestioned.

The case for raising *R. didymum* to specific status, and the intention to treat *R. sanguineum* ssp. *sanguineum* var. *haemaleum* as a natural hybrid, is made in the entry for *R. didymum* on page 82. Here, the remaining three varieties will be compared with the Edinburgh Revision's var. *sanguineum,* in the light of that new field study evidence.

All the plants to be contrasted display the narrowly winged petioles common to all of the *R. sanguineum* flock and most, the thin, plastered, abaxial leaf surface tomentum. Yet some also incorporate features that could only have come from natural cross-pollination with other Series *Haemaguinea* species growing nearby, or with the swarm of established F1 or F2 hybrids that are also present.

In alphabetical order, the three varieties are:

R. sanguineum ssp. *sanguineum* var. *cloiophorum*.

This plant is described as having pure white, white tinged rose, yellow flushed pink or rose, orange-red, pink, rose or rose-crimson flowers. The calyx lobes are deflexed, a trait acknowledged by the epithet, which translates from the Latin as 'wearing a collar'. George Forrest's July 1917 gathering under F 14269 is the type collection and this taxon is indeed indistinguishable from var. *sanguineum* apart from a non-crimson flower colour, the pure white forms excepted.

These were collected under F 14270, given specific ranking and originally described as *R. leucopetalum.* They differ by sporting setulose or setulose-glandular bristles on their branchlets and petioles. The two adjacent field numbers clearly indicate a close association on the ground, the first taxon found at 3,355m, the second between 3,660 and 3,965m. Forrest's next listed gathering - F 14271 - is the type specimen of *R. citriniflorum,* which was collected at 3,965m, confirming an upward ascent of the mountain slope and a traverse through a zone of either intermediate or hybrid rhododendrons.

The pre-Edinburgh Revision inclusion of *R. asmenistum* into the var. *cloiophorum* fold has no effect on the above, as apart from its white corollas tinged rose on the margins, it is identical to the variety and therefore without any setulose or setulose-glandular bristles.

Field evidence therefore supports the conclusion that the pure white and bristly forms of var. *cloiophorum* are hybrids, which are considered herein to be *R. x leucopetalum.* As flower colour alone cannot be used to justify the division of a taxon - the rules dictating that there has to be a second significant character difference or a niche geographic distribution - the remaining members of this variety are judged to be indistinguishable from var. *sanguineum* and made synonymous under it.

R. sanguineum ssp. *sanguineum* var. *didymoides*.

Again, the corolla pigmentation of var. *didymoides* varies from the crimson of var. *sanguineum,* the slightly smaller flowers being yellow flushed or margined crimson, orange-red, red or rose. However, persistent leaf bud scales, plus ovaries and mature capsules that are densely stalked-glandular, also distinguish these plants. Forrest's 1921 collection under F 19982 is the type specimen.

Three now synonymous species are included within the entirety of var. *didymoides: R. mannophorum* adds stalked-glandular pedicels and calyx lobes to the already tacky ovaries and capsules, but is without the persistent perulae; *R. roseotinctum,* first collected under F 14268, is its mirror, apart from a lower habit of growth and slightly smaller, more campanulate-shaped corollas, which may have a distinctive picotee colouring; and *R. sanguineum* ssp. *consanguineum,* which mirrors *R. mannophorum,* apart from having non-sticky tomentose hairs on its pedicels.

Stalked-glandular hairs are a feature of *R. citriniflorum* ssp. *citriniflorum*. They are found in dense concentrations on the pedicels, calyx lobes, ovaries and capsules of this species. On var. *sanguineum,* those same appendages are eglandular. This last statement is made knowing that a few herbarium specimens that have been identified as var. *sanguineum* display a scattering of stalked-glands on their pedicels and calyx lobes, though none house mass accumulations of these hairs. Nor do the ovaries and capsules harbour such. It would not be out of court then, to suggest that although close to var. *sanguineum,* the var. *didymoides* flock are in fact natural hybrids between *R. citriniflorum* ssp. *citriniflorum* and *R. sanguineum* ssp. *sanguineum* var. *sanguineum*. Or a variable cline of intermediates between the two. And so should be reclassified as *R. x didymoides*.

R. sanguineum ssp. *sanguineum* var. *himertum*.

Exclusively graced with yellow corollas, this taxon is often described as a non-glandular expression of *R. citriniflorum* ssp. *citriniflorum*. Intermediates between var. *himertum* and ssp. *citriniflorum* exist and have now been documented as having glandular ovaries and a plastered abaxial leaf indumentum. Equally, ssp. *citriniflorum* itself is frequently devoid of sticky glands. Given such, treatment of var. *himertum* as a natural hybrid between *R. citriniflorum* and *R. sanguineum* would be appropriate, and the taxon is therefore designated *R. x himertum*.

In light of the changes made above, and with *R. sanguineum* ssp. *didymum* raised to specific status, plus *R. sanguineum* ssp. *sanguineum* var. *haemaleum* determined to be a natural hybrid, the ranking of *R. sanguineum* ssp. *sanguineum* var. *sanguineum* can be returned to that set by Adrien Franchet when he described the species in Volume 12 of the *Journal de Botanique,* published in 1898. Of course, the epithet selected for the species is no longer strictly accurate, 'blood red' being joined by white tinged rose, yellow flushed pink or rose, orange-red, pink, rose or rose-crimson. This pigmentation range is duplicated by several other Subsection *Neriiflora* species - for instance, *R. aperantum, R. floccigerum* ssp. *floccigerum,* and *R. parmulatum,* to name but three - so this inherent morphology would not be unique or atypical.

The *R. sanguineum* feature set now comprises sparsely white-tomentose branchlets; deciduous leaf bud scales; obovate through oblong-obovate to oblong leaves 2.4 to 10.5cm long by 1 to 3.5cm wide, these somewhat decurrent on the petiole; the leaf adaxial surface is dark green, matt, with flat or somewhat revolute margins, while the abaxial indumentum is unistrate, continuous, thin and plastered, with white, fawn, brown or dark brown rosulate

hairs that cloak an epidermis with poorly developed waxy papillae; the petiole, rhachis, pedicel, ovary and capsule are tomentose, the hairs white or brownish, their presence sparse to dense; the inflorescence is loose, its 3-5 corollas each 2.4 to 4cm long, fleshy in texture, tubular-campanulate in shape, and deep crimson, crimson, carmine or scarlet in colour, or more rarely, white-tinged-rose, yellow flushed pink or rose, orange-red, pink, rose or rose-crimson; and the stamen filaments are pubescent at the base or glabrous.

Each and every former pretender to the species epithet will prove incompatible with those keying strictures if strictly applied.

R. sanguineum was first found by Abbé Jean-Andre Soulié in June of 1895 at Sela, near Tsekou (Chigu), on the Mekong-Salween Divide of southeast Tibet and first introduced into British gardens by George Forrest in 1914 under F 13304, though once again, such might have occurred a decade earlier in 1904 under F 503 if seed had accompanied the dried material and A. K. Bulley's propagating staff had got their act together.

Additional batches of seed, collected by the Scotsman, Frank Kingdon-Ward, Joseph Rock and Te Tsun Yu, continued to arrive right up until China closed its doors to outsiders in 1949-50, after which, a forty-two-year hiatus began. This was ended late in 1992 when Peter Cox reintroduced the species from Yunnan, with another seven collections from the province, and one from southeast Tibet following in the years up until 2001. Then, in 2009, a Danish collector, Bent Ernebjerg, discovered a population of *R. sanguineum* growing in northwestern Myanmar, and more recently, the distribution range has been extended to take in Arunachal Pradesh, though no documented seed gatherings from these plants have yet been introduced.

In UK cultivation, *R. sanguineum* is not overly picky as to placement within the garden, forms a rounded dome 0.6 to 1.8m high - this dependent on the selected form - and usually begins flowering from a fairly young age.


R. sanguineum (R 106)


R. sanguineum


R. sanguineum (C 6521)



R. sanguineum (R 10893)



R. sanguineum (R 10922)



R. sanguineum (R 10922)

R. sanguineum (R 10983)


R. dichroanthum (F 6781)


R. dichroanthum (F 6781)

R. dichroanthum* ssp. *dichroanthum

Hardiness:
H5.
Flowering Period:
May-June.
Distribution in the wild:
WC Yunnan, China.
Growing in forests, at the margins of bamboo breaks, in alpine thickets and meadows, on open rocky slopes and cliff ledges, in both moist and dry situations, at elevations of 2,700-3,700m.

Identification:
Shrub, compact and spreading, broadly upright or rounded, 0.3 to 2.5m high; branchlets thinly white floccose-tomentose, glabrous when mature.
Leaf bud scales deciduous.
Leaves oblanceolate through oblong-obovate, 4 to 10cm long by 1.3 to 4cm wide, apex obtuse or rounded, base tapered or obtuse; upper surface dark green, near matt; lower surface tomentose, the unistrate indumentum continuous, plastered or compacted, silvery, composed of rosulate hairs with short arms, the midrib tomentose or not.
Petiole 5-15mm long, thinly white floccose-tomentose, but swiftly glabrescent.
Inflorescence loose, 3-8-flowered.
Rhachis 3-5mm long, brown pubescent.
Pedicel 11-28mm long, moderately through densely brown-tomentose.
Calyx cupular or not, coloured, fleshy, 4-5-lobed, these divided to the middle or the base, each 3-25mm long, their outer surface glabrous and eglandular, their margins ciliate.
Corolla 3.2 to 4.5cm long, fleshy, tubular-campanulate, orange-red, or yellow flushed red or carmine.
Stamen filaments pubescent at the base.
Ovary oblong or conoid, 4-7mm long, 7-8-locular, densely rufous-tomentose, eglandular.
Style sometimes tomentose at the base.
Capsule 10-16mm long, straight, densely tomentose.

Seed Collections:

F 6761	1910	CLD 1544	1990
F 6781	1910	H&M 1381	1990
F 11597	1913	H&M 1544	1990
F 28283	1930/1931	SSNY 364	1992
F 28290	1930/1931	AC 3079	1996
F 28348	1930/1931	CCHH 8262	1997
SBEC 545	1981	JN 1057	1999
SBEC 601	1981	BE 12-18	2012

The four subspecies of *R. dichroanthum* are very similar to each other, differing only in a few minor characteristics. In another taxon, such foibles would warrant only varietal status, but here geography plays a hand in the ranking, as the four do not meet on the ground, each having a distinct and disjunct endemic population.

It was George Forrest who discovered the specific species, on the Cangshan mountain range above Dali, in west-central Yunnan, during July 1906. This was towards the end of his first Chinese expedition and five separate gatherings of dried material are known to have made it back to the herbarium at Edinburgh Botanic, rampaging Tibetan monks notwithstanding. The collection date likely meant any viable, ripe seed was unavailable, which if nothing else, spared a certain nursery-business-owning cotton merchant further embarrassment. That Arthur Kilpin Bulley's propagators succeeded in establishing a bevy of new Chinese ornamentals in UK cultivation - herbaceous species such as primulas to the fore - is not in doubt, but clearly, rhododendron seed was not their forte. *R. dichroanthum* was therefore not introduced into cultivation until Forrest found it again on his second expedition to Yunnan in 1910, and it was two years after that, that the botanic description, written by Professor Friedrich Ludwig Diels, finally appeared, in the 1912-published *Plantae Chinenses Forrestianae* expedition listing, this included within Volume 7 of *Notes from the Royal Botanic Garden, Edinburgh*.

Keying apart the four subspecies of *R. dichroanthum* is initially easy, as both ssp. *herpesticum* and ssp. *septentrionale* have narrowly winged petioles and often sport short, sticky bristles on their ovaries or branchlets, but distinguishing the specific species from ssp. *apodectum* is harder and relies on more nebulous feature differences: an oblong-obovate through oblanceolate leaf shape with a tapering base, rather than oval to oblong-obovate blades with a rounded base; the foliage matt above instead of somewhat shiny, the leaves slightly longer and in comparison, narrower; and marginally thinner abaxial indumentum, plastered or compacted, not woolly. Longitudinal ribbing has only been found on the upper leaf surface of ssp. *apodectum,* but it is not a universal trait.

Within Series *Haemaguinea, R. dichroanthum* most closely mirrors *R. sanguineum,* which has a similar thin and plastered abaxial leaf indumentum, but the non-winged petioles will quickly key the two apart.

In the UK's woodland gardens, freedom of flowering varies between the various established clones of *R. dichroanthum,* a few being somewhat shy despite beginning to set buds at an early age. Otherwise, cultivation is straightforward and without problem, the plant's hardiness sufficiently robust to allow the species to succeed in most areas where rhododendrons can be grown, a 2m tall dome the long-term result. Prospective purchasers should note however that plants can suffer quite serious bark split if hit by a late spring frost once the sap begins to rise at the end of April, this condition pervasive to all four subspecies, though the damage is rarely fatal.

Orange-flowered specimens of *R. dichroanthum* ssp. *dichroanthum* are deservedly popular, with mature specimens found in virtually all the major rhododendron gardens open to the general public. The subspecies has also been used extensively by hybridisers, with its genes incorporated into many of the most highly regarded, and commercially popular crosses, 'Berryrose', 'Fabia', 'Goldsworth Orange', 'Golden Horn', 'Persimmon' and 'Sonata' just a few of the names from a wide selection.



R. dichroanthum (SBEC 545)



R. dichroanthum

R. dichroanthum* ssp. *apodectum

Hardiness:
H5.
Flowering Period:
May-June.
Distribution in the wild:
W Yunnan, China; NE Upper Myanmar.
Growing in forests, at the margins of cane breaks and thickets,
in meadows and open scrub, on open rocky slopes and cliff ledges,
at elevations of 2,600-3,600m.

Identification:
Shrub, compact, rounded or broadly upright, 0.3 to 2.5m high;
branchlets thinly white floccose-tomentose, glabrous when mature.
Leaf bud scales deciduous.
Leaves oval through oblong-obovate to elliptic or oblanceolate,
3.5 to 8.5cm long by 2 to 3.8cm wide,
apex rounded or obtuse, base rounded or obtuse;
upper surface pale or dark green, somewhat shiny,
sometimes rugulose with longitudinal ribbing;
lower surface tomentose, the unistrate indumentum continuous, loose to compacted,
silvery through fawn, composed of rosulate hairs with short arms,
the midrib tomentose or not.
Petiole 5-14mm long, thinly white floccose-tomentose, but swiftly glabrescent.
Inflorescence loose, 3-8-flowered.
Rhachis 2-5mm long, brown pubescent.
Pedicel 10-25mm long, moderately through densely fawn or brown tomentose, eglandular.
Calyx cupular or not, coloured, fleshy,
the lobes divided to the middle or the base, each 3-20mm long,
their outer surface glabrous and eglandular, their margins ciliate.
Corolla 2 to 4.3cm long, fleshy, tubular-campanulate,
deep crimson, orange-crimson or orange-rose.
Stamen filaments pubescent at the base.
Ovary densely rufous-tomentose, eglandular.
Capsule 10-18mm long, straight or slightly curved,
moderately through densely tomentose.

Seed Collections:

F 8987	1912	F 18153	1917/1919	F 24728	1924/1925
F 9054	1912	F 18167	1917/1919	F 27359	1924/1925
F 11896	1913/1914	R 7663	1923/1924	Yu 10691	1937
F 12094	1913/1914	F 24113	1924/1925	KW 20923	1953
F 15932	1917/1919	F 24305	1924/1925	KW 21000	1953
F 17560	1917/1919	F 24331	1924/1925	JN 11054	2011
		F 24712	1924/1925		

R. apodectum was the next member of Series *Haemaguinea* to be discovered and introduced, a population of plants on the western flank of the Shweli-Salween Divide in western Yunnan coming to George Forrest's attention during August 1912. Isaac Bayley Balfour and William Wright Smith composed the botanic description that subsequently appeared in Volume 10 of *Notes from the Royal Botanic Garden, Edinburgh,* published in 1917, with the reduction in rank to a subspecies of *R. dichroanthum* occurring in 1940, part of John MacQueen Cowan's 'Rhododendrons of the Sanguineum Alliance' review that was featured in Volume 20 of *Notes*.

Leaf stalks without narrow wings or ridges key ssp. *apodectum* from all of the many *R. sanguineum* lookalikes, as well as from the true species itself, plus ssp. *herpesticum* and ssp. *septentrionale,* but not from ssp. *dichroanthum*. Here, identification is often less than precise, though clues are provided by the more oval to oblong-obovate leaf shape and the foliage being marginally shiny above. If any ribbing is found running lengthwise across the leaf's upper surface, ssp. *apodectum* is assuredly to hand, but otherwise, reliance has to be placed on the abaxial tomentum, which might be a tad thicker and a degree or two woollier than that borne by ssp. *dichroanthum,* but money should not be wagered on such. Nor bets placed on the leaf length, despite any number of publications stating that the ssp. *apodectum* blades are generally smaller. In the wild, this may be so, but in cultivation, neither trait should be considered definitive.

Of course, such hair-splitting will never arise with regard to the endemic populations, because ssp. *dichroanthum* is only found on the Cangshan mountain range above Dali, which is many miles distant from the ssp. *apodectum* flocks on the Shweli-Salween Divide and in northeast Upper Myanmar.

Rock, Yu and Kingdon-Ward followed Forrest in returning seed to the UK, with Jens Nielsen breaking a near six-decades-long privation when he rediscovered the species in the west of Yunnan and reintroduced it in 2011.

In the main, cultivated plants of *R. dichroanthum* ssp. *apodectum* will grow into 1.5m-high, upright spreading shrubs, the best forms when mature liberally covered with a dusting of orange-crimson or orange-rose corollas from early May onwards. A dwarf form, rarely more than 0.6m high and the perfect subject for a rock garden, with crimson-coloured blooms, may also be admired, though at fewer venues. Both types are fully hardy, sport stiff ascending branches, and are robust growers, but not all are free-flowering, with a number of clones decidedly remiss in producing a swarm of inflorescences season after season.



R. apodectum



R. apodectum



R. apodectum

R. mallotum

R. mallotum

Hardiness:
H4-5.
Flowering Period:
March-April.
Distribution in the wild:
W Yunnan, China; NE Upper Myanmar.
Growing in forests, in and at the margins of bamboo or rhododendron thickets,
in rocky gullies, on cliffs and open rocky slopes,
at elevations of 3,000-3,700m.

Identification:
Shrub or small tree, broadly upright, often on a single trunk, 1.5 to 6.5m high;
branchlets densely rufous-tomentose, the hair colour occasionally cinnamon-grey.
Leaf bud scales deciduous.
Leaves very thick and stiff, obovate through broadly oblanceolate,
7 to 15.8cm long by 3.5 to 8cm wide,
apex rounded, truncate or notched, base obtuse or sometimes rounded;
upper surface dark green, rugose, rough,
the midrib moderately through densely brown or grey tomentose, or glabrous;
lower surface densely tomentose,
the unistrate indumentum thick, woolly and continuous,
cinnamon-brown or rufous,
composed of dendroid hairs with ribbon-like branches.
Petiole 13-36mm long, usually densely tomentose.
Inflorescence usually compact and dense, 7-20-flowered.
Rhachis 8-15mm long, densely tomentose.
Pedicel 6-15mm long, stout, densely tomentose.
Calyx minute, the lobes 0.5-3mm long,
their outer surface and margins densely tomentose.
Corolla 2.8 to 5cm long, fleshy, tubular-campanulate,
crimson through scarlet to cherry-red.
Stamen filaments red.
Ovary densely rufous-tomentose.
Capsule 12-20mm long, oblique, slightly curved, densely tomentose,
the seeds very small.

Seed Collections:

F 17853	1919
Farrer 815	1919
F 25067	1924
BASE 9672	2000
DGEY 406	2001
JN 11058	2011

R. mallotum was found growing on the open hillsides above the Hpimaw Pass in northeastern Upper Burma by Frank Kingdon-Ward on May 19th, 1914. The dried material he collected - from 'scraggy trees up to 5m high' - was far from perfect and mars the botanic description he wrote with Sir Isaac Bayley Balfour that is included in Volume 10 of *Notes from the Royal Botanic Garden, Edinburgh,* published in 1917. George Forrest secured pristine flowering specimens from lower growing plants on the N'Maikha-Salween Divide in western Yunnan during April 1919 and although these were initially given specific status and described as *R. aemulorum* by Balfour in 1920 (*Notes,* Volume 12), Harry Tagg later recognised them for what they were and sunk the taxon under *R. mallotum* whilst working on *The Species of Rhododendron,* published in 1930.

The tree-like stature and heavily indumented, thick, stiff and large leaves, rough and rugose, make *R. mallotum* one of the easiest species to recognise - within the series, the subsection, or indeed, across the entire genus, up close or from afar. A complete lack of bristles on any of its appendages will cleave specimens from their more elfin-like cousin, *R. beanianum,* though such an identity crisis will only be experienced in a horticultural locale and with juvenile plants.

The taxon's unique characteristics have prompted many botanists to suggest either a closer association with the rhododendrons of Subsection *Falconera,* or placement in a monotypic subsection of its own. The latter option however, discounts the clear similarities with the two *R. beanianum* subspecies and *R. pocophorum,* while a lack of any cup-shaped hairs in the abaxial leaf indumentum swiftly rules out the former.

In fact, both propositions have also been dismissed on genetic evidence, this data presented in the *Phylogeny of Rhododendron Subgenus Hymenanthes Based on Chloroplast DNA Markers* paper that featured in the journal *Plant Systematics and Evolution* (Volume 285, Issue 3, March 2010). For the study's authors showed that *R. mallotum* had a clear and close association with all the other Subsection *Neriiflora* species tested, but was distant from the four Subsection *Falconera* rhododendrons included in their analysis.

The battle between collectors to be first to introduce a new plant into UK cultivation is reflected in the epithet bestowed on the now synonymous *R. aemulorum,* with Balfour's choice translating from the language of ancient Rome and its empire - long dead, but still used in science and astronomy to baffle the riff-raff - as 'rhododendron of the rivals'. This was selected because seed of *R. mallotum* collected in April 1919 by Forrest, arrived back in Blighty on almost the same day as a gathering made on Myanmar's Hpimaw Pass by Reginald Farrer, forcing the umpires to declare it a simultaneous introduction. A third batch of capsules, secured by Forrest in 1924 and sourced from the same population at Hpimaw, preceded a seventy-six year gap before the species was re-encountered in Yunnan and re-introduced by members of the British-American Salween Expedition.

Mature specimens of *R. mallotum* in full bloom are truly a sight to behold, but with the buds beginning to swell from as early as mid-February, frost damage is frequently unavoidable. The leaf blades easily make up for this loss, being eye-catching at all times, but never more so than when a gust of wind lifts them up and a late afternoon sun lights their undersides so they become burning ellipses of reddish-orange. Cultivation is usually without problem providing the drainage remains good, with specimens long-lived, healthy and hardy in a sheltered location. But if over time the roots start to become waterlogged, early leaf fall and branch die back will occur, and if nothing is done to alleviate the situation despite the clear visual warnings, even 6m high plants will be lost. Too much sun in southern gardens will also prove detrimental to the foliage, as evidenced for many years by the fine, tree-like specimens at Wakehurst Place, after the Great Storm of 1987 took away much of their shelter and dappled shade.




R. mallotum (F 17853)


R. mallotum (F 17853)


R. mallotum (Farrer 815)

R. mallotum

R. dichroanthum* ssp. *herpesticum* var. *herpesticum

Hardiness:
H5.
Flowering Period:
May-June.
Distribution in the wild:
W Yunnan, China; NE Upper Myanmar.
Growing in forests, bamboo thickets and mixed scrub, in alpine meadows,
on open rocky slopes and cliff ledges, at elevations of 3,600-4,270m.

Identification:
Shrub, compact and spreading through broadly upright, 0.15 to 0.6m high;
branchlets thinly white or rarely fawn floccose-tomentose, glabrous when mature,
often setulose-glandular.
Leaf bud scales deciduous.
Leaves obovate through oblong-obovate,
3 to 7cm long by 1.4 to 3cm wide,
apex rounded, rarely obtuse,
base tapered, rounded or obtuse, sometimes slightly auricled, decurrent on the petiole;
upper surface pale or dark green, matt, rugulose;
lower surface tomentose, the unistrate indumentum continuous, plastered or compacted,
fawn or white, composed of rosulate hairs with short arms,
the midrib thinly tomentose or not.
Petiole 4-12mm long, the margins narrowly winged or ridged,
thinly white floccose-tomentose, but swiftly glabrescent, rarely setulose-glandular.
Inflorescence loose, 3-8-flowered.
Rhachis 2-5mm long, dark brown pubescent.
Pedicel 13-32mm long, rufous-tomentose, moderately through densely setulose-glandular.
Calyx cupular or not, coloured, the base fleshy,
the lobes divided to the middle and each 3-10mm long,
their outer surface usually glabrous and setulose-glandular at the base,
their margins ciliate-glandular.
Corolla 2.5 to 4.3cm long, fleshy, tubular-campanulate,
deep crimson, orange-red, or yellow flushed red or carmine.
Stamen filaments pubescent at the base.
Ovary moderately through densely rufous-tomentose,
moderately through densely setulose-glandular.
Capsule 10-20mm long, straight or slightly curved,
moderately through densely tomentose, moderately through densely setulose-glandular.

Seed Collections:

F 24616	1924/1925	F 27099	1924/1925
F 24620	1924/1925	F 27113	1924/1925
F 25579	1924/1925	F 27116	1924/1925
F 25855	1924/1925	F 27471	1924/1925
F 26963	1924/1925	F 27494	1924/1925
F 26965	1924/1925	F 27499	1924/1925
F 26966	1924/1925	F 27568	1924/1925
F 26974	1924/1925	F 27570	1924/1925
F 26977	1924/1925	F 27580	1924/1925
F 27003	1924/1925	F 27599	1924/1925
F 27012	1924/1925	F 27613	1924/1925
F 27050	1924/1925	F 27626	1924/1925
F 27051	1924/1925	F 27641	1924/1925
F 27052	1924/1925	F 27644	1924/1925
F 27061	1924/1925	F 27646	1924/1925
F 27063	1924/1925	F 27650	1924/1925
F 27071	1924/1925	F 27654	1924/1925
F 27089	1924/1925	F 27662	1924/1925
F 27093	1924/1925	F 27663	1924/1925
F 27095	1924/1925	F 27672	1924/1925
F 27097	1924/1925		

R. dichroanthum* ssp. *herpesticum* var. *scyphocalyx

Hardiness:
H5.
Flowering Period:
May-June.
Distribution in the wild:
W Yunnan, China; NE Upper Myanmar.
Growing in forests, bamboo thickets and mixed scrub, in alpine meadows, on open rocky slopes and cliff ledges, at elevations of 2,900-4,270m.

Identification:
as var. *herpesticum* except:
Habit broadly upright or rounded, 0.9 to 2.5m high.
Leaves 3.5 to 9.5cm long by 2 to 4cm wide.

Seed Collections:

Farrer 1024	1919	F 27140	1924/1925
KW 3267a	1919	F 27461	1924/1925
KW 3392	1919	F 27477	1924/1925
F 24532	1924/1925	F 27480	1924/1925
F 24546	1924/1925	F 27485	1924/1925
F 24603	1924/1925	F 27487	1924/1925
F 24683	1924/1925	F 27490	1924/1925
F 25065	1924/1925	F 27502	1924/1925
F 26924	1924/1925	F 27573	1924/1925
F 26927	1924/1925	F 27575	1924/1925
F 26978	1924/1925	F 27583	1924/1925
F 27011	1924/1925	F 27585	1924/1925
F 27018	1924/1925	F 27589	1924/1925
F 27019	1924/1925	F 27594	1924/1925
F 27054	1924/1925	F 27633	1924/1925
F 27057	1924/1925	F 27657	1924/1925
F 27059	1924/1925	F 27665	1924/1925
F 27115	1924/1925	F 30394	1930/1931
F 27132	1924/1925	DGEY 407	2001
F 27134	1924/1925	JN 11057	2011
F 27137	1924/1925	BE 15-05	2015

R. herpesticum was discovered on July 16th 1914, the find made by Frank Kingdon-Ward on the ridge of Naung Chaung in the Nwai Divide of northeastern Upper Myanmar. Here, the plants formed fairly extensive tangled mats around 0.3m high, from just above the tree line at 3,600m, climbing-up to the mountain's summit 400m above. The species was described by Ward and Sir Isaac Bayley Balfour in Volume 10 of *Notes from the Royal Botanic Garden, Edinburgh,* published in 1917.

R. scyphocalyx was first encountered a little less than two years later, during May 1919, when George Forrest found a population of plants established on the western flank of the N'Maikha-Salween Divide, also in northeastern Upper Myanmar. Here however, the shrubs were medium-sized, to around 1.5m high. The species botanic description, penned by Forrest and Balfour, graces the pages of *Notes,* Volume 13, published in 1922.

In fact, in everything but stature and altitudinal distribution, the two plants are mirror images of one another, with all their intrinsic characteristics, major and minor, matching. *R. scyphocalyx* is basically a larger-growing version of *R. herpesticum,* with slightly bigger leaves. Their petiole, pedicel, calyx lobe, corolla and capsule lengths are equal across the two taxa, the decorative feature set borne by such, equally echoed. This replication allowed John MacQueen Cowan to reduce the ranking of both to subspecies status and place them under *R. dichroanthum* (*Notes,* Volume 20, 1940), and the Edinburgh Revision botanists, not quite four decades later, to make ssp. *herpesticum* synonymous under ssp. *scyphocalyx* (A Preliminary Synopsis of the Genus Rhododendron: II., *Notes,* Volume 37, 1979).

On first inspection, this might appear a contravention of the internationally agreed nomenclature rules, but as both taxa were reduced to subspecies status simultaneously and no subsequent decrease in ranking took place, the choice of which to maintain and which to sink, rested solely with the author proposing the change, and David Chamberlain judged that because ssp. *herpesticum* was rare in cultivation compared with the widely grown ssp. *scyphocalyx,* it should be the taxon lost to synonymy. However, as Forrest's copious field number listings indicate, both forms clearly grow in fairly close association, yet the populations continue to maintain their differing statures across the distribution despite this level of fraternisation. Moreover, specimens of ssp. *scyphocalyx* have now been recorded growing at lower elevations than ssp. *herpesticum* - their altitudinal distribution bases at 2,900m and 3,600m, respectively - with both collected at up to 4,270m.

To more accurately reflect these disparities, varietal status is the ranking required, under ssp. *herpesticum,* the first taxon to be described. The two new combinations adopted therefore are *R. dichroanthum* ssp. *herpesticum* var. *herpesticum,* and *R. dichroanthum* ssp. *herpesticum* var. *scyphocalyx*.

The narrowly winged petioles and setulose-glandular ovaries of both varieties distinguish ssp. *herpesticum* from both ssp. *apodectum* and ssp. *dichroanthum,* with the latter characteristic also separating it from the true and false *R. sanguineum* clan and technically *R. didymum,* which has stalked-glands on the ovary rather than glandular bristles. As both are sticky however, the presence of persistent perulae on the branchlets of *R. didymum* is a quickly discerned feature and ideal to confirm a correct identification if the black-crimson corollas are not in evidence.

Reginald Farrer was the first plant hunter to introduce seed of *R. dichroanthum* ssp. *herpesticum* into British gardens when he secured capsules of var. *scyphocalyx* during 1919, these gathered from plants in the woods around the then Burmese village of Hpimaw, which is now located in China (following the 1960 conclusion of a long-running border dispute). Frank Kingdon-Ward also sent two collections of this variety back to the UK from Upper Myanmar later that same year, but it was not until George Forrest began his 1924-1925 expedition that seed of var. *herpesticum* was finally bagged, F 24616 the first of

a slew of lots gathered by the Scotsman, who remains the only Westerner to have sourced viable wild seed. His collections of var. *scyphocalyx* also dominate that seed table post the initial three introductions, although not exclusively, for after a gap of seventy years, the variety was re-encountered in Yunnan during 2001, 2011 and 2015.

Cultivation of both plants is straightforward, as they are fully hardy outdoors, free-flowering from a young age and not particularly choosy about where in the garden they are sited. If that spot is regularly subject to late spring frosts however, a move to a more protected nook or cranny will quickly reap rewards. Dwarf clones will rarely exceed a height of 0.6m, while the taller forms vie between double that and 1.5m high, growing into broadly upright, rounded domes. Specimens displaying deep orange flowers rival the blooms of *R. citriniflorum* ssp. *horaeum* in the most beautiful rhododendron stakes, though rarely will both species offer their floral display at the same time.

Plants with deep crimson corollas, borne by either variety, are now quite scarce in UK gardens and often absent from even the larger species collections.



R. herpesticum (F 27052)



R. scyphocalyx (F 27657)

R. scyphocalyx



R. citriniflorum ‘Brodick’



R. citriniflorum (C 6543)

R. citriniflorum* ssp. *citriniflorum
Hardiness:
H5-6.
Flowering Period:
April-May.
Distribution in the wild:
SE Tibet; NW Yunnan, China.
Growing in thickets, on alpine moorland, and on rocks, screes and cliffs,
at elevations of 3,900-4,900m.

Identification:
Shrub, compact and rounded to upright, sometimes leggy, 0.2 to 1.5m high;
branchlets thinly white floccose-tomentose or not.
Leaf bud scales usually deciduous.
Leaves obovate through oblong-obovate to elliptic,
2.5 to 8.5cm long by 1.2 to 2.8cm wide,
apex obtuse or rounded, base obtuse or cuneate, decurrent on the petiole;
upper surface pale through dark green;
lower surface densely tomentose, the bistrate indumentum continuous,
thick and woolly, or thin and plastered,
dark brown, grey-brown, brown, fawn or whitish,
the upper layer composed of ramiform hairs,
these with medium-length curled branches on a short stem,
the lower layer composed of rosulate hairs with short arms,
the midrib thinly tomentose or not.
Petiole 4-12mm long, flat, narrowly winged,
thinly white, fawn or dark brown floccose-tomentose or not.
Inflorescence compact or loose, 2-6-10-flowered.
Rhachis 2-5mm long, brown-tomentose.
Pedicel 10-30mm long,
moderately through densely short-stalked glandular or eglandular,
moderately through densely tomentose or glabrous,
the hairs when present short- or long-branched and usually intermixed with the glands.
Calyx cupular or not,
the lobes divided to the middle or the base and each 2-5mm long, rarely 10-14mm,
their outer surface hairy or glabrous, stalked-glandular or eglandular,
their margins ciliate, glandular-ciliate or glabrous.
Corolla 3 to 4.5cm long, thin, not fleshy, tubular-campanulate,
yellow, often flushed with pink or red.
Stamen filaments pubescent at the base, rarely glabrous.
Ovary densely reddish-brown or rufous tomentose, rarely glabrous,
moderately stalked-glandular, rarely eglandular.
Capsule 8-15mm long,
moderately through densely tomentose, the hairs brown or dark brown,
rarely glabrous,
moderately through densely stalked-glandular, rarely eglandular.

Seed Collections:

F 14271	1917	R 11154	1923/1924	Cox 6543	1994
F 14272	1917	R 22191	1932	AC 3598	1997
F 14274	1917	R 22210	1932	AC 3602	1997
F 14356	1917/1919	R 22277	1932	AC 3614	1997
F 14416	1917/1919	R 23564	1932	AC 3638	1997
F 18938	1917/1919	R 23579	1932	CCHH 8177	1997
F 20090	1921/1922	R 23581	1932	DGEY 039	2001
F 21751	1921/1922	R 23638	1932	DGEY 186	2001
F 21752	1921/1922	R 23647	1932	DGEY 254	2001
F 22679	1921/1922	R 23669	1932	DGEY 255	2001
F 22683?	1921/1922	R 108	1948/1949	DGEY 281	2001
R 10946	1923/1924	Cox 6538	1994	BE 12-42	2012



R. citriniflorum (R 108)

R. citriniflorum was discovered by George Forrest on the mountains of the Mekong-Salween Divide in northwest Yunnan during July 1917. The plant hunter described his find with Sir Isaac Bayley Balfour in Volume 11 of *Notes from the Royal Botanic Garden, Edinburgh,* which was published in 1919, their choice of epithet clearly signposting the lemon-yellow flowers.

The species can be identified from all the other members of Series *Haemaguinea* - the changeable thickness of the bistrate leaf abaxial indumentum notwithstanding - by the thin-walled corollas and the normally deciduous leaf bud scales, which when considered in combination with the glandular hairs present on the pedicels, ovaries and calyx (both outer surface and lobe margins) usually does the trick. Occasionally, one member of this latter trio may be found without sticky hairs, but only very rarely will all three prove to be completely eglandular.

Despite some obvious differences, *R. citriniflorum* has long been associated with *R. horaeum,* indeed John MacQueen Cowan formalised this relationship at subspecies ranking in 1940 (*Notes,* Volume 20), and the Edinburgh Revision botanists then reduced that to varietal status in 1979 (*Notes,* Volume 37). That pairing is maintained here, but at Cowan's designation, which more correctly reflects the fact that many of the character disparities are near polar opposites - for instance, deciduous rather than persistent perulae; thin rather than fleshy corollas; and the pedicel, calyx, ovary and capsule glandular rather than eglandular. Field study has also found a clear divergence in the wild distribution, with the populations of ssp. *citriniflorum* established and growing up to the 4,900m contour, while those of ssp. *horaeum* do not extend their endemicity above 4,500m.

On the ground, any number of intermediates and natural hybrids have been found, crosses between ssp. *citriniflorum* and the other *Haemaguinea* rhododendrons that grow nearby, which complicates a positive identification in the wild and where such forms have been introduced into horticulture. *R. sanguineum* is most often the donor or receiver of pollen and field study has documented extensive hybrid swarms between these two taxa. Equally, two of the *R. haematodes* subspecies - *R. catacosmum* and *R. chaetomallum* - along with *R. temenium,* have also been less than chaste.

Forrest-collected seed of *R. citriniflorum* ssp. *citriniflorum* was first available to British gardeners in 1917, with many other gatherings from the Scotsman, as well as Joseph Rock, arriving up until 1948. Peter Cox of Glendoick reintroduced the species in 1994, and close to a dozen additional lots have been returned by other Western teams through until 2012, when the Nagoya Protocol restrictions began to bite. As would be expected from such a bounty, multiple disparate forms abound in cultivation, these offering broadly upright or compact and rounded shrubs, with yellow, lemon-yellow, flushed pink, flushed red, flushed rose or bi-colour flowers (pink lobes, with a creamy-white tube). The best are those clones with pure yellow or lemon-yellow corollas - 'Brodick Form' is one of these and it is a stunner - with most others being inferior through to decidedly rank. Equally worth noting is the fact that some clones offer up no more than a handful of flower buds each season.

All the clones of *R. citriniflorum* are easy to maintain providing their drainage remains swift, and with a H5-6 hardiness rating, they can be established outdoors wherever the soil is right for rhododendron cultivation.

R. microgynum

Hardiness:

H5.

Flowering Period:

April-May.

Distribution in the wild:

SE Tibet; NW Yunnan, China.

Growing in open pine woodland, amongst bamboo, in alpine thickets and on rocky slopes, at elevations of 3,300-4,300m.

Identification:

Shrub, rounded and compact through broadly upright, 0.6 to 1.6m high;
branchlets stout, thinly white or fawn floccose-tomentose,
often sparsely short-stalked glandular, sometimes setulose.
Leaf bud scales deciduous.
Leaves elliptic through oblong-elliptic to oblong-lanceolate or lanceolate,
4 to 12cm long by 1.5 to 4cm wide,
apex acute, acuminate or obtuse, base tapering, cuneate or rounded;
upper surface dark green, somewhat rugulose;
lower surface densely tomentose, the unistrate indumentum continuous,
thin to somewhat thick, felted to semi-woolly,
brown, cinnamon-brown, fawn or buff,
composed of rosulate hairs with long and flat
ribbon-like, uncurled branches on short stems,
the midrib tomentose.
Petiole 5-16mm long, stout,
thinly white or fawn floccose-tomentose, becoming glabrescent,
eglandular and without bristles.
Inflorescence compact to loose, 3-10-flowered.
Rhachis 2-9mm long, brown or dark brown tomentose.
Pedicel 9-34mm long, tomentose,
sparsely through moderately short-stalked glandular,
the glands very small and intermixed with the hairs.
Calyx fleshy through chartaceous,
the lobes often divided to the base, each 1-3mm long,
their outer surface and margins sparsely floccose-tomentose or not,
and sparsely short-stalked glandular or not.
Corolla 2.2 to 4cm long, usually fleshy, campanulate, often widely so,
deep crimson, or more rarely rose through pale pink, sometimes faintly flecked.
Stamen filaments pubescent along the lower half or at the base.
Ovary variably brown floccose-tomentose, variably short-stalked glandular.
Style sometimes only half as long as the corolla.
Capsule 10-14mm long, straight, tomentose or not,
sparsely through moderately short- or long-stalked glandular.

Seed Collections:

F 14242	1917	F 16687	1918

Three rhododendrons, each a previous beneficiary of specific status, comprise this taxon as it has been defined by the Edinburgh Revision's botanists: *R. gymnocarpum, R. microgynum* and *R. perulatum*. Inclusion of the latter, however, is problematic.

R. perulatum was made synonymous after a reassessment found that its large and papery calyx lobes varied from chartaceous to fleshy, this state mirrored by specimens of *R. microgynum*. Yet no mention was made of the other differences that exist between *R. perulatum,* and *R. microgynum* and *R. gymnocarpum.* The persistent rather than deciduous perulae, for instance; the bistrate rather than unistrate abaxial leaf indumentum; the glandular rather than non-sticky petioles; oh, and the tubular-campanulate rather than widely campanulate corollas, the former also being pubescent within, at the base.

So sinking *R. perulatum* under *R. microgynum* broadens the botanic description.

Considerably.

A better association would be with *R. comisteum* of Subsection *Taliensia,* as outlined originally by Sir Isaac Bayley Balfour within Volume 11 of *Notes from the Royal Botanic Garden, Edinburgh,* published in 1919, this assessment confirmed by H. H. Davidian in *The Rhododendron Species,* Volume 3, 1992, who went further and decreed the two be made synonymous. Given that most experts today consider *R. comisteum* to be a natural hybrid between *R. proteoides* and *R. sanguineum,* by extension that determination must also apply to *R. perulatum,* if an arch splitter's determination holds weight. Its characteristics, therefore, should no longer influence the taxon being considered here, and this is reflected in the bullet points set out opposite.

A few marginal differences between *R. gymnocarpum* and *R. microgynum* remain, but none are sufficient to warrant a demerger, although the latter has only be found once in the wild, and the former twice. All three gatherings were made by George Forrest, with *R. microgynum* found on the rocky upper slopes of Ka-gwr-pw in the Mekong-Salween Divide during July 1917 at 3,660m, and *R. gymnocarpum* encountered almost exactly a year later in July 1918, higher up the same mountain at 4,270m. Location-wise, Ka-gwr-pw is near Tsarong in southeast Tibet. The third collection occurred in October 1918 and took place on the mountains of Yunnan, northeast of Chungtien (Zhongdian), also at 3,660m, but only samples of the foliage were gleaned for the herbarium.

Forrest described *R. microgynum* jointly with Balfour in 1919's Volume 11 of *Notes,* and working with Harry Tagg, *R. gymnocarpum* in 1927's Volume 15. The species is allied to *R. sanguineum,* but distinguished from it when in flower by the campanulate rather than tubular-campanulate corolla shape, plus the usually sticky ovaries. When out of flower, by the felted to semi-woolly and slightly thicker abaxial leaf indumentum, and when oblong-lanceolate through lanceolate, the leaf shape. The distinctly recurved leaf margins are an additional key. Suggestions that the species might better be associated with the Series *Floccigera* rhododendrons are ruled null and void by the truncate ovary.

Seed of *R. microgynum* was introduced into the UK by Forrest in 1917 under the field number F 14242, with the contents of some Gymnocarpum Group capsules arriving a year later and covered by F 16687. The latter has flowers of a deep rich crimson, present in quantity on mature plants, with even youngsters quite floriferous from an early age. Cultivation is without problem, the species adopting a rounded dome shape over time, and reaching to between 1 and 1.5m in height. Hardiness is good and growth vigorous.

Rose-pink flowered forms from the first introduction are now a rare find in British gardens, these plants more compact and slightly lower growing than the red-bloomed plants from the same collection.



R. microgynum (F 14242)



R. microgynum (F 14242)



R. microgynum



R. microgynum (F 16687)

R. temenium* var. *temenium

Hardiness:
H5-6.
Flowering Period:
April-May.
Distribution in the wild:
The border regions between SE Tibet and China's Yunnan Province.
Growing in alpine thickets, on moorland, rocky slopes and cliffs,
at elevations of 3,000-4,600m.

Identification:
Shrub, compact and rounded, 0.3 to 1.5m high;
branchlets thinly white floccose-tomentose or not,
moderately through densely setulose, rarely setulose-glandular,
sometimes displaying swollen verrucae with age.
Leaf bud scales deciduous.
Leaves oblong through oblong-elliptic to elliptic,
3.5 to 8cm long by 1.2 to 3cm wide,
apex rounded or obtuse, base broadly cuneate, obtuse or rounded,
decurrent on the petiole;
upper surface dark green, the midrib floccose or not,
setulose at the base, along the lower half or without bristles;
lower surface glaucous-papillate,
glabrous or with the vestiges of a whitish floccose-tomentum
especially on the midrib and main veins, these hairs rosulate with short arms.
Petiole 4-15mm long, the margins narrowly winged or ridged,
thinly white floccose-tomentose, becoming glabrescent,
setulose or rarely setulose-glandular.
Inflorescence compact, 2-6-flowered.
Rhachis 2-6mm long, brown-pubescent.
Pedicel 9-20mm long,
usually moderately through densely brownish tomentose, setulose.
Calyx cupular or not,
the lobes divided to the middle or the base, each 2-5-10mm long,
their outer surface glabrous and eglandular, their margins ciliate.
Corolla 3 to 4.5cm long, fleshy, tubular-campanulate through campanulate,
crimson through carmine, or yellow.
Ovary densely tomentose, occasionally sparsely glandular.
Capsule 8-19mm long, straight,
sparsely through moderately tomentose or with the vestiges of hairs,
occasionally sparsely glandular.

Seed Collections:

F 14364	1917	F 22730*	1921/1922	R 23593	1932
F 14365	1917	KW 5435	1922	R 23617	1932
F 16702	1917/1919	R 10909	1923/1924	R 23629	1932
F 20071	1921/1922	R 10941	1923/1924	R 23640*	1932
F 20889	1921/1922	R 10951*	1923/1924	Yu 20611	1937
F 21733*	1921/1922	R 10952	1923/1924	Yu 20931	1937
F 21734	1921/1922	R 11214	1923/1924	Yu 23277	1937
F 21782	1921/1922	KW 5878	1924/1925	R 104	1948/1949
F 21809	1921/1922	R 22271*	1932	R 114	1948/1949
F 21844*	1921/1922	R 22272*	1932	R 125a	1948/1949
F 21914*	1921/1922	R 22290*	1932	R 171	1948/1949
F 22699*	1921/1922	R 22292*	1932	Cox 6037a	1992
F 22697*	1921/1922	R 22298*	1932		

Field numbers marked with an asterisk (*)
denote collections of *R. temenium* var. *temenium* Gilvum Group.


R. temenium (R 114)

R. temenium* var. *dealbatum

Hardiness:
H5-6.
Flowering Period:
April-May.
Distribution in the wild:
The border regions between SE Tibet and China's Yunnan Province.
Growing in alpine thickets and on rocky slopes at elevations of 3,600-4,300m.

Identification:
as var. *temenium* except:
Branchlets sparsely setulose, sometimes without bristles,
sparsely stalked-glandular.
Inflorescence loose, 2-4-flowered.
Pedicel sparsely setulose, sometimes without bristles,
sparsely stalked-glandular.
Corolla white through deep rose-pink.

Seed Collections:

F 19960	1921/1922
F 21744	1921/1922
F 21901	1921/1922
F 21902	1921/1922
F 21903	1921/1922
F 21904	1921/1922
F 22695	1921/1922
F 22698	1921/1922
R 22070	1932
Yu 19373	1937
R 60	1948/1949
R 113	1948/1949
DGEY 278	2001
DGEY 269	2001

George Forrest continued his aggregation of the Series *Haemaguinea* flock during July 1917 by finding *R. temenium* resident on Ka-gwr-pw, and *R. glaphyrum* geographically close by, but on the Salween-Kiu Chiang Divide. Both plants were described jointly with Sir Isaac Bayley Balfour, the former in Volume 11 of *Notes from the Royal Botanic Garden, Edinburgh,* the latter in Volume 13, respectively published in 1919 and 1920. Then, in 1921, soon after resuming his exploration of the Salween-Kiu Chiang Divide, the Scotsman discovered *R. dealbatum,* though initially this was regarded as another gathering of *R. glaphyrum.* Fast-forward to 1940, and after a re-examination of the herbarium specimens, plus those plants now growing in cultivation, John MacQueen Cowan determined that *R. glaphyrum,* and newly-conceived *R. dealbatum,* should both be subspecies of *R. temenium* (*Notes,* Volume 20). This allowed David Chamberlain to sink *R. glaphyrum* under *R. dealbatum* after yet another re-examination in 1979 without so much as even ruffling the nomenclature rules, and to opt for varietal status at the same time (*Notes,* Volume 37).

The two varieties of *R. temenium* are separated by the quantity of bristles present on their branchlets and pedicels; by the carriage of their inflorescence; and by their flower colour. If the specimen being examined is strongly setulose, with a tight and dense flower truss, and crimson through carmine or yellow corollas, var. *temenium* will be to hand. If devoid of bristles, or when these are only weakly present, more especially if there is also a sparse scattering of stalked-glandular hairs on the branchlets and pedicels, the flower truss is fairly lax and the corollas are white through deep rose-pink, then var. *dealbatum* will be the object of your attention.



R. dealbatum (R 113)

The Edinburgh Revision texts additionally recognised and described a third variety, namely *R. temenium* var. *gilvum*.

This taxon has yellow corollas, but no other feature differences to separate it from var. *temenium,* which in David Chamberlain's full *Hymenanthes* monograph of 1982 vintage (*Notes,* Volume 39, Number 2) was constrained to crimson through carmine corollas. On the ground, field study has now shown that the distributions of the two varieties are mirrored, without any niche populations, and as indicated previously, flower colour alone cannot be used to justify a ranking division. Synonymy must therefore be applied, with var. *gilvum* sunk under var. *temenium,* and Gilvum Group consecrated for any rhodophile suffering acute withdrawal symptoms.

Keying *R. temenium* from all the other Series *Haemaguinea* members relies on the leaf morphology, a glaucous and near glabrous state below distinguishing it from all in the crowd apart from *R. aperantum* and *R. parmulatum*. The usually heavily spotted corollas of *R. parmulatum* are a no-brainer when the plants are in flower, but at other times, reliance will need to be placed on the petiole margins - unwinged and without narrow ridges - and the upper leaf surface - rugulose rather than smooth. Leaf shape is the determinant with regard to *R. aperantum,* these being lanceolate through oblanceolate, rather than oblong through elliptic, and in addition, crowded in whorls at the shoot tips, and often subsessile. The young shoots of *R. aperantum* are, moreover, completely devoid of bristles.

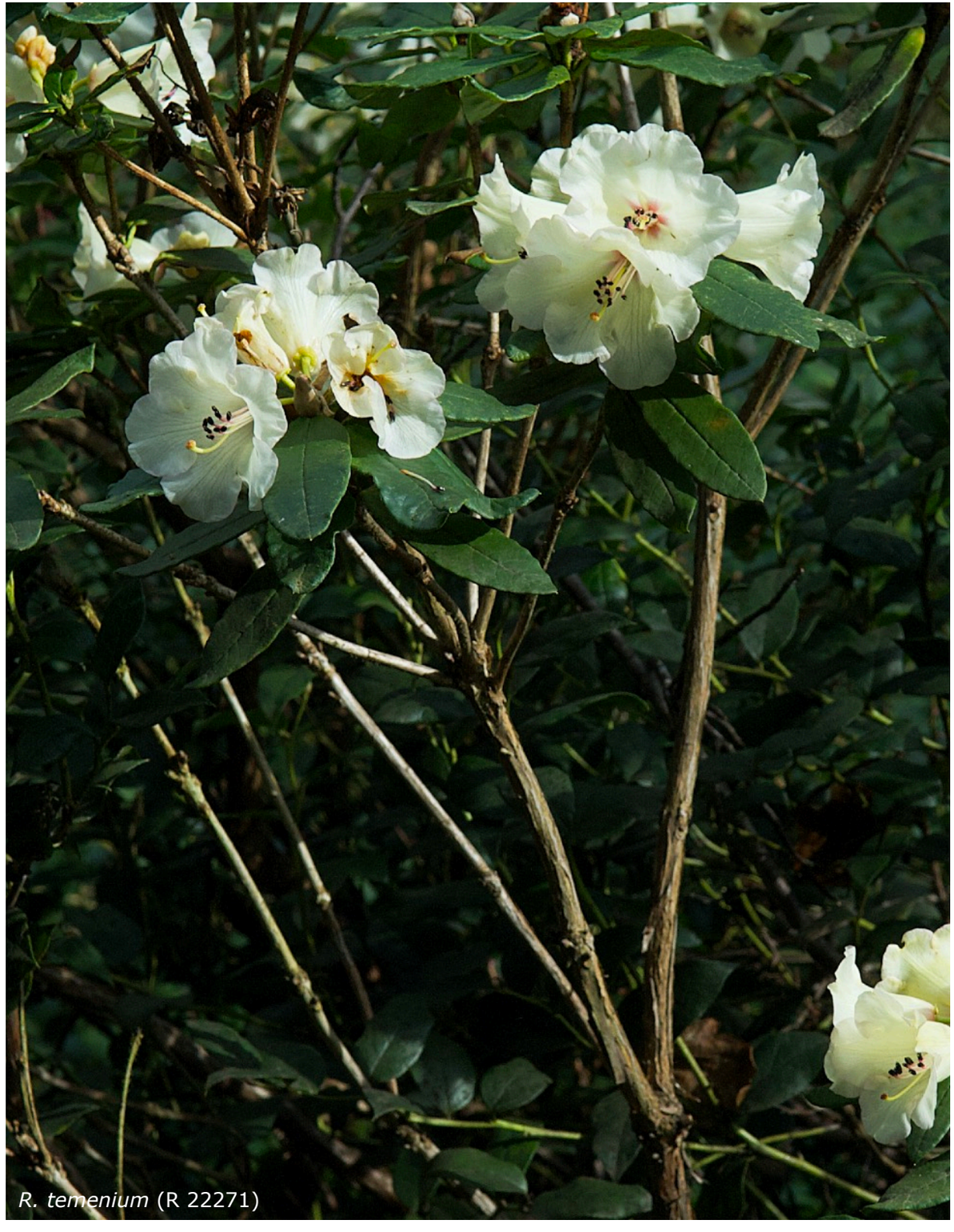
R. temenium is also quite closely allied to *R. sanguineum,* but lacks even the thinnest trace of an abaxial indumentum.

Complicating the endemic situation are yellow-flowered intermediates between the natural hybrid *R. x himertum* and *R. temenium* var. *temenium* Gilvum Group. These have setose or setulose shoots, plus a thin discontinuous abaxial leaf surface tomentum, beneath which lurks an epapillate lower epidermis. Previously given specific status as *R. fulvastrum* by Balfour and Forrest - writing in *Notes,* Volume 13 - they are now considered to be natural hybrids, so are here regarded as *R. x fulvastrum*. Some botanists determine the award-winning 'Cruachan' clone to be a member of this swarm, others that it is a member of Gilvum Group. The plant was shown to the RHS as *R. chrysanthemum,* then a subspecies of *R. temenium* courtesy of Cowan's 1940 'Sanguineum Alliance' review, but which was sunk under var. *gilvum* in the Edinburgh Revision, and so by extension, herein, part of Gilvum Group.

George Forrest introduced var. *temenium* into British gardens in 1917, var. *dealbatum* - as the now synonymous *R. glaphyrum* - in 1921-22, and the equally sunk var. *gilvum* in 1922. Joseph Rock takes the credit for *R. x fulvastrum,* which arrived a decade later in 1932, some thirteen years after its discovery on the Salween-Kiu Chiang Divide by Forrest during July 1919. Peter Cox reintroduced var. *temenium* into British gardens in 1992, Steve Hootman, Jens Nielsen and Peter Wharton doing the same for var. *dealbatum* under two DGEY field numbers during 2001.

Both accepted varieties of the species remain compact in cultivation, developing into flat-topped or dome-shaped specimens around 1m high, well-filled with foliage. A cool site is preferred, with the soil draining fast but not drying-out. Plants are hardy, with a H5-6 rating, but should be sheltered from the wind, yet not subject to too much shade, which will inhibit an otherwise free-flowering nature once mature.

The specific species epithet apparently references the original discovery site near the Doker La pass, an area sacred to Tibetan Buddhists.



R. temenium (R 22271)

R. temenium (R 22272) ‘Cruachan’

R. chaetomallum (F 25601)

R. haematodes* ssp. *chaetomallum

Hardiness:
H5.
Flowering Period:
March-May.
Distribution in the wild:
SE Tibet; NW Yunnan, China; Arunachal Pradesh, India; NE Upper Myanmar.
Growing in conifer and bamboo forests, alpine thickets, scrub and open meadows,
amongst rocks and boulders, on cliffs and crags,
at elevations of 3,000-4,600m.

Identification:
Shrub, compact, rounded or broadly upright, 0.6 to 3m high;
branchlets sparsely through moderately tomentose, the hairs brown, pale brown or whitish,
or glabrous,
moderately through densely setose,
the bristles stout.
Leaf bud scales deciduous.
Leaves thick, obovate through oblong,
4.2 to 12.5cm long by 1.8 to 5.5cm wide,
apex rounded, rarely obtuse, base cuneate through rounded;
upper surface pale or olive-green, somewhat rugulose, matt;
lower surface densely tomentose, the bistrate indumentum thick, woolly and continuous,
pale through dark fawn, brown or dark brown,
the upper layer thick, matted, continuous, composed of dendroid hairs,
the lower layer thin, continuous, composed of whitish, compacted rosulate hairs.
Petiole 4-16mm long, grooved above,
variably tomentose, the hairs brown, pale brown or whitish,
moderately through densely setose,
the bristles stout.
Inflorescence compact, 4-12-flowered.
Rhachis 4-10mm long, brown-tomentose, setose or not.
Pedicel 10-30mm long, sometimes tomentose, usually not,
moderately through densely setose.
Calyx cupular, often crimson-coloured,
the lobes divided to the middle or to the base, each 3-20mm long,
their outer surface glabrous, their margins ciliate or glabrous.
Corolla 3.2 to 5.3cm long, fleshy, tubular-campanulate,
scarlet through deep crimson.
Stamen filaments occasionally pubescent at the base.
Ovary 5-10-locular, densely tomentose, the hairs brown or rufous,
sometimes setose.
Style sometimes tomentose at the base.
Capsule 8-23mm long, variably tomentose or glabrous,
moderately through densely setose.

Seed Collections:

F 14987	1917	R 10918	1923/1924	R 22187	1932
F 16691	1918	R 10984	1923/1924	R 22188	1932
F 17330	1918/1919	R 10985	1923/1924	R 22197	1932
F 18917	1918/1919	R 10989	1923/1924	R 22199	1932
F 19911	1921/1922	R 11081	1923/1924	R 22211	1932
F 19955	1921/1922	R 11156	1923/1924	R 22304	1932
F 19959	1921/1922	R 11175	1923/1924	R 22305	1932
F 19978	1921/1922	R 11184	1923/1924	R 22306	1932
F 20015	1921/1922	R 11204	1923/1924	R 22466	1932
F 20025	1921/1922	R 11227	1923/1924	R 23294	1932
F 20026	1921/1922	F 25597	1924/1925	R 23304	1932
F 20215	1921/1922	F 25601	1924/1925	R 23305	1932
F 20299	1921/1922	F 25602	1924/1925	R 23306	1932
F 20333	1921/1922	F 25607	1924/1925	Yu 20609	1937
F 21758	1921/1922	F 25862	1924/1925	Yu 20738	1937
F 21826	1921/1922	R 18359	1929	R 13	1948/1949
F 21831	1921/1922	R 18389	1929	R 22	1948/1949
F 21857	1921/1922	R 18406	1929	R 39	1948/1949
F 21872	1921/1922	F 30539	1930/1931	R 40	1948/1949
F 21873	1921/1922	KW 9608	1931	R 41	1948/1949
F 22657	1921/1922	KW 9637	1931	R 52	1948/1949
F 22658	1921/1922	R 22004	1932	R 166	1948/1949
F 22688	1921/1922	R 22058	1932	JN 493	1996
F 22857	1921/1922	R 22059	1932	JN 762	1999
F 22883	1921/1922	R 22065	1932	HECC 10018	2002
KW 5431	1922	R 22066	1932	HECC 10066	2002
		R 22069	1932		

R. chaetomallum was discovered on Mount Ka-gwr-pw, in the Mekong-Salween Divide of southeast Tibet, by George Forrest during October 1917. Writing in Volume 12 of *Notes from the Royal Botanic Garden, Edinburgh,* published in 1920, the plant hunter described the find jointly with Sir Isaac Bayley Balfour.

Field study has found that the populations of *R. chaetomallum* and *R. haematodes* merge in northwestern Yunnan, with considerable overlap observed. Distinct communities of both species are found elsewhere, respectively to the east and southwest. This required a reduction in rank to subspecies status, which was formerly set out in the second part of the Edinburgh Revision *Preliminary Synopsis* paper (*Notes,* Volume 37, 1979).

The comparative quantities of hard to soft hairs on the branchlets and petioles key the two taxa apart, so a dense concentration of stout bristly hairs, with a consequent reduction to just a sparse covering of pliable follicles, indicates ssp. *chaetomallum,* while the reverse, with any remaining bristles fairly slender, ssp. *haematodes*. Other differences include stature and leaf size, with ssp. *haematodes* being lower and smaller, having a smooth rather than somewhat wrinkled upper leaf surface, and an abaxial indumentum that is more spongy than woolly. As indicated previously above, the third member of the grouping, ssp. *catacosmum,* has a morphology that falls between the two, its foliage, although a touch longer and wider, matching ssp. *chaetomallum,* while the bristle-to-hair ratios and growth habit conform with ssp. *haematodes. R. catacosmum* also bears cupular calyx lobes that are never less than 13mm long, but frequently closer to twice that in length, which give the flowers an almost azalea-like hose-in-hose appearance.

A number of rhododendrons found in the wild and introduced into British gardens share many of the characteristics of ssp. *chaetomallum* and previously, were botanically associated with it:

R. chionanthum.

White flowers and a patchy discontinuous unistrate indumentum apart, the remaining character set includes features that in the past placed this taxon in close alliance with ssp. *chaetomallum*. Discovered, collected and introduced by George Forrest in 1924, the sole gathering being F 25564, the consensus now casts the find as a natural hybrid, the reasoning behind this duplicating that underlying the *R. x hemidartum* status reduction (elucidated herein within the *R. coelicum* entry on page 72). As well, the taxon is thought no longer to be in UK cultivation.

R. hillieri.

This plant is considered synonymous under ssp. *chaetomallum* by some authors, but as a natural hybrid incorporating the genes of *R. catacosmum, R. citriniflorum* and *R. temenium* by others. Significantly, field study has shown that the taxon only occurs in areas where hybrid swarms predominate and moreover, determined that ssp. *chaetomallum* was not part of the parentage mix, as it was absent from at least one of these locations, notably Si-chi-to on the Salween-Kiu Chiang Divide. Therefore it was *R. x hillieri* that George Forrest first found, gathered-up and introduced in 1922.

R. hemigymnum.

Yet another of the Scotsman's finds from the Salween-Kiu Chiang Divide, the taxon was first encountered at Tsarong in June 1922, but later also collected off the western flank of the same mountain chain in northeast Upper Myanmar. However, like *R. x chionanthum,* the indumentum is the giveaway, as it is usually never more than a thin veil of hairs. The leaf shape, less populated flower truss and wider-opening, more campanulate corollas, also call the association with ssp. *chaetomallum* into question. David Chamberlain lists it as a hybrid between *R. eclecteum* and *R. pocophorum* in his full Edinburgh Revision Subgenus *Hymenanthes* paper (*Notes,* Volume 39, 1982), a view that is now widely endorsed.

R. chaetomallum var. *xanthanthum.*

This plant was also discovered near Tsarong in June 1922 by the prodigious Mr Forrest and has creamy-yellow flowers that are flushed, striped or margined with pale rose or crimson, the corollas often being up to 6cm long on a rounded shrub around 1.5m high. Where endemic, specimens exclusively populate the same indiscriminate hordes as *R. x hillieri,* so their treatment as natural hybrids is a foregone conclusion.

R. chaetomallum var. *chamaephytum.*

A 1938 Ludlow, Sherriff and Taylor discovery made at Singo Samba, Lo La Chu, which is apparently near Molo in southeastern Tibet, the variety was described by John MacQueen Cowan in *Notes,* Volume 21, this published in 1953. The taxon is a dwarf shrub, prostrate and creeping, never more than 0.6m high, which grows over rocks in mixed evergreen woodland close to the 4,000m contour. Until the autumn of 2002, the variety was absent from UK cultivation, but then Peter and Kenneth Cox, Philip Evans and Peter Hutchison stumbled upon a group of plants in Arunachal Pradesh and gathered up the ripe capsules under HECC 10018. The postulated view is that this too is a natural hybrid, the result of a cross between one of the varieties of *R. forrestii* and *R. haematodes* ssp. *haematodes,* although the team also found bog-standard specimens of ssp. *chaetomallum* established in the same general area. All agree more field study is required before a decision can be taken on the taxon's status, but it is treated herein as Chamaephytum Group in anticipation of that work.

R. haematodes ssp. *chaetomallum* was introduced into British gardens by George Forrest in 1917. Some seventy-odd batches of Forrest, Kingdon-Ward, Rock or Yu seed followed, the lots arriving up until 1949, but since then, only Jens Nielsen has come upon the species in Yunnan - gathering capsules twice; during the autumn of 1996 and again in 1999 - with the aforementioned HECC team's encounter in Arunachal Pradesh occurring some three years later, this also extending the known endemicity into northeast India.

Regrettably, cultivation reports are as varied as the forms found in the UK's woodland gardens, though today, the subspecies is rarely available in commerce even from the specialist nurseries. Peter and Ken Cox report that plants growing at Glendoick - their horticultural emporium located midway between Perth and Dundee overlooking the mouth of the River Tay - are often short-lived and exhibit partial branch die back (*Encyclopaedia of Rhododendron Species,* 1997). In comparison, sizeable specimens that are probably well over ninety years old can be found at Exbury and Muncaster - respectively, on the Hampshire coast, opposite the Isle of Wight, and directly adjacent to the Irish Sea in west Cumbria - with one venerable, early-flowering example at the latter garden in tip-top health despite being blown over in a wild gale several years ago. That particular specimen benefits from being planted on a fast draining, wooded hillside that offers excellent protection from the usual onshore wind, the site in fact allowing the plant to layer, in-situ where it fell, the old root ball still partially in the ground and providing sustenance.

The species epithet translates as 'with woolly hair'.



R. chaetomallum



R. chaetomallum



R. chaetomallum (F 25601)

R. coelicum (KW 21075)

R. coelicum* var. *coelicum

Hardiness:
H5.
Flowering Period:
April-May.
Distribution in the wild:
W Yunnan, China; NE Upper Myanmar.
Growing amongst bamboo, on shaded screes, in shaded creek gullies, and on cliffs,
at elevations of 2,700-4,400m.

Identification:
Shrub, compact and bushy through upright, 1 to 2m high;
branchlets eglandular or sparsely short-stalked glandular,
sometimes sparsely tomentose.
Leaf bud scales deciduous.
Leaves thick, obovate through oblong-obovate,
5.4 to 9.5cm long by 2.7 to 4.7cm wide,
apex rounded, base obtuse or rounded;
upper surface dark green, never glaucous, shiny;
lower surface densely tomentose,
the unistrate indumentum thick, woolly and continuous,
brown, fulvous or rufous,
composed of dendroid hairs with long, multiply twisted branches.
Petiole 8-15mm long, stout, eglandular or sparsely short-stalked glandular,
sometimes sparsely tomentose.
Inflorescence compact to loose, 6-15-flowered.
Rhachis 5-7mm long, tomentose, the hairs cinnamon or brown, eglandular.
Pedicel 7-10mm long, sparsely short-stalked glandular,
sometimes with the remnants of an initially present tomentum.
Calyx cupular, fleshy, crimson or red,
the lobes divided to the middle or to the base, each 3-8mm long,
their outer surface glabrous and eglandular, their margins ciliate-glandular.
Corolla 3.4 to 4.5cm long, fleshy, tubular-campanulate,
deep scarlet through deep crimson.
Ovary densely short-stalked glandular, brownish tomentose or not.
Style sometimes short-stalked glandular at the base.
Capsule 10-18mm long, straight or curved,
short-stalked glandular, brownish tomentose or not.

Seed Collections:

F 25625	1924	F 25870	1925
F 25647	1924	KW 10134	1931
F 25834	1925	KW 21075	1953
F 25856	1925	KW 21077	1953

R. coelicum* var. *pocophorum

Hardiness:
H4-5.
Flowering Period:
March-April.
Distribution in the wild:
SE Tibet; NW Yunnan, China; Arunachal Pradesh, India; NE Upper Myanmar.
Growing in and at the margins of bamboo and conifer forest, in thickets,
on open rocky slopes or meadows, and on crags,
at elevations of 3,300-4,600m.

Identification:
as var. *coelicum* except:
Shrub, compact and rounded through upright, 0.6 to 3m high;
branchlets densely short- or medium-stalked glandular, not tomentose.
Leaves obovate through oblong,
6 to 16cm long by 2.4 to 7cm wide,
apex distinctly mucronate, base cuneate, obtuse or more rarely rounded;
upper surface sometimes with a glaucous bloom, the margins usually flat.
Petiole 8-26mm long,
moderately through densely variably-stalked glandular, tomentose or glabrous.
Inflorescence 6-20-flowered.
Rhachis 5-10mm long, short-stalked glandular or eglandular.
Pedicel 7-20mm long,
moderately through densely short- or medium-stalked glandular, not tomentose.
Calyx lobes 3-14mm long.
Corolla 3.6 to 5.3cm long, some forms with darker spotting.
Ovary not tomentose.
Capsule 10-25mm long,
moderately through densely short-stalked glandular, rarely brownish tomentose.

Seed Collections:

F 19977	1921	F 21830	1922	R 11163	1923/1924
F 19983	1921	F 22894	1922	R 11201	1923/1924
F 20019	1921	F 22909	1922	KW 8289	1927/1928
F 21711	1922	F 22911	1922	R 22001	1932
F 21712	1922	F 22912	1922	R 22002	1932
F 21713	1922	F 22913	1922	BE 09-07	2009
F 21720	1922	F 22916	1922	BE 09-09	2009
F 21721	1922	KW 5484	1922	KR 9945	2010
F 21828	1922	R 11155	1923/1924	TDA 626	2014

H. H. Davidian, writing in Volume 3 of *The Rhododendron Species,* published in 1992, states that credit for the discovery of *R. coelicum* was in fact wrongly assigned to Reginald Farrer and that Frank Kingdon-Ward should have been the true recipient - for a June 1919 find, made near the village of Laktang, in Hsawlaw Township, Myityina District, Kachin State, northeastern Upper Myanmar. Farrer's specimens, collected in May 1920 not too far away at the Chawchi Pass, were however, the first to be recognised as a new species and described by Sir Isaac Bayley Balfour from the Yorkshireman's dried material and field notes in Volume 13 of *Notes from the Royal Botanic Garden, Edinburgh,* which went to press in 1922.

There is no dispute over who found *R. pocophorum,* with George Forrest being logged as the first Western plant hunter to encounter the species, doing so at Tsarong, on the Salween-Kiu Chiang Divide in southeast Tibet, during September 1919. The botanic description for the new-to-science species was begun by Balfour and completed by Harry Tagg, their text appearing in 1927's Volume 15 of *Notes*.

Botanists and horticulturalists all agree that *R. coelicum* is very closely allied to *R. pocophorum,* differing only in overall height, leaf and calyx lobe size, the quantity of glands on the young stems, and the presence or not of hairs on some of the appendages, which is not cut and dried, because the characteristic is variable for *R. coelicum*. Some suggest that *R. coelicum* may be an extreme form of *R. pocophorum* or alternatively, a natural hybrid, but two factors militate against this. Firstly, it is very well established on the ground, with Farrer, for instance, describing mile after mile of scarlet flowering plants at Chawchi - 'blots of colour poking out above the snow' is the oft-used quote from his field notes. Secondly, Forrest found identical specimens on the Salween-Kiu Chiang Divide in western Yunnan. Populations of *R. pocophorum* are found close to both of these sites, with the two taxa actually sharing a near identical overlapping distribution, both in altitude and location. For these reasons, they are here considered varieties of the same species. In an ideal world, *R. pocophorum* would take pride of place, as this is by far the more widely grown of the two shrubs in British gardens, but the botanic description for *R. coelicum* was published first and so takes precedence.

Both plants can be keyed from the other members of the series by considering in combination: the unwrinkled upper leaf surface; the thick and woolly, single-layered and continuous abaxial tomentum; and the densely glandular ovary.

In August 1921, George Forrest found another member of the Subsection *Neriiflora* clan at Tsarong, on the Salween-Kiu Chiang Divide - *R. hemidartum*. This was described by Balfour and Tagg in *Notes,* Volume 15, and given specific status. However, following a re-examination by David Chamberlain for the Edinburgh Revision, this ranking was reduced and the plant placed as a variety of *R. pocophorum.* The current consensus is that its 'half-flayed' and patchy abaxial indumentum is actually indicative of a natural hybrid, with the flower truss and leaf shape displayed by the type specimen - collected under the field number F 20028 - providing further visual confirmation that this view is correct, even though all three plants share the same kind of tomentum hair, namely dendroid, with long and much twisted branches. Thus, *R. x hemidartum* herein.

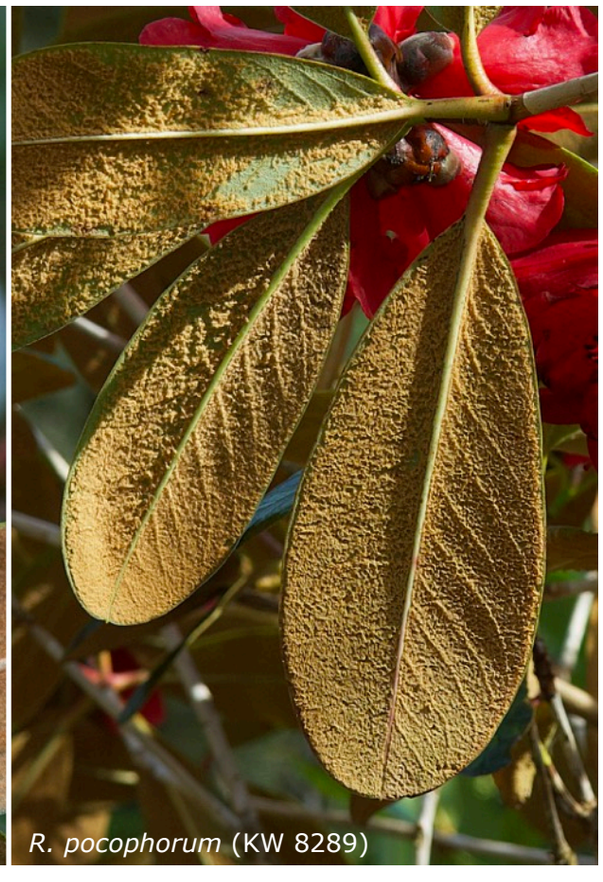
Forrest introduced five gatherings of *R. coelicum* var. *coelicum* across his 1924-1925 expedition, with two Kingdon-Ward re-introductions following - the first in 1931 and then two batches of seed in 1953. Since then however, the species has eluded any modern-day collecting team. The taxon is slightly later flowering than var. *pocophorum* in UK cultivation and if grown in the country's more northerly climes, the foliage on some clones has been found to be semi-deciduous if not near deciduous, with the leaves retained for just a year at most, usually less. Some authors also report the plant as a weak grower, while others state that it is fully hardy and of sturdy habit, locale the likely cause of such discrepancies. The epithet translates as 'heavenly' and specimens are certainly that when in flower.

R. coelicum var. *pocophorum* was also introduced into British gardens by George Forrest, with three seed lots arriving in 1921 and a further slew the following year. Unlike var. *coelicum* however, post a total of seven additional gatherings made by Kingdon-Ward and Rock, and then a gap of seventy-seven years, var. *pocophorum* revealed itself to the Danish plant hunter Bent Ernebjerg in 2009, to Keith Rushforth in 2010, and to Timothy Atkinson in 2014, the former securing Myanmarese seed, the latter two gentlemen coming upon the species in the Anjaw District of India's Arunachal Pradesh. Reports on the ease of cultivation vary greatly again, but specimens will be seen thriving in gardens up and down the country where the drainage is swift, dappled shade is provided and repeated yearly frostings do not hit the vegetative buds as they begin to swell or damage the new growth as it emerges. East coast and inland sites will therefore need to provide extra shelter to achieve this blissful state.

Two forms of var. *pocophorum* are resident in UK gardens and often available in commerce: an upright shrub to around 2m high, with an open and spreading habit that bears crimson-scarlet corollas in loose trusses; and a slightly taller clone, rounded and dome-shaped, with slightly larger leaves and corollas, the latter deep crimson and in a more populous, tighter truss. Both, when happy, make superb specimen plants, with the shiny foliage always striking, but the second, when covered head to foot in bloom, is simply sublime.



R. coelicum (F 25625)



R. pocophorum (KW 8289)

R. pocophorum




R. coelicum (KW 21075)


R. coelicum (KW 21075)


R. coelicum (KW 21075)



R. pocophorum (KW 8289)



R. pocophorum



R. pocophorum

R. aperantum

Hardiness:
H5.
Flowering Period:
April-May.
Distribution in the wild:
NW Yunnan, China; NE Upper Myanmar.
Growing in rhododendron thickets, open meadows and on cliffs,
at elevations of 3,600-4,500m.

Identification:
Shrub, dense and matted, spreading or rounded,
0.1 to 0.6m high, but to 1.5m in shade;
branchlets floccose-tomentose, the hairs whitish or fawn, or glabrous,
rarely medium-stalked glandular.
Leaf bud scales persistent along the whole stem.
Leaves subsessile, crowded in whorls at the shoot tips,
lanceolate through oblanceolate to obovate,
2 to 6.5cm long by 1 to 2.8cm wide,
apex rounded, rarely acute,
base tapered, cuneate, or obtuse, decurrent on the petiole;
upper surface dark green, somewhat rugulose, the margins recurved;
lower surface usually glaucous, white or whitish, the epidermis waxy-papillate,
glabrous at maturity or sparsely white-floccose,
any hairs most likely present on the midrib and the main veins.
Petiole 3-6mm long, broad, the margins winged,
sparsely through moderately floccose-tomentose at first, the hairs whitish or fawn,
becoming glabrescent or glabrous.
Inflorescence loose, 2-6-flowered.
Rhachis 2-5mm long, brown-floccose.
Pedicel 10-30mm long, moderately through densely floccose-tomentose,
sometimes long-stalked glandular.
Calyx cupular, each lobe 2-10mm long,
their outer surface glabrous and eglandular, their margins ciliate-glandular or not.
Corolla 2.8 to 4.8cm long, thin, tubular-campanulate,
white, yellow flushed pink or rose, orange, orange-red, red or crimson,
sometimes with mixed colours.
Ovary densely rufous-tomentose, the hairs long and coarse,
sometimes with a few glandular hairs.
Capsule 8-20mm long, straight,
variably tomentose, the hairs brown or dark brown,
and sometimes medium- or long-stalked glandular.

Seed Collections:

KW 3301	1919	F 27572	1924/1925
F 26925	1924/1925	F 27576	1924/1925
F 26926	1924/1925	F 27579	1924/1925
F 26930	1924/1925	F 27584	1924/1925
F 26931	1924/1925	F 27587	1924/1925
F 26933	1924/1925	F 27590	1924/1925
F 26934	1924/1925	F 27597	1924/1925
F 26936	1924/1925	F 27604	1924/1925
F 26937	1924/1925	F 27630	1924/1925
F 26938	1924/1925	F 27636	1924/1925
F 26964	1924/1925	F 27640	1924/1925
F 27002	1924/1925	F 27645	1924/1925
F 27020	1924/1925	F 27648	1924/1925
F 27022	1924/1925	F 27651	1924/1925
F 27025	1924/1925	F 27666	1924/1925
F 27073	1924/1925	R 18352	1929
F 27075	1924/1925	R 18354	1929
F 27077	1924/1925	F 29938	1930/1931
F 27079	1924/1925	F 30534	1930/1931
F 27081	1924/1925	F 30536	1930/1931
F 27083	1924/1925	JN 498	1997
F 27111	1924/1925	JN 499	1997
F 27467	1924/1925	JN 768	1999
F 27474	1924/1925	BE 15-10	2015
F 27483	1924/1925	BE 15-20	2015
F 27486	1924/1925	BE 15-24	2015
F 27491	1924/1925	BE 15-28	2015
F 27493	1924/1925	BE 15-38	2015

The botanic description for *R. aperantum,* jointly penned by Sir Isaac Bayley Balfour and the plant hunter who first discovered the species, Frank Kingdon-Ward, appears in Volume 13 of *Notes from the Royal Botanic Garden, Edinburgh,* published in 1922. The initial find was made three years earlier during July 1919, on the western spur of Imaw Bum, a 3,810m-high mountain in northeastern Upper Myanmar. Here, the species formed thick matted carpets on the rocks and slopes.

Twelve months later, Reginald Farrer encountered *R. aperantum* while exploring the terrain of Myanmar's Chawchi Pass. His field notes describe extensive populations of dwarf plants, no more than 8 to 20cm high, spreading for miles on the high alpine slopes.

George Forrest too would come across the species, for the first time in 1924, and his commentary on the encounter details 1m-tall specimens, which grew as tangled masses in open rocky meadows.

That biogeography portends difficulties in cultivation, and so it has proved, with a cool position, ideally north facing and open to the sky, plus very good drainage, essential prerequisites. Too much overhead or side-on shade results in a much leggier habit, likely unavoidable in the UK's southern gardens as such will be needed to keep the roots from baking and the leaves from scorching. However, the result of maintaining this extra ration of TLC will prove well worth the effort - a flat-topped and spreading low shrub, almost completely covered each season in lax trusses of up to six corollas. When mature. For the species is also slow to begin budding-up.

Prospective purchasers should be aware of the pink, rose and creamy-white clones sometimes available from the specialist nurseries, as these are often inferior in bloom to those fêted with brilliant red.

On a positive note, *R. aperantum* is one of the easiest Subsection *Neriiflora* plants to identify. First, because the tightly packed whorl of narrow leaves clustered at each branch tip on very short petioles - technically regarded as 'subsessile' - are an obvious and striking feature. Next, because the stems themselves are covered from top to bottom with the remains of the leaf bud scales. Then, if you turn those smallish, oblanceolate-shaped blades over, their lower surface will be found to be without a cloak of indumentum, apart from a sparse freckling of hairs on the midrib and primary veins, and instead, seen to be white, and waxy, and glaucous, this due to cells on the abaxial epidermis being prolonged into papillae. And lastly, confirmation of a correct diagnosis is provided by the winged margins on the petioles, formed by a decurrent and tapering leaf base.

Specimens matching that description, but having a patchy, unistrate, leaf abaxial indumentum - grown from Forrest's F 25563 collection, which equals F 25878 (the number duplication explained in Volume One) - are now regarded as natural hybrids, despite being originally described as *R. aperantum* var. *subpilosum* by John MacQueen Cowan in his 1940 'Sanguineum Alliance' review (contained inside *Notes,* Volume 20).

A number of authors have remarked on the wide range of corolla colour exhibited across the endemic populations and speculated that this might be down to hybridisation, although there is currently no move afoot to reclassify the non-red forms as field study or DNA evidence to support such is lacking. Moreover, many other members of the subsection display an equally diverse pigmentation rainbow.

Frank Kingdon-Ward was the first plant hunter to return seed of *R. aperantum* to the UK in 1919, followed by a sprawl from George Forrest - but remember that his 1924-1925 expedition entries are duplicated - the flow interrupted by two from Joseph Rock in 1929. Jens Nielsen began the re-introductions, reaping capsules during 1997 and again in 1999, followed by fellow Dane, Bent Ernebjerg, with five lots in 2015.

The epithet translates as 'boundless', referencing Farrer's Chawchi Pass observation.



R. aperantum (F 26933)



R. aperantum

R. catacosmum

R. haematodes* ssp. *catacosmum

Hardiness:
H5.
Flowering Period:
March-May.
Distribution in the wild:
SE Tibet; NW Yunnan, China.
Growing at forest margins, in alpine thickets and scrub, and on cliffs,
at elevations of 3,650-4,400m.

Identification:
Shrub, compact and rounded, 1.2 to 3m high;
branchlets thick, densely brownish or fulvous tomentose or floccose-tomentose,
sometimes sparsely setose.
Leaf bud scales deciduous.
Leaves thick, obovate, 5 to 14cm long by 2.5 to 6.5cm wide,
apex rounded, base broadly cuneate or obtuse;
upper surface dark green, matt, somewhat rugulose;
lower surface densely tomentose, the bistrate indumentum thick, woolly and continuous,
brown, dark brown, fulvous or pale cinnamon,
the upper layer thick, loose, continuous, composed of dendroid hairs,
the lower layer thin, continuous, composed of whitish, compacted rosulate hairs.
Petiole 10-15mm long, grooved above,
densely brown tomentose or floccose-tomentose.
Inflorescence compact or loose, 5-9-flowered.
Rhachis 5-15mm long, brown or fawn tomentose or floccose-tomentose.
Pedicel 16-35mm long, densely brown tomentose or floccose-tomentose.
Calyx large, cupular, crimson or red,
the lobes divided somewhat from above and each 13-25mm long,
their outer surface glabrous and eglandular, their margins ciliate.
Corolla 4 to 4.8cm long, fleshy, tubular-campanulate,
scarlet through crimson to rose-crimson, rarely pink.
Stamen filaments pubescent at the base, glabrescent or glabrous.
Ovary densely rufous or brown tomentose.
Style sometimes pubescent at the base.
Capsule 10-25mm long, densely brown or cinnamon tomentose.

Seed Collections:

F 20078	1921	R 11185	1923/1924
F 20895	1921	R 22465	1932
F 21727	1921/1922	TDA 605	2014
F 22910	1921/1922	TDA 606	2014
F 22915	1921/1922		

R. catacosmum was the last of the *R. haematodes* subspecies to be discovered, the encounter finally taking place in eastern Tibet, on the mountains of the Salween-Kiu Chiang Divide, when George Forrest came upon a population of plants in July 1921, introducing the species into UK cultivation later that same year. The botanic description was begun by Sir Isaac Bayley Balfour shortly before his death in 1922, and completed by Harry Tagg in time for publication in 1927's Volume 15 of *Notes from the Royal Botanic Garden, Edinburgh*.

The species is clearly allied to *R. haematodes* ssp. *chaetomallum,* sharing a similar wild distribution, habit, height of growth, leaf shape, bistrate abaxial indumentum, and large calyx lobes. The maximum foliage length and width is greater, but over an entire mature shrub, in the main, the leaves will be found to be smaller than those borne on ssp. *chaetomallum*. The calyx lobes however, will always be cupular and between 13 and 25mm in length, never shorter.

The lack of any bristles - the branchlets occasionally excepted, when a scattering of setose hairs may be found along their length - mirrors the characteristics of *R. haematodes* ssp. *haematodes.*

David Chamberlain has reported that a Forrest specimen under field number F 20908, which was gathered on the Salween-Kiu Chiang Divide in western Yunnan during October 1921, is morphologically midway between *R. catacosmum* and *R. haematodes* ssp. *chaetomallum,* displaying the obovate leaves but having bristles on the branchlets and petioles (*Notes,* Volume 39, Number 2, 1982).

That morphology and biogeography indicates that *R. catacosmum* should be reduced to a subspecies of *R. haematodes,* which is acted on herein even though future field study might conclude that varietal or even group status be more appropriate.

The principal feature used to distinguish *R. haematodes* ssp. *catacosmum* from the other Subsection *Haemaguinea* rhododendrons is the calyx, which is an almost hose-in-hose affectation with irregularly sized and shaped crimson through red coloured lobes. The obovate leaves are also distinctive, with only *R. mallotum* and *R. pocophorum* matching or exceeding their length or width.

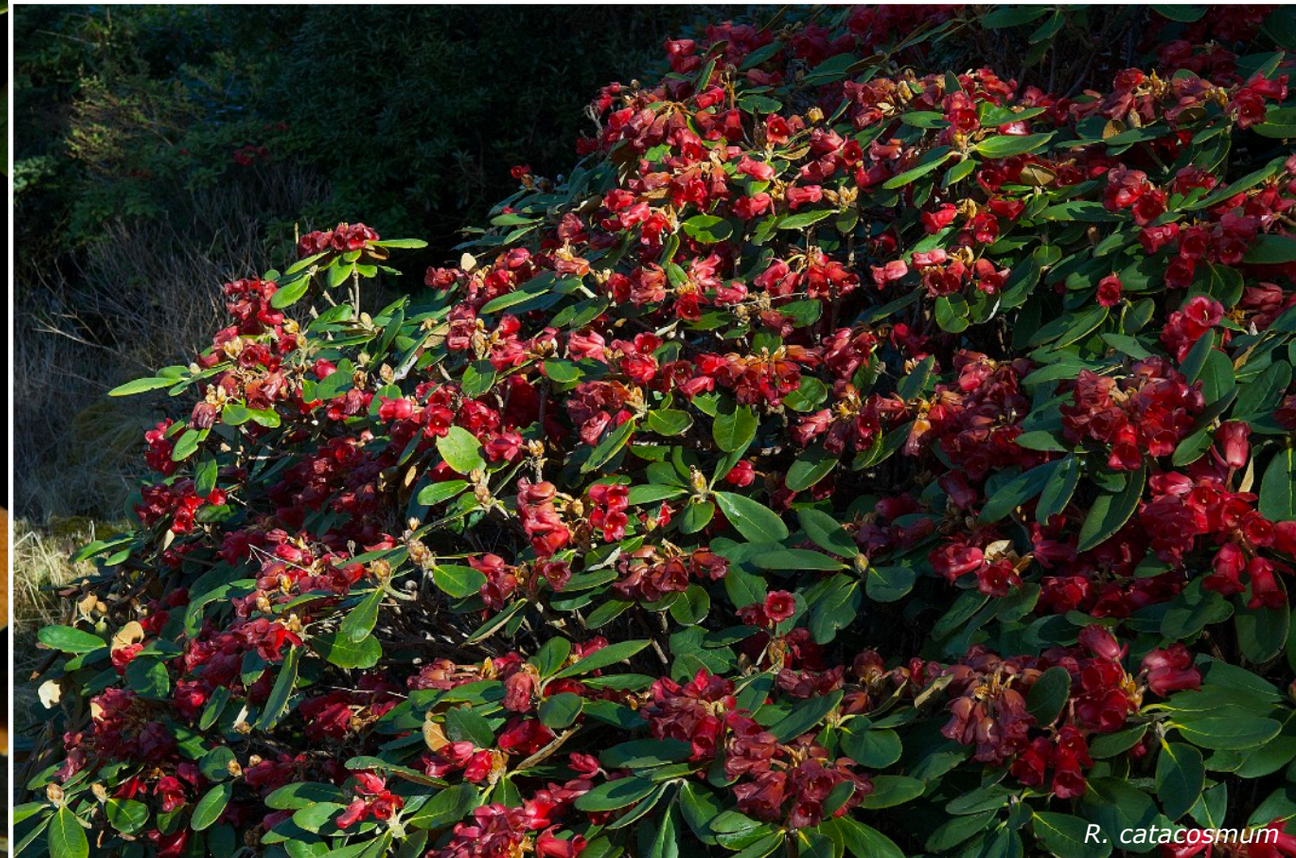
Apart from the George Forrest collections of 1921 and 1922, the only other collector to have secured and returned capsules was Joseph Rock: in 1923; and again in 1932, although this second gathering, under the field number R 22465, was originally thought to have been *R. haematodes.* Then, in 2014, Timothy Atkinson found the species growing in the Anjaw District of Arunachal Pradesh, near Tongol, the populations established at around 2,600m. If the field identification is confirmed and the plants authenticated, the natural distribution of ssp. *catacosmum* will then exactly mirror that of ssp. *chaetomallum,* which could prompt the implementation of the varietal or synonymic classification changes outlined above, though currently the doyens are moot on the subject.

With the endemic populations found at fairly high altitudes, ssp. *catacosmum* is fully hardy in the UK (as anyone who has reached the William Wright Smith memorial, viewpoint and shelter at Benmore Botanic Garden in Argyll should be able to confirm). The species is easy to grow providing good drainage is maintained, though gardeners in southern England should choose a planting site in dappled shade. Mature specimens will form a rounded, domed bush just under 2m high, well-filled with foliage and ablaze each spring with crimson-red corollas.

Vegetative propagation is apparently difficult, so grafted or layered juveniles will not only be rare, but priced accordingly.


R. catacosmum


R. catacosmum


R. catacosmum

R. didymum

Hardiness:
H5.
Flowering Period:
June-July.
Distribution in the wild:
SE Tibet; NW Yunnan, China.
Growing in stony alpine meadows and on limestone cliffs,
at elevations of 4,300-4,600m.

Identification:
Shrub, broadly upright, 0.3 to 1m high;
branchlets thinly white-tomentose, setulose-glandular.
Leaf bud scales persistent, lost with age but not swiftly deciduous.
Leaves rigid, obovate through oblong-obovate,
2 to 6cm long by 1 to 1.8cm wide,
apex rounded or broadly obtuse, base obtuse or tapered,
somewhat decurrent on the petiole;
upper surface dark green, shiny, rugulose;
lower surface tomentose, the indumentum unistrate or bistrate,
continuous, thin or somewhat thick, white or fawn,
when unistrate composed of rosulate hairs with short arms,
when bistrate the upper layer composed of ramiform hairs
with curled branches on a short stem,
the lower layer composed of rosulate hairs with short arms,
the midrib thinly tomentose.
Petiole 3-15mm long, the margins narrowly winged or ridged,
thinly white-tomentose, setulose-glandular.
Inflorescence loose, 3-6-flowered.
Rhachis 4-10mm long, glabrous, setulose-glandular.
Pedicel 13-34mm long, glabrous, densely setulose-glandular.
Calyx lobes divided to the middle or to the base, each 1-2mm long,
their outer surface glabrous, moderately through densely setulose-glandular,
their margins glabrous, setulose-glandular.
Corolla 2.3 to 3cm long, fleshy, tubular-campanulate,
black-crimson or dark crimson.
Ovary usually glabrous, densely medium-stalked glandular.
Capsule 6-10mm long, straight, usually glabrous,
moderately through densely long-stalked glandular.

Seed Collections:

F 20220	192	R 44	1948/1949
F 20239	1921	R 45	1948/1949
F 20888	1922	R 53	1948/1949
F 21750	1922	R 54	1948/1949
F 22842	1922	R 61	1948/1949
KW 5432a	1922	R 62	1948/1949
R 11216	1923/1924	R 65	1948/1949
R 22183	1932	R 128	1948/1949
LS&E 13129	1946/1947		



R. didymum

R. didymum is often described as a glandular expression of *R. sanguineum,* with many botanists considering it no more than a subspecies of that taxon, albeit the most distinctive member, 'at one extreme of a more or less continuously varying complex of taxa'. Field study has shown that this cline of intermediates is also heavily - if not entirely - populated by swarms of shrubs now known to be of hybrid origin or differing from *R. sanguineum* only in their corolla colour, as David Chamberlain reported in his 1982 Subgenus *Hymenanthes* text (*Notes from the Royal Botanic Garden, Edinburgh,* Volume 39, Number 2, page 399, from which the earlier quote is taken). Unfortunately however, the Edinburgh Revision's application of subspecies ranking disregards the fact that the morphology of *R. didymum* is markedly different to that of *R. sanguineum*.

Such anomalies include:

- Leaf bud scales that are more or less persistent, not swiftly deciduous.
- Sticky bristles on the branchlets, petioles, rhachis, pedicels and calyx lobes.
- Stalked-glandular ovaries and capsules, which are otherwise glabrous, not densely hairy.
- Calyx lobes just 1 or 2mm in length, never longer and not deflexed.
- Smaller leaves that are shiny above, with a rigid lamina.
- An often thicker abaxial leaf indumentum, which may be unistrate or bistrate.
- A flowering period late in the season, the inflorescences opening in June or July, not March through May.

A biogeographic irregularity must also be borne in mind as in cultivation, unlike its supposedly close relatives, the species requires a near alkaline soil to flourish. Peter and Kenneth Cox, for instance, report that until lime was applied to the compost of plants being raised in the gardens at Glendoick, specimens were regularly lost (*The Encyclopedia of Rhododendron Species,* 1997). This predisposition is an adaptation evolved over time to cope with the limestone cliffs on which wild plants are found, locales where all of the *R. sanguineum* troupe would falter and fail. Alkaline rainwater runoff from the surrounding rocks basically reduces the acidic nature of the soil pockets in which the populations of *R. didymum* grow, technically increasing the pH value by reducing the concentration of hydrogen ions present.

Only one conclusion can be drawn from the above data set: downgrading the ranking of *R. didymum* to a subspecies of *R. sanguineum* was an error.

Specific status is therefore reapplied herein, even though the *R. didymum* populations are contained within the geographic and altitudinal distribution of *R. sanguineum,* because the lime tolerance effectively makes them disjunct.

Ranking the species at this echelon was also the considered choice of H. H. Davidian (*The Rhododendron Species,* Volume 3, 1992).

R. didymum was discovered growing on the mountains of the Salween-Kiu Chiang Divide in southeast Tibet by George Forrest during September 1921. Two batches of seed were despatched to the UK later that same year and additional gatherings made in 1922, when the botanic description, written by Sir Isaac Bayley Balfour from the Scotsman's field notes and dried herbarium specimens appeared in Volume 13 of *Notes*. The species has also been found and collected in northwestern Yunnan.

The black-crimson corollas, small rigid leaves and relatively persistent perulae will quickly distinguish *R. didymum* from all the true species within Series *Haemaguinea,* but individuals from a trio of taxa previously given specific, subspecies or varietal ranking may prove slightly more taxing, for at first glance, they appear remarkably similar in form to *R. didymum* and they have those signature black-crimson flowers. In their own right, each is a very fine plant, worthy of a place in the garden. But they are hybrids:

R. haemaleum - or as the Edinburgh Revision would have it, *R. sanguineum* ssp. *sanguineum* var. *haemaleum* - is a clear and obvious cross between *R. didymum* and *R. sanguineum,* or a pairing between *R. didymum* and an intermediate or hybrid of *R. sanguineum*. It does not have persistent leaf bud scales or glandular bristles on the stems, nor in many cases, the small, rigid and shiny leaves. The indumentum is unistrate; the calyx large, often with deflexed lobes; and the ovary and capsule though densely hairy, are devoid of any stalked glands. Equally, there are no sticky bristles on the rhachis, pedicel or calyx. So, *R. x haemaleum.*

R. haemaleum var. *atrorubrum,* or *R. sanguineum* ssp. *atrorubrum,* has a densely glandular pedicel and ovary, but again is without sticky bristles and sports deciduous perulae. So, for the diehards, *R. x atrorubrum.*

R. haemaleum var. *mesaeum,* or *R. sanguineum* ssp. *mesaeum,* does have fairly persistent leaf bud scales and smaller leaves, but they are not rigid, and nor do they ever display a bistrate indumentum. These plants also lack a full compliment of sticky bristles. So, if you must, *R. x mesaeum.*

All three natural hybrids bloom during April-May and show absolutely no proclivity for supplements of lime. The latter two were rightly consigned to synonymy under *R. sanguineum* ssp. *sanguineum* var. *haemaleum* in the Edinburgh Revision and that taxon's epithet, as outlined above, is herein preceded by a small 'x'.

R. didymum remains a small, low-growing shrub in cultivation, attaining a height of rarely more than 0.6m, and it is perfectly suited to placement in a rock garden where its cultural needs can be fully met in a controlled and isolated pocket of soil. The species is relatively hardy, but will benefit from a sheltered spot, though equally, specimens become quite open if placed in too much shade. Regrettably, flower bud production is often far from profuse, certainly not matching the regular overabundance to be found on specimens of *R. x haemaleum,* which, if nothing else, further confirms that taxon's natural hybrid status.

A plant for the 'connoisseur', *R. didymum* is a very rare find even in the large, open-to-the-public species collections. It has not been re-introduced into UK cultivation since the eight Joseph Rock gatherings made in 1948/1949 arrived, although a plant hunting team that comprised Steve Hootman, Jens Nielsen and Peter Wharton did return an affinity form from Yunnan in 2001 under the field number DGEY 043b.

R. didymum

R. horaeum (F 21850)

R. citriniflorum* ssp. *horaeum

Hardiness:
H5.
Flowering Period:
April-May.
Distribution in the wild:
SE Tibet; NW Yunnan, China.
Growing in thickets, on alpine moorland, and on rocks, screes and cliffs,
at elevations of 3,600-4,500m.

Identification:
Shrub, compact, rounded or broadly upright, occasionally prostrate, 0.2 to 1.5m high;
branchlets thinly white floccose-tomentose or not.
Leaf bud scales usually persistent.
Leaves obovate through oblong-obovate to elliptic,
2.3 to 6cm long by 1.2 to 2.4cm wide,
apex obtuse or rounded, base obtuse or cuneate, decurrent on the petiole;
upper surface dark green, rugulose;
lower surface densely tomentose, the bistrate indumentum continuous,
thick and woolly, rarely thin and plastered,
dark brown, grey-brown, brown, fawn or whitish,
the upper layer composed of ramiform hairs
with medium-length curled branches on a short stem,
the lower layer composed of rosulate hairs with short arms,
the midrib thinly tomentose or not.
Petiole 4-13mm long, flat, narrowly winged, thinly white floccose-tomentose or not.
Inflorescence compact to loose, 2-6-flowered.
Rhachis 2-5mm long, brown-tomentose.
Pedicel 10-26mm long, moderately through densely tomentose or not.
Calyx cupular or not, the base fleshy, coloured as the corolla,
the lobes divided to the middle or to the base,
each 7-20mm long, rarely 2-6mm,
their outer surface glabrous and eglandular, their margins ciliate.
Corolla 2.6 to 3.8cm long, fleshy, tubular-campanulate,
yellowish-red, orange through carmine.
Stamen filaments pubescent at the base, rarely glabrous.
Ovary densely reddish-brown or rufous tomentose.
Capsule 8-14mm long,
moderately through densely tomentose, the hairs brown or dark brown.

Seed Collections:

F 20218	1921/1922	R 22189	1932
F 21850	1921/1922	R 22192	1932
F 21851	1921/1922	R 22193	1932
F 21852	1921/1922	R 22194	1932
F 21854	1921/1922	R 22196	1932
F 21855	1921/1922	R 22205	1932
F 21860	1921/1922	R 22206	1932
F 22668	1921/1922	R 22207	1932
F 22675	1921/1922	R 22208	1932
F 22690	1921/1922	R 22212	1932
F 22694	1921/1922	R 22213	1932
F 22862	1921/1922	R 23649	1932
R 10905	1923/1924	Yu 19339	1937
R 11157	1923/1924	Yu 20716	1937
R 11186	1923/1924	DGEY 250	2001
R 18463	1929	DGEY 281	2001



R. horaeum (R 10905)

First encountered near Tsarong, on the Salween-Kiu Chiang Divide of eastern Tibet, George Forrest described his September 1921 find the following year in Volume 13 of *Notes from the Royal Botanic Garden, Edinburgh,* writing with Sir Isaac Bayley Balfour. The name chosen for the new species was *R. horaeum,* which means 'beautiful' in translation, and its orange-flowered forms can be lionised as nothing less.

Edinburgh's John MacQueen Cowan was the first botanist to fully detail the clear and close relationship the species has with *R. citriniflorum,* doing so in his 1940 exposition 'Rhododendrons of the Sanguineum Alliance' published in *Notes,* Volume 20. This correctly reduced *R. horaeum* to a subspecies of *R. citriniflorum* in line with the applying precedence strictures, but also gave a number of intermediate forms the same ranking.

Forty years later, in his Subgenus *Hymenanthes* paper (*Notes,* Volume 39, Number 2, 1982), David Chamberlain stated that although the two extremes of *R. citriniflorum* were distinct, they should be assigned varietal status, citing the extensive range of intermediates found in the wild as justification, and these were ether made synonymous, or treated as natural hybrids.

The two rhododendrons are undoubtedly allied, but their character differences require the higher level of ranking set out by Cowan. For one taxon has thin-walled corollas; usually small calyx lobes; a glandular ovary, pedicel and capsule; thick to thin abaxial leaf indumentum; and deciduous perulae. In contrast, the other boasts: thick and fleshy corollas; usually large calyx lobes; a non-sticky ovary, pedicel and capsule; routinely thick abaxial leaf indumentum; and persistent perulae. Their geographic distribution must also be taken into account, with on-the-ground study now recording a 300m lower elevation and 400m higher elevation altitude variance between the two species: *R. citriniflorum* endemic between the 3,900 and 4,900m contours; while *R. horaeum* occupies sites from 3,600m up to 4,500m. Some authors suggest specific status should be returned solely on account of the persistent leaf bud scales, but this view is also in error as their retention is variable. Subspecies ranking is therefore the correct designation and it is readopted herein.

R. citriniflorum ssp. *horaeum* can be identified from the other members of Series *Haemaguinea* by its continuous, thick and woolly, bistrate lower leaf surface indumentum, and by checking that the pedicel, calyx and ovary are without glands, the corolla is fleshy, and there are perulae densely adorning the stem immediately below the leaf node. The flowers will likely be a shade of orange and the calyx lobes at the tube base, large, coloured as the corolla, and although irregular in shape, basically cupular.

As with ssp. *citriniflorum,* hybrid swarms abound in the wild and selections from them such as *R. citriniflorum* ssp. *aureolum* and *R. citriniflorum* ssp. *rubens* - both described by John Cowan in his 1940 Sanguineum Alliance paper - have been introduced into UK cultivation. The former is now considered synonymous; the latter, with deciduous perulae, sticky bristles on the ovary and calyx margins, and reddish-crimson flowers, determined to be a natural hybrid. Plants once labelled *R. sanguineum* ssp. *consanguineum,* although latterly *R. sanguineum* ssp. *didymoides* Consanguineum Group, are in fact ssp. *horaeum* if graced with persistent leaf bud scales, but *R. x rubens* if the perulae are deciduous.

Forrest-collected seed was once again the first to be grown in UK gardens, with several batches arriving from his 1921-22 expedition, after which Joseph Rock and Te Tsun Yu took over the mantle. Only one team has encountered the subspecies in recent times: the 2001 DGEY Hootman-Nielsen-Wharton expedition.

Rounded domes between 0.6 and 1.5m high are the norm in UK cultivation even when the seed has come from the prostrate forms found scrambling over rocks on high alpine slopes, as the British maritime climate has proven far more benign than the local conditions these plants had evolved to survive.



R. horaeum (R 10905)

R. dichroanthum* ssp. *septentrionale

Hardiness:
H5.
Flowering Period:
Late May-July.
Distribution in the wild:
W Yunnan, China; NE Upper Myanmar.
Growing in forests, cane breaks, alpine thickets and meadows,
on open rocky slopes and cliff ledges, at elevations of 3,700-4,300m.

Identification:
Shrub, compact and spreading, somewhat rounded or broadly upright, 0.3 to 2.5m high;
branchlets thinly white floccose-tomentose, glabrous when mature.
Leaf bud scales deciduous.
Leaves oblanceolate through narrowly oblanceolate,
3.5 to 9.5cm long by 1.6 to 3cm wide,
apex rounded, base obtuse, decurrent on the petiole;
upper surface pale or dark green, matt, rugulose;
lower surface tomentose, the unistrate indumentum continuous, plastered or compacted,
fawn or white, composed of rosulate hairs with short arms,
the midrib thinly tomentose or not.
Petiole 4-12mm long, the margins narrowly winged or ridged,
thinly white floccose-tomentose, but swiftly glabrescent, rarely setulose-glandular.
Inflorescence loose, 3-8-flowered.
Rhachis 3-5mm long, dark brown pubescent.
Pedicel 13-28mm long, rufous-tomentose, rarely setulose-glandular.
Calyx cupular or not, coloured, the base fleshy,
the lobes divided to the middle, each 3-10mm long,
their outer surface glabrous and eglandular, their margins ciliate or ciliate-glandular.
Corolla 2.5 to 4.3cm long, fleshy, tubular-campanulate,
orange-red, or yellow flushed red or carmine.
Stamen filaments pubescent at the base.
Ovary moderately through densely rufous-tomentose,
and moderately through densely setulose-glandular or not.
Capsule 10-18mm long, straight or slightly curved,
moderately through densely tomentose,
and moderately through densely setulose-glandular or not.

Seed Collections:

KW 5487	1922
F 25577	1924/1925
F 25787	1924/1925
JN 757	1999

R. septentrionale completes the quartet of *R. dichroanthum* subspecies that have been discovered to date.

Historically, it was George Forrest and his team of trained local collectors who were given credit for the discovery, made on the hills of Upper Myanmar, the specimens sourced from a population of plants established on the western flank of the Salween-Kiu Chiang Divide in July 1924. However, a reassignment had to be instigated after the expert doyens at Edinburgh Botanic looked again at a Frank Kingdon-Ward collection returned under the field number KW 5487. Initially determined to be a probable subspecies of *R. dichroanthum* - the entry appears with a question mark addendum in *Notes from the Royal Botanic Garden, Edinburgh,* Volume 20, 1940, as well as in the seed collections listings published in the RHS 1967 and 1980 *Rhododendron Handbooks* - but post the reassessment, the 1998 edition catalogued it as ssp. *septentrionale*. Ward had collected both dried material and seed from plants he had found growing at Moku Tra, close to the Taru Tza Pass in Upper Myanmar, this bringing the discovery and approximate introduction date forward by two years, to the beginning of November 1922.

Although a botanic description was written by Harry Tagg from Forrest's specimens, the determination made being *R. scyphocalyx* var. *septentrionale,* it was never published, remaining in manuscript form until John Cowan combined the epithet into a subspecies of *R. dichroanthum* for his 'Rhododendrons of the Sanguineum Alliance' treatise along with the aforementioned question mark.

As with ssp. *herpesticum,* the narrowly winged and ridged leaf stalks separate ssp. *septentrionale* from both ssp. *apodectum* and ssp. *dichroanthum* itself, but as the pedicels, calyx lobes, ovaries and capsules are variably setulose-glandular, with some specimens displaying sticky hairs, others not, this second distinguishing criterion is not as decisive. One or two authors state that these features are always eglandular, but their case is dependant on the exclusion of herbarium material other botanists have determined to be ssp. *septentrionale*. Clearly, this state of affairs would make identification iffy were it not for the foliage, which thankfully, is oblanceolate in shape, sometimes narrowly so, and therefore distinct from the leaves of the other three subspecies. The *R. sanguineum* melee may also be cast aside thanks to this geometry.

Forrest's field notes indicate that the populations of ssp. s*eptentrionale* will be found around 60 miles north of those of typical ssp. *herpesticum,* and to date, no reports of any overlap have been submitted by other observers. The chosen epithet - 'Northern' - thereby reflects this geographic propensity.

R. dichroanthum ssp. *septentrionale* is the rarest member of the foursome introduced into UK cultivation. Specimens are fairly upright in growth, topping out to around 1.5m, and have proved to be hardy and free flowering.

The subspecies was reintroduced from Yunnan by Jens Nielsen in 1999.

R. parmulatum

Hardiness:
H5.
Flowering Period:
March-May.
Distribution in the wild:
SE Tibet.
Growing in pine forests, on steep rocky slopes and cliffs,
at elevations of 3,000-3,700m.

Identification:
Shrub, rounded or broadly upright, 0.6 to 2m high;
branchlets sparsely floccose-tomentose, but quickly becoming glabrescent then glabrous,
rarely sparsely setulose, and rarely short-stalked glandular.
Leaf bud scales deciduous.
Leaves obovate through oblong to elliptic,
3.5 to 8.6cm long by 1.5 to 4.5cm wide,
apex rounded or broadly obtuse, base cuneate or rounded;
upper surface green, rugulose;
lower surface glaucous, finely waxy papillate, glabrous,
the midrib and the main veins sparsely white-floccose,
the hairs rosulate with short arms.
Petiole 2-8mm long, broad, floccose at first,
but quickly becoming glabrescent then glabrous.
Inflorescence loose, 3-6-flowered.
Rhachis 3-6mm long, glabrous, rarely sparsely floccose.
Pedicel 6-23mm long, glabrous, rarely sparsely floccose.
Calyx cupular or disc-shaped, fleshy,
the lobes divided to the middle or to the base, each 3-7mm long,
their outer surface and margins glabrous and eglandular.
Corolla 3.5 to 5cm long, tubular-campanulate,
white, pale yellow flushed pink, pink through red, or bicoloured,
often heavily spotted red or grey-purple.
Stamen filaments pubescent along the lower half or at the base, or glabrous.
Ovary sparsely floccose or glabrous, rarely medium-stalked glandular.
Capsule 10-16mm long, sparsely floccose or glabrous, eglandular.

Seed Collections:

KW 5875	1924
LS&E 13612	1946/1947
LS&E 15291	1946/1947
CC 7518	1996
CC 7538	1996

June 29th, 1924, was the date on which Frank Kingdon-Ward became the first Western plant hunter to encounter *R. parmulatum,* finding the species growing within a dense thicket of other shrubs on the Doshong La in southeastern Tibet. John MacQueen Cowan wrote the botanic description, his text appearing in Volume 19 of *Notes from the Royal Botanic Garden, Edinburgh,* published in 1936, shortly after the species flowered for the first time in a British garden. That event took place in April, at both Borde Hill, the Sussex home of Colonel Stevenson Clarke, and at Edinburgh Botanic.

Kingdon-Ward's seed had arrived in the UK towards the end of 1924, after which, more than two decades would pass before the next gathering was made - the team of Frank Ludlow, George Sherriff and Henry Elliot securing one lot from the Doshong La, and a second batch of capsules from Pemako, in the Tsangpo Gorge, during their 1946-1947 explorations - and then five decades more before Peter and Kenneth Cox reintroduced the species in 1996.

The glabrous abaxial leaf surface and the usually heavily spotted flowers, make *R. parmulatum* somewhat aberrant within Series *Haemaguinea* and the Subsection *Neriiflora* classification folder as a whole, but on the other hand, easy to identify from its cohorts. Of these, *R. temenium* is the only species likely to engender any hesitancy, as the subsessile leaves of its other close associate, *R. aperantum,* are lanceolate in shape, the branch-tip whorls immediately distinctive, and the corollas unspotted. The pedicels and ovaries of the two *R. temenium* varieties are densely covered in hairs however, which will key the two species apart whenever a specimen of *R. parmulatum* is found with unspotted corollas.

In the wild, the species is geographically isolated from its nearest *Neriiflora* allies, which means the usual slew of intermediates is absent, removing that complication from the keying process, although natural hybrids with *R. faucium,* from Subsection *Thomsonia,* have been found. These are quickly discernable as they sport corollas that are much more open in shape, nearer campanulate rather than tubular-campanulate, and they have a far more populous flower truss.

Cultivated plants of *R. parmulatum* have proved hardy and easy to grow, topping-out at around 1.3m in height, though they often do not flower as youngsters. The creamy-yellow 'Ocelot' clone from Tremeer, a private garden near St. Tudy in Cornwall that was once owned by the renowned hybridiser Major-General Eric Harrison, is the form of the species most often found in collections, the dense purple-grey spotting in bands along the posterior lobes, instantly distinctive. Most of the other colour forms found in the wild - pale yellow flushed pink, pink through red, even bicoloured - have yet to be introduced.



R. parmulatum



R. parmulatum



R. parmulatum (KW 5875) ‘Ocelot’

R. beanianum

R. beanianum* ssp. *beanianum

Hardiness:
H4-5.
Flowering Period:
March-May.
Distribution in the wild:
SE Tibet; Arunachal Pradesh, India; NE Upper Myanmar.
Growing in and at the margins of forests,
in bamboo thickets, in gullies, and amongst rocks on alpine slopes,
at elevations of 2,700-3,400m.

Identification:
Shrub, compact, bushy or upright, becoming straggly with age, 1 to 3m high;
branchlets sparsely through moderately brownish stellate-tomentose or not,
moderately through densely setose,
or sparsely through moderately short-stalked setose-glandular.
Leaf bud scales deciduous.
Leaves thick, obovate through oblong to elliptic,
4.8 to 10.3cm long by 2 to 4.6cm wide,
apex rounded, base obtuse or rounded;
upper surface dark green, rugose, the midrib sometimes setose;
lower surface densely tomentose, the unistrate indumentum thick, woolly and continuous,
brownish, fulvous or rufous,
composed of coarse dendroid hairs with long or short stems and short ribbon-like branches.
Petiole 8-20mm long, grooved above, tomentose or not,
moderately through densely setose,
or sparsely through moderately short-stalked setose-glandular.
Inflorescence compact to loose, 4-10-flowered.
Rhachis 4-9mm long, tomentose or not, setose or not.
Pedicel 10-20mm long, moderately through densely brownish tomentose or not,
moderately through densely setose,
or sparsely through moderately short-stalked setose-glandular,
or without bristles and glands.
Calyx cupular, crimson,
the lobes divided to the middle or to the base and each 2-20mm long,
their outer surface glabrous and eglandular, their margins sparsely tomentose or not.
Corolla 3 to 4.5cm long, fleshy, tubular-campanulate,
blood-red through carmine, rarely pink.
Stamen filaments crimson along the lower half or at the base.
Ovary densely brownish stellate-tomentose.
Style tomentose at the base.
Capsule 12-28mm long, slightly curved, densely tomentose or not, densely setose.

Seed Collections:

KW 6805	1926
KW 6829	1926
KW 6835	1926
KC 0122	2001
BE 12-29	2012
BE 12-41	2012
BE 12-50	2012
BE 12-52	2012



R. beanianum

R. beanianum* ssp. *piercei

Hardiness:
H4-5.
Flowering Period:
March-May.
Distribution in the wild:
SE Tibet; Arunachal Pradesh India.
Growing in thickets at elevations of 3,700-4,200m.

Identification:
Shrub, compact, bushy and spreading, through open and straggly, 1.2 to 2.5m high;
branchlets densely brown-tomentose.
Leaf bud scales deciduous.
Leaves oblong through ovate to elliptic,
4 to 11cm long by 2 to 5.5cm wide,
apex rounded, base rounded or somewhat cordate;
upper surface dark green, rugulose, shiny with age,
the midrib moderately through densely rufous-pubescent throughout
or just along the lower third;
lower surface densely tomentose, the bistrate indumentum thick, woolly and continuous,
brown, reddish-brown or fulvous,
the upper layer thick, continuous,
composed of dendroid hairs with short ribbon-like branches,
the lower layer thin, continuous,
composed of white, adpressed rosulate hairs,
the midrib usually densely hairy.
Petiole 7-20mm long, grooved above, densely brown-tomentose.
Inflorescence terminal, a racemose umbel, compact, 6-8-flowered.
Rhachis 4-5mm long, tomentose.
Pedicel 12-15mm long, moderately through densely tomentose.
Calyx crimson, the lobes 3-6mm long,
their outer surface and margins glabrous.
Corolla 2.8 to 3.6cm long, fleshy, tubular-campanulate,
crimson.
Ovary densely fawn-tomentose.
Style tomentose at the base.
Capsule 14-18mm long, curved, densely fawn-tomentose.

Seed Collections:

KW 8254	1928
KW 11040	1933



R. piercei (KW 11040)

R. piercei



R. beanianum

R. beanianum was discovered at Seinghku Wang in Kachin State, Upper Myanmar, on June 1st, 1926, by Frank Kingdon-Ward. John MacQueen Cowan later described the species in 1938, writing in Volume 10 of the journal *New Flora & Silva.* Other Western plant hunters would find disjunct populations of the taxon growing in two valleys in Arunachal Pradesh, India, while Chinese botanists have also reported the taxon to be present in southeastern Tibet.

That latter finding weakens the case for maintenance of *R. piercei* at specific ranking, as does the treatment of the Kingdon-Ward gathering made under field number KW 8254. For though this was first classified as *R. beanianum,* it has now been re-examined and determined to be *R. piercei.*

The two species are very similar: the former, taller-growing, with slightly smaller leaves, yet larger corollas and calyx lobes, and it comes with a single-layered abaxial leaf indumentum; the latter, without any bristles - sticky or otherwise - on the branchlets, petioles, leaf adaxial midrib, pedicel and capsule, bears a two-layered tomentum. The foliage of *R. piercei* is also decidedly shiny, and rugulose rather than rugose. However, these differences, in concert with the natural distributions - KW 8254 was collected in the Delei Valley, Arunachal Pradesh, extending the range of *R. piercei* from its otherwise single known location at Dri La, Zayul, in southeastern Tibet - do not warrant the maintenance of specific status and in consequence, *R. piercei* is herein determined to be a subspecies of the earlier described, *R. beanianum*.

Traditionally, a December 1933 date is given for Frank Kingdon-Ward's collection and introduction of *R. piercei* under the field number KW 11040, however, the inclusion of KW 8254 into the fold brings that date forward to May 1928. Cowan described Ward's 1933 find in Volume 21 of *Notes from the Royal Botanic Garden, Edinburgh,* published in 1953, stating that the taxon had the main characteristics of *R. beanianum,* but differed in not having bristles on the stems, and that its markedly shiny leaves had a rich cinnamon-red indumentum below. *R. beanianum* var. *compactum* was his choice of epithet.

The first botanist to formally describe that leaf indumentum as bistrate was H. H. Davidian, doing so when he applied specific status to the taxon in 1976 (*Journal American Rhododendron Society,* Volume 30, Number 4), renaming the plant for Mr and Mrs Lawrence J. Pierce, who were well-known rhododendron growers from Seattle, Washington State. The *R. piercei* tomentum has a thick upper layer of dendroid hairs with short ribbon-like branches and a lower, thinner layer of white, adpressed rosulate hairs. Both coverings are continuous.

Davidian describes the *R. beanianum* abaxial indumentum as being either unistrate or bistrate (*The Rhododendron Species,* Volume 3, 1992), while all the other published texts specify a single-layered covering of hairs. This dichotomy results from where specimens of KW 8254 are placed in the firmament. If assigned to *R. beanianum,* then the either-or treatment of Davidian is required; if to *R. piercei,* then the cut and dried option set out by David Chamberlain in his Subgenus *Hymenanthes* Edinburgh Revision texts and reflected in the identification bullet points on pages 91 and 92 apply.

A combination of morphological features must be used to distinguish *R. beanianum* ssp. *beanianum* from the other Series *Haemaguinea* species: the rugose adaxial leaf surface; the thick and continuous abaxial indumentum; and the presence of both hairs and bristles (oftentimes sticky) on the young shoots and petioles. Its subspecies sister apart, young plants of *R. mallotum* are most likely to cause confusion in a horticultural setting, but are devoid of bristles and have much larger leaves. Mature specimens of *R. mallotum* display a tree-like habit, often with just a single trunk, while *R. beanianum* never develops such a stature, remaining no more than a tallish shrub even in old age.

The *R. beanianum* ssp. *piercei* feature set detailed above and opposite will key specimens from all the other Series *Haemaguinea* rhododendrons.

Until just after the Millennium, all the cultivated plants of *R. beanianum* originated from the three batches of seed collected by Frank Kingdon-Ward in 1926, but then, in 2001, Kenneth Cox secured a batch of capsules from Arunachal Pradesh, while a decade later in 2012, Bent Ernebjerg returned from Myanmar with a quartet of gatherings.

The best clones of *R. beanianum* established in the woodland gardens of England, Scotland and Wales, are utterly stunning plants whether they are in or out of flower, for they sport knockout, blood-red corollas, often produced to excess, and foliage that remains eye-catching from the moment it first extends to when it falls some two years later. The species comes from relatively low altitudes however, so despite the H4-5 rating, it is not as hardy as some of its series or subsection contemporaries, with specimens requiring a modicum of extra protection at sites along the east coast or inland, most especially for those plants that open their blooms during early March. The taxon is of course named for William Jackson Bean (1863-1947), author, renowned botanist and past Curator of the Royal Botanic Garden, Kew.

Without doubt, *R. piercei* is also one of the finest plants to be found in the genus, free-flowering from an early age, relatively hardy, fast growing and without complications in cultivation provided a well-drained site is chosen. It has yet to be rediscovered in the wild, so the two Kingdon-Ward gatherings remain the only introductions to date.

Placement of specimens grown from that seed in the UK's southern gardens, fair best if set in dappled shade, this shielding the flowers and the foliage from the effects of a blistering midday sun. Blooms will sometimes be lost to the arch defiler of early flowering rhododendrons, but when Jack is mercifully avoided, a mature bushy specimen, awash in dark crimson trusses, will stop any two-legged garden visitor in their tracks. Of course, avian admirers will only be thinking of the nectar they can get at by pecking through to the sugar filled nectar pouches at the base of the corolla tube; mammalian devotees on the other hand, will have trouble simply breathing.



R. piercei (KW 8254)



R. beanianum

R. piercei

Section *Leiorrhodium* Subsection *Parishia:*



R. elliottii (KW 19083)



Taxa:

R. elliottii
- *R. elliottii* ssp. *elliottii*
- *R. elliottii* ssp. *facetum*

R. kyawii
R. venator

Taxonomic Revision:

The Subsection *Parishia* epithet is derived from that of *R. parishii,*
an honorific for the Reverend Charles Samuel Pollock Parish (1822-1897),
who served as chaplain at the port of Moulmein (now Mawlamyaing) in lower Myanmar,
and discovered the species while out searching for orchids on the Dawna mountain range,
southeast of the town, sometime around 1868.
Regrettably, his find has a constitution far too tender for permanent placement
outdoors in even the mildest of west coast gardens,
and even more unfortunately, is currently believed to have been lost to UK cultivation.

Placement within Section *Leiorrhodium* is a result of the 2010-published study,
A Phylogeny of Rhododendron Subgenus Hymenanthes Based On Chloroplast DNA Markers,
but otherwise, the subsection remains as defined by the 1996 Edinburgh Revision,
apart from a ranking reduction for *R. elliottii* and *R. facetum,*
and the addition of *R. venator*.

Subsection Morphology:

Shrubs or small trees, compact, bushy or straggly,
to rounded, spreading or broadly-upright, 1 to 12m high;
branchlets stout, moderately through densely white or reddish stellate-tomentose at first,
becoming glabrescent or glabrous, quickly or with age,
usually setulose-glandular, sometimes stalked-glandular, those hairs present intermixed;
bark rough, grey-brown, flaking.

Leaves coriaceous,
elliptic to broadly obovate, lanceolate through oblanceolate to oblong-lanceolate,
6 to 30cm long by 1.7 to 11cm wide,
apex acute, rounded or obtuse, base obtuse or rounded, retained for 2-3 years;
upper surface dark green, occasionally rugulose, matt or shiny,
variably stellate-tomentose at first,
becoming glabrous or with vestiges of the indumentum remaining,
the midrib grooved, occasionally setulose-glandular,
the veins often deeply impressed, the margins somewhat recurved or flat;
lower surface paler, variably stellate-tomentose,
usually becoming glabrous, or with vestiges remaining,
especially on and around the midrib,
but sometimes with a thin cinnamon-brown persistent covering,
this sometimes mixed with a few stalked glands, rarely with intermixed folioliferous hairs,
often punctulate with minute red glands,
the midrib and primary veins raised.

Leaf anatomy comprises a 2-layered upper epidermis,
with the cells of similar size in each layer;
the cuticle is between half and as thick as the cells are deep; water tissue is present;
the lower epidermis cells are not prolonged into papillae.
Sclereid cells are present.

Petiole 10-60mm long, grooved above,
white or reddish stellate-tomentose at first,
sometimes with intermixed stalked- or setulose-glandular hairs,
usually becoming glabrous with age, rarely persistent.

Inflorescence racemose-umbellate, lax or compact, rarely pendulous, 4-10-20-flowered.

Rhachis 6-50mm long, floccose or stellate tomentose,
often intermixed with short-stalked or setulose glands.

Pedicel 6-30mm long, stellate-tomentose or glabrous,
sometimes short-stalked glandular.

Calyx reddish, usually small, 5-lobed, usually irregularly so,
these broad, rounded, triangular or ovate, and 1-5mm long,
their outer surface stellate-tomentose or glabrous, often with stalked or setulose glands,
their margins, glabrous, ciliate, stalked- or setulose-glandular.

Corolla 2.5 to 6cm long, 5-lobed, fleshy, funnel- or tubular-campanulate,
deep red, crimson or scarlet, rarely rose-purple or reddish-purple,
usually spotted deeper,
with 5 conspicuous nectar pouches at the base;
the outer surface glabrous or hairy, sometimes stalked- or setulose-glandular.

Stamens 10, unequal;
filaments glabrous or hairy along the lower half or at the base.

Ovary conoid or oblong, 3-9mm long, 5-6-locular rarely more,
densely stellate-tomentose,
often variably stalked- or setulose-glandular, the hairs intermixed.

Style 20-45mm long, glabrous, stellate-tomentose or glandular,
when present the hairs intermixed, at the base or to the tip.

Capsule oblong or oblong-oval, 12-34mm long, usually slightly curved, grooved,
stellate-tomentose, sometimes sparsely glandular.

Seeds elongate, winged, sometimes narrowly so, each end with appendages.



R. elliottii (KW 19083)

R. elliottii (KW 19083)

R. elliottii* ssp. *elliottii

Hardiness:
H3-4.
Flowering Period:
May-July.
Distribution in the wild:
Naga Hills, NE India.
Growing in woodland at elevations of 2,400-3,000m.

Identification:
Shrub or small tree, straggly, rounded or broadly upright, 3 to 9m high.
Vegetative buds rounded and prominent.
Leaves lanceolate through oblanceolate to oblong-elliptic or elliptic,
6 to 15cm long by 2.5 to 6cm wide;
lower surface stellate-tomentose and matt at first,
becoming glabrous and shiny at maturity,
but sometimes with vestiges of the indumentum remaining, especially on the midrib,
and punctulate with minute red glands.
Petiole 13-30mm long,
reddish stellate-tomentose and stalked-glandular,
becoming glabrescent and glabrous at maturity.
Inflorescence 6-10-20-flowered.
Rhachis 10-16mm long,
floccose and short-stalked glandular.
Pedicel 8-12mm long,
glabrous, moderately through densely short-stalked glandular.
Calyx lobes 2-4mm long,
their outer surface moderately through densely short-stalked glandular,
their margins sparsely ciliate-glandular or glabrous, short-stalked glandular.
Corolla 4 to 5.5cm long, funnel-campanulate,
scarlet through crimson, deep rose-purple or reddish-purple,
with plentiful darker spotting;
the outer surface glabrous.
Stamen filaments glabrous.
Ovary moderately through densely rufous-stellate-tomentose,
moderately through densely short-stalked glandular.
Style sparsely stellate-tomentose base-to-tip or along the lower half,
short-stalked glandular base-to-tip.
Capsule oblong, 15-20mm long,
stellate-tomentose, sometimes sparsely glandular.

Seed Collections:

KW 7725	1927	AC 5539	2004	AC 5566	2004
KW 19083	1949	AC 5540	2004	TDA 765	2014
NAPE 0010	2003	AC 5541	2004	TDA 766	2014

R. elliottii was the first member of the subsection tolerant of the winter lows that are part and parcel of the UK's maritime climate to be discovered and introduced. Sir George Watt found the rhododendron growing on Mount Javpo, the peak part of the Naga Hills of northeast India, during January 1882, and he named the find for the Chief Commissioner of Assam, Charles Alfred Elliott (later knighted and promoted to Lieutenant-Governor of Bengal), who was journeying with the Burma-Manipur Delimitation Commission expedition to which Watt had been assigned as physician and botanist. A partial description of the species can be found halfway into the near 800-page tome *Indian Trees,* written by Sir Dietrich Brandis and published in 1906, while a full botanic treatment, penned in 1914 by John Henry Lace and William Wright Smith, appears in Volume 8 of *Notes from the Royal Botanic Garden, Edinburgh*.

The species is the westernmost established member of Subsection *Parishia* and very closely related to *R. facetum,* populations of which can be found just across the border in northeastern Upper Myanmar. This biogeography led Peter and Kenneth Cox, in their 1997-published *Encyclopedia of Rhododendron Species,* to suggest that *R. elliottii* might better be considered an adjunct of that taxon.

Morphologically, the differences between the two are indeed so nebulous that distinguishing one from the other when out of flower is a near impossibility, though in general the leaves of *R. elliottii* tend to be slightly smaller, are usually less tapered at the base and without any vestige of the initially present stellate indumentum (at least on the upper surface). When the corollas are available for inspection, their shape will be seen to be more funnel-campanulate than tubular-campanulate, with the pedicel and calyx sporting short-stalked glands rather than hairs (although the calyx margins are sometimes excepted). Additionally, the stamen filaments are glabrous and the ovary both hairy and sticky. But as the geographic separation remains disjunct, with no on-the-ground merging reported, formally associating the pair would require ranking at subspecies status, and moreover, to comply with the nomenclature rules, that new designation would be under *R. elliottii,* for *R. facetum* was not described until 1917. However, such an alliance appears sound and is adopted herein.

The glabrous stamen filaments of *R. elliottii* ssp. *elliottii* key the subspecies from *R. kyawii,* which in addition, usually retains a thin covering of cinnamon-brown stellate hairs on the leaf underside and has far longer petioles. *R. venator* possess a gland-free style, apart from an occasionally spattering of such at the base, has much smaller corollas that are rarely more than 4cm long, and is a straggly shrub to around 3m high at maturity rather than a small tree reaching to 9m.

Prior to 2003, seed of *R. elliottii* ssp. *elliottii* had only been introduced into UK gardens on three occasions. The premier 1882 gathering by Watt resulted in plants with rose-purple flowers, but these have apparently all been lost to cultivation due to a lack of hardiness. Frank Kingdon-Ward's subsequent 1927 and 1949 harvesting of capsules from Mount Javpo - almost certainly secured from higher up the mountain - produced crimson-flowered plants. These have now developed into mature tree-like specimens that are simply the most stunning red-blooming species rhododendrons in the genus, with plants under KW 7725 having garnered prestigious AM and FCC awards from the RHS. The species has also been used to create some of the best hybrids available for clement climes, most notably by Lionel de Rothschild of Exbury.

Cultivated plants usually begin flowering in the latter half of May, a month earlier than *R. facetum,* blooming freely and often with abandon. New growth comes late and so requires protection from early autumn frosts, restricting placement to west coast woodland gardens and the mildest sites along the south coast.

R. elliottii (KW 19083)

R. elliottii (KW 7725)

R. elliottii (AC 5541)

R. elliottii (KW 19083)

R. elliottii* ssp. *facetum

Hardiness:
H3-4.
Flowering Period:
June-August.
Distribution in the wild:
W Yunnan, China; NE Upper Myanmar; N Vietnam.
Growing in mixed woodland or scrub, sometimes in the open,
at elevations of 2,100-3,600m.

Identification:
Shrub or small tree, compact to leggy, rounded or broadly upright, 2 to 12m high;
branchlets sometimes short- or medium-stalked glandular.
Leaves obovate-elliptic through oblong-elliptic to oblong-lanceolate,
8.5 to 25cm long by 3 to 7.8cm wide;
lower surface stellate-tomentose and matt at first,
becoming glabrous and shiny at maturity,
but sometimes with vestiges of the indumentum remaining, especially on the midrib,
and punctulate with minute, red glands.
Petiole 10-34mm long,
white or reddish stellate-tomentose at first, rarely medium-stalked glandular,
becoming glabrescent and glabrous at maturity.
Inflorescence 8-13-20-flowered.
Rhachis 10-23mm long,
stellate-tomentose at first, but quickly glabrescent,
or moderately through densely floccose or pubescent,
rarely short-stalked glandular.
Pedicel 6-20mm long,
moderately through densely rufous stellate-tomentose, but occasionally glabrous,
sometimes moderately through densely short-stalked glandular.
Calyx lobes 2-5mm long, irregular,
their outer surface usually moderately through densely stellate-tomentose,
often short-stalked glandular,
their margins stellate-tomentose, occasionally ciliate, rarely glabrous,
often short-stalked glandular.
Corolla 2.5 to 5cm long, tubular-campanulate,
deep pink, rose through scarlet, crimson, or clear bright red,
usually spotted deeper, occasionally blotched;
the outer surface sometimes sparsely through moderately floccose-stellate-tomentose,
rarely medium-stalked glandular at the base.
Stamen filaments puberulent along the lower half or at the base.
Ovary sometimes 7- or 8-celled, densely rufous-stellate-tomentose.
Style moderately through densely floccose-stellate-tomentose base-to-tip
or along the lower two-thirds,
short- or medium-stalked glandular at the tip, along the upper half, or throughout,
rarely without glands; stigma small.
Capsule oblong or oblong-oval, 12-34mm long,
moderately through densely stellate-tomentose, occasionally short-stalked glandular.

Seed Collections:

F 13508	1914	SBEC 257	1981
F 15917	1917/1919	SBEC 890	1981
F 17610	1917/1919	SBEC 949	1981
F 17616	1917/1919	AC 578	1993
F 17852	1917/1919	AC 598	1993
F 18171	1917/1919	KR 2628	1993
F 18273	1917/1919	AC 3049	1996
Farrer 1022	1919	AC 3061	1996
KW 5445	1922	AC 3094	1996
R 7648	1923/1924	KR 3986	1996
F 24201	1924/1925	CCHH 8053	1997
F 24592	1924/1925	PW 178	< 2000
F 24739	1924/1925	BASE 9701	2000
F 24748	1924/1925	DGEY 426	2001
F 26045	1924/1925	KR 7593	2002
F 26071	1924/1925	KR 7667	2002
F 27069	1924/1925	C&N 5867	2007
F 27105	1924/1925	C&N 5845	2007
F 27468	1924/1925	C&N 5873	2007
KW 7327	1926	C&N 5874	2007
F 29763	1930/1931	CWT 6395	2011
Yu 21000	1937	JN 11041	2011
SBEC 1014	1981	JN 11055	2011
SBEC 183	1981		

R. facetum (AC 598)

On June 9th, 1914, Frank Kingdon-Ward became the first Western plant hunter to come upon *R. facetum,* discovering a population of 7m-high scarlet-flowered plants that were growing near his campsite at Fengshui-ling in eastern Upper Myanmar. Which was lucky, because just a month later, his principal rival, George Forrest, found a group of lower growing, crimson-bloomed shrubs at Ghi-shan, to the east of Tali Lake (now Er Hai) in mid-west Yunnan. Both species ended up being described in Volume 10 of *Notes from the Royal Botanic Garden, Edinburgh,* published in 1917: *R. facetum* by Sir Isaac Bayley Balfour and Kingdon-Ward; and Forrest's find, which was named *R. eriogynum,* by Sir Isaac and William Wright Smith.

Kingdon-Ward's tree-like rhododendrons were bereft of seed, but Forrest's shrubs still held viable capsules and their contents were introduced into UK cultivation under the field number F 13508 later that same year. The Scotsman would source multiple collections of both species when he returned to China on subsequent expeditions, while Reginald Farrer secured Myanmarese seed in 1919, Kingdon-Ward doing the same in 1922. First flowering in UK cultivation occurred during 1926, at Trewithen, near Truro in Cornwall, the garden of George Johnstone.

Doubts had begun to be expressed about the validity of maintaining the two taxa as distinct species as early as 1930 - Harry Tagg's entries in *The Species of Rhododendron,* for instance - but reaching that conclusion formally took the botanists until 1979, when it was adopted in the second part of the Edinburgh Revision's *Preliminary Synopsis* paper (*Notes,* Volume 37), and - shock horror! - that same view was endorsed by H. H. Davidian in 1992 (*The Rhododendron Species,* Volume 3).

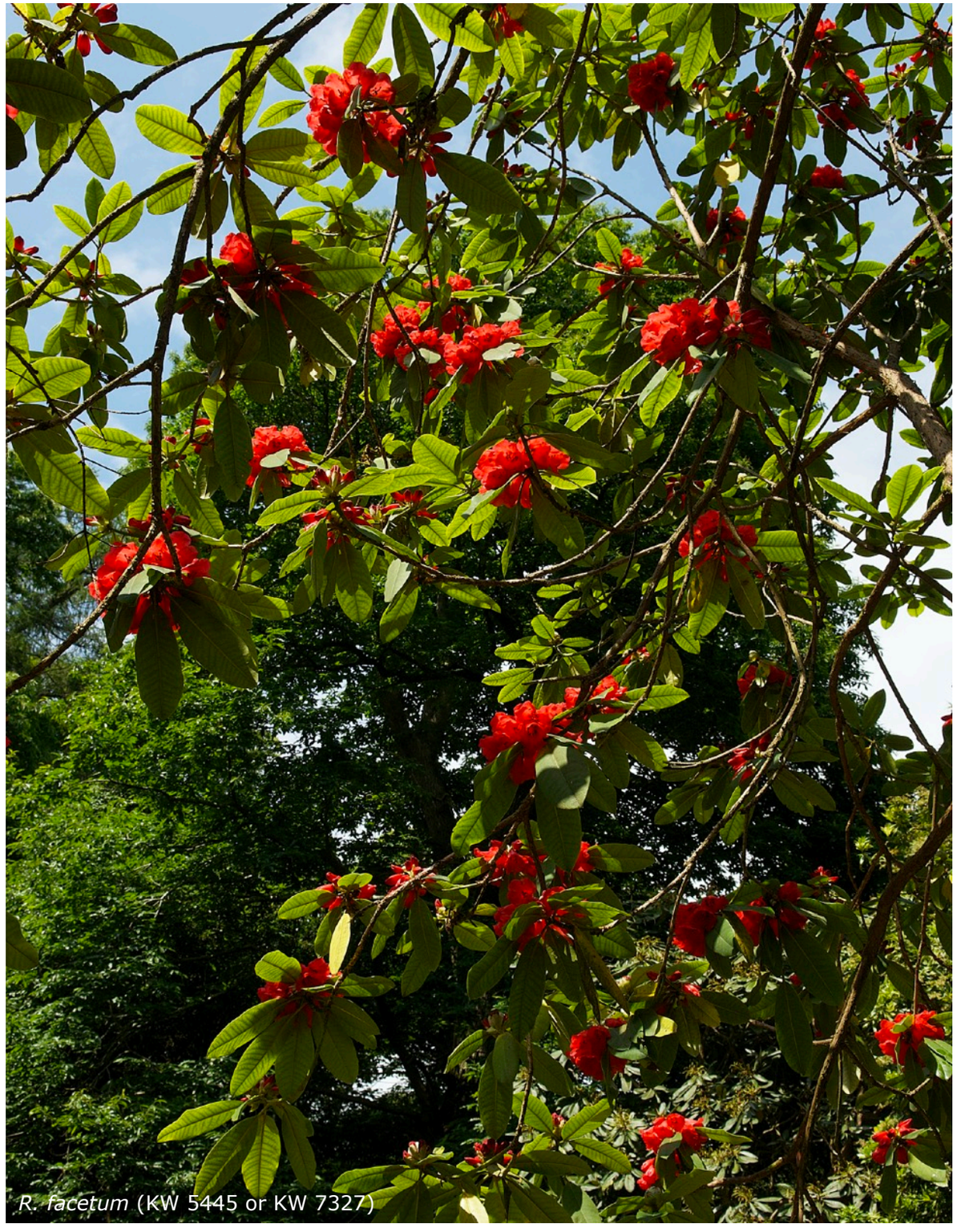
The reduction of *R. facetum* from specific to subspecies status evidenced herein, is required because of its close similarity to *R. elliottii,* which was partially described in 1906 and fully documented in 1914, so takes precedence under the nomenclature rules, the much wider natural distribution of the former notwithstanding.

R. elliottii ssp. *facetum* differs from its Indian sister on Mount Javpo most obviously in having hairs on, or at the base of, the stamen filaments, plus a non-sticky ovary. Less decisively, the pedicel and calyx are usually hairy and glandular, the corollas are tubular-campanulate rather than funnel-campanulate in shape, and the leaf base narrows gradually rather than abruptly. Foliage size, persistent remains of the evanescent juvenile tomentum and other suggested keys are simply too amorphous to be considered seriously.

The species is also closely related to *R. kyawii,* but lacks both the small bristles found on that taxon's young shoots, abaxial and adaxial midrib, petiole, rhachis and pedicel, and the thin but usually persistent covering of cinnamon-brown hairs on the mature leaf underside. Foliage size, petiole length and ultimate height are all quoted as being greater for *R. kyawii* than ssp. *facetum,* but again such distinctions are ambivalent, both in the wild and in cultivation. Size is a valid comparator however with regard to *R. venator,* which is smaller on all counts - ultimate height, leaf size and corolla length being manifestly clear-cut - but offers glabrous stamens and a non-sticky style to dispel any lingering doubts.

Bloom time for ssp. *facetum* in British gardens is usually around the middle of June, often a whole month later than ssp. *elliottii,* which means the plant's new shoots start to expand even later still. Early autumn frosts are therefore the greatest danger to successful cultivation, yet paradoxically, excessive mid-summer heat can also cause injury, distorting and deforming the soft and unripened growth, which is then left more prone to insect attack. And an August drought will only exacerbate matters.

However, despite such approbations, cultivation along the east coast is not a complete folly providing a really sheltered spot can be found.



R. facetum (KW 5445 or KW 7327)

R. facetum (KW 5445 or KW 7327)



R. facetum (AC 598)



R. facetum (AC 598)



R. facetum (KW·5445 or KW 7327)

R. kyawii

Hardiness:
H3.
Flowering Period:
June-August.
Distribution in the wild:
W Yunnan, China; NE Upper Myanmar.
Growing in mixed woodland and thickets, in deep forested gorges, and on limestone cliffs, at elevations of 1,500-3,700m.

Identification:
Shrub or small tree, rounded, spreading or broadly upright, 3 to 10m high.
Leaves oblong-elliptic through obovate-elliptic,
8 to 30cm long by 3 to 11cm wide;
upper surface midrib sometimes setulose-glandular;
lower surface stellate-tomentose at first,
remaining so or becoming glabrescent to near glabrous, the hairs cinnamon-brown,
usually intermixed with a few short-stalked glands, which may also remain or fall off,
the midrib conspicuously raised, setulose-glandular at first.
Petiole 15-60mm long,
moderately through densely reddish stellate-tomentose and setulose-glandular,
the hairs intermixed, each type persistent or falling away with age.
Inflorescence 10-15-20-flowered.
Rhachis 20-50mm long,
moderately through densely floccose- or stellate-tomentose,
setulose-glandular or without glands.
Pedicel 15-30mm long,
variably floccose- or stellate-tomentose, or glabrous,
moderately through densely setulose-glandular.
Calyx lobes, 1-2-5mm long, irregular,
their outer surface and margins floccose or glabrous,
moderately through densely medium- or long-stalked glandular.
Corolla 4 to 6cm long, tubular-campanulate,
bright crimson through scarlet,
unspotted;
the outer surface sparsely through moderately stellate-tomentose,
rarely floccose, setulose-glandular or not.
Stamen filaments puberulent along the lower half or at the base.
Ovary densely rufous-stellate-tomentose,
sparsely through moderately short-, medium- or long-stalked glandular,
or without glands.
Style rufous-stellate-tomentose and short- or long-stalked setose-glandular
at least along the lower half, often to the tip; the stigma capitate.
Capsule oblong, 20-40mm long,
moderately through densely stellate-tomentose,
medium- or long-stalked glandular or eglandular.

Seed Collections:

F 17928	1919	F 27250	1924/1925
F 18395	1919	F 27578	1924/1925
Farrer 1444	1919	F 27678	1924/1925
KW 5469	1922	F 29926	1930/1931
KW 5533	1922	F 29929	1930/1931
F 24542	1924/1925	F 30375	1930/1931
F 24680	1924/1925	KW 51	1938/1939
F 25584	1924/1925	CCHH 8078	1997
F 27126	1924/1925	KR 9689	2010
F 27128	1924/1925	JN 11066	2011


R. kyawii

R. kyawii is the least hardy member of Subsection *Parishia* able to be grown outdoors in the UK and consequently the rarest in cultivation. Assigned a H2-3 hardiness rating by the RHS, specimens will only thrive when sited within a wooded environment at the mildest sites along the west coast, or if grown along the south coast, when cosseted in one of Cornwall or Devon's favoured, near frost-free valleys, all of which run down to the sea. Further east, at Exbury Gardens on the Solent in Hampshire, for instance, the species is only borderline hardy, and if attempted at the Sir Harold Hillier Gardens just a few miles inland at Romsey, the first hard winter would seal their fate. Because late growth, resulting from a June-to-August flowering period, makes even mature plants susceptible to early autumn frosts. Yet where *R. kyawii* can develop undamaged, majestic, large-leaved, tree-like specimens will result, and these will be adorned with a profusion of eye-catching scarlet or deep crimson trusses that prolong the flowering season into mid-Summer.

U Maung Maung Kyaw, an officer in the Imperial Forest Service, discovered the species and collected herbarium material in September 1912 while on an expedition to the Kachin Hills supervised by one of that colonial organisation's Deputy Conservators, a Mr E. M. Buchanan. The find was made in evergreen forest a mile or so from Paypat bungalow in the Myitkyina neighbourhood, and the botanic description that appeared subsequently - in Volume 8 of *Notes from the Royal Botanic Garden, Edinburgh,* published in 1914 - was a joint endeavour between John Henry Lace, then Chief Conservator of Forests in Myanmar, and William Wright Smith.

Two species that had previously been gifted specific status - *R. agapetum* and *R. prophantum* - have now been made synonymous under *R. kyawii:* the latter, without even a hint of controversy back in 1930; the former, with its somewhat shorter petioles - rarely more than 4cm in length - a style glandular only at the base, and a bloom time sometimes as much as four weeks in advance of the type species, still for some, the subject of debate. If the wild populations of the two taxa were disjunct, a case for retention at subspecies ranking could be made, but field study has shown that this is not the case and that full intergradation occurs (David Chamberlain, *Notes,* Volume 39, No. 2, 1982).

The small glandular bristles, intermixed with a usually dense covering of stellate hairs on the branchlets, petioles, rhachis and pedicel, distinguish *R. kyawii* from the two *R. elliottii* subspecies, though these stiff setulose hairs often prove deciduous with age. If absent, an equally valid key is the usually persistent tomentum on the adaxial leaf surface, this covering of cinnamon-brown hairs although thin and sometimes discontinuous, only rarely completely lost. A lack of spots on the corollas is also telling.

Setulose-glandular hairs will also be found gracing the feature set of *R. venator,* but this species can be cleaved from *R. kyawii* by the glabrous stamen filaments and non-sticky style. The former also has far smaller leaves and corollas, and is a straggly shrub rather than a small, broadly-upright tree.

George Forrest was the first plant hunter to introduce *R. kyawii* into British gardens, his premier batch of seed arriving in 1919 under the guise of *R. prophantum.* Several more lots followed, with Reginald Farrer and Frank Kingdon-Ward both adding to the pot. David Chamberlain, Peter Cox, Steve Hootman and Peter Hutchison were members of the team who reintroduced the species from the Shweli-Salwin Divide in 1997, with Keith Rushforth and Jens Nielsen securing additional lots in 2010 and 2011 respectively.



U Maung Maung Kyaw (second from right).

R. kyawii

R. venator (KW 6285)

R. venator

Hardiness:
H4-5.
Flowering Period:
May-June.
Distribution in the wild:
Tsangpo Gorge, SE Tibet.
Growing in forests and thickets, by swamps, along rocky valley slopes, and on rock faces, at elevations of 2,400-2,800m.

Identification:
Shrub, compact, bushy or straggly, 1 to 3m high.
Leaves oblanceolate through oblong-lanceolate to elliptic-lanceolate,
6 to 15cm long by 1.7 to 4.5cm wide;
upper surface rugulose;
lower surface densely stellate and folioliferous tomentose at first,
the hairs intermixed and becoming widely or closely scattered with age, papillate,
the midrib conspicuously raised, stellate and folioliferous tomentose, the hairs intermixed.
Petiole 9-16mm long,
moderately through densely whitish-stellate-tomentose
and sparsely through moderately setulose-glandular, the hairs intermixed,
quickly glabrescent or evanescent.
Inflorescence often pendulous, 4-10-flowered.
Rhachis 6-10mm long,
densely tomentose, the hairs brown, cinnamon, fawn or rust coloured.
Pedicel 8-23mm long,
moderately through densely stellate-tomentose,
sparsely through moderately setulose-glandular, rarely without glands.
Calyx lobes 1-3-5mm long,
their outer surface moderately through densely stellate-tomentose,
sometimes glandular at the base,
their margins glabrous or ciliate, and setulose-glandular.
Corolla 2.8 to 4cm long, tubular-campanulate,
crimson through scarlet to reddish-orange;
the outer surface glabrous.
Stamen filaments glabrous.
Ovary densely stellate-tomentose,
sometimes short-stalked setulose-glandular at the base.
Style glabrous, or sparsely through moderately stellate-tomentose at the base,
rarely setulose-glandular at the base;
the stigma slightly swollen.
Capsule oblong or slender, 15-23mm long,
moderately through densely stellate-tomentose.

Seed Collections:

KW 6285	1924	Watt 32	1937	LS&E 13584	1946/1947

In 1979, when the second half of *A Preliminary Synopsis of the Genus Rhododendron* was published in Volume 37 of *Notes from the Royal Botanic Garden, Edinburgh,* its two authors, James Cullen and David Chamberlain, set out their decision to place *R. venator* in a newly-created monotypic pigeonhole - Subsection *Venatora*. Doctor Chamberlain would later describe the taxon as being distinctive, but having no close allies, in his full Subgenus *Hymenanthes* revision paper (*Notes,* Volume 39, Number 2, 1982), and within this text, an affinity with Subsection *Maculifera* was noted on two counts: the scattering of folioliferous hairs found mixed-up with the thin stellate tomentum on the leaf abaxial surface, most especially along the midrib; and the characteristics of the corollas, which somewhat resembled those of *R. strigillosum*. The habit and leaf shape were also denoted as being suggestive of species in Subsection *Irrorata,* most especially *R. kendrickii.* Yet no mention whatsoever was made of the previous linkage with the rhododendrons of Subsection *Parishia,* despite the taxon's placement within this grouping when it was ranked as a subseries of the Irroratum Series under the old Balfourian classification.

Fast-forward a decade to the entry in Volume 3 of H. H. Davidian's *The Rhododendron Species*, and his 1992-published text will tell you that the stellate hairs on virtually every feature of *R. venator,* plus the equally widespread setulose-glandular hairs, the corolla shape with five basal nectar sacs in the throat, and to a degree, the leaf shape, match precisely with the morphological characteristics of the other *Parishia* species. True, the two *R. elliottii* subspecies and *R. kyawii* do not exhibit any folioliferous hairs on their component parts, but to sever an otherwise clear linkage on the basis of this one anomaly is wrong and it is not continued herein.

The online *Flora of China* entry backs this stance, placing *R. venator* in Subsection *Parishia.* Moreover, the concluding comment made by its authors, states that the affinity with Subsection *Maculifera* is 'distant'.

DNA evidence would of course indicate the most appropriate grouping, but none of the four *Parishia* species were included in the lists of rhododendrons tested in the three most significant inter-relational studies published to date (namely, the *Kurashige et al.* 2001, *Gao et al.* 2002, and *Goetsch et al.* 2005, scientific papers).

The restricted distribution of *R. venator,* confined to a limited area within the Tsangpo Gorge between Pemakochung and Senge Dzong, in southeast Tibet, clearly makes the species an outlier from the subsection's principal cohorts, spread as they are in an arc across the Naga Hills of north-east India, the mountains of Upper Myanmar, and those of western Yunnan. In response to a worsening climate caused by the rise of the Himalaya, though critically, while still protected within the developing ramparts of the gorge, the species has shrunk its features - habit, stature, leaf dimensions and corolla size - and become somewhat hardier than its cohorts, with that H4 rating allowing specimens to be planted outdoors in all but the coldest lowland UK gardens.

Frank Kingdon-Ward was the first Western plant hunter to come upon *R. venator* in the wild, doing so in the middle of November 1924 and remarkably, managing to get seed back to Blighty before the year was out. Harry Tagg wrote the species description almost a decade later when cultivated plants first began to flower, initially producing an English-only teaser for the Rhododendron Association Yearbook Supplement of 1933 (edited by a certain Lionel de Rothschild). His full botanic text with Latin adornments was found shortly after his death later that same year, when colleagues were sorting through the papers left on his desk. It was published posthumously in 1934, within Volume 18 of *Notes*.

The true species has only been found on two occasions since Kingdon-Ward's original introduction, despite being locally abundant within the Tsangpo Gorge. J. Cromer Watt returned seed during 1937, and then in April 1947, it was the turn of Frank Ludlow, George

Sherriff and Henry Elliott.

Seed from plants discovered in Arunachal Pradesh in 2001 by Kenneth Cox, along with a second gathering made in 2005, have been introduced into UK gardens and were at first tentatively given an affinity denomination. However, those cultivated specimens have longer, narrower leaves, sport pendulous bell-shaped red flowers, have pointed growth buds, and the branchlets themselves bear a dense covering of bright red bristles.

Subsequent botanic consideration concluded that a new species was to hand rather than a form of *R. venator,* but David Chamberlain is presently unable to formally publish a description and epithet due to the ramifications of the Convention on Biological Diversity, specifically, the Prior Informed Consent provisions. So for the time being, plants grown from KC 0104 and APA 87 must remain epithetless.

The moniker for *R. venator* incidentally, translates as 'hunter', an allusion to the scarlet flower colour rather than a misspelt association with the Isle of Wight.



R. venator (Watt 32)



R. venator (Watt 32)

R. venator (KW 6285)

Section *Leiorrhodium* Subsection *Selensia:*



R. dasycladum (AC 1943)



Taxa:

R. hirtipes
R. martinianum
R. selense
R. selense ssp. *dasycladum*
R. selense ssp. *jucundum*
R. selense ssp. *selense*

Taxonomic Revision:

The list of species set out above is significantly shortened from the tally detailed in the Edinburgh Revision texts after the removal of *R. bainbridgeanum, R. calvescens, R. erythrocalyx, R. esetulosum* and *R. setiferum*.

Field study has confirmed that *R. erythrocalyx* is indeed a natural hybrid - between *R. selense* and *R. wardii* - hence its non-appearance above, and although proof positive is still awaited, most Western experts believe that: *R. bainbridgeanum* resulted from pairings between natural hybrids of *R. crinigerum, R. selense* and possibly *R. wardii;* plants cultivated under the *R. calvescens* epithet are natural hybrids with a *R. vernicosum* x *R. beesianum* parentage; *R. esetulosum* is the product of a *R. selense* x *R. vernicosum* get together; and *R. setiferum,* which was reclassified as *R. selense* ssp. *setiferum* in 1978, arose from a *R. selense* x *R. bainbridgeanum* cross.

The cpDNA-motivated Section *Ponticum* to Section *Leiorrhodium* transfer apart, the subsection otherwise remains as defined in the Subgenus *Hymenanthes* paper of 1982.

Subsection Morphology:

Shrubs or small trees, broadly upright or rounded-spreading, 0.3 to 8m high; young shoots stalked-glandular or setulose-glandular, occasionally with sparse dendroid indumentum; bark brown or greyish-brown, rough, coarsely striate or cracking into oblong plates, sometimes warty.

Leaves evergreen, coriaceous, sometimes papery, rarely rigid, obovate through elliptic, 1.5 to 13cm long by 0.8 to 7.5cm wide, apex rounded or obtuse, base rounded, obtuse, cordate or truncate, retained for 1, or 1-3 years; upper surface dark green, shiny or matt, glabrous or with the vestiges of hairs or glands, the midrib grooved, sometimes hairy or setose-glandular near the base, rarely along the lower half, the veins impressed, the margins sometimes slightly recurved; lower surface glabrous when mature or with a thin indumentum of dendroid hairs, sometimes glaucous, the midrib raised, sometimes hairy, setose-glandular or stalked-glandular, usually near the base.

Leaf anatomy comprises a 2-layered upper epidermis,
with the cells in both layers being roughly equal in size; the cuticle is thin,
to around half as thick as the cells are deep; water tissue is usually absent;
the lower epidermis cells are usually not prolonged into papillae,
but when prolonged, are very small.
Sclereid cells are absent, or only sparsely present.

Petiole 3-30mm long, often terete,
usually flat and grooved above, rounded below,
setose-glandular, stalked-glandular, dendroid-hairy, or glabrous, in varied combinations.

Inflorescence lax, umbellate or shortly racemose, 1-7-10-flowered.

Rhachis 2-8mm long, usually floccose,
often stalked-glandular.

Pedicel 8-35mm long,
stalked glandular, setose-glandular, pubescent, in varied combinations.

Calyx variable, 5-lobed, these unequal,
triangular, ovate, oblong or rounded, 1-5-10mm long,
their outer surface and margins usually stalked-glandular, sometimes ciliate.

Corolla 2.5 to 5cm long, funnel-campanulate to campanulate,
white, creamy-white, white flushed rose, pale yellow, pink to reddish-purple,
with or without a crimson basal blotch, with or without crimson-purple flecks or spots;
nectar pouches lacking;
5-lobed, the lobe apex rounded and emarginate.

Stamens 10, unequal;
filaments pubescent at the base.

Ovary conoid, oblong, ovate or slender, 3-7mm long, 5-7-locular,
stalked-glandular, sometimes with rufous dendroid hairs.

Style glabrous, glandular at the base or along the lower half,
rarely eglandular.

Capsule oblong or slender, 10-35mm long,
straight or curved, often sickle-shaped,
often setose-glandular or stalked-glandular, rarely hairy.

Seeds elongate, narrowly winged, each end with an appendage.



R. dasycladum (AC 1943)



R. selense (F 21878)

R. selense* ssp. *selense
Hardiness:
H4-6.
Flowering Period:
April-May.
Distribution in the wild:
SE Tibet; NW Yunnan & SW Sichuan, China.
Growing in open pine and bamboo forests, rhododendron thickets, and on stony slopes,
at elevations of 2,700-4,550m.

Identification:
Shrub or small tree, broadly upright, compact or straggly, 0.6 to 3m high;
branchlets short-stalked-glandular, rarely eglandular, hairy or glabrous.
Leaves thinly coriaceous or papery,
ovate through obovate to elliptic,
2.6 to 8.2cm long by 1.5 to 3.9cm wide,
retained for just one year;
lower surface green or pale glaucous green,
glabrous at maturity, without a persistent indumentum,
the epidermis with or without a glaucous bloom,
the midrib raised.
Petiole 6-30mm long,
short-stalked-glandular, rarely eglandular, hairy or glabrous.
Inflorescence 3-8-flowered.
Pedicel 10-30mm long, stalked-glandular, hairy or glabrous.
Corolla 2.2 to 4cm long, funnel-campanulate,
white, pale cream, white flushed rose,
pale through deep pink, rose, or reddish-purple (rarely),
with or without a crimson basal blotch, with (rarely) or without crimson-purple spots.
Ovary densely short-stalked glandular, rarely hairy.
Style occasionally glandular at the base, rarely glandular along the lower half.
Capsule oblong or slender, 12-35mm long, sickle-shaped,
glandular or with the vestiges of glands.

Seed Collections:

F 13933	1917/1919	R 10930	1923/1924	R 23492	1932
F 14009	1917/1919	R 10961	1923/1924	Yu 7867	1937
F 14057	1917/1919	R 10963	1923/1924	Yu 19042	1937
F 14458	1917/1919	R 11026	1923/1924	Yu 20780	1937
F 15018	1917/1919	R 11028	1923/1924	LS&E 15057	1946/1947
F 16679	1917/1919	R 11058	1923/1924	R 154	1948/1949
F 16684	1917/1919	R 11062	1923/1924	Cox 6024	1992
F 16750	1917/1919	R 11063	1923/1924	Cox 6047	1992
F 19019	1917/1919	R 11064	1923/1924	Cox 6067	1992
F 21000	1921/1922	R 11065	1923/1924	SSNY 55	1992
F 21689	1921/1922	R 11066	1923/1924	SSNY 151	1992
F 21743	1921/1922	R 11077	1923/1924	KGB 691	1993
F 21874	1921/1922	R 11095	1923/1924	CNW 460	1994
F 21876	1921/1922	R 11111	1923/1924	CNW 620	1994
F 21878	1921/1922	R 11127	1923/1924	CNW 623	1994
F 21879	1921/1922	R 11209	1923/1924	CNW 684	1994
F 21892	1921/1922	R 11241	1923/1924	CNW 735	1994
F 21917	1921/1922	R 11507	1923/1924	CNW 737	1994
F 22711	1921/1922	R 11635	1923/1924	CNW 750	1995
F 22739	1921/1922	KW 9500	1931	AC 1580	1996
F 22758	1921/1922	KW 9621	1931	AC 1756	1996
F 22800	1921/1922	R 22028	1932	AC 1776	1996
F 22898	1921/1922	R 22029	1932	AC 4769	2001
F 22899	1921/1922	R 22030	1932	AC 4770	2001
F 22905	1921/1922	R 22032	1932	AC 4800	2001
F 22906	1921/1922	R 22033	1932	C&N 6156	2007
KW 5414	1922	R 22225	1932	CNC 12079	2012
R 10929	1923/1924	R 22237	1932	BE 15-49	2015
		R 22291	1932		

R. selense was discovered at Sie-La, Tsekou, on the Mekong-Salween Divide in the northwest of Yunnan, at the end of June 1895, Jean-Andre Soulié, a Catholic missionary priest sent into China by the Missions Étrangères de Paris organisation, responsible for the find. The dried material Soulié collected was swiftly despatched off to the French capital and post its arrival, examined and described by Adrien Franchet at the Muséum National d'Histoire Naturelle in 1898, his text appearing in Volume 12 of the *Journal de Botanique*.

George Forrest introduced *R. selense* into UK cultivation during 1917, returning additional batches of capsules as the expedition progressed, along with seed and dried herbarium material from five mirrors of the species, namely *R. axium, R. chalarocladum, R. metrium, R. nanothamnum* and *R. probum*. This quintet were reduced from specific to subspecies ranking by Harry Tagg in 1930's *The Species of Rhododendron,* and then - *R. probum* excepted - sunk as synonyms by John MacQueen Cowan and H. H. Davidian in an article they wrote for the 1951-52 *Rhododendron Year Book.* The sole remaining exception became *R. selense* var. *probum,* which was finally sunk by the Edinburgh Revision botanists in their *Preliminary Synopsis* paper of 1978 vintage (*Notes from the Royal Botanic Garden, Edinburgh,* Volume 36), within whose pages a Frank Kingdon-Ward find made back in 1913 - *R. pagophilum* - was also finally put to rest, post a similar protracted fate.

All of which illustrates the fact that over its endemic distribution, the 1978-defined *R. selense* ssp. *selense* is somewhat variable in its constitution. Field reporting shows that it merges with *R. dasycladum,* producing a host of intermediates, and in places, comes close to duplicating the morphology exhibited by *R. jucundum,* despite that taxon's disjunct and isolated population. And of course, on the ground, innumerable natural hybrids with the likes of *R. crinigerum, R. eclecteum, R. forrestii, R. hirtipes, R. sanguineum, R. temenium, R. vernicosum, R. wardii* and a host of others further complicate matters. Identification out in the wild therefore, is decidedly complex, given the feature boundary blurring.

However, to key the three subspecies from each other, the branchlets should be inspected first: short-stalked-glandular when mature, ssp. *selense;* setulose-glandular, ssp. *dasycladum* or ssp. *jucundum.* Attention should then switch to the leaves: completely glabrous, ssp. *selense;* an abaxial indumentum lost at maturity, with the leaf underside shown to be without a glaucous bloom, ssp. *dasycladum;* an abaxial indumentum lost at maturity that reveals a markedly glaucous bloom across the surface, ssp. *jucundum.* Final confirmation of a correct identification is provided by the calyx lobes when the plants are in flower: 1 to 2mm long, ssp. *selense;* if the largest lobes present are 3 to 5mm long, ssp. *dasycladum;* and if they are 4 to 6mm in length, ssp. *jucundum.*

The thinly coriaceous to papery-texture of the leaves should cleave the *R. selense* trio from the rest of the subsection, a distinction aided in the case of *R. martinianum* by a very rigid leaf, and by the rash of small brown dots seen on the abaxial epidermis of *R. hirtipes,* though these may be sometimes be obscured by a thin, floccose indumentum.

The natural hybrids that were once classified as *R. selense* ssp. *setiferum,* will display an abaxial leaf surface with a thin, but persistent, yet often discontinuous indumentum, and have calyx lobes between 4 and 8mm long.

Regrettably, in UK cultivation, the abundance of bloom exhibited by plants in the wild is rarely matched, with the great majority of introduced forms reluctant to set more than a few flower buds each season, though a sheltered but open position in the garden will maximise the potential for such and ensure the best deportment.

A September 1904 collection of *R. selense* made by Forrest on his first expedition to China under the field number F 5068, was subsequently placed under *R. panteumorphum* in 1916, with the dried material currently filed under *R. x erythrocalyx,* this determination made by David Chamberlain in 1979 (the usual qualifications apply to any seed).



R. selense



R. selense (F 14009)



R. selense (F 21878)



R. selense (R 11111)

R. selense* ssp. *jucundum

Hardiness:
H5-6.
Flowering Period:
April-May.
Distribution in the wild:
Cangshan Mountains, W Yunnan, China.
Growing along the margins of pine forests, in cane breaks and rhododendron forest,
in meadows, amongst boulders and on open rocky slopes,
at elevations of 3,050-3,660m.

Identification:
Shrub or small tree, broadly upright or spreading, compact or straggly, 0.6 to 6m high;
branchlets long stalked-glandular through setose-glandular.
Leaves thinly coriaceous or papery,
ovate through obovate to elliptic,
5 to 7.5cm long by 2.8 to 4cm wide,
retained for just one year;
lower surface glabrous at maturity, without a persistent indumentum,
the epidermis with a distinct glaucous bloom,
the midrib raised, sometimes sparsely short-stalked glandular towards the base.
Petiole 9-22mm long, grooved above,
long stalked-glandular through setose-glandular.
Inflorescence 3-8-flowered.
Pedicel 10-28mm long, stalked-glandular, hairy or glabrous.
Corolla 2.5 to 4cm long, funnel-campanulate or campanulate,
white, pale cream, white flushed rose, pale through deep pink, or rose,
with or without a crimson basal blotch, with or without crimson-purple spots.
Ovary densely stalked-glandular.
Style glandular at the base, rarely glandular along the lower half.
Capsule oblong or slender, 12-35mm long, slightly or distinctly curved,
glandular or with the vestiges of glands.

Seed Collections:

F 15579	1917	CLD 1300	1990
R 6357	1924	AC 815	1993
SBEC 349	1981	KR 2761	1993
SBEC 365	1981	KR 4051	1996
SBEC 543	1981	KR 4051b	1996
SBEC 544	1981	JN 1029	1999

The September 1904 collection of *R. x erythrocalyx* excepted, the first actual member of Subsection *Selensia* that George Forrest discovered - two years later during July 1906; at a site on the eastern side of the Tali Range in western Yunnan, now better known as the Cangshan - was *R. jucundum*. Only herbarium material was gathered that early in the season and it would be over a decade later before fully developed capsules were sourced by the Scotsman - from the same locale; the only place where the species has been found to date - and seed returned to the UK in 1917, a year after the species botanic description finally appeared in Volume 9 of *Notes from the Royal Botanic Garden, Edinburgh,* the text jointly written by Sir Isaac Bayley Balfour and his deputy, William Wright Smith.

R. jucundum managed to retain its specific ranking until 1978 and the publication, in *Notes,* Volume 36, of *A Preliminary Synopsis of the Genus Rhododendron,* the opening salvo of the Edinburgh Revision authored by James Cullen and David Chamberlain, whose reassessment of the morphology also took account of the restricted endemic distribution and the fact that the population was geographically isolated from *R. dasycladum* and *R. selense,* and correctly settled on subspecies status.

The underside of the *R. selense* ssp. *jucundum* leaf blade bears a heavy glaucous bloom not matched by any other member of the subsection, though the foliage of ssp. *selense,* and that of *R. martinianum* can, to a lesser degree, also be glaucous. Additional character differences with ssp. *selense* are minor, the presence of setose-glandular as well as stalked-glandular hairs on the branchlets, petioles and pedicels being one such. Keying the plants from some forms of ssp. *dasycladum* relies solely on the lack of any persistent abaxial indumentum.

Slightly larger leaves and a more populous inflorescence assist in distinguishing specimens of ssp. *jucundum* from the rigidly-leafed *R. martinianum*.

Cultivated plants are usually 2m high domes rather than the tree-like specimens found in the wild, these free-flowering from a young age, but as solitary specimens, unable to match the spectacle of an entire Chinese hillside submerged in a monoculture of bloom. *R. jucundum* is quite fast growing and hardy, but intolerant of poor drainage.

Before the Sino-British Expedition to the Cangshan's five-lot reintroduction of 1981 occurred, only Joseph Rock had contributed an additional gathering of seed to that of the premier collection, doing so seven years on from Forrest, in 1924. Six more lots have been secured by other Western plant hunters since 1981, all in the decade leading up to the Millennium.



R. jucundum (SBEC 349)



R. jucundum



R. jucundum (SBEC 543)

R. jucundum (SBEC 365)

R. selense* ssp. *dasycladum

Hardiness:
H5-6.
Flowering Period:
April-May.
Distribution in the wild:
E Tibet; W Yunnan & SW Sichuan, China.
Growing in open pine forest, scrub, and on bouldery slopes above the tree-line,
at elevations of 2,700-4,000m.

Identification:
Shrub or small tree, broadly upright or spreading, compact or straggly, 1 to 4.5m high;
branchlets long-stalked glandular through densely setose-glandular.
Leaves thinly coriaceous or papery,
ovate through obovate to elliptic,
4 to 9cm long by 2.2 to 4.2cm wide,
retained for just one year;
lower surface glabrous at maturity or with a thin veil of hairs,
the epidermis without a glaucous bloom, rarely with such,
the midrib raised, glandular or not, hairy or not.
Petiole 8-25mm long,
long-stalked glandular through densely setose-glandular.
Inflorescence 3-10-flowered.
Pedicel 8-24mm long, stalked-glandular.
Corolla 2.5 to 4cm long, funnel-campanulate,
white, pale cream, white flushed rose, pale through deep pink,
with or without a crimson basal blotch, with or without crimson-purple spots.
Ovary densely stalked-glandular.
Style glandular at the base, rarely glandular along the lower half.
Capsule oblong or slender, 12-35mm long, slightly curved or sickle-shaped,
short-stalked glandular.

Seed Collections:

F 11312	1913	R 11269	1923/1924	R 25260	1932
F 12950	1913/1914	R 11270	1923/1924	R 25398	1932
F 12982	1913/1914	R 11289	1923/1924	R 25428	1932
F 13897	1917/1919	R 11385	1923/1924	KW 13420	1937
F 15414	1917/1919	F 25535	1924/1925	LS&T 4360	1938
F 16318	1917/1919	F 25737	1924/1925	SBLE 406	1987
F 21563	1921/1922	F 25880	1924/1925	AC 1943	1996
F 22019	1921/1922	F 25899	1924/1925	CNC 12069	2012
R 11259	1923/1924	F 25993	1924/1925	JN 12153	2012
		KW 7189	1926		

It was during July 1913 that George Forrest first happened upon *R. dasycladum,* finding a population of plants on the mountains northeast of the Yangtze Bend in northwest Yunnan. The botanic description of the new-to-science species was published in 1917, Isaac Bayley Balfour and William Wright Smith jointly penning the entry that appeared in Volume 10 of *Notes from the Royal Botanic Garden, Edinburgh,* and their choice of Latin epithet translates as 'with hairy boughs'.

This is the key to identifying the taxon from all the other members of the subsection, for as illustrated by the photographs on pages 116 and 117, a profusion of sticky bristles will be found on the young shoots and branchlets, and on the petioles and pedicels.

Additionally, the leaf underside will be found to lack a glaucous bloom, although this absence is sometimes veiled by a thin indumentum.

Now classified as a subspecies of *R. selense,* the shrub is also allied to *R. hirtipes,* the latter, however, lacks leaves with a papery texture, has corollas that are campanulate in shape rather than funnel-campanulate, and its lower leaf surface is punctulate, distinctly covered by a rash of small brown dots (that are revealed to be collapsed hairs if studied under a microscope). Distinguishing ssp. *dasycladum* from ssp. *selense* when the abaxial leaf surface of the former is glabrous, relies on the latter having stalked-glandular hairs on its features rather than setose-glandular follicles, and in UK cultivation when in flower, ssp. *dasycladum* will usually be covered in far more bloom than its sister subspecies. From ssp. *jucundum,* reliance for a correct identification rests on the absence of that glaucous bloom from the lower surface of the leaves.

Out in the wild, ssp. *dasycladum* is dispersed to the east and south of the ssp. *selense* populations, with plants usually found growing at lower elevations, although their distributions do merge at some locales, so the altitudinal distinction is far from clear-cut. Intermediate forms between the two were first classified as *R. rhaibocarpum,* though this taxon has since been made synonymous under ssp. *dasycladum.* The subspecies is also geographically distant from *R. hirtipes,* while the population of ssp. *jucundum* is isolated on the Cangshan Mountains.

Seed of *R. selense* ssp. *dasycladum* was actually introduced into UK gardens under the type specimen collection of *R. rhaibocarpum,* this gathering - F 11312 - being made in September 1913, when plants were in fruit. Forrest, Kingdon-Ward, Rock, and Ludlow, Sherriff and Taylor, all secured additional lots, with the species reintroduced in 1987 by the members of the Sino-British Expedition to Lijiang, and later, by a trio of other collectors. Three forms are now established in cultivation, varying in habit from a compact small shrub barely topping the 1m-mark with oval leaves no more than 5cm long; to a 2m high clone with oblong leaves 7.5cm in length; and a 4m tall small tree with elliptic-shaped foliage to 6.5cm. All are free-flowering and hardy.

R. dasycladum (AC 1943)


R. dasycladum


R. dasycladum


R. dasycladum

R. dasycladum (F 11312)

R. martinianum

Hardiness:
H5-6.
Flowering Period:
April-May.
Distribution in the wild:
SE Tibet; NW Yunnan, China; NE Upper Myanmar.
Growing in open conifer forest and along forest margins,
in scrub and thickets, and in open pasture above the tree-line,
at elevations of 3,000-4,300m.

Identification:
Shrub, broadly upright, compact and rounded, or straggly,
much-branched, 0.6 to 3.5m high;
branchlets thin, stalked-glandular or setose-glandular, occasionally glabrous.
Leaves thinly coriaceous, rigid,
elliptic through ovate-elliptic to obovate,
1.5 to 5.4cm long by 0.8 to 2.5cm wide,
retained 1-3 years;
lower surface glaucous or pale glaucous green,
punctulate with minute glands, otherwise glabrous,
rarely with a few tufts of hairs even at maturity,
the midrib raised.
Petiole 3-7mm long, stout, flat above, rounded below, near glabrous at maturity,
sparsely setulose-glandular or stalked-glandular.
Inflorescence 1-4-flowered.
Pedicel 15-35mm long,
sparsely setulose-glandular or stalked-glandular, rarely hairy.
Corolla 2.5 to 4cm long, funnel-campanulate,
white, milky-white, white flushed rose, pale yellow, pink through red to purple,
with or without crimson-purple spots.
Ovary densely short-stalked glandular.
Style densely short-stalked glandular at the base or not.
Capsule oblong or slender, 15-25mm long, straight or curved,
glandular-hairy or with the vestiges of such.

Seed Collections:

F 13301	1914	F 25614	1924/1925
F 13439	1914	F 25811	1924/1925
F 13949	1917/1919	KW 6795	1926
F 19540	1921/1922	KW 7612	1926
F 20246	1921/1922	R 18421	1929
F 20826	1921/1922	R 22119	1932
F 21695	1921/1922	R 22123	1932
F 21775	1921/1922	R 23482	1932
F 22939	1921/1922	KW 13017	1937
F 22940	1921/1922	KW 13419	1937
KW 5434	1922	R 47	1948/1949
R 10912	1923/1924	R 57	1948/1949
R 10958	1923/1924	KW 21547	1953
R 10965	1923/1924	AC 3251	1997
R 11205	1923/1924	AC 3267	1997



R. martinianum (F 25614)

R. martinianum was also found by George Forrest in western Yunnan, but during September 1914 - 'in fruit, and with a single withered flower on a ripening capsule'. It was his third expedition to China, but the first with a new sponsor, Arthur Bulley and Bees Seeds Ltd having been supplanted by J. C. Williams, of Caerhays Castle, Cornwall. Land-owner, Liberal Unionist politician and in sequence, Member of Parliament for Truro, High Sherriff of Cornwall, and then Lord Lieutenant of Cornwall, he also found the time to breed hybrid rhododendrons, camellias and daffodils in the Gulf Stream-tempered grounds of his estate and picked up the entire tab for Forrest's venture - a sum of £3,108.13s.6d. back in the day, which when adjusted for inflation, would now be well in excess of £300,000. And he continued that association with the Scotsman, remaining the plant hunter's principal backer on all four of his subsequent trips.

The species description of *R. martinianum* was jointly written by Forrest and Sir Isaac Bayley Balfour, and it appears in Volume 11 of *Notes from the Royal Botanic Garden, Edinburgh,* published in 1919 (from which the 'in fruit' quote above is taken). The chosen epithet is an honorific for John Martin, the first Head Gardener at Caerhays - hence the set up text - who occupied that post from the 1890's until around 1922 and was responsible for cultivating all of the species rhododendrons then grown on the estate, which at the time, was the most complete collection of such in the entire country.

Closely allied to *R. selense, R. martinianum* has smaller leaves - 1.5 to 5.4cm long and 0.8 to 2.5cm wide, in contrast to a length of 2.6 through 8.2cm and width of 1.5 to 3.9cm - which are retained for up to three years rather than just one, and while also thinly coriaceous, they are decidedly rigid, with this feature the primary characteristic used to key one taxon from the other. Additionally, fewer corollas will be found in the flower truss - 1 to 4 instead of 3 to 8 - and the shrub is generally lower growing. It also has quite thin branches with distinctive nodes.

Paraphrasing from the *Notes* botanic description:

> 'these nodal swellings appear like beads on a rosary chain, separated by cylindric portions of the stem on which are visible the scars of the fallen innermost scale-leaves. The nodule itself is formed by the clustering of the leaves and the suppression of elongated internodes at the end of each year's growth'.

So: Dumbledore's Elder Wand writ large in Genus *Rhododendron*.

Wild plants also (reportedly) have narrower corollas than found on the various forms in cultivation.

R. martinianum was first introduced into British gardens from Forrest's premier 1914 gathering, with another haul of capsules following later that same year. Additional lots from Forrest, Kingdon-Ward and Rock arrived in subsequent years up until 1953, but the various endemic populations have proved more elusive to track down for modern-day plant hunters, the only accrual to date being made by Alan Clark on the Doshong La in 1997.

Most forms of the species develop into rounded domes around 1.4m high that become straggly with age, the exceptions being Forrest's 25614 from 1924, and an affinity collection made by Kingdon-Ward in 1953 - under KW 21557 - this sourced from plants growing in The Triangle, Upper Myanmar. Both are more compact in habit, the former with very small leaves and pure white flowers, the latter bearing white flushed pale pink corollas. Bloom time is April-May and all the introductions growing in British gardens have been gifted a H5-6 hardiness rating, but they still require a sheltered niche to thrive along the east coast.



R. martinianum (F 20246)



R. martinianum aff. (KW 21557)

R. hirtipes

Hardiness:
H5-6.
Flowering Period:
February-April.
Distribution in the wild:
SE Tibet.
Growing in wet conifer forest and ravines, alongside rivers or streams,
on cliffs and amongst rocks, at elevations of 3,000-4,700m.

Identification:
Shrub or small tree, upright and bushy, 0.3 to 8m high;
branchlets moderately through densely setose-glandular, the hairs brown,
and often stalked-glandular.
Leaves coriaceous, broadly obovate through oblong-oval,
5 to 13cm long by 3.5 to 7.5cm wide,
retained 1-2 years;
lower surface pale green, sparsely floccose tomentose, the indumentum loose,
sparsely stalked-glandular, these hairs scattered,
the epidermis moderately through densely brown punctulate,
the midrib distinctly raised,
setose-glandular near the base, along the lower half, or along the entire length,
the veins raised.
Petiole 10-30mm long, terete, shallowly grooved above,
moderately through densely setose-glandular, the hairs brown and persistent.
Inflorescence 2-7-flowered.
Pedicel 10-20mm long, densely setose-glandular.
Corolla 3.5 to 5cm long, campanulate,
white through pink to rose-pink, or white flushed pink,
often with pink and white bands outside,
with or without a crimson-purple basal blotch, with or without crimson-purple spots.
Ovary densely stalked-glandular.
Style densely stalked-glandular at the base or along the lower two-thirds,
rarely eglandular.
Capsule oblong, 10-25mm long, straight or slightly curved,
setose-glandular.

Seed Collections:

KW 5659	1924	LS&E 15263	1946/1947
KW 6223	1924	LS&E 15272	1946/1947
LS&T 3624	1938	LS&E 15273	1946/1947
LS&T 3631	1938	LS&E 15765	1946/1947
LS&T 3797	1938	LS&H 17546	1949
LS&E 13128	1946/1947	CV 9546	1995
LS&E 13152	1946/1947	KR 3490	1995
LS&E 13526	1946/1947	CC 7508	1996
LS&E 13551	1946/1947	CC 7549	1996
LS&E 13629	1946/1947	CC 7578	1996
LS&E 13634	1946/1947	AC 3257	1997
LS&E 13675	1946/1947	AC 3326	1997
LS&E 13782	1946/1947	AC 3357	1997
LS&E 13982	1946/1947	AC 4497	2000
LS&E 14028	1946/1947	AC 4597	2000
LS&E 15005	1946/1947	AC 4637	2000
LS&E 15029	1946/1947	AC 4638	2000
LS&E 15033	1946/1947	AC 4644	2000
LS&E 15041	1946/1947	AC 4668	2000
LS&E 15055a	1946/1947	AC 4669	2000
LS&E 15056	1946/1947	AC 4723	2000
LS&E 15072	1946/1947	TARRVS 065	2002
LS&E 15088	1946/1947	TARRVS 192	2002
LS&E 15090	1946/1947	KR 5059	2004
LS&E 15092	1946/1947		

Frank Kingdon-Ward was the first Western plant hunter to encounter, collect and introduce *R. hirtipes,* making the find at Tsela Dong in the Tsangpo Gorge, southeast Tibet, during May 1924. A multitude of subsequent gatherings have shown the species population to be restricted to just this area of Tibet and moreover, to be west of the subsection's main distribution. Harry Tagg described the taxon in 1930's *The Species of Rhododendron,* but wrongly associated it with *R. glischrum* on account of the indumentum, a misplacement that was rectified in the Edinburgh Revision texts.

R. hirtipes can be identified from the other members of Subsection *Selensia* by its setose-glandular branchlets and petioles, the presence of stalked glands on the ovary, the scattered indumentum on the abaxial leaf surface, the broadly obovate leaves, and the campanulate corolla shape. Morphologically however, its most unique characteristic is the punctulate abaxial epidermis, which when viewed by the naked eye, is seen as a wash of small brown dots across the leaf. Placed under magnification, the majority of those specks will be revealed to be small hairs, the vesicular branches of which are impregnated with a dark secretion; a minority will be unveiled as isolated stalked glands.

Harry Tagg's expanded species description, written for Volume 16 of *Notes from the Royal Botanic Garden, Edinburgh,* includes the following excerpt:

> 'The vesicular hairs of the leaf underside are very characteristic. They have short pluricellular stalks crowned at the apex with clusters of vesicular cells which in the young dry leaf are filled with a brownish substance. Ward refers to these hairs as forming on the young fresh leaf a layer of glistening pale green agglutinated hairs. On the older leaves these cells are collapsed and the hairs appear as formless resinous dots on the leaf surface. The resinous substance is soluble in potash, in which medium the cells well up and resume their bladder-like shape. The numerous long setae characteristic of the leaf underside of *R. glischrum* are here replaced by fewer clavate glands on relatively short stalks.'

All of which explains the choice of epithet, the translation from botanic Latin being 'with a hairy foot'.

In the wild, mature specimens of *R. hirtipes* in bloom are an unforgettable sight, especially when a whole hillside of trees is festooned with colour, but in the UK, late spring frosts often decimate the corollas, with the early flowering clones in especial jeopardy as they begin opening their buds in mid February. Other forms opt for a March-April slot, but even so, and despite the H5-6 hardiness rating, east coast gardeners will need to provide a very sheltered spot for a specimen if the blooms and extending new growth are to come through unscathed, year after year.



R. hirtipes (KW 5659)



R. hirtipes

Section *Leiorrhodium* Subsection *Smirnowia:*


R. makinoi



Taxa:

R. adenopodum
R. degronianum
R. degronianum ssp. *degronianum*
R. degronianum ssp. *heptamerum*
R. degronianum ssp. *makinoi*
R. degronianum ssp. *yakushimanum*
R. smirnowii

Taxonomic Revision:

The creation of Subsection *Smirnowia* within
Genus *Rhododendron* Subgenus *Hymenanthes* Section *Leiorrhodium*
is a direct result of the molecular evidence presented in the 2010 study
A Phylogeny of Rhododendron Subgenus Hymenanthes Based On Chloroplast DNA Markers,
which was written by Richard Milne and David Chamberlain,
and Chantel Davies, Ruby Prickett and Lucy Inns.

The cpDNA data set presented showed that the old,
Edinburgh Revision-defined Section *Ponticum,* actually consisted of two clades:
one was the home for two Subsection *Pontica* specific species,
plus nearly all the other Southeast Asian elepidote taxa;
the other, a residence containing the remaining eight Subsection *Pontica* species,
along with *R. calophytum, R. insigne* and *R. praevernum.*

Within that first clade
- designated Section *Leiorrhodium* herein -
R. degronianum, R. smirnowii and *R. adenopodum*
were shown to form a sister group to all the other species.

As with Section *Leiorrhodium,* this abode too required a new epithet,
the choice of Subsection *Smirnowia* indicating the probable cpDNA biogeographic lineage.

The second clade retains the Section *Ponticum* epithet, while a third pigeonhole
- Section *Pentanthera* -
completes the Subgenus *Hymenanthes* family as defined by
Loretta Goetsch, Andrew Eckert and Benjamin Hall, in their 2005-published study
The Molecular Systematics of Rhododendron (Ericaceae):
A Phylogeny Based Upon RPB2 Gene Sequences.

Subsection Morphology:

Shrubs or small trees,
compact and rounded, to lax, spreading or broadly upright, 0.3 to 6m high;
branchlets glabrous to densely tomentose, sometimes variably short-stalked glandular;
bark brown, brownish-grey or grey, usually quite rough.

Leaf bud scales persistent, semi-persistent or deciduous.

Leaves evergreen, coriaceous, convex or flat,
linear-lanceolate through oblanceolate and oblong-obovate to elliptic,
5 to 20cm long by 0.8 to 8cm wide,
apex acuminate, acute, rounded or obtuse, base tapered, cuneate or obtuse,

retained for 1-5 years;
upper surface olive-green or dark green, shiny or matt,
occasionally reticulate or somewhat rugulose,
often tomentose at first but glabrous when mature,
or more rarely dotted with the vestiges of those hairs,
the midrib grooved, usually glabrous, but sometimes woolly-tomentose,
the veins usually deeply impressed, the margins recurved or flat;
lower surface indumentum bistrate, continuous, thick or thin,
woolly, felted, velutinous or agglutinated,
the dendroid hairs whitish, fawn, pale-, rufous- or dark brown,
sometimes intermixed with a few widely scattered, short-stalked glands,
the midrib prominent, glabrous or hairy, often concealed,
the veins raised, always concealed.

Leaf anatomy comprises a 1- or 2-layered upper epidermis,
with the cells in the top layer (when present) equal in size to those in the layer below;
the cuticle is half as thick or as thick as the top cells are deep;
water tissue is absent; the cells of the lower epidermis are not prolonged into papillae.
Sclereid cells are absent with the exception of *R. adenopodum*.

Petiole 6-32mm long, usually grooved above,
densely tomentose, sometimes short-stalked glandular.

Inflorescence candelabroid, loose or dense, 4-15-flowered;
the bud scales, persistent, semi-persistent or deciduous.

Rhachis 4-30mm long, rarely to 50mm,
moderately through densely tomentose, sometimes short-stalked glandular.

Pedicels 18-60mm long, moderately through densely tomentose,
sometimes short- or long-stalked glandular.

Calyx 5-lobed, these ovate, lanceolate or triangular in shape,
each 1-3mm long, rarely 7-13mm long,
their outer surface and margins glabrous or hairy, rarely short-stalked glandular.

Corolla 2.8 to 5cm long, funnel-campanulate through campanulate,
white, pink through rose, rose-red or rose-purple,
with or without deeper-coloured flecks or spots,
rarely with deeper pink lines along the middle of the lobes,
without nectar pouches;
the outer surface glabrous or pubescent towards the base of the tube, eglandular,
the inner surface pubescent towards the base of the tube, rarely glabrous;
5-lobed, rarely 6-9-lobed, these as long as the tube, shorter or longer.

Stamens 10, rarely 8-14, unequal, shorter than the corolla;
filaments pubescent at or towards the base, often densely so.

Ovary conoid or oblong, 4-6mm long, 5-celled, rarely 6-8-locular,
glabrous or densely tomentose, rarely short-stalked glandular.

Style slender, glabrous,
shorter, equal to or longer than the corolla.

Capsule 10-20mm long, oblong, straight or slightly curved, ridged,
densely tomentose, sometimes glabrous, rarely long-stalked glandular.

Seeds elongate, narrowly winged, each end with appendages (sometimes large).

Subsection Biogeography:

Each of the six species listed opposite
has a bistrate indumentum covering their abaxial leaf surface.

One is domiciled across the mountains of Georgia and northeastern Turkey,
another native to eastern Sichuan and Hubei in China,
the remaining four, endemic to the islands of the Japanese archipelago,
with each population disjunct from the other two.

Yet they have identical hair types in those two layers of tomentum despite
- at the extremes -
being established some 5,000 miles or 8,000 kilometres apart.

The upper layer is composed of dendroid hairs,
which have a stalk and resemble trees,
specifically, the type John MacQueen Cowan defined as ramiform,
these with long and narrow, filamentous branches.
Beneath this layer, a compacted covering of small to large rosulate hairs will be found.

Convergent evolution offers one explanation for how the Turkish-Georgian,
Chinese and Japanese rhododendrons independently developed these emergences
in response to changes in their natural environment,
but a much more likely scenario has been proposed from genetic evidence uncovered
by Richard Milne at the Institute of Molecular Plant Sciences in Edinburgh:

In the Tertiary Period,
that span of time from when the dinosaurs became extinct some 65 million years ago
to the start of the Quaternary glaciations just 2.6 million years ago,
the Northern Hemisphere of planet Earth was considerably warmer than at present.

This allowed species now restricted to warm temperate or subtropical regions
to flourish at higher latitudes in places such as Siberia and Greenland.

It also allowed taxa from many plant genera
- *Aesculus, Hamamelis* and *Platanus,* for instance, in addition to Genus *Rhododendron* -
to uniformly colonise vast areas of the continents then extant,
which were linked by land bridges that do not exist today.

These facilitated the movement of plants between those continents.

But when global temperatures progressively began to drop,
such floras were eliminated from northern and central regions of the Eurasian landmass,
surviving only where the climate remained more favourable.

Subsequent adaption to differing local environments has given rise to the variance
in the morphological feature sets currently present on these six rhododendrons,
but their underlying major characteristics
- the hairs comprising the two-layered abaxial leaf indumentum -
remain basically the same because they arose from the same genetic ancestor.

R. degronianum* ssp. *degronianum

Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
N & C Honshu, Kyushu, Oki Islands, & Yakushima Island, Japan.
Growing in deciduous woodland and above the tree-line on mountain slopes,
at elevations of 800-2,000m.

Identification:
Shrub, compact and rounded, wide-spreading, sometimes broadly upright, 1 to 2.5m high;
branchlets variably tomentose at first, the covering thin, the hairs whitish,
becoming glabrescent or glabrous on one-year-old shoots.
Leaf bud scales deciduous.
Leaves usually convex, oblanceolate through oblong-elliptic to elliptic,
6 to 18cm long by 2 to 4.6cm wide,
retained for 2-4 years;
lower surface tomentose, the bistrate indumentum continuous, thick or thin,
felted, velvety or spongy, fawn, brown or rusty-brown,
the upper layer composed of ramiform hairs,
these with a short, medium or long stem,
and with long and very narrow filamentous branches,
the lower layer with small to large rosulate hairs,
the midrib obscured at first,
becoming glabrescent or glabrous by the second year,
the veins obscured.
Petiole 18-32mm long, moderately through densely whitish-tomentose.
Inflorescence dense or loose, 6-15-flowered;
the buds scales deciduous or semi-persistent.
Rhachis 8-20mm long, moderately through densely floccose.
Pedicel 20-40mm long, moderately through densely floccose.
Calyx lobes 1-3mm long,
their outer surface and margins glabrous or floccose.
Corolla 2.8 to 4.5cm long, 5-lobed, funnel-campanulate,
pink through deep rose, sometimes reddish, rarely white,
with or without deeper coloured spots or flecks,
with or without deeper pink lines along the middle of the lobes;
the outer surface glabrous.
Stamens 10.
Ovary oblong or conoid, 4-5mm long, 5-celled,
densely tomentose, the hairs white, brown or rusty-brown.
Capsule 14-20mm long,
densely tomentose, the hairs brown or rusty-brown.

Seed Collections:

Doleshy 12	1965
Doleshy 81	1967
Doleshy 123 *	1967
Doleshy 523	1971
Doleshy 529	1971
Kurashige 180 *	1987
Kurashige 494	1987
AGS 64	1988

In addition to the authenticated gatherings listed above,
over the past fifty years, more than 120 collections made by members
of the Japanese Rhododendron Society, have appeared on the annual Seed Exchange
run by the American Rhododendron Society.
The known collections of Kyomaruense Group seed are marked with an asterisk (*)



R. degronianum (Doleshy 12)

R. degronianum (Doleshy 12)

R. degronianum

R. degronianum, rather than *R. smirnowii,* was the first occupant of the subsection to be formally encountered, but by whom and exactly when remains a mystery, this state of affairs equally applicable to the taxon's other three subspecies. First described within the pages of *Flora Japonica* by Philipp Franz von Siebold and Joseph Gerhard Zuccarini, their 1835 choice of epithet - *R. metternichii* - was actually illegal within the genus from the get go. Next up was the French botanist Élie Abel Carrière, who put pen to paper in 1869 for Volume 40 of the *Revue Horticole,* but regrettably, the then leading authority on conifers, failed to designate a type herbarium specimen in his prose, this error allowing later conceived monikers to supplant his chosen honorific for Henri Joseph Degron, this gentleman the Monsieur in charge of the French Post Office at the port of Yokohama from 1865 to 1880. Hot on the heels of Carrière, Karl Maximovich dashed off *R. metternichii* f. *pentamerum* in 1870, followed by yet another felonious *R. japonicum,* this time by Camillo Karl Schneider in 1909 (adapting Carl Blume's *Hymenanthes japonica* of 1826 vintage).

Thankfully, modern-day botanic practitioners finally came to their senses and agreed to overlook Carrière's omission, setting aside decades of confusion and prompting a long-overdue synonymic sinking in the process, the loss of the *R. metternichii* epithet still openly mourned by countless devotees despite its nefarious nature.

Returning to the subject of recently evolved character differences, one is evident when dabbing a finger onto the flower stalks and calyx lobes of the various taxa and it can be used to distinguish the *R. degronianum* clan from *R. adenopodum* and *R. smirnowii.* Fingers placed on these appendages will find those of the latter two taxa to be sticky, denoting the presence of glandular hairs, while on the former four subspecies, they will be eglandular, the sticky hairs lost or alternatively, perhaps never developed.

With regard to keying the four *R. degronianum* subspecies from each other:

A check on the number of petal lobes comprising the corolla will distinguish three of these from ssp. *heptamerum*, which has 6 through 9 lobes, ssp. *degronianum,* ssp. *makinoi* and ssp. *yakushimanum* each having but 5. Equally, a count of the stamens, or a tally of the chambers in the seed capsule will also key them apart - 10 through 14, and 7 or 8, for ssp. *heptamerum;* 10 and 5 respectively, for the troika. Then, the generally narrow, linear-lanceolate leaf shape, along with the presence of a persistent tomentum on the branchlets, will cleave both ssp. *makinoi* and ssp. *yakushimanum* away from their two sisters, while the persistent leaf bud scales of the former and the much thicker abaxial leaf indumentum of the latter not only aids this process, but distinguishes the pair from each other.

Knowledgeable rhodophiles will have noted the hard delineation made between the 5-lobed corollas of ssp. *degronianum,* and those with 6 or more petals, which have been assigned to ssp. *heptamerum*. Plants previously classified in the Edinburgh Revision as *R. degronianum* ssp. *heptamerum* var. *kyomaruense,* which have 5-lobed corollas - the term 'heptamerum' actually meaning '7-lobed' - are deemed to be a form of ssp. *degronianum* herein and made synonymous, though RHS Group status will preserve the epithet within horticultural circles. Hiroshi Hara, a highly respected Japanese botanist, had already formalised such an association when he set out the combination *R. degronianum* var. *kyomaruense* in Volume 61, Part 8, of the *Journal of Japanese Botany,* published in 1986, and most Western experts on the genus would now agree that the relationship with ssp. *degronianum* is the stronger. A paler, thinner, agglutinated leaf indumentum was the characteristic Hara used to justify his ranking, but to quote Peter and Kenneth Cox (from their 1997 *Encyclopedia of Rhododendron Species*), such morphology is only 'doubtfully deserving of varietal status'. Equally, the Kyomaruense Group plant population is restricted to just one peninsula in central Honshu, located at the southeastern base of the main ssp. *degronianum* distribution, so the geography too supports a merger.

R. degronianum ssp. *degronianum* was introduced into British gardens from Tokyo in 1894. In UK cultivation the plants form compact, rounded domes or upright brushes that are no more than 2m high. These flower freely from a young age, are easy to grow, but generally considered to be less showy than many clones of ssp. *heptamerum,* and of course, outclassed by the named clones of ssp. *yakushimanum*.



R. degronianum (Kurashige 494)

R. degronianum* ssp. *heptamerum

Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
C & S Japan.
Growing in forests, on open hilltops and mountain ridges,
at elevations of 200-1,400m.

Identification:
Shrub, compact and rounded, wide-spreading, sometimes broadly upright, 1 to 3.7m high;
branchlets variably tomentose, the covering thin, the hairs whitish.
Leaf bud scales deciduous.
Leaves usually flat, oblanceolate through oblong-elliptic to elliptic,
6 to 18cm long by 2 to 4.6cm wide,
retained for 2-4 years;
lower surface tomentose, the bistrate indumentum continuous,
velutinous through agglutinated, thick or thin, tawny or rusty-brown,
the upper layer composed of ramiform hairs,
these with a short, medium or long stem, and with long, very narrow filamentous branches,
the lower layer with small to large rosulate hairs,
the midrib sometimes obscured, glabrous or hairy,
the veins usually obscured.
Petiole 18-32mm long, moderately through densely whitish-tomentose.
Inflorescence dense or loose, 6-15-flowered;
the bud scales deciduous or semi-persistent.
Rhachis 8-20mm long, moderately through densely floccose.
Pedicel 20-40mm long, moderately through densely floccose.
Calyx lobes 1-3mm long,
their outer surface and margins glabrous or floccose.
Corolla 2.8 to 4.5cm long, 6-9-lobed, broadly funnel-campanulate,
pink through deep rose, sometimes reddish, rarely white,
with or without deeper coloured spots or flecks,
with or without deeper pink lines along the middle of the lobes;
the outer surface glabrous.
Stamens 10-14.
Ovary oblong or conoid, 4-5mm long, 7-8-celled,
densely tomentose, the hairs white, brown or rusty-brown.
Capsule 14-20mm long,
densely tomentose, the hairs brown or rusty-brown.

Seed Collections:

Doleshy 5	1965	Doleshy 50	1967
Doleshy 7 *	1965	Doleshy 70 *	1967
Doleshy 21	1967	Doleshy 75 *	1967
Doleshy 22	1967	Doleshy 531	1971
Doleshy 35	1967	Doleshy 541	1971
Doleshy 38	1967	Doleshy 544	1971
Doleshy 40	1967	CP 9857 *	1975
Doleshy 41	1967	Kurashige 830	1987
Doleshy 42	1967	Kurashige 846	1987
Doleshy 45	1967	KQ 37	1989

In addition to the authenticated gatherings listed above,
over the past fifty years, more than 90 collections made by members
of the Japanese Rhododendron Society, have appeared on the annual Seed Exchange
run by the American Rhododendron Society.
The known collections of Hondoense Group seed are marked with an asterisk (*)



R. heptamerum (Doleshy 5)

The epithet ‘heptamerum’ - 7-lobed - was used for the first time within Genus *Rhododendron* in an 1870-authored work, *Rhododendrae Asia Orientalis,* which was written by Karl Maximovich, the Russian botanist, explorer and plant hunter. Maximovich, who had collected extensively in southern Japan between 1860 and 1864, recognised that his specimens were similar to a plant described by Philipp Franz von Siebold and Joseph Gerhard Zuccarini in Volume 1 of their *Flora Japonica,* published in 1835. As a result, the newly-appointed Director of the Saint Petersburg Botanical Gardens, an establishment more formally known today as the Russian Academy of Sciences Vladimir Komarov Botanical Institute's Botanical Garden of Peter the Great - really; I kid you not - placed his conception into a varietal combination with theirs, producing the formulation, *R. metternichii* var. *heptamerum*. Unfortunately, the International Code of Botanical Nomenclature - now the more snappily titled International Code of Nomenclature for algae, fungi, and plants - deemed the Siebold-Zuccarini use of ‘metternichii’ illegal within Genus *Rhododendron* and to cut a long and decidedly complex story short, this ultimately led to Hiroshi Hara conceiving the replacement combination, *R. degronianum* ssp. *heptamerum,* which appeared in Volume 61, Part 8, of the *Journal of Japanese Botany (Shokubutsu Kenkyu Zasshi),* published in 1986.

Native to central and southern Japan, less tangible differences with ssp. *degronianum* than the corolla lobe, stamen and ovary cell counts, are the supposedly flat rather than convex leaves - though such morphology is highly debatable - a sometimes thinner, felted or plastered indumentum that is paler-coloured, and a taller habit, to 3.7m in height.

On the basis of the tomentum thickness and pigment, the botanists responsible for the Edinburgh Revision texts divided the taxon into two varieties - *R. degronianum* ssp. *heptamerum* var. *heptamerum,* and *R. degronianum* ssp. *heptamerum* var. *hondoense* - but this is not consistent with the treatment of other species across the genus and is therefore not followed here. Hondoense Group may be maintained as a home for those plants with an attenuated covering of somewhat anaemic-hued hairs and placed alongside the already established Micranthum Group for lower-growing specimens, even though the respected Swedish botanist Tor Nitzelius (1914-1999), who conducted extensive field study in Japan over many years, has written that apart from separating the 5-lobed and basically 7-lobed plants, no further splitting should be accepted or is actually required (*Notes on some Japanese Species of the Genus Rhododendron,* which was published in the journal *Acta Horti Gothoburgensis,* Volume 24, 1961).

R. degronianum ssp. *heptamerum* is known to have been introduced into British gardens during 1870, but may actually have arrived eight years earlier in 1862 if accounts of the subspecies being part of a consignment Robert Fortune sent to John Standish are accurate. Mature specimens form rounded domes or upright bushes to around 2m in height that are much wider spreading, these well-filled with elegant leaves.

The mountainous topography of Japan and the climatic conditions experienced when travelling south down its island chain have induced the subspecies to develop into a range of differing forms, with the leaf length and shape, flower colour and habit all varying considerably, which has allowed all those inappropriate varieties to be proposed. Amongst this gamut of sometimes commercially available clones: some have leaves and flowers that outshine those of ssp. *degronianum;* one sports an indumentum on the leaf abaxial surface that has been gifted a colour intensity that can only be described as near psychedelic; others are low-growing, compact shrubs with pretensions to rival ssp. *yakushimanum*. All are easy to grow, have proven very hardy and flower with abandon from a young age in April-May.



R. heptamerum



R. heptamerum (CP 9857) ‘Hondoense Group’



R. heptamerum



R. heptamerum

R. heptamerum

R. smirnowii

Hardiness:
H6-7.
Flowering Period:
May-June.
Distribution in the wild:
Georgia; NE Turkey.
Growing on hillside slopes in spruce forest, rhododendron scrub, or open, exposed sites,
at elevations of 500-2,800m.

Identification:
Shrub or small tree, compact, lax or broadly upright, 0.5 to 6m high;
branchlets densely tomentose, the covering felted or woolly, the hairs whitish or fawn,
variably short-stalked glandular.
Leaf bud scales persistent or semi-persistent.
Leaves convex or flat, oblanceolate through oblong-obovate to elliptic,
6.5 to 17.5cm long by 1.8 to 4.2cm wide,
retained for 3-5 years;
lower surface densely tomentose, the bistrate indumentum continuous, thick, woolly,
white, fawn, cinnamon or brown,
the upper layer composed of ramiform hairs,
these with a long narrow stem and long and very narrow filamentous branches,
the lower layer with small to large rosulate hairs,
the midrib concealed, densely woolly tomentose,
the veins concealed.
Petiole 10-30mm long, densely tomentose, the covering felted or woolly,
the hairs whitish or fawn,
variably short-stalked glandular.
Inflorescence loose or dense, 6-15-flowered;
the bud scales persistent or semi-persistent.
Rhachis 5-40mm long, moderately through densely floccose-tomentose,
short-stalked glandular or not.
Pedicel 26-60mm long, variably floccose-tomentose,
moderately through densely short-stalked glandular;
minimally extending in fruit.
Calyx lobes 1-3mm long,
their outer surface sparsely floccose-tomentose or glabrous, short-stalked glandular,
their margins sparsely floccose-tomentose or glabrous, short-stalked glandular or not.
Corolla 3.1 to 4.8cm long, 5-lobed, funnel-campanulate,
pink through rose-purple,
with or without yellowish, brown or greenish spots or flecks;
the outer surface glabrous.
Stamens 10.
Ovary conoid, rarely oblong, 4-6mm long, 5-celled,
densely tomentose, the hairs white.
Capsule 10-16mm long, densely white tomentose.

Seed Collections:

ACH 118	1962	ACH 129	1962



R. smirnowii

The German botanist, Baron Franz Ungern-Sternberg, was the plant hunter who first discovered *R. smirnowii* growing on the hills around Artvin, a small village in northeastern Turkey some twenty miles inland from the Black Sea coast, in the weeks or months immediately prior to his death in 1885. The dried material was sent to his friend, fellow collector Michael Nikolajèwitsh Smirnow, who then despatched it onward to Professor Ernst Rudolf von Trautvetter at the Russian Imperial Botanical Garden of St. Petersburg, where the director of the garden, Doctor Eduard August von Regel, formerly described the new-to-science plant in Volume 34 of *Gartenflora,* published that same year. Some months after the Ungern-Sternberg find, seed collected by W. A. Massalsky from the same locale, was also sent north to St. Petersburg and a portion of it ended up at the Royal Botanic Garden, Kew, in 1886. Successfully germinated, the first flowering of *R. smirnowii* in a British garden took place during early May 1894, with the buds opening on a specimen then no more than 0.3m in height.

The history set out above is detailed in Volume 122 of *Curtis's Botanical Magazine,* published in 1896, and a précis of such will often form part of the *R. smirnowii* entry in most texts on the genus, W. J. Bean's *Trees & Shrubs,* H. H. Davidian's *The Rhododendron Species*, and David Leach's *Rhododendrons of the World,* are examples. And every author will automatically correct the introduction date typo of 1866, to 1886, but it now appears that some of the other facts listed may also be in error.

In an article for the American Rhododendron Society Journal titled *Rhododendrons in the former Soviet Union* - Volume 52, Number 2, 1998 - Professor Mieczyslaw Czekalski, of the Department of Ornamental Plants, Agricultural University, Poznan, Poland, writes that it was Smirnow and Massalsky who made the discovery in 1885, not Ungern-Sternberg, with Trautvetter and Regel therefore rightly naming the plant for Smirnow. Added credence is given to this version of events when the Baron's age is considered: he would have been well into his seventies at the time of the find and perhaps physically unable to make an ascent of 1000m or more in an age when horses were still all the rage and Land Rover four-wheel-drive vehicles had yet to be invented. Because the *R. smirnowii* populations he is credited with discovering, are established between the 500 and 2,800m contours, on open, exposed hillsides, or in the spruce forests and rhododendron scrub that tightly cloak those mountains.

Morphologically, *R. smirnowii* is most closely related to *R. ungernii,* the two species having an identical wild distribution across northeastern Turkey and the Caucasus, although they have different habitat preferences. Four distinct characteristics quickly key them apart when in bloom: calyx lobe size - 1-3mm for *R. smirnowii,* 4-9mm for *R. ungernii;* the number of corollas in the flower truss - respectively, 6 to 15, rather than 12 to 30; tacky hairs on the outer surface of the corolla tube - absent instead of present; and a densely hairy, but non-sticky ovary, as opposed to one that is glabrous but densely glandular, this duality mirrored on the mature seed capsules. Generally, *R. smirnowii* also has smaller leaves than *R. ungernii,* a 17.5cm maxima in lieu of one 25.5cm long, but this variation is less bankable than the preceding quartet.

Genetically however, as the Milne-Chamberlain cpDNA study shows, *R. smirnowii* is much more closely related to *R. degronianum,* despite the latter being domiciled half a world away on the islands of Japan. This is because they share the same common ancestor, a progenitor widespread across a vast sweep of land in the Tertiary geologic period, which then spawned each and every Southeast Asian elepidote rhododendron when the Himalaya Mountains began to lift skyward and that concordant multitude was divided into a myriad of now-isolated remnant groups, each then adapting to a new spectrum of climatic extremes. All bar *R. insigne,* a few ex-members of Subsection *Fortunea,* and the remaining taxa of the old Subsection *Pontica,* the Japanese-endemic *R. brachycarpum,* for instance, which while changed from its forebear, remains genetically bound to *R. aureum, R. caucasicum* and *R. maximum.* Because they all share the exact same chloroplast DNA sequences. Which are different to those found within the same organelles resident within the cells of *R. smirnowii* and *R. degronianum,* a fact that confirms the different evolutionary pathway followed by the Section *Leiorrhodium* rhododendrons.

R. smirnowii is one of the hardiest indumented rhododendron species in cultivation, able to shrug-off a very cold and severe UK winter, including one where temperatures fall to below -20ºC, with ease. A robust and vigorous grower best placed in an open position to maintain a compact, rather than leggy habit, clones with deep pink or rose-purple flowers should be sought out, the best undoubtedly being Edmund de Rothschild's award-winning 'Vodka' clone, with corollas that shade from red-purple at the lobe tips to near white deep in the throat, and are held in candelabroid trusses of 16-18 florets. But rarely will this Exbury treasure be available for purchase.



R. smirnowii



R. smirnowii (ACH 129)



R. smirnowii



R. smirnowii



R. smirnowii

R. smirnowii

R. adenopodum

R. adenopodum
Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
E Sichuan & Hubei, China.
Growing in thin woodland, at elevations of 1,500-2,200m.

Identification:
Shrub, lax, rounded or spreading, 1.5 to 3m high;
branchlets moderately or densely tomentose, the hairs whitish or fawn,
short-stalked glandular, or eglandular.
Leaf bud scales deciduous or persistent.
Leaves lanceolate through oblanceolate,
7.5 to 20cm long by 2 to 5cm wide,
retained for 3 years;
lower surface with a bistrate, quite thick, felty or woolly indumentum,
the upper layer composed of ramiform hairs,
these with a long narrow stem and very long, narrow filamentous branches,
the lower layer with small to large rosulate hairs,
intermixed with widely-scattered, short-stalked glandular hairs,
the midrib prominent, glabrous or hairy,
the veins concealed.
Petiole 15-32mm long, moderately or densely tomentose, the covering thin,
the hairs whitish or fawn,
short-stalked glandular, or eglandular.
Inflorescence 4-8-flowered in a lax candelabroid truss;
the bud scales persistent or semi-persistent.
Rhachis 10-30mm long, sometimes extending to 50mm,
densely through moderately, white or fawn floccose.
Pedicels 30-40mm long, unequal, glabrous or hairy,
moderately through densely stalked-glandular, the hairs rarely short-stalked.
Calyx lobes 3-13mm,
their outer surface glabrous, eglandular, or short-stalked glandular,
their margins glabrous or hairy, eglandular or short-stalked glandular.
Corolla 3.6 to 5cm long, funnel-campanulate,
pale rose, often with deeper crimson spotting,
the outer surface glabrous, sometimes pubescent at the base of the tube.
Stamens 10, rarely 8.
Ovary conoid, 4-5mm long, 5-6-celled,
densely fulvous-glandular.
Capsule *c.* 15mm long, puberulous or glabrous, long-stalked glandular.

Seed Collections:

W 505	1900
W 1161	1900/1902


R. adenopodum

Had he still been alive in 2010, waving rhododendron leaves at a spellbound audience of adherents, one suspects the only person not to have been surprised by the cpDNA placement of *R. adenopodum* in a clade with *R. degronianum* and *R. smirnowii,* would have been H. H. Davidian. The United Kingdom's foremost expert on the genus had maintained that plant's associations within the old Ponticum Series - in Volume 3 of his tour de force, *The Rhododendron Species,* published in 1992 - on account of the plant's candelabroid inflorescence and abaxial leaf surface indumentum. And while any 'old dog/young turk' aphorisms should be resisted, one might construe that in this case, they would accurately reflect the situation pertaining at a certain botanic institute in the 1970s and 80s.

In *A Revision of Rhododendron II* (*Notes from the Royal Botanic Garden, Edinburgh,* Volume 39, No. 2), David Chamberlain cites the funnel-campanulate and shallowly-lobed corollas, plus the stipitate-glandular ovary, as the morphologic features that sat better with the species of Subsection *Argyrophylla* than they did with those of Subsection *Pontica.* He also notes that the *R. adenopodum* geographic distribution is more in line with the former, than the latter, even though it was clearly an outlier.

In fact, as Peter and Kenneth Cox detail in their 1997-published *Encyclopedia of Rhododendron Species,* those split characteristics likely place the taxon mid-way between the two subsections, making it the probable evolutionary bridge that connects them. But genetics has a habit of catching everyone out.

Abbé Paul Guillaume Farges, a Jesuit priest working for the Missions Étrangères de Paris organisation, was the first Western plant hunter to find *R. adenopodum* in the wild, discovering the species whilst botanising at Tchenkeou-tin, in the east of Sichuan Province. Despatching his dried herbarium collections back to France, they were described in 1895 by Adrien Franchet, éminence grise at the Paris Museum of Natural History, when writing in Volume 9 of the *Journal de Botanique*.

R. youngae, also from Sichuan, was described by Professor Fang Wen-Pei in 1939, but reduced to synonymy under *R. adenopodum* in the Edinburgh Revision texts. Whether that sinking still holds good vis-à-vis the cpDNA sequence data is unknown, but the taxon was maintained at specific status within the *Argyrophylla* clan by H. H. Davidian in Volume 2 of his treatise, published in 1989.

A rounded, spreading, lax shrub in cultivation, *R. adenopodum* is very hardy despite coming from quite low altitudes, the RHS assigning it a H6-7 ranking. The species was introduced into British gardens from Hubei around 1900 by Ernest Wilson, the gathering made during his first collecting trip to China for the Veitch Nurseries and the progeny of those capsules have proved easy to please, even though slow growing, and are considered relatively free-flowering. Some clones however, are prone to chlorotic foliage.

R. adenopodum has avoided an encounter with any Western, or indeed, Chinese plant hunting team since the Wilson audiences of over a century ago, while *R. youngae* has been absent without leave since April 13th, 1930.


R. adenopodum


R. adenopodum

R. degronianum* ssp. *makinoi

Hardiness:
H6-7.
Flowering Period:
May-June.
Distribution in the wild:
C Honshu, Japan.
Growing in conifer forest and on mountain slopes amongst rocks,
at elevations of 180-700m.

Identification:
Shrub, compact and rounded, dense and wide-spreading, sometimes broadly upright,
1 to 2.5m high;
branchlets densely woolly-tomentose, the indumentum persistent but loose, brown.
Leaf bud scales persistent.
Leaves usually convex, linear-lanceolate through narrowly lanceolate,
5 to 18cm long by 0.8 to 2.5cm wide,
retained for 4-5 years;
lower surface densely tomentose, the bistrate indumentum continuous, very thick, woolly,
white, fulvous or dark brown,
the upper layer composed of ramiform hairs,
these with a long stem and long, very narrow filamentous branches,
the lower layer with small to large rosulate hairs,
the midrib usually obscured, densely woolly, rarely glabrous,
the veins obscured.
Petiole 6-20mm long, slightly grooved above or not,
densely woolly-tomentose at first, the hairs brown, soon glabrescent.
Inflorescence dense, 5-8-flowered, rarely to 30-flowered;
the bud scales persistent.
Rhachis 2-10mm long, densely woolly-tomentose, the hairs brown or rufous.
Pedicel 18-30mm long, densely tomentose, the hairs brown or rufous.
Calyx lobes 1-7mm long,
their outer surface and margins moderately through densely floccose,
the hairs brown or rufous.
Corolla 3 to 4cm long, 5-lobed, funnel-campanulate,
pink or pale rose through off-white,
with or without crimson spots,
the outer surface glabrous.
Stamens 10.
Ovary conoid, 4-5mm long, 5-celled,
densely woolly-tomentose, the hairs whitish or brown.
Capsule 10-13-mm long,
densely woolly-tomentose, the hairs whitish or brown.

Seed Collections:

Doleshy 1	1965
Doleshy 2	1965
Doleshy 3	1965
Doleshy 4	1965
Doleshy 832	1984
Doleshy 839	1984
Doleshy 841	1984
Doleshy 843	1984
Kurashige 276	1987
Russell 893	1987
W&H 790	1987

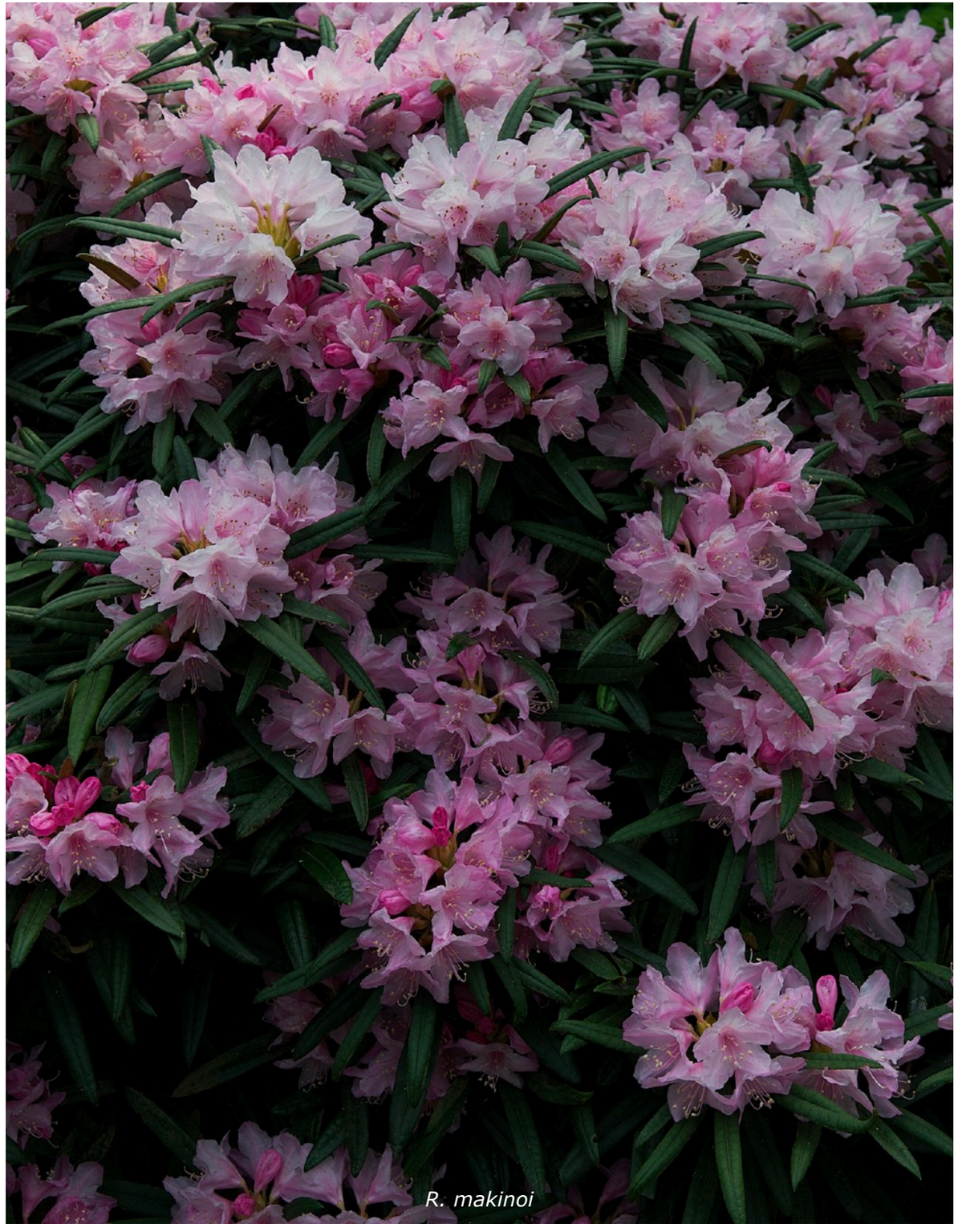
In addition to the authenticated gatherings listed above,
over the past fifty years, more than 20 collections made by members
of the Japanese Rhododendron Society, have appeared on the annual Seed Exchange
run by the American Rhododendron Society.


R. makinoi

R. makinoi was first named as *R. stenophyllum* in 1910 by the renowned Japanese botanist Tomitarô Makino, with a full species description appearing in Volume 24 of *Shokubutsu-gaku Zasshi,* but as with the Siebold-Zuccarini *R. metternichii* epithet for *R. degronianum,* the botanist had unknowingly copied a previously-used moniker, in this case, one Sir Joseph Hooker had coined thirty years earlier in 1878 for a tropical Vireya species from Borneo. The duplication was spotted when another Japanese rhododendron expert, Professor Takenoshin Nakai, visited Edinburgh Botanic in the 1920s and saw a group of plants that could only be Makino's *R. stenophyllum* on a tour of the gardens. These had arrived from the Yokohama Nursery Company some years before, but bore incorrect labels, identifying them as *R. metternichii*. Working with Harry Tagg, a replacement for the illegal appellation was chosen: happily, one that honoured the original author. Nakai published the new honorific in the second edition of a book he co-wrote with Genichi Koidzumi, *Trees and Shrubs Indigenous in Japan Proper,* while Tagg included it within the elepidote section of *The Species of Rhododendron,* publication dates being 1927 and 1930, respectively.

Classification-wise, over the course of its now-known-to-science existence, *R. makinoi* has been described and ranked as a narrow-leaved variety of *R. degronianum,* and as a subspecies of *R. yakushimanum*. Its placement herein, as a subspecies of the former rests principally on the mirrored bistrate leaf indumentum and identical hair types, although other significant characteristics are duplicated in the morphology. Feature variances from the standard ssp. *degronianum* profile are recent adaptations - in geological terms - to the environmental challenges faced by the plants: growing across a small mountainous enclave in central Honshu, many in quite dense shade under trees, others out in the open on exposed slopes. The linear-lanceolate leaf shape, blade retention for up to five years, flowers opening in June rather than April-May, and the late-appearing new growth, clothed in a sheath of white tomentum, which decorate a plant in August and September, are all the result of mastering such adversities.

Despite mature specimens of *R. degronianum* ssp. *makinoi* being a feature in many of the major rhododendron collections up and down the country - these individuals covering themselves in white, pink or rose coloured flowers each year and displaying eye-catching foliage at all other times - they can sometimes prove difficult to grow well, sporting leaves that are decidedly chlorotic and often failing to develop an extensive root ball. Reports also indicate a preference for near alkaline soil, with grafted plants on a different root stock performing better where this pH cannot be achieved. The very swift drainage provided by a hillside planting site or raised bed, in quite deep shade from nearby trees, may resolve such problems by better mirroring the plant's natural habitat. Forms with wider leaves are apparently less problematical and stronger growers, but may be intermediates or natural hybrids with ssp. *degronianum*.



R. makinoi

R. makinoi

R. degronianum* ssp. *yakushimanum
Hardiness:
H6-7.
Flowering Period:
Late April-May.
Distribution in the wild:
Yakushima Island, S Japan.
Growing in conifer forest, on exposed hilltops and mountain ridges amongst rocks,
at elevations of 1,500-1,800m.

Identification:
Shrub, compact and rounded, wide-spreading, 0.3 to 1.5m high;
branchlets moderately through densely woolly-tomentose,
the indumentum persistent but loose, whitish.
Leaf bud scales deciduous or persistent.
Leaves usually convex,
linear-lanceolate through oblong-obovate, rarely broadly elliptic,
4 to 10cm long by 1 to 3cm wide,
retained for 2-4 years;
lower surface densely tomentose, the bistrate indumentum continuous, very thick, woolly,
white, grey, or fawn,
the upper layer composed of ramiform hairs,
these with a long stem and long, very narrow filamentous branches,
the lower layer with small to large rosulate hairs,
the midrib obscured, densely woolly,
the veins obscured.
Petiole 10-20mm long, densely woolly-tomentose, the hairs whitish.
Inflorescence dense or loose, 5-12-flowered;
the bud scales persistent.
Rhachis 4-8mm long, densely woolly-tomentose, the hairs brown.
Pedicel 12-28mm long, densely tomentose, the hairs brown.
Calyx lobes 1mm long,
their outer surface and margins densely brown-floccose.
Corolla 3 to 4cm long, 5-lobed, funnel-campanulate,
deep pink in bud, fading to pale pink and when fully open, pure white,
the outer surface glabrous.
Stamens 10.
Ovary conoid, 5mm long, 5-celled,
densely woolly-tomentose, the hairs whitish or brown.
Capsule 10-12-mm long,
densely woolly-tomentose, the hairs whitish or brown.

Seed Collections:

Serbin 10	1959
Doleshy 9	1965
Doleshy 10	1965
Doleshy 212	1970
KQ 310	1989
SOJA 310	1989

In addition to the authenticated gatherings listed above,
over the past fifty years, some 14 collections made by members
of the Japanese Rhododendron Society, have appeared on the annual Seed Exchange
run by the American Rhododendron Society.


R. yakushimanum

The wild distribution of *R. degronianum* ssp. *yakushimanum* is restricted to one small, near-circular island, located some 30 miles off the southern tip of Kyushu, the islet part of the Ryukyu Archipelago that curves down through the East China Sea to Taiwan. Yakushima is just 17 miles or 27 kilometres across and was declared a UNESCO World Heritage Site in 1993 due to its 2,000m-high mountains that rise steeply from the sea and which are home to the oldest cedar trees in Japan. Dating back to the end of the Jōmon period in Japanese history - around 300 BC - these massive specimens of *Cryptomeria japonica* - awe-inspiring to behold, with trunks of phenomenal girth - survive undisturbed in a warm-temperate, primeval forest ecosystem. At sea level, the island's climate is sub-tropical, with banana, papaya, pineapple and other 'exotics' cultivated, but as height is gained and the montane rainforest is left behind for the high moors and bamboo-grasslands of the central peaks, conditions become far more extreme. And it is in these areas, with a yearly average rainfall of between six and twelve metres - 235 to 471 inches for those still conversant with the old imperial system - where *R. degronianum* ssp. *yakushimanum* is found.

Beginning some 1,000m up the mountain slopes, in the mixed *Abies* and *Cryptomeria* forest, a population of plants matching the feature set of *R. degronianum* ssp. *degronianum* will be found. Then, between the 1,200m and 1,500m contours, and to 1,600m in a few locales on the windless side of the hills, shrubs with flatter and longer leaves than those of ssp. *yakushimanum,* though not as large as those of ssp. *degronianum* take over. These too, in the main, will be found in woodland, often in quite dense shade, where they grow to 2 or 2.5m in height, and have a fairly open habit. Most recently, they have been referenced as *R. degronianum* ssp. *yakushimanum* Intermedium Group, but this label wrongly construes their origin, as did *R. yakushimanum* var. *intermedium* previously. Equally, use of the 'intermedium' epithet is illegal under the nomenclature rules, because *R. intermedium* was registered by Georg Wenderoth in 1825, and again by Ignaz Tausch in 1836.

The first true plants of *R. degronianum* ssp. *yakushimanum* are encountered on a marshy plateau almost devoid of trees at around the 1,500m-contour, in full exposure, but protected from the prevailing wind. Strangely, this is the dwarf form of the subspecies, attaining a height of between 0.45 and 0.6m at maturity, with a very dense habit and small rounded leaves no more than 4 to 6cm long, the margins of which are distinctly recurved. Specimens of this form have proved very difficult to grow in UK cultivation and equally hard to propagate vegetatively.

Ascend higher, to areas around 250m above the tree line, which are fully exposed, battered by the wind, constantly drenched in mist and buried under snow for up to five months each year, and there, covering much of the ground almost up to the mountain summits, are the bushes of ssp. *yakushimanum* so familiar to every rhodophile. They are lower growing than the plants in cultivation, reaching only to around 1m in height, but the dark green convex leaves and pink-fading-white flowers are an exact match for the first two specimens of the species introduced into UK cultivation.

Two evolutionary pathways for the high elevation Yakushima rhododendrons are possible: the first finds ssp. *degronianum* reacting to the environmental challenges as it advances up the mountainsides, changing its characteristics to populate new locales; the alternative has ssp. *degronianum* established over the entire mountain, then reacting to change as the climatic conditions deteriorate. Either scenario can result in the stabilised populations found at the top and bottom of the range, plus that transitional layer, with a varying morphology, set in between. Except that on the ground, the actual situation is not quite as clear-cut. Because the regular typhoon-strength storms easily carry ripe seed from the lower bands to the top and vice-versa. And of course, the usual interbreeding inherent with the genus, muddies the waters still further. So there are areas where plants with thinly indumented leaves grow literally alongside those with much thicker tomentum - out in the open; in full exposure; regardless of the fact that they are not adapted to be there and should have been culled by the elements.

Gifting these individuals group or varietal status under ssp. *yakushimanum* does not correctly reflect the still-evolving situation found on the slopes of Yakushima's three central peaks, and a better option would be to recognise these intermediates for what they currently are: unspeciated natural hybrids. Which is the option followed herein.

Koichiro Wada (1907-1981), the renowned Japanese plantsman, was responsible for supplying the two individual specimens of *R. yakushimanum* that were the first introduction of the species into British gardens. Despatched from his Hakoneya Nursery at Numazuchi, on Honshu, they arrived safely into the expert hands of Lionel de Rothschild in 1934, each no more than 25cm high, and one, with just four remaining leaves. Rothschild had written to Wada in 1931 asking him to send plants 'of unusual character and high quality' for his burgeoning rhododendron garden in the New Forest at Exbury, and the contents of that consignment certainly fulfilled his request.

The two small plants were nursed at Exbury over the next decade, the Second World War, and the death of the garden's founder in January 1942, notwithstanding. Growing slowly into 1m-wide domes, their tomentum-covered foliage and perfect flowers were then only being admired by a select few: for they were sited in "not a very prominent position, seemingly escaping close notice" and Exbury, at that time, was not open to the general public. "After the war, however, one of the two plants was translated to the Royal Horticultural Society's Garden at Wisley" - both quotes, C. E. Lucas Phillips and Peter N. Barber, *The Rothschild Rhododendrons,* 1967 - by Francis Hanger when, in 1946, he left his Head Gardener role at Exbury to become Curator at the Royal Horticultural Society's then sole outdoor venue, though "the modus operandi for this transfer remains shrouded in mystery" (A. F. Serbin, *Journal American Rhododendron Society,* Volume 19, Number 2, 1965). Wisley's new arrival was unveiled in full bloom at the Chelsea Flower Show in 1947 and immediately won a First Class Certificate.

In an article for the RHS Journal of 1947, Hanger writes that the Wisley plant was "a layer from the original introduction" (*Additional Notes on R. Yakushimanum,* by Alleyne Cook, *JARS,* Volume 13, Number 1), though others might well have begged to differ.

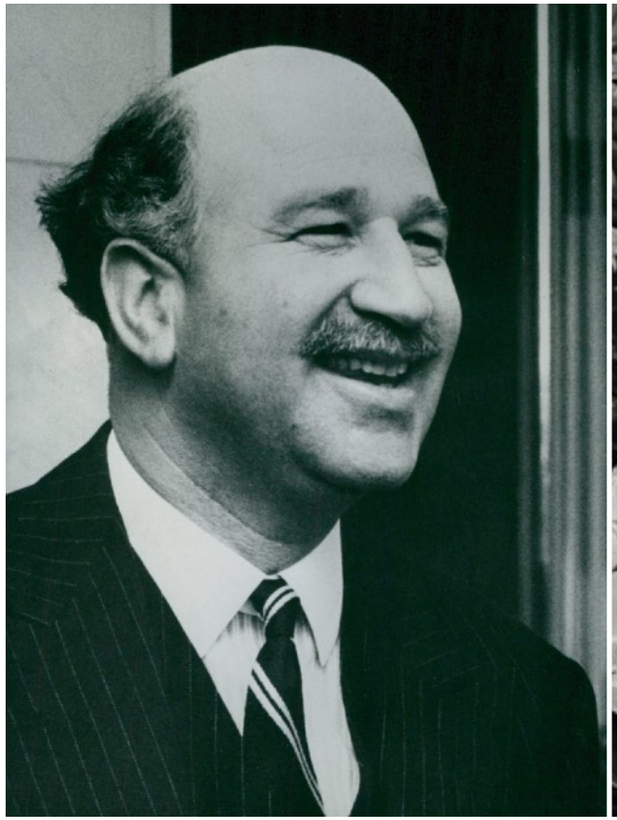
One of those who knew better, Major Edmund de Rothschild, Lionel's eldest son, who was then recently discharged from the army and at the time, still finding his feet at Exbury, was at least asked by the RHS if he would help with a name for the clone.

His choice was 'Koichiro Wada'.

The Exbury form of ssp. *yakushimanum* - slightly more upright in growth, with darker leaves that are doubly convexed - caused a sensation of its own when displayed at Chelsea in 1950. However, contrary to popular belief, it is not the recipient of an Award of Merit, though many regard it as the better plant, including its owner, who in a 1989 *JARS* essay titled *The Living Garden,* wrote:

> 'My father's then Head Gardener was Mr Francis Hanger and just before I was demobilised, the Royal Horticultural Society, not thinking that Exbury Gardens would be carried on, invited Mr Hanger to become Curator at Wisley. Mysteriously one of the *R. yakushimanums* found its way to Wisley and that plant was granted the FCC, but the Exbury *R. yakushimanum* is far superior.'

Admiral Adama, from the reimagined *Battlestar Galactica* TV series popular in the first decade of the new Millennium, would offer a characteristic 'so say we all', before having a certain gentlemen escorted to the brig.



Edmund de Rothschild (1916-2009).



Francis Hanger (1900-1961).

R. yakushimanum remained a rarity in UK and other Western gardens for the next decade, with only small grafted plants or rooted cuttings struck from the Exbury and Wisley clones available in limited numbers. And high prices. Hand-pollinated selfed seedlings were obtainable in greater quantity, but they too were still expensive, and far from exact mirrors of their parent plant, with all such juveniles showing small but significant variations in foliage, flower and habit.

1959 saw the first group of hybrids formerly announced by the Waterer nursery at Bagshot, a pairing with 'Corona' producing 'Doc'; another with 'Doncaster' gifting 'Bashful', 'Pink Cherub' and 'Sneezy'; and one with 'Fabia Tangerine' rendering 'Bambi', 'Molly Miller', 'Shrimp Girl' and 'Timothy James'. They were the first trickle of what would later become a deluge, a flood of biblical proportions that resulted from ssp. *yakushimanum* being crossed with virtually every other elepidote rhododendron on the face of the planet. Yet none of the matings made with the species then, or indeed to date, have delivered an entity that outshines either of the two original clones in form or flower. And some of the plants foisted upon a gluttonous-for-more gardening public have been decidedly second-rate concoctions, their mediocre and inferior quality deserving only of the bonfire, not even worthy of an IRRC entry. The term 'cabbages' is one of the more frequently used and politer appellatives employed to describe their total lack of charm.

1959 also saw the first introduction of wild-collected seed.

Doctor A. Frederick Serbin, a member of the American Rhododendron Society, travelled to Japan in the autumn of that year and with the help of the Japanese Department of Agriculture and their Forestry Service visited Yakushima, returning with seed and cuttings from the plant population atop Mount Hanano-Ego. His trip is recorded in two articles written for the ARS *Quarterly Journals* of 1960 (Volume 14, Number 1) and 1965 (Volume 19, Number 2), details from which are incorporated into the descriptive paragraphs overleaf. Frank Doleshy, another ARS alumnus, would visit the island in 1965 and 1970, securing capsules on both occasions. Yet like the selfed seedlings from the two Wada plants shipped to Exbury, the degree of variation seen in juvenile through adult specimens grown from those collections - as well as seedlings germinated from gatherings made by members of the Japanese Rhododendron Society, who regularly donate material from their own expeditions to the annual ARS Seed Exchange - is considerable, indicating that the genetic pot atop the mountains of Yakushima is still being stirred.

R. degronianum ssp. *yakushimanum* was first described as a specific species by the Japanese botanist Takenoshin Nakai in 1921 when writing in the *Tokyo Botanical Magazine* (*Shokubutsu-gaku Zasshi,* Volume 35). In UK cultivation, specimens should be sited out in the open, in full sun, in northern gardens, with just a modicum of light dappled shade provided elsewhere. They will then flower freely and with abandon each year from a young age, opening their exquisite blooms from late April into May, and maintain the tightly-packed dome of dark green recurved foliage that is their hallmark. They are fully hardy, with a H6-7 RHS hardiness rating, and apart from deadheading, require little else from their owners except unfettered, year-round adoration.



R. yakushimanum (Serbin 10)

R. yakushimanum (Doleshy 10)

Section *Leiorrhodium* Subsection *Taliensia* Series *Bureavia:*



R. elegantulum



Taxa:

R. adenogynum
R. balfourianum
R. bureavii
R. bureavioides
R. dignabile
R. elegantulum
R. nigroglandulosum

Taxonomic Revision:

Subsection *Taliensia,* as defined within the 1996 Edinburgh Revision,
and presented in the RHS *Rhododendron Handbook* of 1998,
comprised some sixty species, subspecies, varieties or unacknowledged natural hybrids
even without taking into account the swarm of botanically 'sunk' horticultural group names
that were still doggedly being maintained by the aficionados of the genus:
Globigerum, Triplonaevium and Tritifolium, to note but three,
all being forms of *R. alutaceum,* which is also - now - known to be a hybrid.

A quarter of a century on, despite the removal from the inventory
of those field-study-certified natural crosses (see the list opposite),
and some minor comings and goings between the other subsections,
- *R. coeloneuron* out; *R. circinnatum* in -
when the slew of new discoveries are added to the total, the specific species count
still tops fifty, with more than a dozen lower ranked individuals to consider as well.

All gathered together in one amorphous whole.

Expert botanists regard the subsection as 'taxonomically difficult',
its membership as 'a particularly complex group',
both quotes gleaned from David Chamberlain's 1982 Subgenus *Hymenanthes* revision
(*Notes from the Royal Botanic Garden, Edinburgh,* Volume 39, No. 2),
while horticulturalists either divide the clique on
'leaf shape and indumentum characteristics as seen by the naked eye',
to paraphrase John McQuire and Mike Robinson in their
Pocket Guide to Rhododendron Species (Kew, 2009),
or resort to improper cubbyholes such as a 'Lacteum Alliance'
- used in *The Encyclopedia of Rhododendron Species,* by Peter and Kenneth Cox, 1997 -
which as reported in Volume 1's overview,
is a non-acceptable botanic pigeonhole within the nomenclature code.

Doctor Chamberlain does state that 'the present circumscription creates a very
diverse subsection in which some subdivision may be justified', but rules as inadequate
the historic Balfourian partitions as maintained by H. H. Davidian in
The Rhododendron Species, Volumes 2 and 3, Batsford, 1989 and 1992 respectively.

Regrettably, a full genetic breakdown of the subsection into a number of clades
is currently unavailable, and the Chadwick et al. paper
Analysis of Leaf Waxes as a Taxonomic Guide to Rhododendron Subsection Taliensia
(*Annals of Botany,* Volume 86, 2000)
appears far too dependent on when the leaf is sampled to provide consistency.

Recourse therefore, must rest on the readily-to-hand morphology:
such as the leaf abaxial surface indumentum type - unistrate or bistrate;
or the nature of the hairs found covering the ovary - glandular or eglandular.

In combination these formulate:
Series *Bureavia* - unistrate and glandular;
Series *Faberia* - bistrate (at maturity or only at first) and glandular;
Series *Principia* - bistrate (at maturity or only at first) and eglandular;
and, Series *Wightia* - unistrate and eglandular.

The inherent variability of that morphology within Subsection *Taliensia,*
where only a part of a taxon's population might actually sport a glandular ovary,
a lesser proportion be eglandular, or vice-versa,
requires the majority position to be given preference.

To that end, the Edinburgh Revision determinations regarding the presence
of a unistrate or bistrate leaf indumentum are accepted here,
except where more recent, on-the-ground field reporting differs,
any contrary opinions being reported in the text that follows.

Field study undertaken post-publication of the 1996 classification has determined
the following taxa to be natural hybrids:

R. aganniphum var. *flavorufum* = *R. x flavorufum;*
R. alutaceum var. *alutaceum* = *R. x alutaceum;*
R. alutaceum var. *iodes* = *R. x iodes;*
R. alutaceum var. *russotinctum* = *R. x russotinctum;*
R. bathyphyllum = *R. x bathyphyllum;*
R. comisteum = *R. x comisteum;*
R. detonsum = *R. x detonsum;*
R. inopinum = *R. x inopinum;*
R. mimetes var. *simulans* = *R. x sinosimulans;*
R. paradoxum = *R. x paradoxum;*
R. phaeochrysum var. *agglutinatum* = *R. x agglutinatum;*
R. roxieanum var. *parvum* = *R. x parvum;*
and cultivated introductions of *R. wightii* pre 1971 = *R. x wightii*
(until one of the epithets is changed to avoid unnecessary species-hybrid confusion).

Minor revisions, such as the reinstatement of *R. vellereum* at specific ranking,
the three *R. roxieanum* varieties sunk in synonymy,
and *R. traillianum* var. *dictyotum* treated as a natural hybrid,
are fully reported within those individual species entries.

The choice not to use the Balfourian 'Lacteum Series' and 'Taliensia Series' monikers
as botanic containers at this classification echelon
- despite both almost certainly having nomenclature precedence -
was made because the contents of the new pigeonholes
do not match with the old repositories, and in fact, vary significantly.

So taking the Section *Ponticum* to Section *Leiorrhodium* transfer as rote for all four series,
with regard to the first of those new boxes: the taxa in Series *Bureavia* will have
a unistrate abaxial leaf indumentum and a glandular ovary,
such features distinguishing them from all the other members of Subsection *Taliensia*.



R. adenogynum

Series Morphology:

Shrubs or small trees, compact, rounded or spreading, to broadly upright, 0.5 to 9m high;
branchlets glabrous or hairy, usually stalked-glandular, more rarely eglandular;
bark grey-brown, rough.

Leaf bud scales deciduous.

Leaves evergreen, coriaceous, sometimes thickly so,
lanceolate through oblong-elliptic to oblong or obovate,
4 to 20cm long by 1.3 to 7cm wide,
apex acute, acuminate or obtuse, and often apiculate or mucronate,
base obtuse, rounded, cuneate or tapering;
upper surface dark green, rarely pale green, usually rugulose, matt or shiny,
glabrous when mature or with the vestiges of hairs, eglandular,
the midrib grooved, usually glabrous, sometimes hairy, rarely glandular,
the veins deeply impressed;
lower surface with a unistrate indumentum, dense, rarely sparse, thick or thin,
usually continuous, woolly, spongy or compacted,
sometimes with a pellicle or thin surface film,
yellowish, silvery-white or salmon-pink at first, becoming
pale pinkish-cinnamon, greyish-fawn, olive-brown, tawny or rusty-red at maturity,
formed of ramiform hairs, sometimes intermixed with glandular hairs,
the midrib prominent, hairy or glabrous, glandular or eglandular,
the veins usually concealed.

Leaf anatomy comprises a 2- or 3-layered upper epidermis,
with the cells in all three layers of roughly equal size;
the cuticle is approximately as thick as the cells are deep; water tissue is absent;
the lower epidermis cells are not prolonged into papillae.
Sclereid cells are present in the leaf tissue.

Petiole 5-30mm long, grooved above, hairy or glabrous, glandular or eglandular.

Inflorescence racemose-umbellate, dense but loose, 4-20-flowered.

Rhachis 4-15mm long, hairy or glabrous, glandular or eglandular.

Pedicel 5-40mm long, hairy or glabrous, glandular or eglandular.

Calyx large, small or minute, 5-lobed, these unequal and 0.5-12mm long,
their outer surface and margins hairy or glabrous, glandular or eglandular.

Corolla 2.5 to 5.3cm long, campanulate, tubular-campanulate or funnel-campanulate,
white to pink, cream, pale yellowish (rarely), rose, purplish, or reddish (rarely),
often conspicuously spotted, sometimes blotched,
without nectar pouches;
5-lobed, the lobes rounded and emarginate.

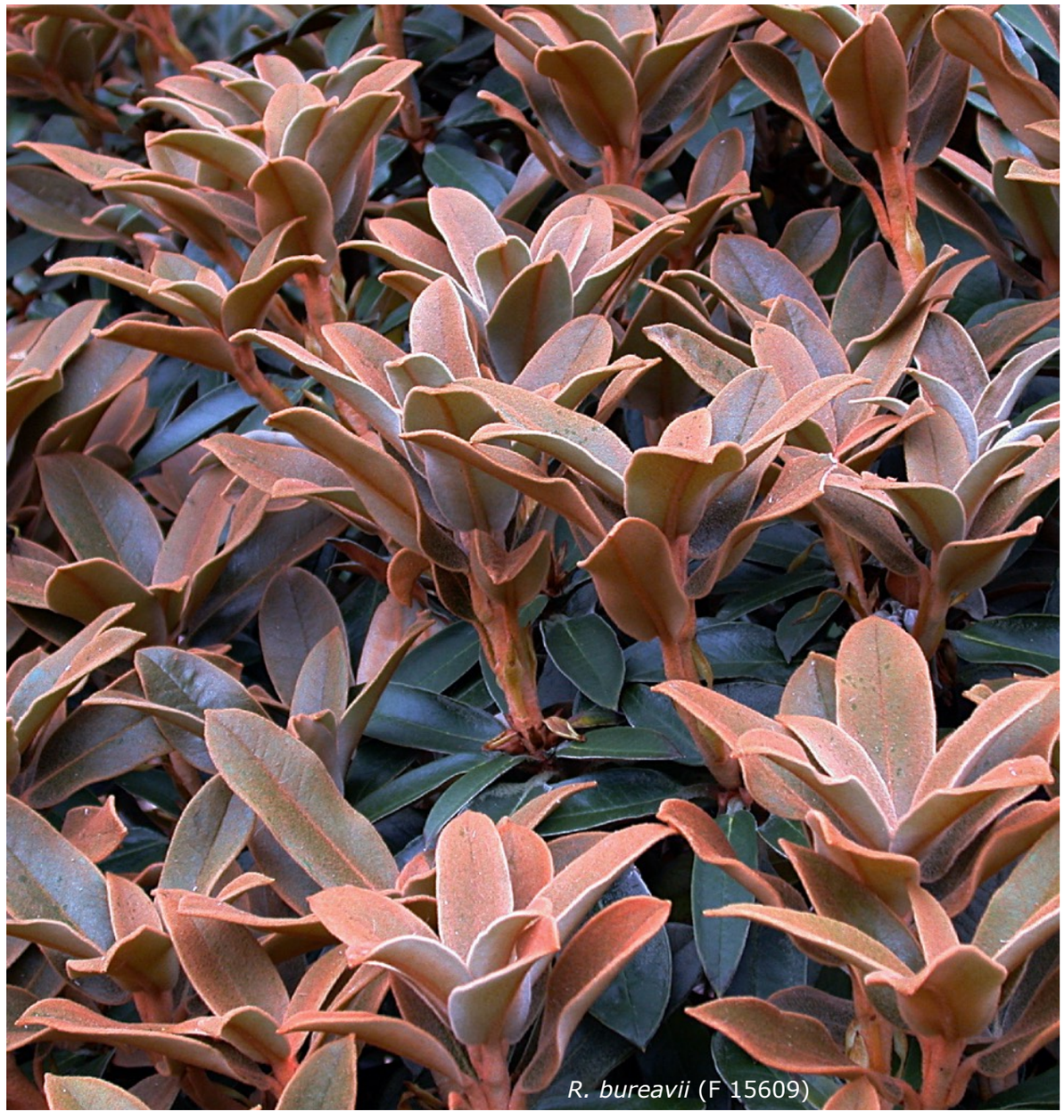
Stamens 10, unequal, shorter than the corolla;
filaments pubescent at the base, rarely along the lower half,
eglandular, rarely glandular along the lower half.

Ovary oblong, conoid or ovoid, 4-7mm long, 5-8-locular,
glabrous or hairy, stalked-glandular.

Style glabrous or hairy (rarely),
stalked-glandular at the base or along the lower half, sometimes eglandular.

Capsule 10-28mm long, oblong or oblong-oval, straight or slightly curved,
glabrous or hairy, stalked-glandular or eglandular.

Seeds elongate, narrowly winged or not winged,
each end usually with appendages (occasionally very small).



R. bureavii (F 15609)

R. bureavii

Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
SW Sichuan, N & NE Yunnan, China.
Growing in open coniferous forests, rhododendron thickets and on mountain slopes,
at elevations of 2,800-4,500m.

Identification:
Shrub or small tree, compact and rounded, to broadly upright, 1 to 7.6m high;
branchlets densely woolly tomentose, the hairs rufous through tawny,
often sparsely through moderately intermixed with long-stalked red glands.
Leaves oblong-obovate through elliptic, sometimes broadly so, to oblong-lanceolate,
4.5 to 19cm long by 2 to 7cm wide,
retained for 3-4 years;
upper surface dark green, usually shiny, glabrous,
rarely thinly rufous hairy, these hairs semi-persistent,
the midrib tomentose at the base or up to half its length, eglandular;
lower surface indumentum unistrate, densely woolly, continuous,
salmon-pink at first, rufous or tawny when mature,
the midrib densely woolly.
Petiole 10-25mm long, thick, densely tomentose, the hairs woolly and rufous,
sparsely through moderately long-stalked glandular.
Inflorescence 6-20-flowered.
Rhachis 5-10mm long, moderately through densely woolly tomentose, the hairs rufous,
short-stalked glandular or eglandular.
Pedicel 10-28mm long, moderately through densely woolly tomentose, the hairs rufous,
sparsely through moderately medium- or long-stalked glandular.
Calyx large, the lobes fleshy or membranous, oblong or oblong-oval, each 5-10mm long,
their outer surface densely brown-pubescent
and moderately through densely short-stalked glandular,
but sometimes only across the lower half,
their margins glabrous or brown-pubescent, and densely short-stalked glandular.
Corolla 2.5 to 5cm long, tubular-campanulate or campanulate,
white, white flushed pink, pink, creamy-white flushed rose, rose, rarely reddish,
with or without crimson or purple spots.
Stamen filaments densely pubescent at the base.
Ovary conoid or ovoid, 4-5mm long,
moderately through densely brown- or rufous-tomentose, but sometimes glabrous,
moderately through densely short- or long-stalked glandular.
Style tomentose at the base or along the lower third, or glabrous,
densely short- or long-stalked glandular at the base.
Capsule 10-20mm long, ovoid, oblong or oblong-oval,
moderately through densely brown- or rufous-tomentose, the hairs long,
long-stalked glandular,
or with the vestiges of hairs and glands.

Seed Collections:

W 1769	1903/1905	C&H 7158	1995
F 15609	1917	C&H 7158b	1995
R 6296	1923/1924	AC 874	1995
R 11370	1923/1924	AC 880	1995
R 11376a	1923/1924	AC 2067	1996
R 11377a	1923/1924	AC 2072	1996
R 11382	1923/1924	AC 2073	1996
R 25435	1932	AC 4006	2001
R 25436	1932	AC 4838	2001
R 25439	1932	AC 4842	2001
R 25442	1932	NN 0909	2009
R 25445	1932	CDHM 14508	2010
McLaren 38/023	1932/1939	CNC 12080	2012
SICH 595	1991	JN 12214	2012
Cox 6148	1992	JN 12318	2012
CNW 1000	1994	JN 12358	2012


R. bureavii (F 15609)

R. bureavii (F 15609)

R. bureavii was the first member of the series to be discovered, an encounter with the Catholic missionary priest Jean-Marie Delavay, at Yen-tze-hay, near Lankong, to the north of Tali (now Dali), in northwestern Yunnan, taking place on June 1st, 1886. The dried material was despatched back to France and on its receipt, Delavay's find was named for the French physician and botanist Louis Édouard Bureau (1830-1918), who was then the director of the herbaria at the Muséum National d'Histoire Naturelle in Paris, where Adrien Franchet, his assistant, described the new taxon in 1887 (*Bulletin de la Société Botanique de France,* Volume 34), but if any seed was returned with the dried specimens, it failed to germinate. In fact, as John MacQueen Cowan observes, despite the 'enormous quantities of herbarium material sent to Franchet in Paris, only three or four species were established in cultivation' (*The Rhododendron Yearbook,* Number 7, 1953), though this is most probably a slight underestimate.

Traditionally, the introduction of *R. bureavii* into UK cultivation is credited to George Forrest under his 1917 gathering F 15609, yet F 506 was returned from his first expedition to China more than a decade earlier. Any seed would have been placed into the less than expert hands of Arthur Kilpin Bulley, the Cheshire businessman who was the principal sponsor of the trip, so no more needs to be said. Just as mystifying is W 1769, a collection from Ernest Wilson's second expedition to western Sichuan for the Veitch Nursery that was made sometime between 1903 and 1905. The RHS *Rhododendron Handbook* of 1998 tentatively lists it as *R. bureavii,* although earlier editions of such had described the entry as 'bureavii (davidii ?)', even though the character differences between these two species should have been immediately apparent, as would a natural hybrid pairing.

Historical verisimilitude to one side, it was back in 1972 that the true worth of the species was recognised when an RHS Award of Merit was bestowed on a mature specimen of *R. bureavii* exhibited by the Royal Botanic Garden, Wakehurst Place, though not for the flowers, for the foliage.

To quote H. H. Davidian:

> 'The most striking character of the plant is the thick, woolly, cinnamon-coloured or rusty-red indumentum of hairs covering the lower surface of the leaves. Other distinctive features are the densely, cinnamon or rusty-red woolly branchlets, petioles, rhachis of the inflorescence, pedicels and ovaries.'
> (*The Rhododendron Species,* Volume 3, 1992).

Or authors Peter and Kenneth Cox:

> 'As it is easier to please in cultivation than most of its relatives, it has become the most popular garden plant of Subsection *Taliensia*.'
> (*The Encyclopedia of Rhododendron Species,* 1997).

Some forms are also blessed with a proclivity to bloom, the bushes annually awash with trusses of white, or white flushed with rose flowers, though these will be plants at least a decade on from the ring of the garden centre till. And prospective purchasers should also check with their supplier as to which clone is available, for a number are decidedly shy flowerers, which presents a bit of a dichotomy as these are often the clones with the best foliage. Two structural types are in cultivation: the first develops into a rounded bush around 1.2m high; the second attains a height of 3m in time and is broadly upright in habit. Both are fully hardy and can be planted wherever rhododendrons succeed in the British Isles providing they can be sheltered from the wind, this especially apposite in colder, drier gardens.

R. bureavioides is the most likely occupant of Series *Bureavia* to be mistaken for *R. bureavii,* but lacks any non-sticky hairs on the ovary or style (both plants, of course, host a crowd of stalked-glandular hairs on these appendages). Other characteristics, such as petiole length (shorter), leaf shape (narrower) or corolla size (larger), are much less precise and not consistent. For instance, the petiole may only appear to be shorter because it is bent. Admittedly this can be distinctive visually, as the whorl of foliage at the branch tips of *R. bureavioides* gives the impression of being sessile, but for keying the two apart, not so helpful.

R. nigroglandulosum has a much smaller calyx - to just 1mm in length rather than the 5-10mm-long lobes found on *R. bureavii* - while *R. elegantulum* has clearly narrower leaves, the abaxial leaf surface indumentum is decidedly thinner - 'more felty and less woolly', to again quote Davidian - and like *R. bureavioides,* the ovary and style are usually glabrous (but not eglandular).

Switching to synonymy, *R. cruentum* - discovered by Edouard Maire on the Ta-hai-tse Plateau, north of Tungchwan in northeast Yunnan during May 1911 and described by Hector Léveillé in 1913 (*Repertorium Specierum Novarum Regni Vegetabilis,* Volume 12) - has smaller flowers and fleshy, rather than membranous, calyx lobes. Supposedly. Because 'a complete intergradation of these characters' on the ground was reported by David Chamberlain in 1982 (*Notes from the Royal Botanic Garden, Edinburgh,* Volume 39, No. 2), which explained why he and James Cullen had sunk the taxon in Part 1 of their *Preliminary Synopsis* paper (*Notes, V*olume 36, 1978).

With regard to the nature of the *R. bureavii* abaxial leaf surface indumentum, the sole contrary voice to report it as being bistrate, is that of H. H. Davidian. The entry in Volume 3 of *The Rhododendron Species,* published in 1992, lists medium- to long-stemmed ramiform hairs with very long and jointed narrow branches as forming the upper layer, while the lower is composed of closely or widely scattered rosulate hairs.

Peter and Kenneth Cox, hands-on horticulturalists, report it to be unistrate.



R. bureavii

R. bureavii

R. bureavii (R 25436)

R. bureavii

R. bureavioides

Hardiness:
H6-7.
Flowering Period:
May.
Distribution in the wild:
WC & NW Sichuan, China.
Growing at elevations of 3,000-3,5000m.

Identification:
Shrub or small tree, compact and rounded, to broadly upright, 1.2 to 5m high;
branchlets stout, densely woolly tomentose, the hairs pale fawn or rust-coloured,
sparsely medium- or long-stalked glandular.
Leaves oblong-lanceolate through oblong-oval to elliptic or broadly obovate,
7 to 16.5cm long by 2 to 6cm wide,
retained for 2-3 years;
upper surface dark green, shiny, tomentose at first, the hairs semi-persistent or glabrous,
the midrib hairy or glabrous, eglandular;
lower surface indumentum unistrate, dense, continuous, woolly,
rusty-red when mature,
the midrib usually woolly hairy, sometimes medium-stalked glandular.
Petiole c. 10mm long, thick, bent, the leaf whorls appearing sessile,
densely rufous tomentose,
sometimes medium- or long-stalked glandular.
Inflorescence 8-15-flowered.
Rhachis *c.* 8mm long, densely woolly tomentose, eglandular.
Pedicel *c.* 15mm long, moderately through densely woolly tomentose,
densely short-stalked glandular.
Calyx large, the lobes membranous,
each deeply divided to near the base, oblong, 7-12mm long,
their outer surface floccose and glandular,
their margins stalked-glandular.
Corolla 4 to 4.5cm long, funnel-campanulate,
white, white flushed rose, or rose,
with crimson spots and a deeper basal blotch.
Stamen filaments pubescent at the base.
Ovary conoid, 5mm long, glabrous,
densely medium- or long-stalked glandular.
Style glabrous,
medium-stalked glandular at the base or along the lower half.
Capsule 12-18mm long, oblong-oval, glabrous,
long-stalked glandular.

Seed Collections:

W 1538	1904	AC 4104	1998
Cox 5039	1990	AC 4110	1998
Cox 5072	1990	H&M 2189	1998
Cox 5076	1990	AC 4851	2001
CEE 344	1991	AC 4881	2001
AC 4014	1998	JN 12084	2012


R. bureavioides (H&M 2189)


R. bureavioides (H&M 2189)

Almost two decades flew by before the next resident of Series *Bureavii* was found, Ernest Wilson receiving the credit in June 1904 for an introduction gathered at Tatsienlu (now Kangding) in southwestern Sichuan under W 3954. Isaac Bayley Balfour named and described the taxon in 1920, his appraisal appearing in *Notes from the Royal Botanic Garden, Edinburgh,* Volume 13, except that the dried material used for that delineation is currently filed as *R. bureavii* in the Edinburgh herbarium, and as *R. faberi* at Kew, with specimens from an earlier, May 1904, gathering - under W 3959, which some sources list as W 1538 - currently bearing a *R. prattii* label, though both sets of specimens have a Balfour designation as the type of *R. bureavioides* in the column registering such re-assessments. The Wilson plants established in cultivation from those collections do not, however, match morphologically with any of the reintroductions made by Peter Cox in 1990, the Chengdu Edinburgh Expedition in 1991, Alan Clark in 1998 and 2001, Charles Howick and William McNamara in 1998, or Jens Nielsen in 2012.

Basically, this is because the characteristics of *R. bureavioides* are in flux and totally dependent on which botanist is being consulted, so any identification bullet points are likely to be wrong, or right, contingent on the doyen, apart from the complete lack of non-sticky hairs on the ovary and style, which everyone appears to acknowledge as being true, and that same ovary being densely stalked-glandular. This state of affairs also appertains to the style, though here bets are hedged, with some committing to 'at the base', and others settling on 'along the lower half'.

To avoid the possibility of an embarrassing faux pas, the composition of the abaxial leaf surface indumentum should never be raised in polite conversation, as tempers are likely to flare. It is described as bistrate by both David Chamberlain and H. H. Davidian, and confirmed as such through field reporting by Chinese botanists (an addendum to the *R. bureavii* entry on the *Flora of China* website). Yet Peter and Kenneth Cox state that 'it seems to be unistrate in wild and cultivated plants we have observed' (*The Encyclopedia of Rhododendron Species,* 1997), an assessment that if made elsewhere, would conclude the argument. Except here, the problem is over what specimens each group consider are actually *R. bureavioides,* be they dried material in the herbaria, endemic plants in Sichuan, or those grown from the original introduction. The choice to go with unistrate herein maintains the probable association with *R. bureavii,* but again, is a shot in the dark until the geneticists do their thing, despite Balfour's subliminally-prompting choice of Latin epithet - a plant resembling *R. bureavii*.

R. danbaense is thought to be a synonym of *R. bureavioides,* though again, this is dependent on who you ask as there is disagreement over how many layers comprise its abaxial indumentum. *Flora of China* reports that 'without seeing the type specimen, it cannot be confirmed if the leaf indumentum is truly unistrate'. Equally, the photo of the stamens and ovary of *R. danbaense* presented in *Sichuan Rhododendron of China* (Fang Wen-pei, *Science Press,* Beijing, 1986), along with the Ling Cheng Hu description that was published in the *Bulletin of Botanical Research, Harbin,* Volume 6, No. 1, 1986, also prove problematical, as yellowish-white hairs are recorded as being present at the ovary apex and the style is described as densely villose. Yet as all agree, both these characteristics are glabrous for *R. bureavioides*. So the ranking row rumbles on, mitigated only by the fact that affinity forms of *R. danbaense* are the sole introductions of the species made into UK gardens to date.



R. bureavioides (or so the label claims)

R. adenogynum

Hardiness:
H6-7.
Flowering Period:
March-May.
Distribution in the wild:
SE Tibet; SW Sichuan, NW & W Yunnan, China.
Growing in pine and fir forest, in rhododendron and mixed thickets,
on open pasture and grassy or rocky mountain slopes, and on limestone cliffs,
at elevations of 3,000-4,300m.

Identification:
Shrub or small tree, rounded, spreading, to broadly upright, 0.5 to 5.5m high;
branchlets stout, floccose or densely tomentose at first,
the hairs grey, the indumentum woolly, rarely glabrous,
usually with intermixed short- or medium-stalked glands, rarely eglandular.
Leaves thickly coriaceous,
lanceolate through oblong-lanceolate to elliptic,
5 to 13.5cm long by 1.3 to 4cm wide,
retained for 2-4 years;
upper surface dark green, glabrous or with the vestiges of hairs,
the midrib hairy or glabrous, glandular or eglandular;
lower surface indumentum unistrate, dense, continuous,
thickly spongy through matted, rarely sparse, sometimes with a shiny pellicle,
yellowish at first, rich olive brown when mature,
intermixed with some short- or medium-stalked glandular hairs,
but sometimes eglandular,
the midrib hairy or glabrous, glandular or eglandular.
Petiole 10-25mm long, floccose, or densely tomentose, or glabrescent to near glabrous,
moderately through densely short- or medium-stalked glandular, rarely eglandular.
Inflorescence 4-12-flowered.
Rhachis 4-10mm long, floccose or tomentose,
short- or medium-stalked glandular, rarely eglandular.
Pedicel 15-40mm long, floccose or densely tomentose, rarely glabrous,
densely medium- or long-stalked glandular, these hairs rarely short-stalked.
Calyx large, purplish or yellow-green, the lobes deeply divided,
oblong or oblong-oval, each 4-8-15mm long,
their outer surface and margins moderately through densely
short- or medium-stalked glandular.
Corolla 3 to 5.3cm long, campanulate or funnel-campanulate,
white, white flushed pink, pale pink or pink, magenta-rose, rose-purple or reddish-purple,
with or without crimson or purple spots.
Stamen filaments densely pubescent and glandular-hairy along the lower half.
Ovary oblong, conoid or ovoid, 5-7mm long, glabrous,
densely short- or long-stalked glandular.
Style glabrous,
usually short- or medium-stalked glandular at the base or along the lower third.
Capsule 10-22mm long, oblong or oblong-oval, straight or slightly curved, glabrous,
moderately through densely medium- or long-stalked glandular.

Seed Collections:

F 5868	1910	F 29313	1930/1931
F 5871	1910	F 29314	1930/1931
F 10113	1912/1914	F 30888	1930/1931
F 10429	1912/1914	R 23661	1932
F 15070	1917/1919	R 23662	1932
F 15072	1917/1919	R 25246	1932
F 15128	1917/1919	R 25305	1932
F 15171	1917/1919	R 25308	1932
F 15243	1917/1919	R 25349	1932
F 16315	1917/1919	R 25375	1932
F 16455	1917/1919	R 25387	1932
F 16473	1917/1919	Yu 13927	1937
F 16643	1917/1919	Yu 13928	1937
F 20415	1921/1922	Yu 14955	1937
F 20444	1921/1922	Yu 15300	1937
F 21409	1921/1922	EN 903	± 1985
F 21410	1921/1922	CHM 2638	1986
F 21588	1921/1922	SBLE 203	1987
R 7794	1923/1924	SBLE 235	1987
R 11134	1923/1924	CLD 1095	1990
R 11367	1923/1924	CLD 795	1990
R 11471	1923/1924	SICH 1095	1992
R 18162	1929	CNW 1193	1994
F 28323	1930/1931	CNW 1194	1994
F 29256	1930/1931	Cox 6502	1994
F 29312	1930/1931	JN 12216	2012



R. adenogynum



R. adenogynum (F 20444)

R. adenogynum was found by George Forrest towards the end of his first expedition to China's Yunnan Province in June 1906, the population of plants discovered on the eastern flank of the Lichiang Mountain Range in the northwest of the canton. Friedrich Diels described the herbarium material in Volume 5 of *Notes from the Royal Botanic Garden, Edinburgh,* published in 1912, his text indicating an absence of glandular hairs on the branchlets, petioles, adaxial and abaxial leaf midribs.

These were provided by the now synonymous *R. adenophorum,* another Forrest find, discovered in 1913 and described by Sir Isaac Bayley Balfour and William Wright Smith in Volume 9 of *Notes,* which was published in 1916.

As indicated, sticky hairs are present on the branchlets, petioles and midribs, however, their presence is not consistent across the population distribution, with a complete range of intermediates found mixed-up on the ground. Additional glandular hairs excepted, these plants are otherwise perfect mirrors of *R. adenogynum,* which is why both David Chamberlain and H. H. Davidian reached the same conclusion and sunk the taxon, the latter specifically including the RHS-maintained Adenophorum Group within that synonymy (*The Rhododendron Species,* Volume 3, 1992). Davidian is alone in describing the indumentum as bistrate, reporting an upper layer of medium-length, narrowly-branched ramiform hairs, the lower, composed of small rosulate hairs, though it should be noted that those forms with the most glandular hairs intermixed amongst the ramiform hairs display an abaxial leaf indumentum with a matted rather than spongy appearance.

Within the series, *R. adenogynum* is most closely related to *R. balfourianum,* both plants having large, densely glandular calyx lobes. Some authors suggest leaf shape as a potential key, the former species supposedly having somewhat narrower foliage than the latter, but a side by side comparison will quickly reveal this to be nonsense, with the length and breadth parameters being virtually identical. The most reliable tells are the hue and texture of the abaxial indumentum: yellowish becoming olive-brown, plus thick and spongy, equals *R. adenogynum;* silvery-white transforming to pinkish-cinnamon, and dense, but compacted or plastered for *R. balfourianum.* On occasion, of course, *R. adenogynum* will have glandular hairs intermixed within the non-sticky ones or, as Harry Tagg writes in *The Species of Rhododendron,* a 'woolly tomentum which covers an under stratum of small glands'. Two additional checks can also be made: firstly, the stamen filaments of both species are densely pubescent along the lower half, but only those of *R. adenogynum* will bear a complement of glandular hairs; and secondly, the rhachis of *R. balfourianum* is never more than 5mm long, while that found on *R. adenogynum* clocks-in between 4 and 10mm in length.

Forrest's 1906 collection - under the field number F 2395 - may or may not have returned seed into the clutches of Arthur Kilpin Bulley, so the premier introduction into UK cultivation is historically credited to a gathering made during the Scotsman's second trip to China in 1910. The slew of gatherings that followed from a host of collectors fall into four basic forms, all rated H6-7 and flowering between March and May. These vary from a low, compact dwarf barely topping 0.6m in height when mature, to a broadly upright shrub that will ultimately hit the 2.5m mark. All are densely clad with leaves and make fine foliage plants, usually spreading wider than they grow tall and flowering at a younger age and more freely than most of their series or subsection compatriots. Swiftly draining soil is mandatory and high summer temperatures are loathed, making the northern counties of England and much of Scotland the plum growing sites, their colder winters easily weathered given the hardiness rating.



R. adenogynum (R 11471)



R. adenogynum (CH&M 2638)



R. adenogynum (R 25305)



R. adenogynum (SBLE 235)

R. balfourianum

R. balfourianum

Hardiness:
H6-7.
Flowering Period:
March-May.
Distribution in the wild:
SW Sichuan, W & NW Yunnan, China.
Growing in fir forests, at the margins of coniferous forest,
in rhododendron or mixed thickets, and on rocky or gravelly slopes,
at elevations of 2,500-4,600m.

Identification:
Shrub, compact and rounded, or broadly upright, 1 to 4.5m high;
branchlets glabrous, rarely sparsely through moderately floccose-tomentose,
sparsely through moderately short-stalked glandular, or eglandular.
Leaves ovate-lanceolate through elliptic to oblong,
4.5 to 13.2cm long by 1.9 to 4.8cm wide,
retained for 1-3 years;
upper surface dark green, matt, glabrous or with vestiges of hairs,
the midrib hairy or glabrous, eglandular;
lower surface indumentum unistrate, thin or thick, dense, continuous,
spongy through compacted (agglutinated), or woolly,
sometimes with a shiny pellicle or thin surface film,
silvery-white at first, pale pinkish-cinnamon or greyish-fawn when mature,
the midrib hairy or glabrous, short-stalked glandular or eglandular.
Petiole 10-23mm long, glabrescent or glabrous,
short-stalked glandular or eglandular.
Inflorescence 5-12-flowered.
Rhachis 4-5mm long, hairy or glabrous,
short-stalked glandular or eglandular.
Pedicel 10-34mm long, sparsely hairy, tomentose, or glabrous,
densely short- or medium-stalked glandular.
Calyx large, the lobes elliptic, oblong-elliptic or rounded, each 3-10mm long,
their outer surface glabrous, variably short-stalked glandular or rarely eglandular,
their margins densely short-stalked glandular-ciliate.
Corolla 3 to 4.8cm long, campanulate or funnel-campanulate,
rose, pale or deep pink, white, rose-pink through pinkish-purple,
with or without crimson or purple spots.
Stamen filaments densely pubescent at the base.
Ovary oblong or conoid, 5-7mm long, glabrous,
densely short- or medium-stalked glandular.
Style glabrous,
medium-stalked glandular at the base or along the lower third, or eglandular.
Capsule 10-28mm long, oblong, straight or slightly curved, glabrous,
moderately through densely short- or medium-stalked glandular, or eglandular.

Seed Collections:

F 6774	1910	F 29264	1930/1931
F 15497	1917/1919	F 29278	1930/1931
F 15969	1917/1919	F 29282	1930/1931
F 16316	1917/1919	R 24281	1932
F 16806	1917/1919	R 24381	1932
F 16811	1917/1919	R 24382	1932
KW 4177	1921	R 24383	1932
F 20455	1921/1922	R 24406	1932
F 20456	1921/1922	R 25437	1932
F 21055	1921/1922	Yu 14662	1937
F 21056	1921/1922	SBEC 554	1981
R 18153	1929	SBEC 583	1981
R 18156	1929	SBLE 560	1987
R 18158	1929	SSNY 224	1992
R 18160	1929	KGB 808	1993
R 18164	1929	KR 2765	1993
R 18170	1929	CNW 432	1994
R 18173	1929	CNW 1233	1994
R 18175	1929	CNW 1239	1994
R 18177	1929	AC 1575	1996
F 29244	1930/1931	JN 913	1999
F 29263	1930/1931	JN 12255	2012

R. balfourianum

Less than a month after finding *R. adenogynum,* George Forrest discovered another member of Series *Bureavia,* this growing on the eastern flank of the Tali Range in the west of Yunnan Province, during his explorations of July 1906. The description of the new-to-science taxon appears in the 1912-published Volume 5 of *Notes from the Royal Botanic Garden, Edinburgh,* and its author, Friedrich Diels, chose to name the plant for that institution's Regius Professor of Botany, Sir Isaac Bayley Balfour.

Born in 1853, Sir Isaac was the son of another Regius Keeper, John Hutton Balfour (1808-1884), so was raised at 27 Inverleith Row, then the Keeper's residence, and thus was intimately familiar with the grounds and the gardens from childhood. He achieved his Doctor of Science degree at Edinburgh University, receiving First Class Honours in 1875, and was then appointed Professor of Botany at the University of Glasgow. At just 31 years of age, he became Sherardian Professor of Botany and Keeper of the Botanic Garden at Oxford, and then, four years later in 1888, returned to Edinburgh Botanic to take up the post of Regius Keeper, which was when the Maull & Fox portrait photograph opposite was taken. Balfour is credited with reviving the entire organisation over the course of his 34-year tenure, during which: new glasshouses were built; the rock garden was completely remodelled; opening times were extended for the public to visit; and extra scientific staff were recruited once the garden's finances were sorted out and its administration changed to mirror that of Kew.

Balfour also began the publication of what would become a world-renowned scientific journal - *Notes from the Royal Botanic Garden, Edinburgh* - in 1900, and two years later, made a junior appointment to the herbarium that would ultimately turn the establishment on its head and place the garden and its institutes at the forefront of research into Genus *Rhododendron,* a position it still occupies to this day. For George Forrest was that new employee and he would travel to China on collecting expeditions for Edinburgh Botanic seven times over the course of the next thirty years and return a mass of material that would require half a century to fully study.

Bayley Balfour took on the task of classifying those newly discovered rhododendrons, was knighted in 1920, but died in 1922, illness forcing his retirement a few months earlier, at the height of the new species influx into British gardens. Yet his taxonomic system of Series and Subseries would last another seventy years, despite its temporary, quick-fix-concept nature, and his name will forever be associated with the botanic descriptions of over 350 individual rhododendrons at specific ranking.

The species that bears his name - *R. balfourianum* - like many of its contemporaries, has had its botanic description extended to cover plants closely resembling the original find that in all but a few minor details are mirrors, and today considered to be synonymous. In the case of *R. balfourianum,* a thin compacted abaxial leaf surface indumentum was amended to encompass individuals with a thicker, spongier tomentum, which were at first classified as *R. balfourianum* var. *agganiphoides* by Forrest and Harry Tagg in a joint text that appeared in the 1927-published, Volume 15 of *Notes.* Found by the Scotsman in June 1918, on the mountain slopes above Muli, in southwest Sichuan, it retained its varietal status until 1982, when David Chamberlain made it fully synonymous in his Subgenus *Hymenanthes* revision (*Notes,* Volume 39, No. 2). In that text, Doctor Chamberlain states that 'there is no clear dividing line between var. *balfourianum,* with a compacted leaf indumentum, and var. *agganiphoides,* with a thick spongy indumentum', concluding that 'the two taxa are therefore not maintained as distinct'.

Except varietal status was revived for *The 1998 Rhododendron Handbook* - penned by the same author - with that previous 'no clear dividing line' abandoned. This could have resulted from Chinese field reporting on the two populations, with var. *agganiphoides* found



Isaac Bayley Balfour.



R. balfourianum (F 16811)

growing at lower altitudes than var. *balfourianum* - 2,500 to 4,100m, and 3,300 to 4,600m, respectively - although no reference is made to this geographic anomaly in the description. The *Flora of China* website entry confirms the presence of a 1-layered abaxial indumentum on both plants, yet it also sets out a few starker, additional feature differences:

Var. *balfourianum* is reported to have leaves that are 5 to 8cm long. These have a thin covering of hairs on the lower surface, which while often agglutinated, is without a pellicle. The style is described as short-stalked glandular along the lower third.

Var. *aganniphoides* on the other hand, has blades that are 7 to 12cm long, and their thick and spongy indumentum does boast a pellicle. The style, however, is only sparsely glandular near the base.

Varietal ranking was also specified in Volume 3 of H. H. Davidian's *The Rhododendron Species* (Batsford, 1992), with the author citing an additional difference: a bistrate rather than unistrate abaxial leaf indumentum. A single layer covering of large rosulate hairs was detailed for the specific species, whereas var. *aganniphoides* could sport an upper echelon composed of ramiform hairs, or on occasion, very large rosulate ones, while small rosulate follicles formed the lower tier.

The authors of *The Encyclopedia of Rhododendron Species,* horticulturalists Peter and Kenneth Cox - the former having re-introduced the species into UK gardens during 1981 when a member of the Sino-British Expedition to the Cangshan - have chosen to maintain the synonymy imposed in 1982, which is also the position followed herein. Such treatment is consistent with the approach applied to the *adenogynum-adenophorum* ranking issue by both H. H. Davidian and David Chamberlain, and on the ground, Western field reporting suggests the leaf length differential isn't quite as clear cut as that set out above and online. Indeed, Davidian catalogues the blades of *R. balfourianum* as spanning 5 to 13.2cm.

Within Series *Bureavia,* a single characteristic can be used to identify plants of *R. balfourianum* from all the other members introduced into UK cultivation, including the very closely allied *R. adenogynum:* the rhachis. It is never more than 4 or 5mm in length. And although the other species may sometimes match that figure, they nearly always bear main flower stalks that are longer, reaching to 8, 10 or 15mm in length. Out of flower, the abaxial indumentum, silvery-white at first, but pinkish-cinnamon or greyish-fawn in hue at maturity, and lacking any glandular hairs, will key the species from *R. adenogynum,* while the glabrous nature of the branchlets will suffice to differentiate it from the densely hairy quartet of *R. bureavii, R. bureavioides, R. elegantulum* and *R. nigroglandulosum,* and the sometimes only sparsely floccose *R. dignabile,* though the latter is never completely lacking hairs on its young stems.

George Forrest was again the first plant hunter to introduce both components of the taxon into UK cultivation, seed of the thinly indumented forms arriving in 1910, and those with a spongy tomentum in 1918. Frank Kingdon-Ward, Joseph Rock and Te Tsun Yu added to the tally up until 1937, with another dozen gatherings secured more recently across a thirty year span split on either side of the millennium. The usual shenanigans apply to a pair of Forrest gatherings from 1906, F 4131 and F 4166.

Flowering in UK gardens takes place from March into May, with the H6-7 hardiness rating allowing specimens to succeed wherever rhododendrons can be grown outdoors in the British Isles. Over the course of many years, *R. balfourianum* develops into a 2m high upright or rounded bush, the framework well-filled with foliage, and it has proved to be one of the easier Subsection *Taliensia* species to grow. Mature specimens are noted to be very free-flowering, those with rose-coloured corollas thought especially beautiful.

R. balfourianum (F 16811)



R. elegantulum (F 21292)

R. elegantulum
Hardiness:
H6-7.
Flowering Period:
March-April.
Distribution in the wild:
Ninglang County, NW Yunnan, & Yung-ning, SW Sichuan, China.
Growing in fir forest, in meadows and on rocky slopes,
at elevations of 3,600-3,900m.

Identification:
Shrub, compact to broadly upright, 1 to 1.8m high;
branchlets densely woolly tomentose, the hairs cinnamon or rusty-red,
sparsely long-stalked glandular or eglandular.
Leaves oblong-elliptic through oblong-lanceolate,
4 to 13cm long by 1.3 to 3.5cm wide,
retained for 3 years;
upper surface pale green, matt, glabrous or with the vestiges of hairs,
the midrib densely woolly hairy at the base or along the lower half, eglandular;
lower surface indumentum unistrate, dense, continuous, thick and woolly,
deep pink at first, rich rufous brown when mature (in the third year),
the midrib moderately through densely woolly, eglandular.
Petiole 10-19mm long, densely woolly tomentose,
the hairs cinnamon or rusty-red, sometimes becoming glabrescent,
eglandular or sparsely medium-stalked glandular.
Inflorescence 6-20-flowered.
Rhachis 6-10mm long, pubescent.
Pedicel 10-20mm long, densely floccose or rufous tomentose,
sometimes becoming glabrescent, medium- or short-stalked glandular.
Calyx large, the lobes acute, oblong or rounded, each 5-12mm long,
their outer surface hairy, short-stalked glandular,
their margins ciliate, densely short-stalked glandular.
Corolla 2.6 to 4cm long, campanulate or funnel-campanulate,
pale purple or purplish-pink, sometimes cream, or cream flushed pink,
with crimson spots.
Stamen filaments densely pubescent at the base.
Ovary conoid, 4-5mm long, glabrous,
densely short- or medium-stalked glandular.
Style glabrous or sparsely hairy at the base,
sparsely short- or medium-stalked glandular at the base.
Capsule 10-15mm long, oblong, straight or slightly curved, glabrous,
densely medium- or long-stalked glandular.

Seed Collections:

F 21292	1922
JN 11240	2012

R. elegantulum was found growing on a steep sheltered slope, amongst larch and fir trees, near Yung-ning in southwest Sichuan, close to the border with Yunnan. The date was May 7th, 1922 and the plant hunter who made the discovery was Frank Kingdon-Ward. The small, compact bush he encountered was in flower, covered in pale purplish-pink blooms spotted darker, but it was the leaves, with their deep, rusty-orange indumentum that held his eye. Any seed was long gone, so only herbarium material was gathered and returned, under KW 5111, but a month later, George Forrest also encountered the species, on mountains to the east of Yung-ning, and he was able to return later on during that same season, to gather the now mature capsules.

For ninety years that 1922 introduction, under F 21292, remained the only harvest of wild *R. elegantulum* seed. So, of course, at one point, the legitimacy of the species was challenged: when Kingdon-Ward's type specimens were re-examined and determined to be *R. detonsum,* which rhodo-savvy botanists now consider to be a natural hybrid that has *R. adenogynum* as one of its parents.

R. elegantulum is closely allied to *R. adenogynum* morphologically, as well as to *R. bureavii,* and may be a stabilised natural hybrid between these two taxa, especially given its very limited wild distribution. However, post the next reappraisal - carried out for the Edinburgh Revision texts - the original diagnosis was confirmed to be accurate and specific status reapplied. Which was prescient, as Jens Nielsen rediscovered the species in Ninglang County, in the northwest of Yunnan, during 2012, and reintroduced *R. elegantulum* under the field number JN 12240, beating the Nagoya Protocol restrictions by a whisker.

Visually, the meld of narrow leaves, orangey-red indumentum and freely produced flowers will be sufficient to identify the species from its close relatives, but the glabrous ovary and usually glabrous style (occasionally sparsely hairy at the base) will key *R. elegantulum* from *R. bureavii* and *R. bureavioides* when combined with the petiole length of 10 to 19mm. An absence of glandular hairs intermixed amongst those forming the abaxial leaf indumentum does the trick with regard to *R. adenogynum.*

Acknowledged as a fine foliage plant, the species does take a number of years to begin flowering freely, but those buds, opening in March-April, begin to do so at a younger age than many of its relatives. It is also fully hardy, rated H6-7, and easy to grow.

R. elegantulum was described by Harry Tagg and George Forrest in Volume 15 of *Notes from the Royal Botanic Garden, Edinburgh,* this published in 1927, and their choice of epithet - 'elegant' - should surprise no-one who has seen a well-grown mature plant in or out of flower, especially the particularly captivating specimen in the Home Wood at Exbury Gardens, Hampshire.



R. elegantulum (a hand-pollinated clone)



R. elegantulum (F 21292)

R. dignabile

Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
SE Tibet.
Growing in fir forests, rhododendron thickets and on open stony slopes,
at elevations of 3,100-4,550m.

Identification:
Shrub or small tree, 0.6 to 9m high;
branchlets, sparsely floccose or glabrescent.
Leaves obovate-lanceolate through oblong-elliptic to oblong-obovate,
7.5 to 18cm long by 3 to 6.5cm wide,
retained for 1-2 years;
upper surface green, shiny, glabrous,
the midrib glabrous, eglandular;
lower surface indumentum unistrate, thin, discontinuous, brown,
composed of the scattered remains of hairs and glands.
Petiole 5-22mm long, sparsely floccose or glabrescent.
Inflorescence 5-15-flowered.
Rhachis 5-12mm long, pubescent.
Pedicel 5-20mm long, sparsely floccose or glabrescent.
Calyx small, pale green, the lobes rounded or triangular, each 0.5-3mm long,
their outer surface and margins glabrous, glandular-ciliate,
or floccose becoming glabrescent.
Corolla 2.5 to 4.5cm long, campanulate or funnel-campanulate,
white, white flushed pink, pink, cream, rose, or pale yellow,
with or without crimson or purple spots and a crimson or purple basal blotch.
Stamen filaments densely pubescent along the lower half.
Ovary conoid, 4-7mm long, glabrous or sparsely brownish-red floccose,
the hairs interspersed with yellow glands.
Style usually glabrous, occasionally glandular at the base.
Capsule unknown.

Seed Collections:

KW 5718	1924	LS&T 4808	1938	LS&E 15048	1946/1947	AC 3444	1997
L&S 1564	1936	LS&E 13703	1946/1947	LS&E 15049	1946/1947	AC 3445	1997
L&S 1566	1936	LS&E 13760	1946/1947	LS&E 15050	1946/1947	AC 3544	1997
L&S 1607	1936	LS&E 13792	1946/1947	LS&E 15175	1946/1947	KR 6154	1999
L&S 1619	1936	LS&E 13793	1946/1947	LS&E 15307	1946/1947	AC 4456	2000
LS&T 3777	1938	LS&E 13794	1946/1947	LS&E 15308	1946/1947	AC 4577	2000
LS&T 3829	1938	LS&E 13843	1946/1947	CV 9569	1995	AC 4630	2000
LS&T 4362	1938	LS&E 13857	1946/1947	KR 3688	1995	TARRVS 138	2002
LS&T 4621	1938	LS&E 15044	1946/1947	CC 7509	1996		

R. dignabile was also found by Frank Kingdon-Ward.

The plant hunter was exploring near Tsela Dzong in southeast Tibet during May 1924 when the discovery was made and seed, along with the type herbarium specimens, were returned under KW 5718, although it then took until 1937 for the species to be described, John MacQueen Cowan correcting that oversight in Volume 19 of *Notes from the Royal Botanic Garden, Edinburgh*. A host of other gatherings, made by Frank Ludlow and George Sherriff - on their own or when working with George Taylor or Henry Elliott - were returned between 1936 and 1947, but the legitimacy of the plants grown from all those collections, as well as the ones germinated from Kingdon-Ward's prime introduction, are now being challenged:

H. H. Davidian, writing in 1989, states that 'there is no record of the species in cultivation' (*The Rhododendron Species,* Volume 2).

The 1998 RHS *Rhododendron Handbook* reports that although the species 'has been recorded in living collections for some time, there has been some doubt as to the authenticity of the plants'.

And Peter and Kenneth Cox, writing in their 1997 *Encyclopedia of Rhododendron Species,* warn that 'yellow-flowered forms referred to this species are probably hybrids with *R. wardii* or *R. campylocarpum*', and that 'some herbarium specimens labelled *R. dignabile* from the Doshong La are a different taxon, closer to *R. phaeochrysum*'.

Expert opinion is therefore of the view that the true species was only introduced in 1995, a collection made by Kenneth Cox and Scott Vergara under the field number CV 9569, this followed by some ten other lots, six of which were secured by Alan Clark. These have confirmed that the species is only endemic to southeast Tibet.

R. dignabile is the sole Series *Bureavia* occupant to have a discontinuous indumentum on the abaxial leaf surface, which often appears near glabrous, as the thin veil of hairs and glands found on the young leaves quickly breaks up and is only present as the scattered vestiges of a juvenile tomentum at maturity. Previously placed in the Lacteum Series under the old Balfourian classification, the taxon is considered most closely allied to *R. beesianum,* but has an ovary sparsely populated with yellow glands.

The epithet translates as 'deemed worthy', which will be highly appropriate if the new introductions open blooms that match those seen in the wild.

R. nigroglandulosum

Hardiness:
H6-7.
Flowering Period:
March-April.
Distribution in the wild:
Tapanshan, N of Kangding, & Ping Wu County, W & N Sichuan, China.
Growing on mountain slopes at elevations of 3,400-3,500m.

Identification:
Shrub or small tree, spreading to broadly upright, 2 to 5m high;
branchlets densely fawn-tomentose,
short-stalked glandular, the glands blackish-purple in colour.
Leaves lanceolate through oblanceolate to oblong,
12 to 20cm long by 3.2 to 5.5cm wide,
retained for 1-3 years;
upper surface dark green, glabrous, eglandular,
the midrib short-stalked glandular, the glands black in colour;
lower surface indumentum unistrate, somewhat thick, continuous, loosely woolly,
brown through reddish brown when mature,
the midrib hairy, short-stalked glandular, the glands black in colour.
Petiole 15-30mm long, moderately through densely floccose-tomentose,
sparsely through moderately short-stalked glandular, the glands black in colour.
Inflorescence 8-10-flowered.
Rhachis 10-15mm long, pubescent, eglandular.
Pedicel 10-30mm long, reddish, densely floccose-tomentose,
sometimes short-stalked glandular, the glands black or dark brown in colour.
Calyx minute, the lobes triangular, each *c.* 1mm long,
their outer surface and margins floccose-tomentose, eglandular.
Corolla 3.2 to 5cm long, campanulate,
yellowish-pink (deep pink or carmine in bud), or white,
with distinctive purple spots.
Stamen filaments pubescent towards the base.
Ovary conoid, 4-5mm long, tomentose,
short-stalked glandular, the glands brown in colour.
Style glabrous, eglandular.
Capsule 15-20mm long, oblong, glabrous or with the vestiges of hairs,
short-stalked glandular, the glands brown in colour.

Seed Collections:

Smith 13979	1934
AC 4941	2001

R. nigroglandulosum was the last member of the series to be encountered, the find made in 1934 at Kina, Tapanshan, to the north of Kangding, in central west Sichuan. The Swedish botanist Karl August Harald (Harry) Smith, who undertook three expeditions to China between 1921 and 1935, was the plant hunter responsible for the discovery and he returned dried material and seed to the botanic garden in Gothenburg and to the Magnus Johnson Nursery in Stockholm. Sixty-seven years later, in the autumn of 2001, Alan Clark made what is believed to be only the second gathering of the taxon when he came upon a population of plants at Huang Tu Liang Shan, in Ping Wu County, northern Sichuan.

The species was first described by Tor Gustaf Nitzelius, curator of the Gothenburg Botanic Garden during the 1950s, and his 1975-penned text appears in Volume 27 of *Rhododendrons with Magnolias and Camellias*.

Allied to *R. adenogynum, R. bureavii* and *R. elegantulum,* the minute calyx lobes of *R. nigroglandulosum,* each around 1mm long, quickly key the few rare, cultivated specimens found in British gardens from each of that troika, as does the presence of distinctive black glands on the young shoots and petioles, the abaxial and adaxial midribs. The botanic appraisal by Nitzelius makes much of these short-stalked sticky hairs, the chosen epithet in fact translating as 'with black glands', but Peter and Kenneth Cox have written that:

> 'This characteristic is however also apparent on narrow-leaved *R. phaeochrysum* cultivated at Gothenburg Botanic Garden, also collected by Harry Smith in the same area. This suggests that *R. nigroglandulosum* is a natural hybrid of this species crossed with *R. bureavioides* or *R. rufum,* which it also resembles.'
> (*The Encyclopedia of Rhododendron Species,* 1997).

Hopefully, Alan Clark's 2001 collection will provide an answer to the species-hybrid conundrum, but in the wild, at the two known locations in western and northern Sichuan where such plants have been found, those populations grow between the 3,400 and 3,500m contours, this very narrow and duplicated altitudinal band clearly supporting the cross-pollination argument.

R. nigroglandulosum remains extremely rare in cultivation, despite being fully hardy with attractive foliage, indeed the narrow leaves - some attaining 20cm in length - are close to being the longest not only in the series, but in the entire subsection. Harry Smith's seed, under the field number 13979, was introduced into UK gardens late in 1934, the now mature specimens germinated from it, currently restricted to a bare handful of specialist gardens.

Section *Leiorrhodium* Subsection *Taliensia* Series *Faberia:*


R. roxieanum



Taxa:

R. circinnatum
R. faberi
R. mimetes
R. prattii
R. roxieanum
R. rufum

Taxonomic Revision:

The six specific species in Series *Faberia*
may be identified from all the other members of Subsection *Taliensia*
by their bistrate abaxial leaf surface indumentum in combination with a glandular ovary.

The former characteristic however, is sometimes only observable on young leaves,
as the upper layer of hairs is often lost by maturity.

The series epithet reflects the nomenclature precedence rather than the order of discovery.

Series Morphology:

Shrubs, sometimes dwarf, or small trees, compact and rounded, to broadly upright,
0.15 (rarely) to 1 through 8m high;
branchlets usually hairy, sometimes becoming glabrescent or glabrous,
stalked-glandular or eglandular (rarely);
bark grey-brown, rough.

Leaf bud scales deciduous or persistent (rarely).

Leaves evergreen, coriaceous, sometimes thickly so,
linear through lanceolate, oblanceolate through oblong-lanceolate,
and oblong, elliptic or ovate, sometimes broadly so,
3 to 19cm long by 0.2 to 8cm wide,
apex acute, acuminate, obtuse or cucullate (rarely), and often apiculate or mucronate,
base obtuse, rounded or cuneate, more rarely tapering and decurrent on the petiole;
upper surface olive or dark green, somewhat rugulose, matt or shiny,
glabrous when mature or with the vestiges of hairs, eglandular,
the midrib grooved, usually glabrous, sometimes hairy, rarely glandular,
the veins deeply impressed, the margins flat or recurved;
lower surface with a bistrate indumentum,
the upper layer dense, but sometimes loose and detersile,
thick or thin, continuous or becoming patchy and lost over time, woolly,
sometimes with a pellicle or thin surface film,
brown, yellowish-brown, cinnamon, fawn or reddish-brown at maturity,
formed of ramiform hairs,
the lower layer thin and compacted, persistent, whitish or fawn,
composed of rosulate hairs,
the midrib prominent, hairy or glabrous, glandular or eglandular,
the veins usually concealed.

Leaf anatomy comprises a 2- or 3-layered upper epidermis,
with the cells in all three layers of roughly equal size;

the cuticle is approximately as thick as the cells are deep; water tissue is absent;
the lower epidermis cells are not prolonged into papillae.
Sclereid cells are present in the leaf tissue.

Petiole 2-35mm long, grooved above, hairy or glabrous, glandular or eglandular.

Inflorescence racemose-umbellate, dense but loose, 6-20-flowered;
the bud scales sometimes persistent.

Rhachis 5-20mm long, hairy, glandular or eglandular.

Pedicel 5-42mm long, hairy or glabrous, glandular or eglandular.

Calyx large, small or minute, 5-lobed, these unequal and 0.5-15mm long,
their outer surface and margins hairy or glabrous, glandular or eglandular.

Corolla 2 to 5.6cm long, campanulate or funnel-campanulate,
white to pink, cream, purplish-pink, rose, or pale yellow (rarely),
often conspicuously spotted, sometimes blotched,
without nectar pouches;
5-lobed, these rounded and emarginate.

Stamens 10, unequal, shorter than the corolla;
filaments pubescent at or towards the base, rarely along the lower two-thirds,
eglandular.

Ovary oblong, conoid or ovoid, 2-10mm long, 5-8-locular,
glabrous or hairy, stalked-glandular.

Style usually glabrous, sometimes hairy at the base,
stalked-glandular at the base or along the lower half, sometimes eglandular.

Capsule 10-25mm long, oblong or oblong-oval, straight or slightly curved,
glabrous or hairy, stalked-glandular or eglandular (rarely).

Seeds elongate, narrowly winged or not winged,
each end usually with appendages (occasionally very small).



R. roxieanum (R 11285) Oreonastes Group

R. rufum (W 4250)

R. rufum

Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
E & S Qinghai, C & SW Gansu, N & W Sichuan, & SW Shaanxi, China.
Growing in forests and on mountain slopes below or around the tree line,
at elevations of 2,300-4,000m.

Identification:
Shrub or small tree, compact and rounded, to broadly upright, 1.3 to 8m high;
branchlets thinly through densely floccose-tomentose at first, the hairs whitish or fawn,
soon becoming glabrescent or glabrous, eglandular.
Leaf bud scales deciduous.
Leaves narrowly obovate through oblong-ovate to elliptic,
5 to 11cm long by 2 to 5cm wide,
retained for 1-2 years;
upper surface olive green, shiny,
the midrib glabrous, eglandular, the margins flat or slightly recurved;
lower surface indumentum bistrate, continuous,
the upper layer thin through thick, often loose, woolly-tomentose,
sometimes embedded in a surface film,
whitish at first, brown or reddish-brown at maturity,
the lower layer whitish and compacted,
the midrib moderately through densely hairy, eglandular.
Petiole 10-20mm long, thick, whitish floccose-tomentose at first,
becoming glabrescent to near glabrous, eglandular.
Inflorescence 6-12-flowered; bud scales persistent or deciduous.
Rhachis 5-8mm long, densely rufous floccose, eglandular.
Pedicel 5-17mm long, moderately through densely floccose-tomentose,
the hairs grey, brown or fawn, rarely glabrous,
eglandular or sometimes short-stalked glandular.
Calyx minute, the lobes broadly triangular or ovate, each 0.5-1mm long,
their outer surface and margins moderately through densely floccose-tomentose,
rarely glabrous,
eglandular or sometimes short-stalked glandular.
Corolla 2 to 3.2cm long, campanulate or funnel-campanulate,
white, white tinged pink, pale pink, deep pink or purplish-pink,
with or without purplish-pink stripes, with or without crimson spots.
Stamen filaments moderately through densely white-pubescent at the base.
Ovary conoid or ovoid, 4-5mm long, 5-6-locular,
densely reddish or grey-brown woolly-tomentose,
densely short-stalked glandular, or sparsely short-stalked glandular at the apex only.
Style glabrous, or sparsely hairy at the base.
Capsule 15-25mm long, oblong, straight or slightly curved, brown floccose,
densely short-stalked glandular or eglandular.

Seed Collections:

W 4235	1910/1911	R 13691	1925/1926
W 4250	1910/1911	R 13692	1925/1926
R 13599	1925/1926	R 13693	1925/1926
R 13601	1925/1926	R 13696	1925/1926
R 13613	1925/1926	R 13697	1925/1926
R 13628	1925/1926	R 14928	1925/1926
R 13630	1925/1926	R 15014	1925/1926
R 13640	1925/1926	CHM 2501	1986
R 13643	1925/1926	CHM 2531	1986
R 13645	1925/1926	CHM 2591	1986
R 13647	1925/1926	SICH 155	1988
R 13649	1925/1926	CCH 3933	1989
R 13650	1925/1926	CCH 3952	1989
R 13675	1925/1926	CCH 4066	1989
R 13678	1925/1926	CCH 4089	1989
R 13680	1925/1926	AC 4774	2001
R 13682	1925/1926	AC 4934	2001
R 13683	1925/1926	AC 4936	2001
R 13684	1925/1926	AC 4937	2001

R. rufum was the first member of the series sextet to be discovered - in northern Sichuan, during August 1885, by the Russian explorer, ethnographer and natural historian, Grigory Nikolayevich Potanin - but it took until 1891 for the species to be described - by the then Chief Botanist and Director of the Imperial Botanical Garden in St. Petersburg, Alexander Theodorowicz Batalin, his outline published in Volume 11 of the institute's *Trudy Imperatorskago S.-Peterburgskago Botaniceskago Sada*. *Acta Horti Petropolitani* (on page 490, should curiosity win over) - with the chosen epithet - meaning 'red' - a clear reference to the abaxial indumentum colour.

Historically, Joseph Rock is the plant hunter given credit for introducing the species into British gardens: his gathering made in Gansu; the seed arriving in 1925.

However, fifteen years earlier, Ernest Wilson had encountered *R. weldianum,* finding two populations in western Sichuan: the first, west of, but near to, Wench'uan Hsien; the second, close to Sunpan Ting. Both were sampled in October 1910, and seed introduced later that same year via the Arnold Arboretum and the Royal Botanic Garden, Kew. Wilson and Alfred Rehder described the species in Volume 1 of *Plantae Wilsonianae,* which was published in 1913, their chosen epithet an honorific for General Stephen Minot Weld Jr., the honoree having previously been President of the Massachusetts Horticultural Society, as well as helping Charles Sprague Sargent, the first director of Harvard University's Arnold Arboretum, to build up the plant collection at Jamaica Plain.

In his Subgenus *Hymenanthes* revision (*Notes from the Royal Botanic Garden, Edinburgh,* Volume 39, No. 2, 1982), David Chamberlain comments that 'the differences between the cuneate leaf-bases of *R. weldianum* and the rounded leaf-bases of *R. rufum* do not merit the maintenance of the former at any rank'. Morphologically, at their extreme, the *R. weldianum* leaf blades come with an oval or even orbicular profile, and H. H. Davidian used this to justify retention of specific status in Volume 3 of his *The Rhododendron Species,* published in 1992, but even John McQuire and Mike Robinson opted for *R. rufum* Weldianum Group in their 2009 *Pocket Guide to Rhododendron Species,* despite their text being based on cut-down versions of Davidian's descriptions.

Cultivated specimens of *R. rufum* can be distinguished from the other members of Series *Faberia* by checking for a total absence of sticky glands on the petioles, this feature usually mirrored on the pedicels. The leaves, which are never more than 11cm long, will then key those plants from *R. circinnatum* or *R. prattii.* The latter possesses a large calyx whose lobes can be up to 15mm long, a rather obvious dissimilitude given the 1mm upper limit of *R. rufum*. *R. circinnatum* also has a minute calyx, but any doubt over a correct identification can be eliminated by checking the previous season's branchlets: if thickly tomentose, *R. circinnatum* will be to hand; near glabrous, *R. rufum*.

In UK cultivation, despite being gifted a H6-7 RHS hardiness rating under the new guidelines introduced post the hard winters of 2009/10 and 2010/11, *R. rufum* should be protected from cold winds when planted in gardens along the east coast, or inland in northern locales. Mature specimens usually form rounded shrubs to around 2m in height, display admirable foliage, but are not in the same league as the best clones of *R. bureavii.* A few really old individuals have attained 4m in height and much more than that in width, and are a splendid sight when bedecked in bloom from head to foot during April-May, but the majestic plants growing at the Valley Gardens in Windsor Great Park, along with their younger mirrors at Edinburgh Botanic - all germinated from the Wilson 4250 gathering - may be an exception, as the species is not usually noted for being so free-flowering. It also takes many years for a plant to fully develop that stunningly-coloured abaxial leaf indumentum.



R. rufum: progressive development of the leaf abaxial indumentum.



R. rufum (W 4250)



R. rufum (W 4250)



R. rufum

R. faberi
Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
C Sichuan, China.
Growing in fir forest, mixed thickets and on rocky mountain slopes,
at elevations of 3,000-3,400m.

Identification:
Shrub, compact and rounded, to broadly upright and open, 1 to 6m high;
branchlets thinly but densely tomentose or densely woolly,
the hairs whitish, brown or rusty-red,
sparsely through moderately short-stalked glandular.
Leaf bud scales deciduous.
Leaves oblanceolate through ovate-oblong to elliptic,
4.5 to 12cm long by 1.8 to 4.8cm wide,
retained for 2-3 years;
upper surface dark green, matt, slightly rugulose,
the midrib glabrous, woolly or floccose;
lower surface indumentum bistrate, continuous,
the upper layer thick, but loose and detersile, lost by maturity,
dark brown through rusty-red,
the lower layer thin and compacted, whitish,
the midrib hairy or glabrous, short-stalked glandular or eglandular.
Petiole 5-20mm long, thinly but densely woolly-tomentose,
the hairs whitish, brown or rusty-red,
sparsely through moderately short-stalked glandular, or eglandular.
Inflorescence 6-12-flowered.
Rhachis 6-10mm long, floccose, eglandular.
Pedicel 12-25mm long, moderately through densely floccose or glabrous,
moderately through densely short- or long-stalked glandular.
Calyx large, the lobes broad, oblong through oblong-ovate to oval, each 6-10mm long,
their outer surface floccose or glabrous,
sparsely through moderately short-stalked glandular or eglandular,
their margins ciliate or glabrous,
moderately through densely short-stalked glandular.
Corolla 3 to 4cm long, campanulate or funnel-campanulate,
white, white flushed pink, or pale pink,
with or without crimson spots, with or without a crimson basal blotch.
Stamen filaments moderately through densely pubescent at the base.
Ovary conoid, 4-5mm long, 6-7-locular, glabrous or densely hairy,
the hairs long and brown,
moderately through densely stalked- or setulose-glandular.
Style glabrous or hairy at the base,
eglandular or rarely short-stalked glandular at the base.
Capsule 12-20mm long, oblong, straight or slightly curved, glabrous,
short- or medium-stalked glandular.

Seed Collections:

W 1527	1904	CEE 245	1991
W 1867a	1904	AC 4775	2001
W 4234	1910/1911	AC 4783	2001
W 4272	1910/1911	AC 4791	2001
KR 177	1980	AC 4792	2001
KR 178a	1980	AC 4797	2001
KR 178c	1980	AC 4806	2001
CCH 3904	1989	SI04-37	2004
Cox 5014	1990	C&N 6158	2007
EGM 111	1990	C&N 6172	2007
EGM 157	1990	JN 12323	2012
CEE 232	1991		


R. faberi (KR 193)

R. faberi is named for the German sinologist, missionary priest and botanist Ernst Friedrich Ludwig Faber, who encountered the species atop the summit of Mount Omei sometime before December 1887, the date when his dried specimens - under the field number 482 - were received at the Royal Botanic Garden, Kew. They were described two years later in 1889 by William Botting Hemsley, his text published in Volume 26 of the *Journal of the Linnean Society (Botany)*.

Faber was the first Western-trained botanist to ascend to the top of the 3,000m-high peak - better known today as Emei Shan; one of the Four Sacred Buddhist Mountains of China; and a botanic hotspot, recognized by UNESCO as a World Heritage Site - but it was Ernest Wilson who was responsible for introducing the taxon into UK cultivation. Two batches of ripe capsules were secured during his second expedition to Sichuan, the seed arriving at the premises of the expedition's sponsors, James Veitch & Sons, at the time, Europe's premier nursery business, in 1904. A second brace was garnered from Wilson's fourth trip in 1911, a portion of this largesse despatched to Kew courtesy of the Arnold Arboretum. Post a seventy-year abstinence, Keith Rushforth takes credit for starting-off the modern-day reintroductions in 1980, after which, eight other collecting teams also came upon the species and returned seed up until 2012.

R. faberi has much smaller leaf blades than *R. prattii* - 4.5 to 12cm long by 1.8 to 4.8cm wide, instead of 6.3 to 19cm, and 3.4 to 8cm, respectively - and these also have a matt rather than shiny upper surface. More importantly, the *R. faberi* blades have a thick and woolly upper layer to their abaxial indumentum, not a thin tomentum or a diaphanous veil of hairs (although both rhododendrons will have shed this top cloak by the time their foliage has reached maturity).

The detersile nature of those hairs is a characteristic not mirrored on the leaves of either *R. circinnatum, R. roxieanum* or *R. rufum,* all of which have a persistent upper layer of indumentum, while *R. mimetes* occupies the halfway-house position, its hairs wearing-off over time in large or small patches, making the lower leaf surface visually distinctive. In addition, *R. mimetes* is usually graced with much smaller calyx lobes, while *R. circinnatum* and *R. rufum* lack any glandular hairs on their petioles.

Young plants of *R. faberi* take many years to develop any abaxial leaf indumentum or begin flowering with any freedom, but are fully hardy and usually easy to grow. Their habit is dense and rounded at first, opening up somewhat with age or when the 2m height marker is crossed.


R. faberi (KR 193)


R. faberi

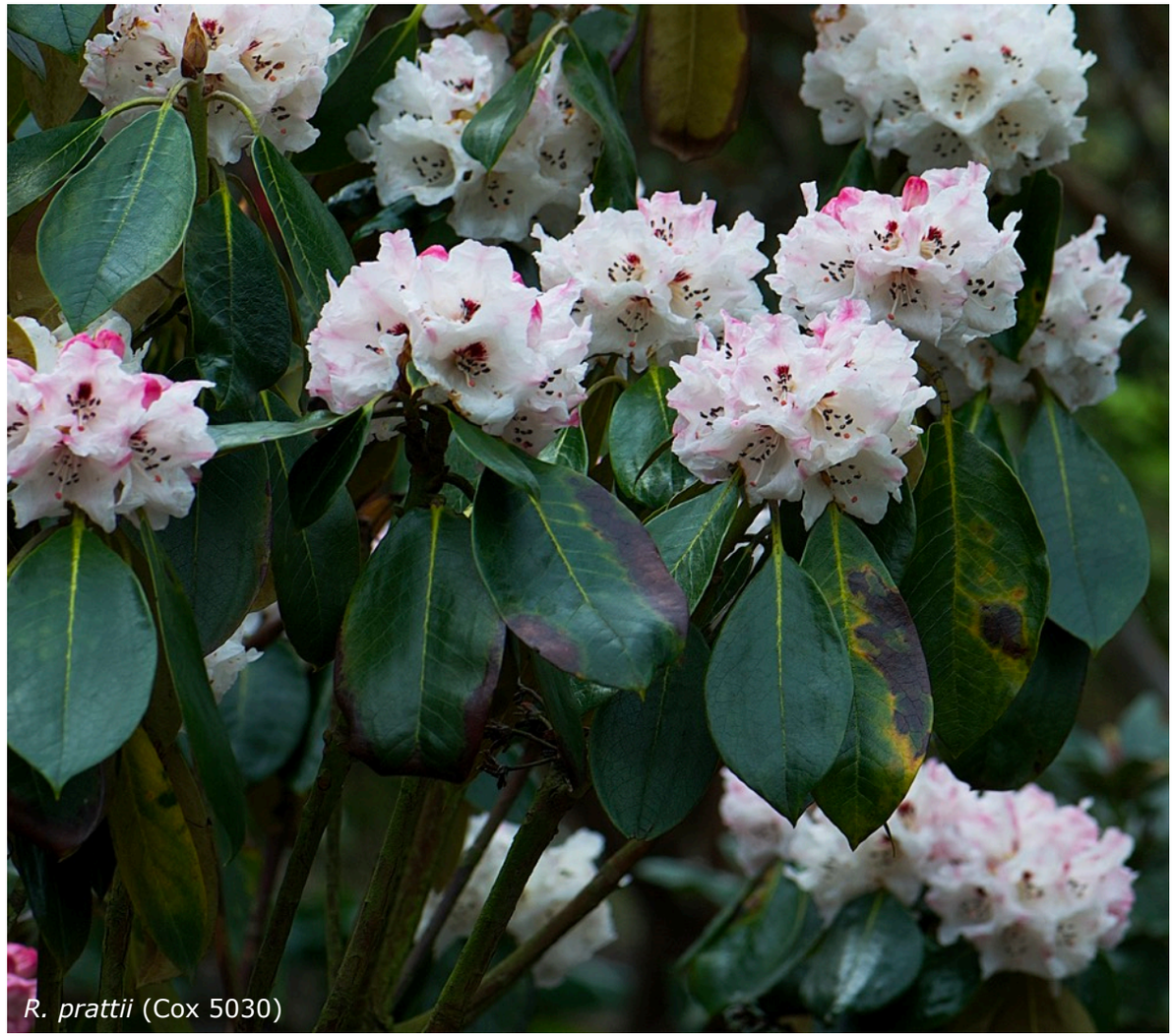
R. prattii

Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
NW & C Sichuan, China.
Growing at the margins of conifer forest and in rhododendron thickets,
at elevations of 2,700-4,300m.

Identification:
Shrub or small tree, compact and rounded, to broadly upright and open, 1 to 6.5m high;
branchlets thinly but densely tomentose, the hairs whitish or brown,
sparsely through moderately short-stalked glandular.
Leaf bud scales deciduous.
Leaves broadly ovate through oblong-elliptic to broadly elliptic,
6.3 to 19cm long by 3.4 to 8cm wide,
retained for 2-3 years;
upper surface dark green, shiny,
the midrib glabrous or with the vestiges of hairs;
lower surface indumentum bistrate, continuous or discontinuous,
the upper layer thin, sometimes a veil of hairs, loose and detersile, lost before maturity,
brown, greyish-brown or fawn,
the lower layer thin and compacted, whitish,
the midrib hairy, sparsely through moderately short-stalked glandular or eglandular.
Petiole 10-35mm long, thick, thinly but densely tomentose,
the hairs whitish or brown, and arachnoid,
sparsely through moderately short-stalked glandular or eglandular.
Inflorescence 6-20-flowered.
Rhachis 8-20mm long, moderately through densely hairy,
sparsely short-stalked glandular or eglandular.
Pedicel 15-42mm long, moderately through densely hairy,
sparsely or densely short- or medium-stalked glandular.
Calyx large, the lobes broad, oblong, oblong-oval or oval, each 5-10-15mm long,
their outer surface hairy or glabrous, short-stalked glandular, rarely eglandular,
their margins hairy or glabrous, densely short-stalked glandular.
Corolla 3.6 to 5.6cm long, campanulate or funnel-campanulate,
white, white flushed pink, rarely cream,
with or without crimson spots, with or without a crimson basal blotch.
Stamen filaments moderately through densely pubescent
at the base or along the lower third.
Ovary conoid or ovoid, 4-6mm long, 5-8-locular,
rufous tomentose, occasionally glabrous,
moderately through densely short- or medium-stalked glandular.
Style glabrous,
short-stalked glandular at the base or along the lower third.
Capsule 16-25mm long, oblong, straight or slightly curved, hairy or glabrous,
moderately through densely medium-stalked glandular.

Seed Collections:

W 1547	1904	CEE 217	1991
W 3958a	1906/1909	CEE 299	1991
McLaren AD 75	1932/1939	CEE 526	1991
CCH 3924	1989	AC 4939	2001
Cox 5028b	1990	AC 4940	2001
Cox 5030	1990	AC 4957	2001
Cox 5061	1990	SI04-24	2004
Cox 5133	1990	JN 12026	2012
EGM 121	1990	JN 12045	2012
EGM 147	1990		



R. prattii (Cox 5030)

R. prattii was found by Antwerp Edgar Pratt and Jean-André Soulié on the hills near Tatsienlu (Kangding), in western Sichuan, during 1890. Pratt was English, a renowned explorer, author and collector; Soulié, French, a Catholic missionary priest employed by Missions Étrangères de Paris, who doubled as an amateur botanist when not otherwise out proselytising (though it may actually have been the other way around). Pratt's activities had been treated with some suspicion by the Chinese authorities, with warnings posted advising locals not to work with him, but through Soulié and another priest, Bishop Félix Biet, he was able to recruit Chinese Christians into his employ and thus resume his floral peregrinations. Continued harassment did eventually bring his work to a halt, but luckily, not before field number 58 was secured, the jointly collected dried material despatched off to Paris, where Adrien Franchet composed the botanic description that appears in Volume 9 of the *Journal de Botanique,* this published in 1895.

Ernest Wilson was again the first plant hunter to introduce the species into British gardens, this seed, like that of *R. faberi,* arriving in 1904, with a second batch added on his third trip, his first expedition for the Arnold Arboretum. George Forrest's native collectors, then employed by Henry McLaren of Bodnant, North Wales, sourced a third lot in the mid 1930s, and fifty years later, in the autumn of 1989, David Chamberlain, Peter Cox and Peter Hutchison reintroduced the taxon into UK cultivation.

In their 1978-published paper *A Preliminary Synopsis of the Genus Rhododendron,* this domiciled within the pages of Volume 36 of *Notes from the Royal Botanic Garden, Edinburgh,* James Cullen and David Chamberlain chose to reduce the ranking of *R. prattii* to a subspecies of *R. faberi.* However, on-the-ground field study later challenged the veracity of what a then recently retired doyen might have termed ill-informed meddling, requiring the status quo pre their machinations to be restored. Of course, the two species are closely allied; indeed, intermediates exist that have the larger foliage of *R. prattii,* as well as the thicker, more persistent, upper layer of abaxial indumentum found on the leaves of *R. faberi;* and both are endemic to areas of central Sichuan, though *R. faberi* is confined to a small number of sites, while *R. prattii* is more widespread, with its distribution extending into the northwest of the province. Yet the two are sufficiently different morphologically for each to require specific status:

R. prattii has much bigger leaves, these both longer and wider, which are shiny above rather than matt, and the upper layer of its leaf abaxial indumentum is very quickly lost, especially as it is a mere veil of hairs or a thin tomentum, rather than the thick and woolly conglomeration initially present on the underside of the *R. faberi* blades.

With regard to the other members of the series, *R. circinnatum* and *R. rufum* have non-sticky petioles, and like *R. roxieanum,* a persistent upper layer of indumentum, while on the *R. mimetes* leaf, this layer is highly distinctive, as it wears-off in large or small patches. All four rhododendrons offer a secondary keying feature from *R. prattii* should an identification ever be in doubt: smaller calyx lobes.

R. prattii is said to be a shy flowerer by some authors, near prolific by others. Uncontested is the fact that the trusses are quite small in comparison to the foliage. Easy to grow, with no reports of temperamental behaviour, the taxon does, however, have a quite wide distribution range in the wild, which begins at the relatively low altitude of 2,700m, so provenance should be checked before purchase if the intended planting site is along the east coast or inland. Wherever the plant is grown, the leaves will require shelter from strong winds.

A trait not mentioned in any of the published botanic descriptions, but highlighted in several horticultural accounts, is the tendency for the *R. prattii* leaf indumentum to be lost initially from around the margins and the apex.



R. prattii (W 3958)

R. roxieanum

R. roxieanum

Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
SE Tibet; SW Sichuan, NW Yunnan, S Gansu, SW Shaanxi, China.
Growing in and at the margins of conifer forests, in mixed forests and open glades,
in rhododendron and mixed thickets, in open alpine meadows,
and on stony mountain slopes, amongst rocks, in ravines or on cliffs,
at elevations of 2,600-4,300m.

Identification:
Shrub, sometimes dwarf or a small tree,
compact and rounded, spreading, or broadly upright and open,
1 to 2.5m high, but sometimes just 0.15m, or to 4m;
branchlets short and stout, moderately through densely tomentose,
the hairs usually cinnamon or rufous, sometimes fawn or brown, the indumentum woolly,
moderately through densely short-stalked glandular or eglandular.
Leaf bud scales persistent or deciduous.
Leaves thickly coriaceous,
narrowly linear through lanceolate, oblanceolate through oblong-lanceolate to elliptic,
3 to 12cm long by 0.2 to 4cm wide,
retained for 1-3 years,
apex sometimes cucullate (hooded),
the base tapering and decurrent on the petiole;
upper surface dark green, shiny, somewhat rugulose,
the midrib hairy or glabrous, eglandular,
the margins moderately through strongly recurved;
lower surface indumentum bistrate, continuous,
the upper layer thick, compact, woolly-tomentose, usually unbleached at maturity,
cinnamon or rufous, sometimes fawn or brown,
the lower layer thin and compacted,
the midrib densely woolly,
eglandular or moderately through densely short-stalked glandular.
Petiole 2-15mm long, moderately through densely woolly-tomentose,
the hairs usually cinnamon or rufous, sometimes fawn or brown,
moderately through densely short-stalked glandular or eglandular.
Inflorescence 6-20-flowered; the bud scales persistent.
Rhachis 5-13mm long, moderately through densely tomentose,
the hairs cinnamon, brown or rufous,
short-stalked glandular or eglandular.
Pedicel 6-20mm long, moderately through densely tomentose, the hairs long,
cinnamon or rufous, sometimes brown, or glabrous,
moderately through densely short-stalked glandular or eglandular.
Calyx minute or small, the lobes triangular or ovate, each 0.5-2mm long,
their outer surface and margins moderately through densely tomentose,
the hairs cinnamon, rufous or brown, or glabrous,
sparsely through moderately short-stalked glandular or eglandular.

Corolla 2 to 4cm long, campanulate or funnel-campanulate,
white, white flushed pink or rose, creamy white, pink, rose, or rarely pale yellow,
with or without crimson-purple spots.
Stamen filaments densely pubescent at the base or along the lower two-thirds.
Ovary oblong or conoid, 2-5mm long, 5-6-locular,
moderately through densely tomentose,
the hairs cinnamon, rufous or brown, or glabrous,
moderately through densely short-stalked glandular.
Style glabrous, sometimes sparsely hairy at the base,
eglandular, rarely glandular at the base.
Capsule 10-20mm long, oblong, straight or slightly curved,
sparsely through moderately brown-hairy or glabrous,
sparsely through moderately short-stalked glandular or eglandular.

Seed Collections:

F 10540	1913	R 11312	1923/1924	CNW 307	1994
F 10991	1913	F 25514	1924/1925	CNW 428	1994
F 12609	1912/1914	F 25749	1924/1925	CNW 431	1994
F 14061	1917/1919	F 25945	1924/1925	CNW 687	1994
F 14142	1917/1919	F 25987	1924/1925	CNW 709	1994
F 14432	1917/1919	R 18161	1929	CNW 710	1994
F 16606	1917/1919	R 18435	1929	CNW 723	1994
KW 4207	1921	R 18436	1929	CNW 727	1994
F 21022	1921/1922	R 23526	1932	CNW 734	1994
F 21546	1921/1922	R 23561	1932	CNW 740	1994
R 10920	1923/1924	R 24503	1932	AC 1716	1996
R 10956	1923/1924	R 25422	1932	AC 1753	1996
R 10979	1923/1924	R 25423	1932	AC 1759	1996
R 11020	1923/1924	R 25452	1932	AC 1763	1996
R 11084	1923/1924	R 25464	1932	AC 1953	1996
R 11115	1923/1924	Yu 10678	1937	AC 1963	1996
R 11144	1923/1924	Yu 10688	1937	AC 1965	1996
R 11251	1923/1924	Yu 14945	1937	AC 1970	1996
R 11261	1923/1924	R 138	1948/1949	AC 1985	1996
R 11291	1923/1924	R 142	1948/1949	JN 334	1997
R 11292	1923/1924	KGB 684	1993	JN 740	1999
R 11293	1923/1924	KGB 688	1993	JN 923	1999
R 11301	1923/1924	AGS 2118	1994	JN 1013	1999
R 11311	1923/1924	AGS 2161	1994	C&N 5772	2007

Seed Collections - Cucullatum Group:							
F 16314	1917/1919	R 6253	1923/1924	R 18155	1929	R 25406	1932
F 16379	1917/1919	R 6365	1923/1924	R 18157	1929	R 25407	1932
F 16469	1917/1919	R 11250	1923/1924	R 18172	1929	R 25455	1932
F 16477	1917/1919	R 11252	1923/1924	R 18176	1929	R 25462	1932
F 16616	1917/1919	R 11253	1923/1924	R 18186	1929	R 25463	1932
F 21049	1921/1922	R 11307	1923/1924	R 18366	1929	AC 675	1993
F 21408	1921/1922	R 11309	1923/1924	F 29257	1930/1931	CNW 679	1994
F 21944	1921/1922	F 25505	1924/1925	F 29317	1930/1931	CNW 680	1994
F 22014	1921/1922	F 25883	1924/1925	R 24299	1932	CNW 685	1994
F 22187	1921/1922	F 25891	1924/1925	R 25405	1932	CNW 686	1994
CNW 690	1994	AC 1949	1996	JN 736	1999	JN 12320	2012
CNW 695	1994	AC 1968	1996	JN 12301	2012	BE 15-01	2015
Seed Collections - Globigerum Group:							
F 16428	1917/1919	R 11100	1923/1924	R 18174	1929	SI04-19	2004
F 16667	1917/1919	R 11106a	1923/1924	R 25390	1932	SI04-32	2004
Seed Collections - Oreonastes Group:							
F 12947	1912/1914	R 11302	1923/1924	Yu 10692	1937	CNW 743	1994
F 13005	1912/1914	F 25515	1924/1925	Yu 13760	1937	AC 1730	1996
F 16508	1917/1919	F 25718	1924/1925	CNW 692	1994	AC 1733	1996
F 16637	1917/1919	F 25926	1924/1925	CNW 721	1994	AC 1750	1996
R 11285	1923/1924	F 25929	1924/1925	CNW 729	1994	AC 1976	1996



R. roxieanum

Despite their complex and varying morphology, the amalgam of plants collected together under the *R. roxieanum* taxon banner - var. *cucullatum,* var. *oreonastes* and var. *roxieanum,* as defined in the Edinburgh Revision texts, plus the previously recognised var. *parvum* and var. *recurvum* - all have one common characteristic that is only partially mirrored on just one other occupant of Series *Faberia:* the flower bud scales are persistent. On occasion, *R. rufum* may also retain these offcasts, but a check of the petiole hair colour will find a whitish tomentum, whereas the hue of the wool on the leaf stalks of whichever component of the *R. roxieanum* potpourri might be to hand, will be brown, cinnamon, fawn or rusty-red.

Turning to those constituent parts:

'Classifying the very variable *R. roxieanum* into varieties is largely for the convenience of gardeners as so many intermediate forms exist.'

The quote above is taken from *The Encyclopedia of Rhododendron Species,* written by horticulturalists Peter and Kenneth Cox, and published in 1997.

In his 1982 Subgenus *Hymenanthes* revision (*Notes from the Royal Botanic Garden, Edinburgh,* Volume 39, Number 2), David Chamberlain wrote:

'There is a complete gradation in the leaf length/breadth ratio from the extreme forms of var. *roxieanum* to the extreme forms of var. *cucullatum*. Therefore an arbitrary dividing line has been selected.'

The owners of Glendoick Gardens also confirmed in their *Encyclopedia* that following field study, an altitudinal progression was apparent:

'In the population at Lao Chun Shan in N. W. Yunnan, forms referable to var. *cucullatum* occur at the highest altitudes. Lower down these gradually evolve into var. *roxieanum* and surprisingly, lower still into the narrowest-leaved form var. *oreonastes*.'

More recently, expedition reports published in the American Rhododendron Society's *Quarterly Journal,* or in the Rhododendron, Camellia and Magnolia Group's *Rhododendrons with Camellias and Magnolias,* have detailed mixed thickets with a plethora of leaf shapes and sizes, irrespective of the altitude.

For instance:

'We started by walking across the valley bottom and up the mountainside which, to our joy, was covered with thousands of plants of *R. roxieanum* with all kinds of leaves, from very narrow up to what is classified *var. cucullatum* and all possible leaf widths in between.'

The above observation, made by Bent Ernebjerg and Ole Jonny Larsen, was included in an article titled *Scandinavian Biluoxueshan and Baima Shan Expedition 2010, Yunnan, China,* which was published in the Winter 2011 edition of *JARS* (Volume 65, Number 4). Their reporting concludes its coverage on the *R. roxieanum* populations they found by restating the view of Peter and Kenneth Cox - that 'dividing this species into varieties is for garden convenience only.'

Picking up on those cues:

Instigation of the Group System by the Royal Horticultural Society - to preserve the epithets of 'sunk' taxa for horticulturalists - has been fully adopted and is widely used. Two new monikers will therefore swell the ranks: Cucullatum Group, covering all those forms of *R. roxieanum* with a wider leaf - these often with a hooded apex - where the breadth to length ratio is 1:2.2-4; and Oreonastes Group, covering those forms with very narrow linear leaves that have strongly recurved margins, where that same ratio is 1:8-15.

In 1997, Peter and Kenneth Cox also proposed that cultivated forms of *R. globigerum* be freed from their past association with the *alutaceum-iodes-russotinctum* hybrid-swarm quagmire and instead, be placed under *R. roxieanum*. John McQuire and Mike Robinson agreed with this approach in their *Pocket Guide to Rhododendron Species* published a decade later and formally listed Globigerum Group within the *R. roxieanum* family.

A great many once-specific species or lower ranked taxa now considered synonymous have been sunk into one of those previously accepted varieties and the endemic population of *R. roxieanum* is further augmented by a host of natural hybrids. Field observation has confirmed matings with *R. aganniphum, R. balfourianum, R. phaeochrysum, R. proteoides, R. selense* and *R. vernicosum,* and some of these offspring have been described, ranked and introduced into UK cultivation. One example is *R. roxieanum* var. *parvum,* actually a cross between *R. proteoides* and an individual from *R. roxieanum* Cucullatum Group, which should now be referred to as *R. x parvum*. Furthermore, the plants comprising Cucullatum Group - morphologically intermediate between bog-standard forms of *R. roxieanum,* and *R. proteoides* - are now believed to be of hybrid origin, with *R. aganniphum, R. x alutaceum* or possibly *R. phaeochrysum* the likely candidates in the parentage mix. Proof-positive is still awaited on this hypothesis, therefore no additional change of status is proposed herein, especially as Chinese botanists have observed uniform - so speciated? - populations of Cucullatum Group in western Yunnan (see the online *Flora of China* entry).

R. roxieanum was discovered on mountains to the northeast of the Yangtze Bend in July 1913. George Forrest made the find and with William Wright Smith, wrote the botanic description that appears in *Notes,* Volume 8, published in 1915. The Scotsman was also the first Western plant hunter to encounter a member of Oreonastes Group, this meeting dated to August 1914 on the Kari Pass, in the mountains of the Mekong-Yangtze Divide, again in northwest Yunnan, though the taxon was initially described as *R. recurvum* var. *oreonastes* in 1919's Volume 11 of *Notes,* this text jointly written by Forrest and Sir Isaac Bayley Balfour. Both forms of the species were introduced into British gardens by Forrest, in 1913 and 1914, respectively.

Heinrich von Handel-Mazzetti, an Austrian botanist, found *R. cucullatum* on the slopes of Mount Loseschan in southwest Sichuan during April 1914, and described the species in Volume 58 of *Anzeiger der Akademie der Wissenschaften in Wien* (*Mathematische-naturwissenchaftliche Klasse*), which was published in 1921. Seed was introduced into the UK between 1917 and 1919, the field numbers F 16314 and F 16379, plus three others, indicating who got the credit for securing the capsules.

And it was also good ole George who stumbled upon *R. globigerum,* first on the Muli Mountains of southwest Sichuan during June 1918, then on the Chienchuan-Mekong Divide of northwest Yunnan a little over four years later in October 1922. Joseph Rock also returned viable seed in 1923-24, 1929 and 1932, although any plants grown under the field number R 11101 - from his first set of collections - that still bear a *R. globigerum* label should be retagged *R. x russotinctum*. The Balfour-Forrest-penned species description can be found in Volume 13 of *Notes,* published in 1922.

Multiple collections of *R. roxieanum,* including those forms now referable to either Cucullatum or Oreonastes Group, have arrived over the years since their individual cultivation debuts, with all three forms reintroduced in the 1990s after gaps of forty-four, sixty-one and fifty-seven years respectively. Rock's Globigerum Group gatherings, the last made in 1932, were the sole entries on the ledger until the Danish Sichuan Expedition returned two lots of seed in 2004.

All the incarnations of *R. roxieanum* are slow growing in UK cultivation, with short branchlets and internodes, be they dwarf, low or medium-sized shrubs at maturity. They flower during April-May, but most take many years to begin doing so and few do so freely year on year, especially the compact clones. However, the shrubs are fully hardy, with a H6-7 rating, so able to be grown anywhere rhododendrons succeed outdoors in the British Isles, and as foliage plants, they are simply superb, this accolade most notably due the best specimens from Oreonastes Group.

R. roxieoides was described by David Chamberlain in 1982 (*Notes,* Volume 39, No. 2). It is known from just one sole location, Chongqing, in eastern Sichuan, where it had been reported growing in the valley forests between the 800 and 2,400m contours. Intensely coloured, deep pink corollas, plus a style glandular along the lower half, are the only stated differences from *R. roxieanum,* so in Volume 3 of his *The Rhododendron Species* (Batsford, 1992), arch-splitter H. H. Davidian suggested that 'on these characters alone, the plant does not merit specific status'. More recent field study - as set out in a 2014-published analysis *The conservation of Rhododendrons is of greater urgency than has previously been acknowledged in China* (this authored by Yongpen Ma, Jens Nielsen, David Chamberlain, Xiaoya Li and Weibang Sun, and published in *Biodiversity and Conservation,* Volume 23) - found that only '22 mature plants, occupying an area of less than 200 square metres at the summit from which the type specimen was collected in 1958' remained extant. Seed was introduced into the UK during 2011, the gathering made by Jens Nielsen, so regardless of their taxonomic fate, individuals of *R. roxieoides* now exist disjunct from that threatened, remnant population.

The *R. roxieanum* epithet itself is actually an honorific, for Mrs Roxie Hanna (née Wood), who with her husband William, were protestant missionaries based in Tali-fu (Dali). They were funded by the China Inland Mission, became close friends with George Forrest, who often stayed with them at their mission station when based in the town as the couple also provided the plant hunter with a room in which to dry his herbarium specimens. They survived the earthquake that devastated much of Yunnan in 1925, but left in 1927 when protests against foreign missionaries reached fever pitch and curtailed their work.

The Cucullatum Group epithet translates as 'hooded', a reference to the leaf apex; that for Globigerum as 'bearing a globe'; and Oreonastes, as 'mountain dwelling'.

The seed number assignments in the tables on pages 191 and 192 reflect the current set of determinations rather than their initial assessments, F 16428, for instance, was first listed as *R. cucullatum,* but is now judged to be a member of Globigerum Group, indeed, the first introduction of such into UK cultivation.



R. roxieanum (Cox & Cubey 9432) Cucullatum Group



R. roxieanum (R 11100) Globigerum Group



R. roxieanum (R 11285) Oreonastes Group.

R. mimetes

Hardiness:
H6-7.
Flowering Period:
May.
Distribution in the wild:
SW Sichuan, China.
Growing at forest margins, in thickets amongst scrub,
and in gullies on rocky mountain slopes, at elevations of 3,300-3,650m.

Identification:
Shrub, rounded and compact, to broadly upright, 1 to 2.2m high;
branchlets rigid, sparsely through moderately floccose,
sparsely through moderately short-stalked glandular.
Leaf bud scales deciduous.
Leaves lanceolate through oblanceolate to oblong-ovate and elliptic,
5.5 to 11cm long by 2.5 to 5cm wide,
retained for 1-3 years;
upper surface dark green, shiny, somewhat rugulose,
the midrib floccose or glabrous, short-stalked glandular or eglandular,
the margins undulate;
lower surface indumentum bistrate, continuous,
the upper layer woolly-tomentose, matted or loose, detersile,
wearing-off in small or large patches, entirely lost by maturity,
tawny or yellowish-brown,
the lower layer whitish or fawn, compacted and persistent,
the midrib moderately through densely hairy or glabrous,
short-stalked glandular or eglandular.
Petiole 10-25mm long, floccose, glabrescent at maturity,
short-stalked glandular or eglandular.
Inflorescence 6-10-flowered.
Rhachis 5-10mm long, floccose, eglandular.
Pedicel 12-25mm long, moderately through densely floccose,
short-stalked glandular or eglandular.
Calyx small to large, the lobes broad, rounded, oblong-oval or ovate, each 2-10mm long,
their outer surface sparsely tomentose or glabrous, short-stalked glandular or eglandular,
their margins ciliate or glabrous, short-stalked glandular or eglandular.
Corolla 2.8 to 5cm long, funnel-campanulate,
white, white faintly flushed and margined pink or rose, pinkish-purple, or rose,
with or without crimson spots, with or without a crimson basal blotch.
Stamen filaments moderately through densely pubescent at or towards the base.
Ovary conoid, 3-6mm long, 6-locular,
sparsely or densely rufous- or brown-tomentose, the hairs long,
sparsely or densely long- or short-stalked glandular.
Style glabrous or hairy at the base, the hairs long,
densely short- or medium-stalked glandular along the lower half.
Capsule 12-20mm long, oblong or oblong-oval, straight or slightly curved, glabrous,
densely medium-stalked glandular.

Seed Collections:

F 20419	1921



R. mimetes

Discovered growing on the mountains close to Muli in southwest Sichuan by George Forrest during June 1921, to date, *R. mimetes* has only once been introduced into UK cultivation - under F 20419 - as an earlier gathering made under the field number F 16320, is now docketed as *R. mimetes* affinity. The taxon was jointly described by Harry Tagg and Scotland's foremost plant hunter in Volume 15 of *Notes from the Royal Botanic Garden, Edinburgh,* which was published in 1927.

R. mimetes var. *simulans* was another Forrest find, made at the same time and in the same general locale - June 1921, on the mountains around Muli - and its description, penned by the same authors, follows on from that of *R. mimetes* in the same volume of *Notes*.

David Chamberlain chose to give both species specific status in his 1982 Subgenus *Hymenanthes* revision (*Notes,* Volume 39, No. 2), but had reversed that decision by the mid 1990s, this confirmed in the RHS *Rhododendron Handbook* of 1998, with his text for that entry adding that 'both varieties may have a hybrid origin'. Field observation has now confirmed this to be the case for var. *simulans,* one of its parents almost certainly being *R. sphaeroblastum,* with *R. adenogynum* believed to have completed the match. However, like many other conceptions before it, the 'simulans' epithet was found to be invalid under the nomenclature rules, so a derivative of such - *R. x sinosimulans* - was conceived by Chamberlain in 2005 and published in Volume 14 of *Flora of China*.

Most doyens continue to believe that *R. mimetes* too will ultimately prove to be a natural hybrid, its seeds originally matured in a capsule on a bush of *R. adenogynum,* with the pollen likely provided by one of the *R. phaeochrysum* varieties, though at the moment, proof-positive genetic analysis is lacking.

R. x sinosimulans has an adaxial leaf surface indumentum where the persistent, cinnamon-coloured upper layer is thick and spongy and fissured. This splitting mirrors that found on the leaves of *R. aganniphum* var. *flavorufum,* which, following fieldwork carried out for his PhD thesis by Tobias Marczewski and reported in *Hybrid Zones in Rhododendron Subsection Taliensia,* published in the 2012 edition of *Rhododendrons with Camellias and Magnolias,* has now been redesignated as *R. x flavorufum*. In contrast, the upper layer of the *R. mimetes* abaxial indumentum is woolly, detersile, and while lost over time, wears off in patches that are highly distinctive visually and completely unlike the mottled effect seen on the foliage of *R. x sinosimulans*. Any remaining confusion between the two can quickly be eliminated by checking for the presence of hairs on the ovary: a sparse through dense covering of long, brown- or rufous-coloured hairs indicating *R. mimetes;* absolutely no follicles whatsoever, *R. x sinosimulans*.

Within Series *Faberia,* that patchy indumentum is usually sufficient of itself to key *R. mimetes* from all the other occupants, with only *R. faberi* likely to cause any marginal doubt. This can be eliminated by first looking at the leaves, then the branchlets and the petioles: if the leaf upper surface is matt, and the branchlets and petioles either densely woolly, or densely but thinly tomentose, *R. faberi* is to hand; if shiny, and sparsely through moderately floccose, then *R. mimetes* will be the plant being examined.

The species is an extremely rare find in British gardens, not having been reintroduced despite any number of Western plant hunting expeditions combing the hills of Sichuan Province in the thirty years between 1980 and 2010. Fully hardy outdoors, with a H6-7 RHS rating, *R. mimetes* is a robust grower, its relatively large flowers, produced during May, carried in trusses of 6-10. Most specimens flower freely, form compact domes over time, but Peter and Kenneth Cox, in their 1997 *Encyclopedia of Rhododendron Species,* warn that 'the leaves are inclined to suffer some die-back'.

The epithet translates as 'imitative'.


R. mimetes


R. mimetes

R. circinnatum

Hardiness:
H6.
Flowering Period:
April-May.
Distribution in the wild:
SE Tibet.
Growing in rhododendron thickets,
and on sheltered mountains slopes at or above the tree line,
at elevations of 4,000-4,600m.

Identification:
Shrub or small tree, bushy, 6 to 8m high;
branchlets densely tomentose, the indumentum thick,
the hairs pale yellow (buff) or greyish-white.
Leaf bud scales deciduous.
Leaves thickly coriaceous,
elliptic-lanceolate through oblong-lanceolate to oblong,
10 to 14cm long by 2.8 to 4cm wide,
retained for 2-3 years;
upper surface olive green, matt,
the midrib densely whitish woolly at the base, along the lower third,
or with the vestiges of hairs;
lower surface indumentum bistrate, continuous,
the upper layer dense, thick and woolly, yellowish-brown,
the lower layer of hairs widely scattered,
the midrib densely woolly, eglandular.
Petiole 20-30mm long, stout, densely whitish-grey woolly-tomentose, eglandular.
Inflorescence *c.* 12-flowered.
Rhachis *c.* 10mm long, densely tomentose.
Pedicel *c.* 20mm long, densely floccose, short-stalked glandular.
Calyx minute, the 5 lobes triangular or ovate, each 0.5-1mm long,
their outer surface and margins densely floccose and short-stalked glandular.
Corolla 2.5 to 3cm long, 5-lobed, funnel-campanulate or tubular-campanulate,
pale lemon-yellow, with reddish spots;
the lobes rounded and emarginate.
Stamen filaments densely pubescent at the base or along the lower third.
Ovary oblong, 10mm long, 6-locular, glabrous or densely villous at the base,
densely long- or short-stalked glandular.
Style glabrous, eglandular.
Capsule unknown.

Seed Collections:

KW 11964	1935	CER 9907	1999
AC 3137	1997	CER 9935	1999
CHC 8518	1998		

Botanic argument continues over the placement of *R. circinnatum,* with a resolution between the Subsection *Lanata* and Subsection *Taliensia* camps only likely once definitive, proof-positive-evidence is provided by the geneticists. The approach followed herein is that taken by H. H. Davidian, outlined in Volume 3 of his *The Rhododendron Species,* published in 1992: that the glandular ovary and pedicel, plus the bistrate, two-layered abaxial leaf indumentum, are more reflective of the Subsection *Taliensia* species, and specifically, the clientele of Series *Faberia*.

Whilst assigned to Subsection *Lanata, R. circinnatum* was most closely allied with *R. luciferum,* but this has a much looser and unistrate indumentum, which is easily rubbed-off. The latter species is also without sticky glands on any part of its anatomy. Furthermore, most specimens of *R. luciferum* growing in British gardens are actually *R. circinnatum* - at least, that is the stated view of experts such as John McQuire and Mike Robinson, reported in their *Pocket Guide to Rhododendron Species* (Kew, 2009).

R. circinnatum was discovered and introduced by Frank Kingdon-Ward, the find, under KW 11964, made on July 12th, 1935, on the Bimbi La, in southeast Tibet.

His field notes describe:

> 'a stout little tree, up to 20-25ft high, but rarely erect; often a large bushy shrub with a gnarled trunk and writhing branches',
> (comments viewable on the herbarium sheet at the online Natural History Museum Data Portal, when specimen BM000996678 is entered into the search facility).

Those bushes were also 'in fruit', the mature capsules unspent bounty from the previous season. Yet many botanic authorities still dispute their subsequent introduction, despite the seed lists in successive editions of the RHS *Rhododendron Handbook* - back to at least 1952 - maintaining such to have been the case.

The species botanic description, written jointly by Kingdon-Ward and John MacQueen Cowan, can be found in the 1937-published Volume 19 of *Notes from the Royal Botanic Garden, Edinburgh,* and their choice of epithet - 'made round' - refers to the ramiform hairs present in the upper layer of the abaxial indumentum. Like many of its Series *Faberia* compatriots, these have a short stem and narrow branches, but unlike those others, here, the arms are curly. Resort to a microscope to confirm the identity of a garden specimen is avoided by the complete lack of glands on the petioles, which will key *R. circinnatum* from the entire series membership apart from *R. rufum,* and some forms of *R. prattii*. With regard to *R. rufum,* its leaves are usually no more than 11cm long, whereas the blades on *R. circinnatum* range from 10 to 14cm in length, and in addition, the former usually has a non-glandular pedicel, while the flower stalks on the latter are decidedly sticky. Leaf length and the tactile properties of the pedicel will not differentiate-out those clones of *R. prattii* with eglandular petioles, but the presence of short-stalked glands at the base or along the lower third of the style will, for *R. circinnatum* is bereft of such.

Alan Clark reintroduced the species from Putrang La, Tibet, in 1997, with three additional collections made by two other expeditions arriving before the millennium bug struck. No further gatherings have been returned since.

R. circinnatum

Section *Leiorrhodium* Subsection *Taliensia* Series *Principia:*



R. pronum



Taxa:

R. aureodorsale
R. clementinae
R. nakotiltum
R. pronum
R. proteoides
R. sphaeroblastum
R. sphaeroblastum var. *sphaeroblastum*
R. sphaeroblastum var. *wumengense*
R. taliense
R. vellereum

Taxonomic Revision:

The nine rhododendrons placed within Series *Principia*
can be identified from all the other Subsection *Taliensia* species
by their bistrate abaxial leaf indumentum if an eglandular ovary is also a feature.

As with the Series *Faberia* membership, that former characteristic is sometimes only
observable on young leaves as the upper layer of hairs is shed by maturity.

Absent from the listing above is *R. principis* itself,
as no one has seen this particular taxon in the wild since early May, 1890,
when plant hunters Pierre Gabriel Bonvalot and Prince Henri d'Orléans,
made the only known gathering of herbarium material
at a site somewhere on the road between Lhasa and Batang.
And despite scores of expeditions scouring the hills of China in search of botanic bounty
up until the late 1940s, and literally hundreds of Western teams revisiting all those
mountains and valleys from the early 1980s onwards
- not to mention the Chinese themselves -
R. principis has never once been re-encountered.
Nor has it been introduced into cultivation anywhere on the planet.

But Louis Bureau, along with his assistant in the herbarium at MNHN,
the Muséum National d'Histoire Naturelle in Paris,
a certain Adrien Franchet,
jointly described the find in Volume 5 of the *Journal de Botanique,* published in 1891.

Their chosen epithet for the species was an honorific for the prince,
though considering the expedition team basically bludgeoned the local populace
into providing equipment, supplies, porters and guides in sufficient quantity
to allow their work to continue,
it is a mark of respect that could hardly be described as deserving.

Yet its adoption here avoids the confusion of a tripartite duplication
- subsection-series-species -
which use of the 1886-published conception that has nomenclature precedence
- *R. taliense* -
would undoubtedly cause.

The case for adopting this dyadic restriction is fully set out in Volume One.

Series Morphology:

Shrubs, sometimes dwarf or low, or small trees, prostrate, mounding or spreading,
compact or rounded, to broadly upright, 0.1 to 8m high;
branchlets glabrous, sometimes hairy, eglandular;
bark grey-brown, rough.

Leaf bud scales deciduous or persistent (rarely).

Leaves evergreen, coriaceous, often thickly so,
oblanceolate, ovate-lanceolate through oval, oblong to oblong-elliptic,
or elliptic, sometimes broadly so,
1.3 to 15cm long by 0.4 to 8.7cm wide,
apex acute, acuminate or obtuse, rarely cucullate, and often apiculate or mucronate,
base obtuse, rounded or cuneate, rarely tapered and decurrent on the petiole;
upper surface dark green, sometimes glaucous at first, somewhat rugulose, matt or shiny,
glabrous when mature or with the vestiges of hairs, eglandular,
the leaf profile sometimes convex,
the midrib grooved, glabrous or hairy, eglandular,
the veins deeply impressed, the margins flat or recurved, sometimes distinctly;
lower surface with a bistrate indumentum,
the upper layer thick, rarely thin, but sometimes loose and detersile,
continuous or becoming patchy over time, sometimes completely lost,
woolly, spongy or felted, sometimes with a pellicle or thin surface film,
brown, silvery-white, yellowish-grey, cinnamon, fawn,
tawny-brown or reddish-brown at maturity,
usually formed of ramiform hairs, rarely of stellate hairs,
the lower layer thin and compacted, persistent,
whitish, greyish or fawn,
usually composed of rosulate hairs, rarely of radiate or long-rayed hairs,
the midrib prominent, hairy, eglandular,
the veins usually concealed.

Leaf anatomy comprises a 2- or 3-layered upper epidermis,
with the cells in all three layers of roughly equal size;
the cuticle is approximately as thick as the cells are deep; water tissue is absent;
the lower epidermis cells are not prolonged into papillae.
Sclereid cells are present in the leaf tissue.

Petiole 2-30mm long, grooved above, occasionally narrowly winged or ridged,
hairy or glabrous, eglandular.

Inflorescence racemose-umbellate, dense but loose, 5-20-30-flowered;
the bud scales sometimes persistent.

Rhachis 3-16mm long, glabrous or hairy, eglandular.

Pedicel 8-40mm long, hairy or glabrous, eglandular.

Calyx large, small or minute, 5-lobed, rarely 6-7-lobed, these unequal and 0.5-12mm long,
their outer surface and margins hairy or glabrous, eglandular.

Corolla 1.9 to 5cm long, campanulate or funnel-campanulate,
white to pink, creamy-white, rose, sometimes pale yellow, rarely reddish-magenta or red,
often conspicuously spotted, sometimes blotched,
without nectar pouches;
5-lobed, rarely 6-7-lobed, these rounded and emarginate.

Stamens 10, rarely 12-14, unequal, shorter than the corolla;
filaments pubescent at the base or along the lower third, half or two-thirds,
rarely glabrous, eglandular.

Ovary oblong or conoid, 3-9mm long, 5-9-locular, glabrous or hairy, eglandular.

Style glabrous, eglandular.

Capsule 6-35mm long, oblong or oblong-oval, straight or slightly curved,
rarely strongly curved,
glabrous or hairy, eglandular.

Seeds elongate, narrowly winged or not winged,
each end usually with appendages (occasionally very small).


R. clementinae

R. taliense (F 6772)

R. taliense

Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
W Yunnan, China.
Growing in or at the margins of fir forests, in rhododendron thickets,
in meadows and on rocky slopes, at elevations of 3,000-4,100m.

Identification:
Shrub, low, compact and rounded, to spreading or broadly upright, 0.8 to 4m high;
branchlets moderately through densely woolly-tomentose at first,
the hairs brown, the covering thin, becoming glabrescent.
Leaf bud scales deciduous.
Leaves thickly coriaceous,
lanceolate through ovate-lanceolate to oblong-ovate,
4 to 11cm long by 1.8 to 4cm wide,
retained for 3-4 years;
upper surface dark green, shiny or matt, slightly rugulose,
the midrib glabrous, the margins flat or slightly recurved;
lower surface indumentum bistrate, continuous,
the upper layer thick or very thick, woolly to tomentose, loose through felted,
sometimes divided but not split into sections,
cinnamon, tawny-brown or rufous,
the lower layer thin and compacted,
the midrib densely woolly.
Petiole 5-15mm long, densely tomentose, the hairs brown,
the covering thin, becoming glabrescent.
Inflorescence 8-20-flowered.
Rhachis 5-15mm long, pubescent.
Pedicel 10-20mm long, densely rufous-tomentose.
Calyx minute to small, the 5 lobes triangular or ovate, each 0.5-3mm long,
their outer surface glabrous, rarely hairy,
their margins glabrous or hairy.
Corolla 2.5 to 3.5cm long, campanulate or funnel-campanulate,
white, creamy-white, white flushed pink, white flushed rose, creamy-yellow or pale yellow,
with crimson spots,
5-lobed.
Stamens 10;
filaments densely pubescent at the base or along the lower half.
Ovary conoid, 4-5mm long, 5-7-locular, glabrous, eglandular.
Capsule 10-20mm long, oblong or oblong-oval, glabrous, eglandular.

Seed Collections:

F 6772	1910	AC 673	1993
F 11579	1912/1914	KR 2735	1993
F 11583	1912/1914	KR 2764	1993
R 6253	1923/1924	CNW 813	1994
R 6365	1923/1924	CNW 860	1994
F 28237	1930/1931	CNW 876	1994
F 28253	1930/1931	KR 4056a	1996
F 28353	1930/1931	CCHH 8254	1997
F 28355	1930/1931	JN 1041	1999
F 28357	1930/1931	JN 1042	1999
SBEC 546	1981	JN 12166	2012
SBEC 555	1981	BE 15-06	2015
SBEC 581	1981	BE 15-17	2015
CLD 1287	1990	BE 15-19	2015
SSNY 352	1992	BE 15-27	2015
AC 668	1993		



R. taliense (F 6772)

Flag-waving Brexiteer xenophobes need little convincing that the French are in league with the devil; those within their ranks who are also rhodophiles, and so familiar with the official published history relating to the discovery of *R. taliense,* know it for a fact. For Abbé Jean-Marie Delavay's collection of herbarium material - made on June 17th, 1887; from a population of the plants growing on the Tsang-chan Mountain, above Tali (Dali), in western Yunnan - was dried and despatched off to Paris so quickly that Adrien Franchet was able to write and publish the species botanic description in Volume 33 of the *Bulletin de la Société Botanique de France* more than a year before the discovery was made, his text available to read in April, 1886.

No details of how this feat was achieved have ever been made public, but clearly the representatives of the Société des Missions Étrangères de Paris, along with the team at the Muséum National d'Histoire Naturelle, were in league with some other-worldly power; dark forces who could bend the laws of space-time. Because a check of the literature - Davidian Volume 3, for instance - will confirm those topsy-turvy dates.

Alternatively, of course, the isotype specimen sheets for Delavay 160 could simply be wrongly dated.

Two are available to view online at Edinburgh Botanic: the first - E00001203 - has '17 Juin 1887' clearly written on the MNHN herbarium label, the penmanship exquisite; the second - E00001485 - though somewhat smudged, shows '20 Juin 1884'. The MNHN online herbarium has many of Delavay's collection sheets available to view, but currently, not those for the type specimens of *R. taliense*. However, specimens of *R. lacteum,* which Delavay discovered in May 1884, arrived at MNHN in June 1885, and their Franchet-penned description will also be found in Volume 33 of the *Bulletin,* so the authorised history will have to be rewritten once more.

R. taliense is most closely related to *R. sphaeroblastum,* the prime distinguishing feature cleaving the two apart usually listed in most texts as the former's narrower leaves, 1.8 to 4cm wide, as opposed to the latter's 3.6 to 6.5cm. Should this characteristic prove less than decisive however, recourse to the branchlets, petioles and pedicels will reveal that for *R. sphaeroblastum,* these are glabrous, while for *R. taliense,* they are tomentose. The same indumentum check basically holds good for the branchlets and pedicels of *R. vellereum,* but not its petioles, which are usually hairy above, yet glabrous below, with the leaves varying between 1.8 and 5cm in width.

George Forrest was the first plant hunter to introduce the species into UK cultivation under the field number F 6772, which arrived during 1910. Additional batches were sent by the Scotsman subsequently and he may also have secured viable capsules on his premier expedition to China between 1904 and 1906, though as before, the usual mixed messaging applies to any seed that may have accompanied the five gatherings of herbarium material (F 2408, F 2409, F 4136, F 4160 and F 4167). Two Joseph Rock contributions from 1923 that are also not listed in the table above - R 6253 and R 6365 - are logged in the 1998 RHS *Rhododendron Handbook* listings as *taliense/roxieanum var. cucullatum* and filed herein under the latter taxon, given their likely hybrid nature. The team that comprised the 1981 Sino-British Expedition to the Cangshan can claim credit for being first to reintroduce the species, with some eighteen additional lots secured up until 2015.

R. taliense is fully hardy, the bushes developing over time into rounded-domes with a well-filled framework, to around 2m in height. Some display an abaxial indumentum that is decidedly speckled at maturity, others sport foliage that emits a musky odour. Flowering stature is reached in decades rather than years, with some clones then opening a profusion of blooms in April-May, while others - the majority of established specimens - disdain such largesse and instead opt for floral reticence.



R. taliense



R. taliense (SBEC 555)

R. sphaeroblastum* var. *sphaeroblastum
Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
SW Sichuan & N Yunnan, China.
Growing in fir forests, rhododendron thickets and on mountain slopes,
at elevations of 3,000-4,500m.

Identification:
Shrub or small tree, compact and rounded, or broadly upright, 1 to 7m high;
branchlets glabrous, rarely thinly tomentose.
Leaf bud scales deciduous.
Leaves thickly coriaceous,
broadly ovate-lanceolate through oblong-ovate to ovate-elliptic,
6 to 15cm long by 3.6 to 6.5cm wide,
retained for 2-years;
upper surface dark green, shiny, slightly rugulose,
the midrib glabrous, the margins usually flat;
lower surface indumentum bistrate, continuous,
the upper layer thick, woolly-tomentose, persistent,
whitish at first becoming cinnamon or rusty-red at maturity,
the lower layer thin and compacted,
the midrib densely woolly-tomentose.
Petiole 10-30mm long, thick,
glabrescent to near glabrous, rarely thinly-tomentose.
Inflorescence 10-20-flowered.
Rhachis 8-15mm long, glabrous.
Pedicel 10-20mm long, glabrous at maturity.
Calyx small, the 5 lobes triangular or ovate, each 1.5-2mm long,
their outer surface glabrous,
their margins glabrous, rarely ciliate.
Corolla 2.9 to 4cm long, broadly campanulate or funnel-campanulate,
white, creamy-white, white flushed rose, or pink, sometimes lined deeper,
with or without crimson or purple spots,
5-lobed.
Stamens 10;
filaments moderately through densely pubescent at the base,
or along the lower third.
Ovary oblong or conoid, 5-7mm long, 5-8-locular, glabrous, eglandular.
Capsule 10-22mm long, oblong or oblong-oval, slightly curved,
glabrous, eglandular.

R. sphaeroblastum* var. *wumengense
Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
NE Yunnan, China.
Growing in mixed woodland and rhododendron thickets,
at elevations of 3,600-4,000m.

Identification:
as var. *sphaeroblastum* except:
Leaves elliptic through oblong-obovate to near orbicular,
7 to 12cm long by 5 to 6cm wide;
lower surface indumentum upper layer thin, fawn, sometimes detersile at maturity.
Petiole 20-25mm long.
Inflorescence 8-16-flowered.
Corolla 4 to 4.5cm long, white, yellow or red.
Ovary sparsely floccose.



R. sphaeroblastum: development of the leaf abaxial indumentum.

Seed Collections - var. *sphaeroblastum:*

W 1863	1904	F 29262	1930/1931
F 16377	1918	F 29320	1930/1931
F 17110	1918	F 29321	1930/1931
KW 4185	1921	F 29333	1930/1931
F 20416	1921/1922	R 24280	1932
F 20440	1921/1922	R 24310	1932
F 20445	1921/1922	R 24311	1932
F 20446	1921/1922	R 24325	1932
F 20447	1921/1922	R 24343	1932
F 21009	1921/1922	R 24350	1932
F 21010	1921/1922	R 24413	1932
F 21039	1921/1922	R 24481	1932
F 21040	1921/1922	R 25313	1932
F 21051	1921/1922	R 25472	1932
F 21405	1921/1922	R 25478	1932
R 18178	1929	R 25480	1932
R 18180	1929	AC 878	1995
R 18182	1929	CNC 12053	2012
F 29245	1930/1931	JN 12298	2012
F 29246	1930/1931	JN 12319	2012

Seed Collections - var. *wumengense:*

CNW 925	1994	CNW 979	1994	AC 928	1995
CNW 931	1994	CNW 981	1994	AC 929	1995
CNW 932	1994	CNW 983	1994	C&H 7157	1995
CNW 933	1994	CNW 986	1994	EGM 350	1995
CNW 935	1994	CNW 987	1994	EGM 359	1995
CNW 941	1994	CNW 988	1994	AC 2055	1996
CNW 942	1994	CNW 989	1994	AC 2056	1996
CNW 948	1994	CNW 990	1994	AC 2058	1996
CNW 962	1994	CNW 991	1994	AC 2062	1996
CNW 963	1994	CNW 1024	1994	AC 2063	1996
CNW 968	1994	CNW 1050	1994	AC 2064	1996
CNW 975	1994	CNW 1051	1994	C&N 5989	2007
CNW 976	1994	CNW 1052	1994	JN 12360	2012
		CNW 1057	1994		

Although *R. principis* was the next member of the series to be encountered by a Western plant hunting team, it has since remained hidden away. Nor was it introduced into cultivation at the time of its discovery. So like other such enigmas within the genus, doubts about its true status have begun to be expressed, with those theorising pollinator initiated hybridity, naturally to the fore.

The third member of the coterie to reveal itself - to Ernest Wilson during July 1904; who gathered herbarium material under the field number W 3957, and three months later, seed, under W 1863 - was *R. sphaeroblastum,* and a procession of plant hunters have found it since - George Forrest, Frank Kingdon-Ward and Joseph Rock; more recently, Alan Clark, Kenneth Cox and Jens Nielsen - the last assignation taking place in 2012.

Wilson's collections were made on moorland near Tachien-lu (Kangding), in western Sichuan, but originally determined to be *R. przewalskii*. In *Plantae Wilsonianae,* the two-volume tome he co-authored with Alfred Rehder, the specimens are described as having 'broadly ovate leaves, floccose tomentose below, a rosy-pink corolla and stout fruit covered with purple bloom' (Volume 1, 1913), yet when H. H. Davidian reassessed this material, he determined it to be *R. sphaeroblastum* (as detailed in *The Rhododendron Species,* Volume 3, 1992). Which meant George Forrest's tally of new-to-science species dropped by one even though the type specimen still bears his F 17360 field number. That dried material, collected from a population of plants on the mountains near Muli, in southwest Sichuan, during July 1918, was used by the Scotsman and Sir Isaac Bayley Balfour to describe *R. sphaeroblastum* in Volume 13 of *Notes from the Royal Botanic Garden, Edinburgh,* this published in 1920.

While most closely allied to *R. taliense,* the species will more often be confused with *R. phaeochrysum,* though the thick and bistrate, cinnamon through rusty-red, woolly abaxial tomentum of *R. sphaeroblastum* will provide a clear distinction, as on examination, that of *R. phaeochrysum* will be found to be thin, unistrate, plastered, and dark brown or fawn in hue. Keying *R. taliense* from *R. sphaeroblastum* relies on a check of the young shoots and leaf stalks for a thin, but dense, covering of brown tomentum: if present, the former is to hand; if absent, the latter. And the same test holds true for the flower stalks.

R. sphaeroblastum var. *wumengense* was described by Kuo Mei Feng in 1983 - *Acta Botanica Yunnanica,* Volume 5, Number 3 - with the variety introduced into UK cultivation from northeastern Yunnan by Alan Clark, Jens Nielsen and Murray Wilson eleven years later in 1994. It differs from the specific species in having slightly smaller leaves, which are also more rounded - some forms being near orbicular - a thinner upper layer to its adaxial indumentum - this often detersile and so lost over time - a sparsely floccose ovary, and a white, yellow or red corolla colour palette. On the ground, var. *wumengense* grows across a narrower altitudinal band than var. *sphaeroblastum,* with the distribution logged as between 3,600 and 4,000m, rather than 3,000 to 4,500m, and it is currently only really known from Wumeng Shan, despite a possible 2008 find in southern Sichuan (made by Jens Nielsen, but with no associated field number given, the seed offered on the 2009 exchange run by the American Rhododendron Society).

In cultivation, *R. sphaeroblastum* has proved to be fully hardy and fairly free-flowering, though it remains a somewhat rare find in garden collections. It is a vigorous grower, developing into a rounded dome around 2m high or a more broadly-upright shrub to around 3m. H6-7 and April-May are the accepted hardiness rating and flowering period denominations, with the epithet singling-out the rounded buds.

Quite a few specimens of var. *wumengense* germinated from one of the twenty-seven individual CNW seed introductions of 1994 vintage have now topped the 2m height marker. They also appear happy to bloom profusely on an annual basis.

R. sphaeroblastum (F 20416)


R. sphaeroblastum


R. sphaeroblastum


R. sphaeroblastum



R. wumengense (AC 929)



R. wumengense (AC 929)



R. wumengense (AC 929)

R. clementinae

Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
SE Tibet; SW Sichuan & NW Yunnan, China.
Growing in open forests and at forest margins, in open thickets,
on moorland amongst boulders, on rocky slopes and on cliffs,
at elevations of 3,200-4,450m.

Identification:
Shrub or small tree, rounded and compact, to broadly upright, 1 to 5m high;
branchlets stout, glabrous, rarely with a thin, whitish, tomentum.
Leaf bud scales deciduous.
Leaves thickly coriaceous,
ovate-lanceolate through oval, to broadly elliptic,
6 to 15cm long by 3 to 8.7cm wide,
retained for 2-5 years;
upper surface dark green, glaucous and bluish-green at first, shiny or matt,
slightly rugulose, the leaf profile usually convex,
the midrib glabrous, the margins slightly recurved;
lower surface indumentum bistrate, continuous,
the upper layer thick, spongy or woolly-tomentose, with a silky and glossy pellicle,
sometimes detersile, splitting into large patches and lost by maturity,
whitish, buff or pale cinnamon,
the lower layer thin and appressed, greyish or whitish,
the midrib densely hairy.
Petiole 10-30mm long, glabrous when mature,
rarely with a thin, whitish, tomentum.
Inflorescence 7-15-flowered.
Rhachis 8-15mm long, glabrous.
Pedicel 12-40mm long, stout, glabrous.
Calyx minute, the 6-7 lobes rounded, triangular or ovate, each 1-1.5mm long,
their outer surface and margins glabrous.
Corolla 3.6 to 5cm long, campanulate or funnel-campanulate,
white, creamy-white, white flushed rose, deep pink or deep rose, marked deeper,
with or without crimson or purple spots,
6-7-lobed.
Stamens 12-14;
filaments densely pubescent at the base or along the lower two-thirds.
Ovary oblong or conoid, 6-9mm long, 6-9-locular,
glabrous, eglandular.
Capsule 10-20mm long, oblong or oblong-oval, glabrous.

Seed Collections:

F 10857	1913	F 25916	1924/1925	LS&T 3878	1938
F 11486	1913	F 25917	1924/1925	LS&T 6608	1938
F 12607	1913/1914	R 18446	1929	LS&T 7200	1938
F 16652	1917/1919	R 18448	1929	CNW 1276	1994
F 22202	1921/1922	R 25401	1932	AC 1950	1996
R 11254	1923/1924	R 25430	1932	JN 722	1999
R 11255	1923/1924	R 25432	1932	JN 723	1999
F 25705	1924/1925	Yu 14950	1937	JN 729	1999
F 25742	1924/1925	LS&T 3618	1938	JN 12164	2012



R. clementinae

George Forrest had been on the lookout for a very special rhododendron from the first day he set foot in China in August 1904 - one that he could name for his wife, Harriet Clementina Mary Wallace, née Trail, whom he had met in 1903, when they both worked in the herbarium at Edinburgh Botanic. Fast-forward to August 1913, a decade after that fateful encounter, and on the Chungtien (Zhongdian) plateau of northwestern Yunnan, the plant hunter found exactly what he had been looking for: a shrub with creamy-white flowers marked with crimson, its leaves forming perfect ovals backed by a greyish-white, spongy indumentum, and capsules that coloured deep black-purple. The botanic description was for once, solely Forrest's work, his Latin text published in 1915, within Volume 8 of *Notes from the Royal Botanic Garden, Edinburgh,* the new-to-science species dedicated to his wife, named *R. clementinae.*

It was unique amongst the entire complement of Subsection *Taliensia* rhododendrons in that both the corolla and the calyx possessed six or seven lobes, never the usual five, and that there were always twelve to fourteen stamens gathered inside each and every flower bowl, not the regular, standard contingent of ten, though that nonpareil morphology was lost with the discovery of the 7-lobed *R. aureodorsale* in the early 1980s.

Yet *R. clementinae* remains one of the finest foliage plants within the entire genus, the convex, dark green and shiny leaves, perfectly proportioned, held on a bush for up to five years and flushed bluish-green when they first extend, though the depth of this juvenile hue does not quite match the similar tone that flushes the new growth on the best specimens of *R. campanulatum* ssp. *aeruginosum*.

The species was of course introduced by Forrest in 1913 and even the most cossetted mature plants established in British gardens today are usually no more than 3m-high rounded shrubs, with only a few - from the Rock 25401 introduction - having gained small tree status after ninety years of growth. As youngsters, these would have taken many, many years before they began to flower, but when those blooms did finally appear, the pristine trusses of 7 to 15 funnels, heavily spotted crimson, or flushed with rose, were simply stunning, although any prospective purchaser should note that the oft-touted adage 'free-flowering' is absent from any and all published descriptions.

Seed has been gathered and returned many times since Forrest's first batch arrived in the UK, by the Scotsman himself, by Rock as indicated, by Yu, and by the team of Ludlow, Sherriff and Taylor. The four numbered collections made by the latter trio extended the wild distribution of *R. clementinae* into southeast Tibet, but this appears to have escaped the notice of the doyens, even though the 1967, 1980 and 1998 editions of the *Rhododendron Handbook* have all listed the determinations as such. It should be noted however, that no other plant hunter has found the taxon growing in this area. Alan Clark, Jens Nielsen and Murray Wilson reintroduced the species from Yunnan in 1994 after a near sixty-year gap, with Alan and Jens individually gathering another eight lots subsequently, the last of which arrived at the end of 2012.

The aforementioned *R. aureodorsale* was initially considered to be a subspecies of *R. clementinae,* but has now been given specific status. It has a tawny-hued abaxial indumentum that is without a pellicle, and the pedicels and calyx lobes are sparsely hairy instead of being completely glabrous.



R. clementinae (R 18448)



R. clementinae (F 25917)

R. clementinae (R 25401)

R. clementinae (F 25917)

R. proteoides

R. proteoides

Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
SE Tibet; SW Sichuan & NW Yunnan, China.
Growing in thickets, on open rocky pasture and very steep mountain slopes,
amongst rocks and on cliffs, at elevations of 3,600-4,600m.

Identification:
Dwarf shrub, compact, mounding or spreading, 0.15 to 1m high;
annual growths and internodes short;
branchlets densely cinnamon or rufous woolly-tomentose.
Leaf bud scales persistent.
Leaves thickly coriaceous, close-set,
oblong through oblanceolate to elliptic,
1.3 to 4cm long by 0.4 to 1cm wide,
retained for 2-4 years;
upper surface dark green, slightly rugulose, matt,
the midrib hairy at the base or glabrous, the margins markedly recurved;
lower surface indumentum bistrate, continuous,
the upper layer thick, but loose, woolly-tomentose,
brown, cinnamon or rusty-red, bleaching with age,
the lower layer thin and compacted, composed of radiate hairs,
the midrib densely woolly-tomentose.
Petiole 2-6mm long, thick and broad,
densely cinnamon or rufous woolly-tomentose.
Inflorescence 5-12-flowered;
bud scales persistent.
Rhachis 3-5mm long,
moderately through densely cinnamon or rufous tomentose.
Pedicel 8-13mm long,
densely cinnamon or rufous woolly-tomentose.
Calyx minute or small, the 5 lobes ovate or triangular, each 0.5-2mm long,
their outer surface glabrous or tomentose at the base,
their margins ciliate.
Corolla 1.9 to 3.8cm long, campanulate or funnel-campanulate,
white, creamy-white, pale creamy-yellow, pale yellow, yellow, or white flushed rose,
with crimson or purple spots,
5-lobed.
Stamens 10;
filaments moderately through densely white-pubescent along the lower half or two-thirds.
Ovary conoid or ovoid, 3-4mm long, 5-locular,
densely cinnamon- or rufous-tomentose, eglandular.
Capsule 6-10mm long, oblong, conoid or ovoid,
cinnamon- or rufous-tomentose, eglandular.

Seed Collections:

F 13348	1914	R 23540b	1932	AC 1723	1996
F 14509	1917/1919	R 24296	1932	AC 1761	1996
F 14685	1917/1919	R 24501	1932	JN 239	1997
F 16509	1917/1919	R 94	1948/1949	JN 245	1997
F 16604	1917/1919	R 147	1948/1949	JN 249	1997
F 16609	1917/1919	R 151	1948/1949	JN 268	1997
F 16765	1917/1919	KGB 695	1993	JN 271	1997
F 19006	1917/1919	KGB 700	1993	JN 274	1997
F 19154	1917/1919	Cox 6542a	1994	JN 819	1999
F 19165	1917/1919	CNW 244	1994	JN 827	1999
R 10998	1923/1924	CNW 245	1994	BE 13-11	2013
R 11076	1923/1924	CNW 336	1994	BE 13-12	2013
F 25701	1924/1925	AC 1720	1996	BE 13-44	2013



R. proteoides

The smallest-leaved member of Series *Principia,* and indeed of Subsection *Taliensia* as a whole, was found growing on the mountains of the Mekong-Salween Divide in the northwest of Yunnan Province by George Forrest during September 1914, and introduced into British gardens under the type specimen field number - F 13348 - later that same year. The form collected was a low, dwarf shrub, growing to around 0.6m in height, but Forrest would find mature plants with a creeping habit that were no more than 0.15m high in roughly the same area on subsequent expeditions. Isaac Bayley Balfour and William Wright Smith composed the botanic description that appears in Volume 9 of *Notes from the Royal Botanic Garden, Edinburgh,* published in 1916, their chosen epithet for the new species translating from the Latin as 'resembling a *Protea*'.

Its own natural hybrid offspring apart, the only *Taliensia-Principia* species associate that *R. proteoides* could be mistaken for, is the equally dwarf *R. pronum,* but the presence of a dense cloak of cinnamon- or rufous-coloured woolly tomentum on the branchlets and petioles will key the former from the latter, whose leaf stalks and young stems are totally devoid of such adornment. Within the subsection, the species is probably most closely allied to *R. roxieanum,* especially those plants gathered under Cucullatum Group, but of course, it lacks the glandular ovary. Yet on the mountains of Yunnan, *R. proteoides* will often be found growing in the same area as *R. roxieanum,* only at higher altitudes. Field study has observed the populations merging in places, with ample intermediates recorded in the expedition notes. At least two of these have been introduced into cultivation: one, under the old *R. roxieanum* var. *parvum* banner, now *R. x parvum;* another, designated *R. proteoides* affinity, or as more often seen in gardens and commerce, *R. proteoides* 'Hilliers Form'. In addition, pollinator-empowered promiscuity with *R. aganniphum* resulted in plants that were initially described and introduced as *R. bathyphyllum,* so the moniker for these individuals too is now preceded by a small 'x'.

In UK cultivation, specimens of *R. proteoides* are very slow growing and even harder to please than those of *R. pronum*. Swift drainage is an obviously essential component to longterm success, along with a substrate composed mostly of rotted leaves, twigs and other organic matter, and as the natural habit screams for a rock garden placement, such should allow for the easy provision of those very requirements. But don't expect an eventual 0.3m-high rounded dome to swathe itself in bloom anytime soon. For in Volume 3 of his über-work *The Rhododendron Species,* H. H. Davidian reports on the recent first-flowering of a specimen of *R. proteoides* grown from the Rock 151 gathering and planted-out in the Seattle garden of an American rhodophile a few years after its 1948 germination. Suffice to say that Davidian's third tome was published in 1992, some four decades on from that Pacific-coast enactment.

For those with more limited patience, or newly-bitten septuagenarian rhodophiles contemplating a near-future, ethereal rendition of 'Closer My God to Thee', the 'Hilliers Form' hybrid may prove the better option, though the leaves are decidedly longer and not quite as close-set.



R. proteoides (R 151)

R. nakotiltum

Hardiness:
H6.
Flowering Period:
May.
Distribution in the wild:
NW Yunnan, China.
Growing in pine forests, in thickets and in open scrub on mountain slopes,
at elevations of 3,330-4,000m.

Identification:
Shrub, rounded to broadly upright, 1 to 3.5m high;
branchlets stout, sparsely whitish or rufous floccose, becoming glabrescent.
Leaf bud scales deciduous.
Leaves oblong through oblong-obovate to oblong-elliptic or elliptic,
6 to 12cm long by 2.5 to 4.5cm wide,
retained for 2-3 years;
upper surface dark green,
the midrib floccose, the margins flat;
lower surface indumentum bistrate, continuous,
the upper layer thin and loose, floccose or felty, usually detersile and lost by maturity,
fawn or greyish, becoming brown with age,
composed of long-rayed stellate hairs,
the lower layer thin and compacted, whitish, composed of small long-rayed hairs,
the midrib hairy.
Petiole 13-20mm long, floccose becoming glabrescent.
Inflorescence 12-15-flowered.
Rhachis 5-10mm long, sparsely pubescent or glabrous.
Pedicel 14-20mm long, sparsely through densely floccose-pubescent.
Calyx minute, the 5 lobes deeply divided, rounded, each 1-1.5mm long,
their outer surface glabrous, their margins sparsely ciliate.
Corolla 2.8 to 3.5cm long, open campanulate or funnel-campanulate,
white flushed pink, white flushed rose, pale pink or pale rose,
with or without crimson or purple spots, with or without a crimson or purple basal blotch,
5-lobed.
Stamens 10; filaments densely pubescent at the base.
Ovary conoid, 4-6mm long, 8-locular,
densely rufous floccose-tomentose, eglandular.
Capsule unknown.

Seed Collections:

F 14060	1917
F 14068	1917

R. nakotiltum was the next Series *Principia* species to be bagged by George Forrest, the Scotsman discovering a population of plants growing on the mountains of the Mekong-Salween Divide in northwest Yunnan during June 1917, not quite three years on from his encounter with *R. proteoides,* though the pair are as different as chalk and cheese.

Two gatherings were made, the type specimen under the field number F 14060, along with F 14068, and seed was introduced from both collections. Plants raised from each batch were known to have once existed at Werrington Park in Cornwall, this reported by John McQuire and Mike Robinson in their *Pocket Guide to Rhododendron Species* (Kew, 2009), for the estate's owner, J. C. Williams, was a member of the syndicate that sponsored the expedition, but unfortunately, other specimens still extant in British gardens today, do not match with the dried material Forrest secured and are thought to be hybrids between *R. lacteum* and *R. taliense.*

True specimens of *R. nakotiltum* should be medium to tall growing shrubs, up to 3.5m in height, which sport a densely hairy ovary. The pretenders do not. That height criterion rather obviously cleaves the actual species from both *R. pronum* and *R. proteoides,* which have persistent rather than deciduous leaf bud scales, while the hirsute ovary provides the keying to cleave away *R. aureodorsale, R. clementinae, R. taliense* and *R. vellereum,* plus var. *sphaeroblastum.* A sparse cloak of floccose hairs on the outer surface of the var. *wumengense* ovary complicates matters, but can be resolved by measuring the corolla: 2.8 to 3.5cm long equals *R. nakotiltum;* a length of 4 to 4.5cm, var. *wumengense*.

Isaac Bayley Balfour and George Forrest described *R. nakotiltum* in Volume 12 of *Notes from the Royal Botanic Garden, Edinburgh,* this published in 1920, the epithet translation - 'having the wool plucked off' - a reference to the detersile nature of the abaxial indumentum's upper layer. This is composed of long-rayed stellate hairs, the lower layer of smaller, long-rayed hairs, both types providing those with a magnifying lens a further morphologic identification aid.

Except that finding the species in a cultivated setting remains just as tantalisingly elusive as rediscovering it out in the wilds, for George Forrest is still the only plant hunter to have ever rubbed shoulders with the taxon. Those few imposters bearing a *R. nakotiltum* label in British gardens - such as at Exbury and Muncaster (overleaf left and right) - though gifted a H6 hardiness rating by the RHS, open creamy-white or pale yellow blooms instead of the rose or white-flushed-rose corollas of the bona fide item, and note too the persistent leaf bud scales featured in the righthand image.

R. nakotiltum ?



R. nakotiltum ?



R. nakotiltum ?

R. pronum

Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
NW & W Yunnan, China.
Growing in rocky pasture, moist rocky slopes and along stony banks of streams, amongst rocks and on cliffs, at elevations of 2,600-4,600m.

Identification:
Dwarf shrub, prostrate, creeping, matted or mounding, 0.1 to 0.6m high;
annual growths and internodes short;
branchlets glabrous, rarely floccose.
Leaf bud scales persistent, numerous, large and closely set.
Leaves thickly coriaceous, oblanceolate through oblong-elliptic to elliptic,
3 to 8.8cm long by 1 to 2.8cm wide,
retained for 2-4 years;
upper surface dark green, glaucous and bluish-green at first, matt, slightly rugulose,
the leaf profile convex,
the midrib glabrous, the margins strongly recurved;
lower surface indumentum bistrate, continuous,
the upper layer thick and loose, woolly-tomentose or spongy with a surface pellicle,
greyish, brown or fawn,
the lower layer compacted, greyish-white,
the midrib densely woolly.
Petiole 5-12mm long, broad, the margins with or without ridges,
glabrescent to near glabrous.
Inflorescence 6-12-flowered;
bud scales and bracts persistent.
Rhachis 2-4mm long, glabrous.
Pedicel 10-32mm long, sparsely floccose to glabrescent or glabrous.
Calyx small, the 5 lobes obtusely triangular or ovate, each 0.5-2mm long,
their outer surface glabrous,
their margins glabrous or rarely sparsely floccose.
Corolla 3 to 4.5cm long, campanulate or funnel-campanulate,
white, creamy-yellow, or pink,
with or without crimson or purple spots,
5-lobed.
Stamens 10;
filaments glabrous, or moderately through densely pubescent at the base.
Ovary oblong or conoid, 5-7mm long, 5-6-locular,
glabrous, eglandular.
Capsule 10-14mm long, oblong, straight, blackish,
glabrous, eglandular.

Seed Collections:

R 11306	1923
F 30880	1930
R 25458	1932
JN 783	1999
BE 15-34	2015
BE 15-36	2015
BE 15-41	2015



R. pronum (F 30880)

R. pronum is one of the gems of Genus *Rhododendron.* Rarely does it flower in UK cultivation, but this fully hardy dwarf shrub is especially highly prized: for its foliage - the leaves bluish-green and glaucous when young; and its form - a tight rounded dome in the best clones, courtesy of very short annual growth extensions and branchlet internodes. Slow-growing is an understatement. The production of a single flower bud cause for major celebration. Yet despite being regarded as a plant for the connoisseur - basically because obtaining a specimen was next to impossible before seed was reintroduced by Jens Nielsen in 1999 (this bounty divided into lots and auctioned to the highest bidders on the annual American Rhododendron Society Seed Exchange) - for an alpine species, *R. pronum* is actually remarkably easy to grow, providing protection from late spring frosts is available to safeguard the early growth.

Once again, George Forrest was the first western plant hunter to spot a population of the plants, this event occurring on the mountains of the Chienchuan-Mekong Divide in September 1922. The encounter was with the prostrate form of *R. pronum,* growing at an altitude between 4,260 and 4,420m, and the shrubs were in fruit. But if any seed was returned to the UK under F 22334 - the type specimen - it failed to germinate.

A second group of plants was found in October 1922 and specimens returned under the field number F 22994, but again, if viable capsules were secured, no juveniles sprang up in the seed pans. Both Forrest and Joseph Rock made gatherings during June 1923: F 23375, collected on the Chienchuan-Mekong Divide; and R 9490, from Mount Kin-tzu Shan, west of the Yangtze bend at Shiku, near Tungtien. But only herbarium material was available so early in the season. Thankfully, perseverance finally paid off, the Austrian-American botanist returning to the same site at Shiku in October of that same year to secure seed under the field number R 11306, and this was successfully germinated.

Just two other viable lots had been returned before the Nielsen 1999 reintroduction: Forrest's 30880 from Chuiza Shan in 1930; and Rock's 25458, again from Kin-tzu Shan, but from his 1932 expedition. Bent Ernebjerg, a member of the ARS Danish Chapter, is the only other Western collector to have successfully bought back seed, his three lots gathered on Mount Laowo on the Mekong-Salween Divide, near Biluoxueshan during 2015, the sites at altitudes between 4,020 and 4,200m.

Harry Tagg and George Forrest described *R. pronum* in Volume 15 of *Notes from the Royal Botanic Garden, Edinburgh,* their text published in 1927. Unsurprisingly, the chosen epithet means 'prostrate'.

Within Series *Principia,* only *R. proteoides* is likely to cause a fleeting moment of identification confusion, despite both dwarf species being decidedly possessive of their leaf and flower bud scales. In the unlikely event of an ovary being available for inspection, a dense covering of cinnamon or rusty-red tomentum will reveal that *R. proteoides* is to hand, rather than the glabrous *R. pronum*. Fortunately, that same dyadic works for the branchlets - densely woolly, *R. proteoides;* sans any hairs, *R. pronum* - and the petioles (though here, the *R. pronum* leaf stalk might be glabrescent, rather than completely glabrous). However, one glance at the foliage of either species should normally dispel any doubts, especially if the close-set, narrow, markedly recurved and short blades of *R. proteoides* are being observed, as rarely will these be more than 4cm long or 1cm wide, while those of *R. pronum* can hit 8.8cm in length and be up to 2.8cm in width.



R. pronum (F 30880)

R. vellereum (KW 5656)

R. vellereum

Hardiness:
H6-7.
Flowering Period:
March-April.
Distribution in the wild:
S & E Tibet; SE Qinghai, China.
Growing in, at the margins of and above conifer or board-leaved forest,
in rhododendron thickets, and on dry and stony mountain slopes,
at elevations of 2,700-4,600m.

Identification:
Shrub or small tree, compact and rounded, to broadly upright, 2 to 6m high;
branchlets glabrous, rarely thinly white-floccose at first, becoming glabrescent.
Leaf bud scales deciduous; the buds pointed.
Leaves thickly coriaceous,
oblong-elliptic through oblong-lanceolate,
5.5 to 14cm long by 1.8 to 5cm wide,
retained for 2 years;
upper surface dark green, shiny, smooth or slightly rugulose,
often with small or large patches of white sheen,
the midrib glabrous, the margins flat or slightly recurved;
lower surface indumentum bistrate, continuous,
the upper layer thick, soft and spongy, the surface forming a glossy pellicle,
rarely splitting into small or large patches,
silvery-white, yellowish-grey or fawn,
the lower layer thin and compacted,
the midrib moderately through densely hairy.
Petiole 8-20mm long,
variably white-floccose above, glabrous below.
Inflorescence 10-30-flowered.
Rhachis 5-16mm long, glabrous or hairy.
Pedicel 10-40mm long, red, glabrous,
rarely sparsely floccose becoming glabrescent.
Calyx minute, the 5 lobes triangular or ovate, each 0.5-1mm long,
their outer surface glabrous,
their margins sparsely ciliate or glabrous.
Corolla 2.5 to 4cm long, campanulate or funnel-campanulate,
white, white flushed pink, pink, white flushed rose, rose, or reddish-magenta,
with or without crimson or purple spots,
5-lobed.
Stamens 10;
filaments sparsely pubescent at the base or along the lower half.
Ovary slender or oblong, rarely conoid, 4-6mm long, 5-8-locular,
red, glabrous, eglandular.
Capsule 20-35mm long, slender, strongly curved,
glabrous, eglandular.

Seed Collections:

KW 5656	1925	LS&T 6302	1938	LS&E 15831	1946/1947
KW 10700	1933	LS&T 6645	1938	CV 9547	1995
L&S 1342	1936	LS&T 7190	1938	KR 3336	1995
L&S 1392	1936	LS&E 12002	1946/1947	KR 3446	1995
L&S 1397	1936	LS&E 12380	1946/1947	KR 3654	1995
L&S 1397	1936	LS&E 12393	1946/1947	KR 3726	1995
L&S 1549	1936	LS&E 13251	1946/1947	KR 3804	1995
L&S 1555	1936	LS&E 13509	1946/1947	KR 3844	1995
L&S 1559	1936	LS&E 13516	1946/1947	AC 3127	1997
L&S 1860	1936	LS&E 13524	1946/1947	AC 3128	1997
L&S 2627	1936	LS&E 13671	1946/1947	AC 3129	1997
L&S 2738	1936	LS&E 13747	1946/1947	AC 3131	1997
L&S 2797	1936	LS&E 13909	1946/1947	AC 3134	1997
LS&T 3587	1938	LS&E 15001	1946/1947	AC 3329	1997
LS&T 3600	1938	LS&E 15002	1946/1947	CHC 8509	1998
LS&T 3607	1938	LS&E 15003	1946/1947	AC 4391	2000
LS&T 3609	1938	LS&E 15016	1946/1947	AC 4394	2000
LS&T 3623	1938	LS&E 15022	1946/1947	AC 4443	2000
LS&T 3628	1938	LS&E 15036	1946/1947	AC 4686	2000
LS&T 4140	1938	LS&E 15157	1946/1947	TARRVS 036	2002
LS&T 4536	1938	LS&E 15774	1946/1947	TARRVS 037	2002



R. vellereum (KW 5656)

The decision by the Edinburgh Revision botanists to make *R. vellereum* synonymous under the earlier-described *R. principis* caused controversy at the time and remains a divisive issue today. The seed collection mismatch might very well indicate the scale of that disapprobation - 43 for *R. vellereum* (at the time, 63 today); 0 for *R. principis* (then, and now). Moreover, the one line entry in Part 1 of the James Cullen and David Chamberlain-authored *A Preliminary Synopsis Of The Genus Rhododendron* (*Notes from the Royal Botanic Garden, Edinburgh,* Volume 36, 1978, page 119), potently illustrates the depth of knowledge and amassed expertise when pen was put to paper.

Because as outlined in the Taxonomic Revision bullet points, no Western plant hunter had seen *R. principis* in the wild since early May 1890 when the population encountered by Pierre Gabriel Bonvalot and Prince Henri d'Orléans was discovered. It remained hidden across the decades leading up to 1949 - the first 'Golden Age of Gathering' - as well as after China's 1980 reopening, the swarm of teams and individuals permitted to then botanise those hills in a second golden age notwithstanding. And equally, the Chinese too have failed to relocate that clump of plants on the route between Lhassa and Batang.

In his full Subgenus *Hymenanthes* revision text (*Notes,* Volume 39, Number 2, 1982), Doctor Chamberlain writes that:

> 'some of the ovaries of the type of *R. principis* have a few scattered hairs, whereas they are totally glabrous in the remaining material, including the type of *R. vellereum*. This is the only difference between the two taxa; the latter is therefore not maintained here'.

A statement accepted as fact for the past forty years by most rhododendron-savvy botanists, as well as a few knowledgeable horticulturalists.

But it is wrong.

Because the herbarium specimens of *R. principis* do not have the glossy surface pellicle that is such a feature of the abaxial leaf indumentum of *R. vellereum*.

However, if morphologically that were the only difference between the two, then synonymy might be justified, but again, it is not.

Because as John Hutchinson and Harry Tagg reported in the entry for *The Species of Rhododendron,* and H. H. Davidian confirmed in Volume 3 of his *The Rhododendron Species* (published in 1930 and 1992, respectively): the branchlets of *R. principis* are densely brown woolly-tomentose, while those of *R. vellereum* are glabrous, or very rarely thinly whitish-floccose at first, but then quickly glabrous; the *R. principis* inflorescence holds 7 to 12 corollas, while the flower buds of *R. vellereum* contain 12 to 20 corollas - or up to 30, as reported by Peter and Kenneth Cox in their 1997-published *Encyclopedia of Rhododendron Species* (who grow the Ludlow, Sherriff and Elliott 15797 gathering at their garden near Perth); and lastly, the corollas of *R. principis* are funnel-campanulate in shape, while the *R.vellereum* blooms may be funnel-campanulate, but usually trend towards a campanulate profile, indeed, they are 'more campanulate than most of the subsection' to once again quote Peter and Kenneth Cox, two acknowledged and highly regarded 'hands-on' experts. Oh, and the *R.vellereum* pedicels are flushed red. As is the ovary.

Taken together, these character differences are substantial.

They require that *R. vellereum* be returned to specific status, a ranking from which it should never have been downgraded.

This is also evidenced by the biogeography:

For the single given locale for *R. principis* clearly points towards a likelihood of natural hybridity, which for an increasing number of other rhododendron taxa previously gifted specific status, has proven to be the case after on-the-ground field study, while in contrast, the relatively wide distribution of *R. vellereum* in the south and east of Tibet, and in the southeast of China's Qinghai Province, speaks for itself. As do the multiple gatherings made from those populations.

Frank Kingdon-Ward was the plant hunter who discovered the species, coming upon *R. vellereum* above Nang Dzong, in the Tsangpo Gorge, southeast Tibet, on May 2nd, 1924. Herbarium material was gathered under the field number KW 5640 and later seed, under KW 5656, this introduced into British gardens during 1925; and as indicated above, the taxon was described by Hutchinson and Tagg in the Rhododendron Society's *The Species of Rhododendron,* the chosen Latin epithet meaning 'fleecy' in English.

Mature specimens of *R. vellereum* are a feature of many of the great private and public rhododendron collections found across the UK, with named clones from the Kingdon-Ward introduction twice having secured an Award of Merit from the Royal Horticultural Society (in 1976 and 1979, when shown by R. N. S. Clarke, of Borde Hill, Sussex), though of course, all will still be incorrectly labelled.

Within Series *Principia, R. vellereum* can be distinguished from *R. taliense* by the glabrous branchlets and pedicels; from *R. sphaeroblastum* by the spongy, silvery-white, yellowish or fawn indumentum, complete with that surface pellicle; from *R. pronum* and *R. proteoides* by the 2 to 3m-high rounded habit; from *R. aureodorsale* and *R. clementinae* by possession of a 5-lobed calyx and 10 stamens within each corolla (instead of 6-7 and 12-14); and from *R. nakotiltum,* by a glabrous ovary and the persistent nature of the upper layer of abaxial leaf indumentum.

In cultivation, though fully hardy with a H6-7 rating, *R. vellereum* flowers from March into April, and begins extending its new growth equally early in the season, so a planting site offering protection from late spring frosts is essential. Mild west coast gardens may even find their mature specimens awash with bloom in November or December, though such timing was - until recently - a fairly rare event. Some clones often set multiple flower buds - the 'Lost Horizon' award-winner is one of these; as are plants grown from the LS&E 15797 introduction - but most forms are shyer, and all will take many years from seed or a grafted scion before commencing an annual floral display.



R. vellereum (KW 5656)

R. vellereum (KW 5656) ‘Lost Horizon’



R. vellereum (L&S 2738)



R. vellereum (L&S 2797)



R. vellereum (LS&E 15774)



R. vellereum (LS&T 6645)

R. aureodorsale

Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
Taibai Mountains, SW Shaanxi, China.
Growing in alpine forests and thickets on mountain slopes,
at elevations of 2,700-3,500m.

Identification:
Shrub or small tree, rounded to broadly upright, 2 to 8m high;
branchlets glabrous.
Leaf bud scales deciduous.
Leaves thickly coriaceous,
oblanceolate through broadly elliptic,
8 to 10cm long by 3 to 5cm wide,
retained for 1-2 years;
upper surface dark green, slightly rugulose,
the midrib glabrous, the margins slightly recurved;
lower surface indumentum bistrate, continuous,
the upper layer thick or thin, without a pellicle, detersile, lost by maturity, tawny,
the lower layer appressed, greyish,
the midrib hairy.
Petiole 15-20mm long, narrowly winged, glabrous.
Inflorescence 6-14-flowered.
Rhachis *c.* 12mm long.
Pedicel 20-25mm long, sparsely hairy.
Calyx large, the 7 lobes each *c.* 12mm long,
their outer surface and margins sparsely hairy.
Corolla 2.5 to 3cm long, funnel-campanulate,
white, white flushed rose, heavily spotted crimson,
7-lobed.
Stamens 14; filaments pubescent along the lower half.
Ovary glabrous, eglandular.
Capsule 10-15mm long, oblong, straight, glabrous.

Seed Collections:

JN 11003	2011
JN 11004	2011

As indicated above, *R. aureodorsale* was at first considered to be a subspecies of *R. clementinae*. The taxon was originally described by Wen-Pei Fang and Jing-Qui Fu (*Flora Tsinlingensis,* Volume 1, Number 4, 1983), although a more recent text written by Yong-Peng Ma and Jens Nielsen, this co-authored by Nai-Wei Li and Wei-Bang Sun, and published in Volume 30, Number 2, of the *Nordic Journal of Botany* during 2012, supplements the morphology, as does additional detail from a report and photographs published online in March 2015 by Sten Ridderlöf, director of the Arboretum Lassas Hagar, on Svartlöga Island, Stockholm, Sweden. This information was gathered in June 2004 whilst the author was a member of a Swedish University of Agricultural Sciences expedition to Mount Taibai, the tallest peak of the Qin Mountains in Shaanxi Province, indeed of eastern China as a whole, which, between the altitudes of 2,700 and 3,500m, is the residence of *R. aureodorsale*.

Quoting from the 2012 account: 'some key floral characters were overlooked'; and, the isolated distribution was 'not considered when the species was first described'.

Therefore, it can now be authoritatively stated that *R. aureodorsale* differs from *R. clementinae* in the tawny colour of its abaxial indumentum, the latter displaying hairs that are whitish through pale cinnamon; in the lack of a surface pellicle; in having sparsely hairy, rather than glabrous pedicels and calyx lobes; in possessing funnel-campanulate rather than broadly campanulate shaped corollas; and in sporting a calyx and corolla that are consistently 7-lobed, rather than 6- or 7-lobed.

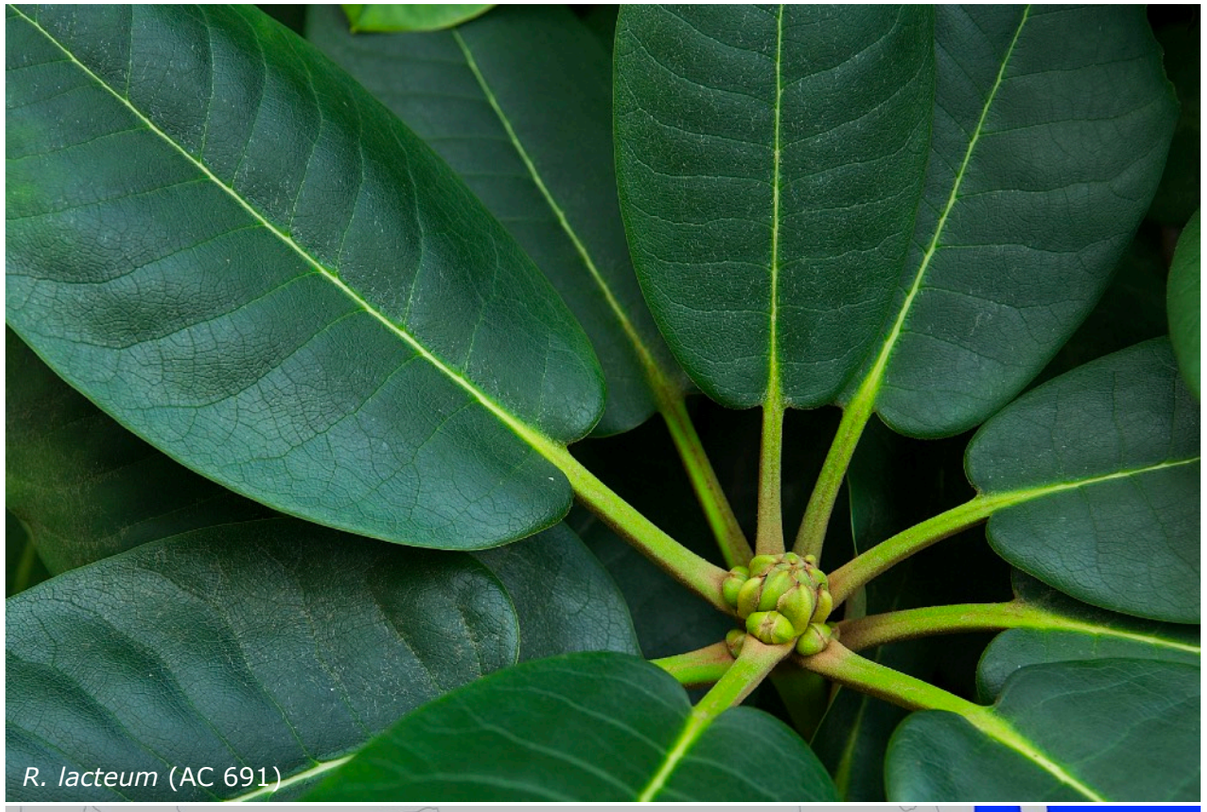
Ma and Nielsen describe the flower colour as white, but Sten Ridderlöf's text and pictures indicate strongly rose-tinted blooms in addition to this hue, these more in sync with the colour range of *R. clementinae,* where the pigmentation extends to bright rose.

The disjunct populations must clearly influence the taxonomic treatment, for Mount Taibai in Shaanxi Province is some considerable distance from the *R. clementinae* distribution in southeast Tibet, southwest Sichuan and northwestern Yunnan. However, the 7-lobed calyx and corolla of *R. aureodorsale* demonstrate a clear antecedence with *R. clementinae,* especially as the only other elepidote rhododendrons currently found growing in the same alpine forests and mountain slope thickets, are *R. pachytrichum* - between the 2,800 and 3,000m contours - and *R. purdomii* - from 3,000m up to 3,500m - both of which are decisively 5-lobed.

One or two doyens have mooted an association with *R. przewalskii,* while others point to a Ludlow, Sherriff and Taylor collection of dried material from southern Tibet, gathered under the field number LS&T 3868 in 1938. These specimens have an apiculate leaf tip, a thin white abaxial indumentum, and a whitish tomentum on their petioles. Moreover, their 7-lobed corollas have prompted determinations that reference the find to *R. clementinae* despite the fact that the two are widely separated geographically (four other collections listed in successive editions of the *Rhododendron Handbooks* as *R. clementinae* - LS&T field numbers 3618, 3878, 6608 and 7200 - are elsewhere than herein, consistently overlooked in accounts of the species distribution). It could be that these plants mirror the disjunct situation apropos *R. aureodorsale,* but as no other plant hunter has yet recorded an encounter with *R. clementinae* in southeastern Tibet, such must remain speculative until genetic examination provides incontestable evidence showing exactly how intimate the a*ureodorsale-clementinae* relationship is or was, and whether any third party input has occurred. The specific ranking adopted by Ma, Nielsen, Li and Sun is therefore maintained, even though this may have been prematurely assigned.

Jens Nielsen gathered all three batches of *R. aureodorsale* seed that have been introduced into British gardens, the first arriving in 2003 via the ARS seed exchange, the others in 2011. Juvenile plants are reportedly slow growers and have garnered a reputation in some quarters as being a mite difficult.

Section *Leiorrhodium* Subsection *Taliensia* Series *Wightia:*



R. lacteum (AC 691)



Taxa:

R. aganniphum
R. barkamense
R. beesianum
R. bhutanense
R. lacteum
R. phaeochrysum
    R. phaeochrysum var. *dryophyllum*
    R. phaeochrysum var. *phaeochrysum*
R. przewalskii
R. traillianum
R. wasonii
R. wightii
R. wiltonii

Taxonomic Revision:

The rhododendrons placed in Series *Wightia* can be identified from all the other occupants of Subsection *Taliensia* by their unistrate abaxial leaf indumentum and eglandular ovary.

The most populous of the four subdivisions,
despite several natural hybrids being removed from the fold,
these species sport a lower leaf surface indumentum featuring a quartet of hair types:
fasciculate, radiate, ramiform or stellate.

Fasciculate hairs have a broad multicellular stem and spreading, cylindric arms,
these composed of cells arranged end-to-end.

Radiate hairs have very short stems or none at all,
and the cells forming the rosette of branches are either spherical or bottle-shaped.

Ramiform hairs have a short stem, with many branched arms at the top.

Stellate hairs have a fairly long, multicellular stem, topped with spreading branches.

Most members of the series have a leaf indumentum composed of a single hair type,
the exceptions being *R. phaeochrysum,* which displays a radiate through sub-ramiform mix,
and *R. wiltonii,* which sports ramiform through stellate to fasciculate hairs.

A microscope is required to identify each type, but distinguishing one species from another,
in the field or in a garden situation, can be achieved without resort to such.

Series Morphology:

Shrubs or small trees, compact or rounded, to broadly upright, 0.3 to 9m high;
branchlets hairy, glabrescent or glabrous, eglandular, occasionally glandular;
bark grey-brown, rough.

Leaf bud scales deciduous, sometimes sticky.

Leaves evergreen, coriaceous, often thickly so,
oblanceolate, obovate, ovate-lanceolate through ovate-oblong, broadly elliptic or oblong,
4 to 18.5cm long, rarely to 30cm long, by 1.5 to 10cm wide,
apex acute, acuminate, rounded or obtuse, and often apiculate or mucronate,

base obtuse, rounded, cordate or cuneate, sometimes tapered,
rarely decurrent on the petiole;
upper surface pale or dark green, somewhat rugulose, rarely bullate-rugose,
matt or shiny, glabrous when mature or with the vestiges of hairs, eglandular,
the midrib grooved, glabrous or hairy, eglandular,
the veins deeply impressed, the margins flat or recurved;
lower surface with a unistrate indumentum, dense, thick or thin, usually continuous,
sometimes becoming glabrescent and glabrous over time,
woolly, spongy or felted, sometimes compacted or agglutinated, occasionally powdery,
occasionally with a pellicle or thin surface film,
dark brown, cinnamon, fawn or reddish-brown at maturity,
more rarely whitish-grey or yellowish-brown,
the hairs ramiform, radiate, stellate or fasciculate,
rarely intermixed with glandular hairs,
the midrib prominent, hairy or glabrous, eglandular, rarely stalked-glandular,
the veins usually concealed.

Leaf anatomy comprises a 2- or 3-layered upper epidermis,
with the cells in all three layers of roughly equal size;
the cuticle is approximately as thick as the cells are deep; water tissue is absent;
the lower epidermis cells are not prolonged into papillae.
Sclereid cells are present in the leaf tissue of most species,
but absent in the blades of *R. beesianum, R. lacteum* and *R. wightii*.

Petiole 3-47mm long, grooved above, sometimes deeply so,
occasionally narrowly winged or ridged,
hairy, glabrescent or glabrous, eglandular, rarely stalked-glandular.

Inflorescence racemose-umbellate, dense but loose, 7-15-30-flowered;
the bud scales sometimes persistent, occasionally sticky.

Rhachis 4-35mm long, glabrous or hairy, eglandular, rarely stalked-glandular.

Pedicel 7-43mm long, hairy or glabrous, eglandular, rarely stalked-glandular.

Calyx small or minute, 5-lobed, these unequal and 0.5-2mm long,
their outer surface and margins hairy or glabrous, eglandular or rarely stalked-glandular.

Corolla 2 to 5.5cm long, campanulate, sometimes broadly so, or funnel-campanulate,
white to pink, creamy-white, pale or lemon yellow, pinkish-rose or rose,
rarely purplish through near red,
often conspicuously spotted, sometimes blotched,
without nectar pouches;
5-lobed, these rounded and emarginate.

Stamens 10, unequal, shorter than the corolla;
filaments pubescent at the base or along the lower third, half or two-thirds,
or glabrous, eglandular.

Ovary oblong, slender, conoid or ovoid, 4-8mm long, 5-11-locular,
glabrous or hairy, eglandular.

Style glabrous, rarely hairy at the base, eglandular.

Capsule 10-45mm long, oblong or oblong-oval, straight or slightly curved,
glabrous or hairy, eglandular.

Seeds elongate, narrowly winged or not winged,
each end usually with appendages (occasionally very small).



R. przewalskii

R. wightii

Hardiness:
H6-7.
Flowering Period:
March-April.
Distribution in the wild:
Nepal; S Tibet; Bhutan; Sikkim, Arunachal Pradesh & Assam, NE India.
Growing in thickets and amongst scrub, on rocky mountain slopes and ridges,
at elevations of 3,350-4,550m.

Identification:
Shrub or small tree, open and broadly upright, 2 to 6m high;
branchlets stout, sparsely grey-floccose, becoming glabrous with age.
Leaf buds sticky.
Leaves obovate through oblong-elliptic to oblong-ovate,
5 to 18cm long by 3.5 to 7cm wide,
retained for 1-2 years;
upper surface dark green;
lower surface indumentum unistrate,
dense, continuous, thin, compacted,
pale fawn at first, becoming brown, cinnamon or rusty-brown with age,
the hairs ramiform,
the midrib hairy or glabrous.
Petiole 10-25mm long, sparsely tomentose becoming glabrescent.
Inflorescence 10-20-flowered;
the buds sticky, the scales persistent.
Rhachis 15-20mm long.
Pedicel 15-30mm long, tomentose, the hairs yellowish or grey,
sparsely glandular.
Calyx minute, the lobes each 0.5-1mm long.
Corolla 3 to 4.5cm long, campanulate,
white, cream, pale yellow or lemon yellow,
with crimson, brown or purple spots, with a crimson basal blotch.
Stamen filaments pubescent at the base.
Ovary densely tomentose, the hairs brown or reddish-brown.
Capsule 20-30mm long, oblong, sometimes with the vestiges of hairs.

Seed Collections:

Cooper 2217a	1914	Bowes-Lyon 15041	1969	AC 5430	2004
Cooper 2590	1914	BLM 92	1971	AC 5440	2004
Cooper 3234	1914	McBeath 1234	1981	AC 5484	2004
Cooper 3498	1914	Hedegaard B100	1983	AC 5489	2004
Cooper 3527	1914	Hedegaard B117	1983	AC 5497	2004
Cooper 3698	1914	KR 886	1985	AC 5515	2004
L&S 49	1933	P&L 12	1986	KR 8205	2005
L&S 606	1934	Bowes-Lyon 4	1987/1989	KR 8279	2005
KW 11588	1935	CHM 3130	1988	KR 8287a	2005
L&S 2859	1936	EGM 70	1988	KR 8288	2005
L&S 2916	1936	KEKE 698	1989	KR 8605	2006
KW 13655	1937	C&S 1590	1990	KR 9527	2008
L&S 3088	1937	C&S 1640	1990	TDA 320	2013
L&S 3091	1937	Fox 98	1990	TDA 324	2013
LS&H 16100	1949	Kinmouth 104	1990	TDA 338	2013
LS&H 16249	1949	KR 1666	1990	TDA 340	2013
LS&H 18899	1949	KR 1743	1990	TDA 341	2013
LS&H 18959	1949	EMAK 569	1991	TDA 342	2013
LS&H 20277	1949	EMAK 641	1991	TDA 871	2016
LS&H 20641	1949	EMAK 916	1991	TDA 874	2016
LS&H 20642	1949	Sinclair 1736	1993	TDA 876	2016
Stainton 241	1956	DSE 154	1995	TDA 1019	2016
Stainton 272	1956	DSE 159	1995	TDA 1021	2016
Bowes-Lyon 3241	1966	KCSH 0322	2003	TDA 1027	2016
Bowes-Lyon 5089	1967	NAPE 0161	2003		

R. wightii (C&S 1640)

Sir Joseph Dalton Hooker was the first plant hunter to encounter one of the occupants of Series *Wightia,* in fact, coming across *R. wightii* itself during 1848. A full description, plus accompanying colour illustration, appears in his botanic travelogue of the expedition, *The Rhododendrons of the Sikkim-Himalaya,* which was published in 1851, and some sixty-two years later, in 1913, the species was illustrated and described in Volume 139 of *Curtis's Botanical Magazine.* However, any rhodophile fascinated by such historical documents, will have noticed a rather obvious dichotomy: Hooker's tab 27, and the Matilda Smith/John Nugent Fitch tab 8492 portraits, do not match.

For they detail two different plants.

One, the true species, as found in the wild.

The other, a seed pan rogue: the sole survivor from the Hooker germination; a cross between *R. wightii* and *R. falconeri,* with a lax, lopsided truss of up to twenty, pale sulphur-yellow corollas, and 25cm-long, dark green, often convex leaves.

That was widely distributed as the real McCoy.

And even planted in the Himalayan House at Kew.

Where it flowered in April 1911, and innocently posed for the top botanical illustrators of the day - the team employed by *Curtis's Botanical Magazine*.

Seedlings and young plants of the true *R. wightii* are now known to be very slow growing and in cultivation, apt to die off for any number of reasons, most of which remain completely inexplicable. Until Len Beer, Roy Lancaster and David Morris re-introduced the species from Nepal in 1971 - under the field number BLM 92 - the consensus view amongst experts was that no one had raised the true species to flowering-size in a British garden. Those specimens that still existed and bore a *R. wightii* label were propagated grafts from the AM-winning plant that James Mangles had conjured-up from Hooker's seed in his garden at Valewood and Clara Mangles had then raised at Littleworth Cross after her brother's death in 1884. And despite the plant's ungainly and sprawling habit, the blooms it opens are usually stunning and often produced in prolific quantity. That the 5- to 7-lobed corollas offered more than a hint of a ventricose inheritance mostly went unremarked, but it was certainly noticed by at least one leading doyen:

Because on a visit to Littleworth Cross at the end of April 1915, J. G. Millais clearly had his doubts, which were expressed in Volume 1 of *Rhododendrons and the Various Hybrids,* this published in 1917:

> 'For a long time this was the only specimen plant in England. It resembles *R. falconeri* ssp. *eximium* in foliage, but has delicate yellow flowers in a tall somewhat uneven truss. I cannot say that in flower it bears much resemblance to Hooker's description and figure of *R. wightii,* and it is possible that the variety grown at Littleworth is not the true form'.

Indeed.

But in 1915, that plant was close to 3m high, with a circumference of almost 23m, and two years before, had been blessed by the RHS with an Award of Merit. Equally, from the twenty-six batches of seed returned to the UK between 1914 and 1969 - by Roland Cooper, Frank Kingdon-Ward, Frank Ludlow and George Sherriff, John Stainton, and Simon Bowes-Lyon - not a single true specimen attained adulthood. And precious few individuals have achieved that status from the forty-plus lots that followed the BLM re-introduction.

But those collections did plot a wild distribution that is now known to extend from Nepal into southern Tibet, Sikkim and Bhutan, as well as take in two other northeast Indian states - Arunachal Pradesh and Assam. That endemicity makes *R. wightii* an outlier within its series, as well as within Subsection *Taliense* as a whole, isolated from all but one of its relatives - *R. bhutanense* - but sharing much of the morphology of *R. beesianum* and *R. lacteum* away to the east.

One such trait is the sticky leaf and flower buds, which identify the species from all the other members of the series except for *R. beesianum*. Here, keying can be achieved by inspecting the leaf abaxial indumentum hairs under magnification - ramiform for *R. wightii,* radiate for *R. beesianum* - although an easier option is simply to compare the foliage: with obovate blades 5 to 18cm long by 5 to 7cm wide found on *R. wightii,* their petioles never winged; and oblanceolate-shaped leaves 9 to 30cm long and 2.6 to 8.3cm wide present on *R. beesianum,* their base often tapering along the petioles as a narrow wing or ridge. And if the plants are in bloom, the task is made even easier, for the corollas of *R. beesianum* are never yellow or cream, but pink through rose - except for the occasional white-flowered clone.

That *R. wightii* is still a very rare find in UK rhododendron gardens today will not come as a surprise to any of the nurserymen who once propagated it, as even in expert hands - or inside the environs of a dewpoint cabinet - young seedlings are highly likely to succumb. They also set a new standard for slow growth. So those specimens that did occasionally feature on a short-stock list were likely to be grafted scions on an understock rather than juveniles on their own roots. But according to the RHS online plant finder, not a single specialist rhododendron nursery is currently offering the species for sale.

Technically, *R. wightii* has a H6-7 hardiness rating, yet it also has a March-April bloom time, so should the availability situation improve to the point where money can change hands, east coast and colder, inland gardens, will need to provide a sheltered planting spot if the flowers are eventually to come through a cloudless, frosty night unscathed. All agree that cultivation-wise, the hybrid is far easier to grow even if it is not as tough - H5-6 is the rating and late April into May the flowering period - but any prospective purchaser is also likely to have their hopes dashed following a search of the nursery web pages. A juvenile will need the same cosseting as the species, except growth will prove to be robust and vigorous, the poor habit a direct result of such. Authors who suggest an ultimate height of 2.5m for *R. x wightii* should be ignored, for they are wrong by at least a factor of two, and some of the clones that may be used to provide future scions have come into existence via the Littleworth Cross plant being hand-pollinated so expect a degree of variation. E. J. P. Magor confirmed this practice was ongoing in Volume 1, Number 1, of *The Rhododendron Society Notes,* published in 1916, reporting that 'seedlings of Rh. Wightii, from seed kindly sent by Miss Mangles, are growing well, though slowly'.

Hooker's choice of epithet for the species - by the by - was an honorific for the former Superintendent of the Madras Botanic Garden, Robert Wight (1796-1872), who assisted Sir Joseph during the course of his Himalayan foraging.



R. wightii (C&S 1640)



R. wightii (C&S 1640)



R. x wightii

R. przewalskii

Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
E & SE Qinghai, SE & SW Gansu, W Shaanxi, & N, C & W Sichuan, China.
Growing in forests, in thickets, and on mountain slopes,
at elevations of 2,600-4,300m.

Identification:
Shrub, rounded and compact, to broadly upright, 1 to 3m high;
branchlets glabrous.
Leaves broadly oblong through elliptic to ovate-elliptic,
4.5 to 11cm long by 1.8 to 5cm wide,
retained for 1-2-3 years;
upper surface pale green, sometimes with a metallic 'bloom-like' sheen;
lower surface indumentum unistrate,
very thin, compacted, agglutinated, continuous at first,
becoming glabrescent or completely glabrous,
whitish-grey, pale brown, yellowish-brown or rusty-yellow,
the hairs stellate, long-rayed.
Petiole 8-25mm long, yellowish.
Inflorescence 10-15-flowered.
Rhachis 4-15mm long.
Pedicel 10-30mm long.
Calyx minute, the lobes triangular or rounded, each 0.5-1mm long.
Corolla 2.3 to 3.5cm long, campanulate or funnel-campanulate,
white through pale pink, or rose-pink,
with or without crimson-purple spots.
Stamen filaments sparsely pubescent at the base or along the lower half.
Ovary glabrous.
Capsule 15-20mm long.

Seed Collections:

W 4231	1910/1911	R 13694	1925/1926
W 4232	1910/1911	R 13695	1925/1926
W 4243	1910/1911	CHM 2545	1986
Farrer 104	1914	SICH 141	1988
Farrer 510c	1914	SICH 357	1988
R 13278	1925/1926	CCH 3929	1989
R 13302	1925/1926	CCH 3944	1989
R 13612	1925/1926	Cox 5073	1990
R 13629	1925/1926	SICH 550	1991
R 13676	1925/1926	AC 4007	2001
R 13677	1925/1926	AC 4034	2001
R 13679	1925/1926	AC 4062	2001
R 13681	1925/1926	AC 4074	2001
R 13685	1925/1926	AC 4854	2001
R 13686	1925/1926		



R. przewalskii

Geographer and explorer Nicolai Mikhaylovich Przewalski - Nikolay Przehevalsky, is an oft-used alternative spelling - began his second expedition for the Russian Geographical Society at Kyakhta, on the border with Mongolia, in 1870. He then travelled through the Gobi Desert to Beijing, continued along the upper Yangtze, and entered Tibet in 1872, returning to Russia a year later. During that circumambulation, apart from amassing over 5,000 plant specimens, 3,000 insects, 1,000 birds, 170 mammal skins and 70 reptiles, vital intelligence information was also passed on to his true employers, who promoted him to Lieutenant-General shortly after his homecoming and eased his appointment onto the General Staff of Tsar and Emperor, Alexander II. For Przewalski was a spy. He was also an unrepentant racist who believed the Chinese people to be cowardly, dirty and lazy - 'the blend of a mean Moscow pilferer and a kike', is one credited quote - and other non-Chinese Asians to be uncivilised and an evolutionary backwards people. Typhus virulently curtailed Przewalski's bile in 1888, ending his life at the age of forty-nine.

It was sometime between 1872 and July 1873, while reconnoitring Gansu Province, that this Putin-esque humanitarian discovered the rhododendron that, courtesy of an 1877 Karl Maximovich botanic description, regrettably still bears his name, the text published in Volume 23 of the *Bulletin de l'Académie Impériale des Sciences de Saint-Pétersbourg*.

Closely allied to *R. phaeochrysum, R. przewalskii* has a much thinner abaxial leaf surface tomentum that is compacted and agglutinated, not felted or suede-like. This usually becomes glabrescent by maturity, and is often completely lost. Equally, the total lack of any hairs on the branchlets, petioles, rhachis, pedicels and calyx lobes is also distinctive, as is the yellow-coloured adaxial midrib.

The species was first introduced into British gardens from the Saint Petersburg Botanical Garden via Kew in the early 1880s, with subsequent batches of seed contributed by Ernest Wilson in 1910/1911, Reginald Farrer in 1914, and a double-figure count from Joseph Rock during 1925/1926. Peter Cox, Peter Hutchison and Donald Maxwell McDonald were responsible for reintroducing the species in 1986, with another eleven documented lots arriving up until 2001.

Classification-wise, in the not too distant past, Chinese botanists actually split the taxon into five subspecies - they still divide it into four - one of which, *R. przewalskii* ssp. *dabanshanense,* has been introduced into UK cultivation from the Gothenburg Botanic Garden in Sweden, as well as germinating in seed pans from a 2003 collection made in northern Sichuan by Jens Nielsen (this listed on the 2004 American Rhododendron Society Seed Exchange). Morphologically, the leaves of ssp. *dabanshanense* will be found to be completely glabrous and the corollas, instead of being 2.3 to 3.5cm in length, just 1 to 2cm long. The Edinburgh Revision 1982 Subgenus *Hymenanthes* text sunk what was then the specific-ranked *R. dabanshanense* under *R. przewalskii,* but had changed that to subspecies status when *The Genus Rhododendron: Its Classification & Synonymy* arrived in book form during 1996. More recently, Chinese botanists have gone the other way, reimposing synonymy under *R. przewalskii* ssp. *przewalskii* (hence the five to four reduction). The latter approach is followed herein, with the three remaining subspecies - *chrysophyllum, huzhuense* and *yushuense;* distinguished by leaf length and width, abaxial indumentum colour, hair type and persistence, corolla number, and a glabrous or not ovary - yet to be introduced into UK cultivation.

R. przewalskii takes around twenty years to top the 1m-mark in British gardens and even longer to open any blooms, is rated H6-7 by the RHS, and the few flower buds that it does set open in April-May. The plant is used medicinally as an astringent in China, however, its adoption as a diarrhetic, although far more appropriate for its honoree, is not currently being considered by NICE.


R. przewalskii


R. przewalskii

R. lacteum

R. lacteum

Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
W Central & NE Yunnan, & S Sichuan China.
Growing at the margins of fir forest, in rhododendron thickets,
and on rocky mountain slopes, at elevations of 3,000-4,100m.

Identification:
Shrub or small tree, rounded or broadly upright, 1.2 to 9m high;
branchlets stout, variably floccose at first, the hairs fawn, the tomentum thin,
becoming glabrescent to glabrous.
Leaf scars large and conspicuous.
Leaves thickly coriaceous,
obovate through obovate-elliptic to broadly elliptic,
6.8 to 18.5cm long by 3.7 to 10cm wide,
retained for 1-2 years;
upper surface dull or dark green;
lower surface indumentum unistrate,
continuous, thin, compacted, suede-like,
greyish-brown or fawn,
the hairs radiate.
Petiole 10-47mm long,
variably floccose at first, the hairs fawn, the tomentum thin,
becoming glabrescent to glabrous.
Inflorescence 12-30-flowered.
Rhachis 12-35mm long, sparsely floccose or pubescent.
Pedicel 18-43mm long,
moderately through densely floccose at first, becoming glabrescent.
Calyx minute, the lobes rounded or triangular, each 0.5-1.5mm long,
their outer surface glabrous or sparsely pubescent,
their margins glabrous or ciliate.
Corolla 3.5 to 5cm long, widely campanulate,
pure yellow, pale yellow or canary yellow, rarely pure white,
without spots, with or without a crimson-purple basal blotch.
Stamen filaments densely pubescent at the base.
Ovary densely pale brown tomentose.
Capsule 15-30mm long, tomentose.

Seed Collections:

F 6778	1910	CNW 966	1994
F 11575	1912/1914	CNW 972	1994
R 6346	1923/1924	CNW 977	1994
F 25583	1924/1925	CNW 978	1994
F 25589	1924/1925	CNW 980	1994
F 28248	1930/1931	CNW 1047	1994
McLaren T 126	1932/1939	CNW 1059	1994
SBEC 235	1981	CNW 1066	1994
SBEC 345	1981	AC 872	1995
SBEC 582	1981	C&H 7164	1995
CLD 1282	1990	EGM 354	1995
AC 670	1993	EGM 356	1995
AC 671	1993	EGM 357	1995
AC 672	1993	AC 2050	1996
AC 674	1993	AC 2059	1996
AC 679	1993	AC 2065	1996
AC 691	1993	KR 4055	1996
SSNY 358	1992	KR 4057	1996
KGB 806	1993	Henriksen 146	1997
KGB 827	1993	JN 1052	1999
KR 2760	1993	CNC 12054	2012
CNW 928	1994	JN 12212	2012
CNW 930	1994	JN 12317	2012
CNW 936	1994	JN 12359	2012

A long-established specimen of *R. lacteum,* topping 3m in height while spreading even wider, covered in large globular trusses of deep yellow blooms - be they blotched crimson-purple or not - is an absolutely stunning sight to behold. More, it is a testament to the green-fingered prowess of the gardener who nurtured it. For although the most beautiful of the Series *Wightia* and Subsection *Taliensia* rhododendrons, the species is also one of the most difficult to grow well, as the host of negative reports that have been clubbed together over the years, giving the shrub its wayward reputation in UK cultivation, will, regrettably, confirm:

It does often die off bit-by-bit on its own roots.

A decidedly acid soil is an absolute pre-requisite, a pH testing kit therefore mandatory when prepping the planting site.

And if the roots hit standing water, the game will quickly be over.

Equally, lack of shelter from the wind will simply not be tolerated.

And near all-day dappled shade is a must.

Even in northern gardens where specimens appear to feel more at home, be these situated along the eastern or western seaboards, or inland, which the H6-7 hardiness rating will take in its stride.

But not dense shade.

Or a site in a frost pocket.

For the blooms open in April-May when Jack can and will strike.

And the corolla tone of those flowers will also vary according to the severity of the previous winter, never achieving the deepest shades sported by wild plants unless you happen to garden on the side of a hill between the 380 and 500m contours - as at Corrour, the fabled rhododendron test garden developed by Sir John Stirling-Maxwell on his estate at Rannock Moor in the Highlands of Scotland.

Nor should an established plant be dug up and moved except under the most dire of circumstances, for the likelihood of it re-establishing and then thriving, is on a par with its owner receiving a seven-figure National Lottery payout.

Oh, and the price for vegetatively-produced youngsters - especially the FCC-awarded, unblotched 'Blackhills' clone - is sky-high, because even the expert propagators employed by the few remaining specialist nurseries experience real difficulty in grafting or layering the species, cuttings being an out-and-out no-no, though sown seed is workable.

Yet the floral rewards if successful, are literally, breathtaking.

R. lacteum was discovered on the summit of Mount Koua-la-po in northwest Yunnan on May 26th, 1884. Abbé Jean-Marie Delavay was on one of his solo botanic hikes, sans porters or guides, though God was at his side, when he came across a pure stand forest of the rhododendron at 3,200m. The Muséum National d'Histoire Naturelle received his dried specimens under field number 164 just over a year later, at the end of June 1885, and Adrien Franchet had the species botanic description penned and ready for Volume 33 of the *Bulletin de la Société Botanique de France,* published in 1886. His chosen epithet means 'milky' or 'white' - in the vernacular of ancient Rome, 'lactei' - and refers to the flowers, for Delavay happened upon the rarest colour form of the species, which was lucky, as 'flavum' had already been snagged by George Don in 1834.

Unfortunately, the online International Plant Names Index had yet to be conceived when in 1894 Otto Stapf used the exact same *R. lacteum* epithet to describe a Vireya species from Borneo - this now known as *R. stapfianum* courtesy of a William Botting Hemsley 1911-dated reworking - or Ernest Wilson and Alfred Rehder assigned it to W 4254 in *Plantae Wilsonianae,* their 1913 faux pas later transformed into *R. galactinum* by Sir Isaac Bayley Balfour and Harry Tagg. The worst offender by far however, was *R. lacteum* var. *macrophyllum,* because it was wrongly figured as just *R. lacteum* in Volume 137 of *Curtis's Botanical Magazine* (Tab 8372), published in 1911. Again, it was Balfour who sorted out the mess, describing *R. fictolacteum* - the 'false' *R. lacteum* - in Volume 59 of *The Gardeners' Chronicle,* published in 1916, which likely rubbed salt into the wound just as its author almost certainly intended.

And Franchet is the answer to the var. *macrophyllum* association - in Volume 34 of the *Bulletin de la Société Botanique de France,* published in 1887.

The real *R. lacteum* is most closely related to *R. beesianum* and *R. wightii,* as well as to the recently described *R. barkamense*. The latter, despite having yellow flowers, is easily keyed away courtesy of the glabrous stamen filaments and equally hairless ovary. It also has but 7 or 8 corollas in each flower truss, whereas *R. lacteum* has from 12 to 30. The sticky leaf and flower buds of *R. beesianum* are a clear distinction, as are the oblanceolate-shaped leaves to 30cm long. True forms of *R. wightii* would likely present the greatest identification challenge if they too were not graced with tacky leaf and flower buds.

George Forrest was the first professional plant hunter to introduce the species into British gardens, a collection of capsules from the eastern side of the Tali Range, made on his second expedition, arriving back in Blighty during 1910. Yet again, it is possible that seed was gathered and returned on the Scotsman's premier trip to China, between 1904 and 1906, as herbarium material for *R. lacteum* is recorded under the field number F 2159, but as the fate that awaited the contents of any of those capsules has been thoroughly detailed already, it does not require a further repeating.

J. G. Millais has reported that the species flowered for the first time in a UK garden at Caerhays Castle, Cornwall, during April 1921, and that J. C. Williams wrote to him soon afterwards saying 'I think that on the whole it is the most definite bit of yellow we have had in Rhododendrons excepting those of the Boothii-Trichocladum set' (*Rhododendrons and the Various Hybrids,* Second Edition, 1924).

Only six additional seed lots were gathered up and sent back to the UK between 1912 and 1939 - four more from Forrest himself, one from Joseph Rock, and the last from Forrest's native collectors when employed by Henry McLaren of Bodnant, North Wales - but since the early 1980s, some forty separate batches of capsules have been secured, three of these from the Sino-British Expedition to the Cangshan, who in 1981, kicked-off the flood of reintroductions.

The majority of those gatherings have been made in west-central or northeast Yunnan, but in 2008, Jens Nielsen confirmed that the species was also resident in southern Sichuan - the gathering available via the ARS 2009 Seed Exchange list - making a second collection in the province - at a site in Pugo County - during 2012. Kenneth Cox, Bradley Newton and William Campbell then added a third batch of capsules, these secured from Luo Ji Shan, during that same year.

Unlike the majority of the Subsection *Taliensia* species, *R. lacteum* has been widely used by hybridisers, both as pollen provider and seed parent. However, a great many of those offspring share the same 'difficult' tag as the species, with only a few proving easier to grow. 'Costa del Sol', 'Galactic', 'Jocelyne', 'Joanita', 'John Barr Stevenson', 'Lionel's Triumph', 'Mariloo' and 'Repose' are all superlative in flower, but of the eight mentioned, only 'Mariloo' and her two sisters - 'Eugenie' and 'Gilbury' - have escaped the awkward label thanks to their *R. caucasicum* organelles inherited from 'Doctor Stocker'.

R. lacteum (CLD 1282)

R. lacteum (AC 691)



R. lacteum (SBEC 345)





R. lacteum (C&H 7164)

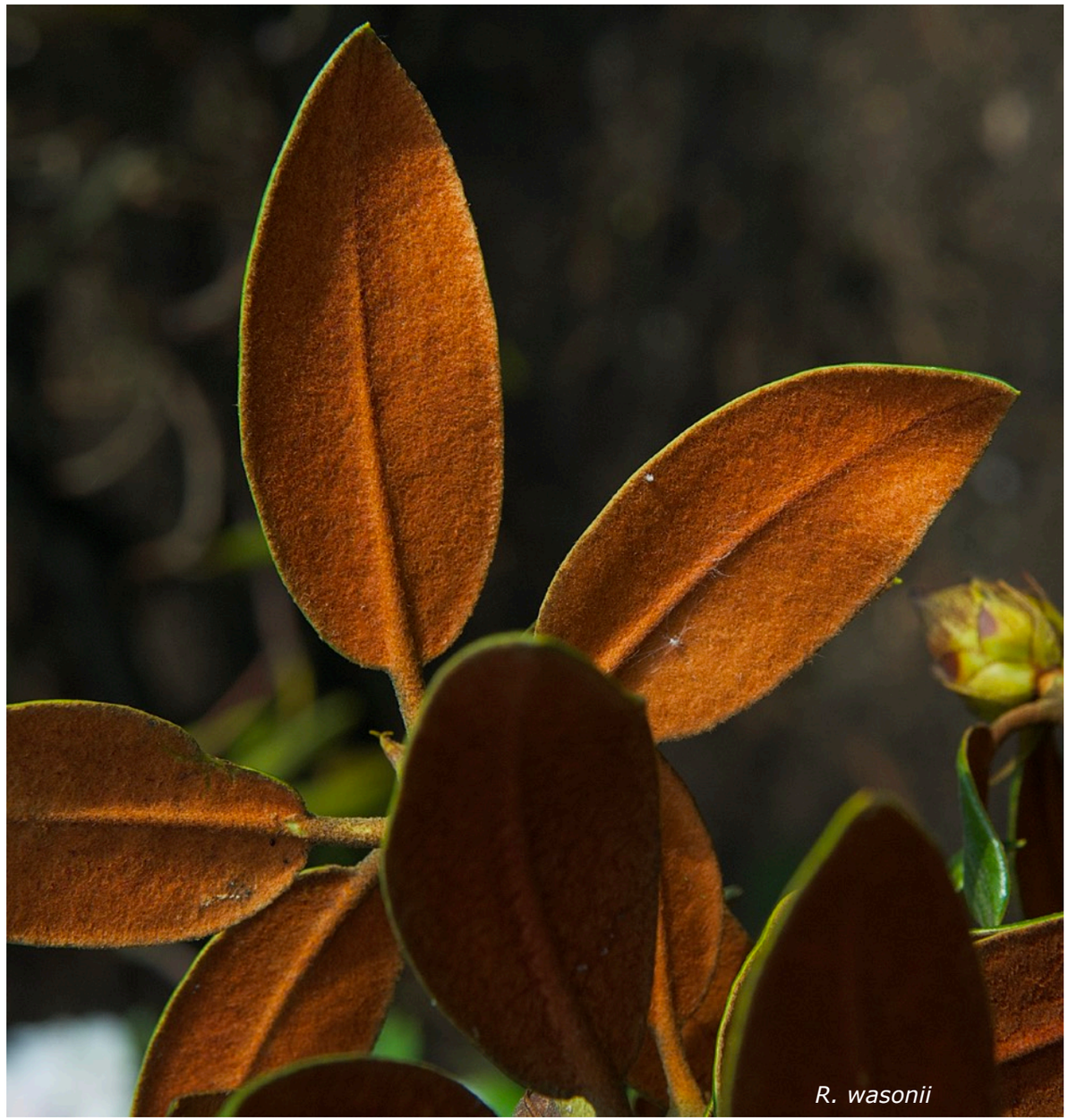
R. lacteum (F 6778)

R. wasonii
Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
C, W & NW Sichuan, China.
Growing in conifer forest, in rhododendron thickets, and on mountain slopes,
at elevations of 2,300-4,000m.

Identification:
Shrub, compact and rounded, to open and broadly upright, 0.6 to 3m high;
branchlets moderately through densely tomentose at first, the hairs brown,
becoming glabrescent,
sparsely short- or medium-stalked glandular or eglandular.
Leaves thickly coriaceous,
ovate-lanceolate through ovate to ovate-elliptic,
4 to 10.3cm long by 2.4 to 4.5cm wide,
retained for 2-3 years;
upper surface dark green, shiny;
lower surface indumentum unistrate,
dense, continuous, thick, felted or woolly,
white at first, becoming brown, reddish-brown or cinnamon,
the hairs long-rayed,
sparsely intermixed with glands or eglandular,
the midrib hairy.
Petiole 5-18mm long,
moderately or densely tomentose, the hairs fawn or brown,
sparsely through moderately short-stalked glandular, or eglandular.
Inflorescence 6-15-flowered;
the bud scales sometimes persistent.
Rhachis 5-10mm long, variably pubescent.
Pedicel 10-32mm long,
densely brown-tomentose, rarely short-stalked glandular.
Calyx minute to small, the lobes ovate or broadly triangular, each 0.5-3mm long,
their outer surface and margins moderately through densely tomentose,
the hairs fawn or brown,
rarely short-stalked glandular.
Corolla 2.5 to 4cm long, broadly campanulate, thin and papery,
white, creamy-white, white flushed pink, white tinged rose on the upper lobes,
creamy-yellow, yellow, pink, rose-pink or rose,
with or without crimson or purple spots, with or without a crimson basal blotch.
Stamen filaments densely pubescent at the base or along the lower half.
Ovary densely tomentose, the hairs whitish, brownish or cinnamon.
Style glabrous or villous at the base.
Capsule 13-17mm long,
moderately through densely brown-tomentose.

Seed Collections:

W 1764	1904	McLaren 38/020	1932/1939
W 1800	1904	McLaren 39/297	1932/1939
W 1866	1904	CCH 3926	1989
W 1876	1904	AC 3605	1997
W 4249	1910/1911	JN 12061	2012


R. wasonii

R. wiltonii
Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
Guizhou, C & W Sichuan, China.
Growing in forests, open woodland and thickets,
on rocky pasture and mountain slopes, on cliffs and at cliff edges,
at elevations of 2,250-3,500m.

Identification:
Shrub, broadly upright, 1 to 5m high;
branchlets densely tomentose, the hairs whitish, yellowish-grey or brown.
Leaves thickly coriaceous,
oblanceolate through ovate-oblong to broadly elliptic,
4.5 to 12.1cm long by 1.5 to 4cm wide,
retained for 2-3 years;
upper surface olive green, bullate-rugose;
lower surface indumentum unistrate,
dense, continuous, thick,
dark brown, cinnamon or rusty-red,
the hairs ramiform through stellate to fasciculate,
the midrib hairy.
Petiole 10-30mm long,
densely tomentose at first, the hairs whitish or brown,
often becoming glabrescent.
Inflorescence 6-10-flowered;
the bud scales sometimes persistent.
Rhachis 5-8mm long, yellowish-pubescent.
Pedicel 15-36mm long,
densely woolly brown-tomentose, sometimes sparsely glandular.
Calyx small, the lobes triangular or ovate, each 1-3mm long,
their outer surface and margins densely brown floccose-tomentose at first.
Corolla 3 to 4cm long, campanulate or funnel-campanulate,
white through pink,
with or without crimson spots, with or without a crimson basal blotch.
Stamen filaments moderately through densely pubescent,
at the base or along the lower half.
Ovary densely brown or rusty-red woolly-tomentose.
Style rarely hairy at the base.
Capsule 15-25mm long, brown-tomentose.

Seed Collections:

W 1804	1904	CEE 227	1991
W 1871	1904	Cox 6150	1992
W 1353	1908	AC 4790	2001
W 4264	1910/1911	AC 4794	2001
KR 143c	1980	AC 4961	2001
EN 3640	± 1985	C&N 6128	2007
CCH 3906	1989	C&N 6138	2007
Cox 5000	1990	C&N 6143	2007
Cox 5110	1990	CNC 12134	2012
EGM 106	1990	JN 12078	2012
CEE 141	1991	JN 12326	2012


R. wiltonii



R. wiltonii (CCH 3906)

Ernest Wilson was the plant hunter who, in May 1904, chanced upon the next two members of the series to be discovered: *R. wiltonii* - 'in thin woods at 3,300m above sea-level'; and *R. wasonii* - 'near Tatsienlu, on rocks in coniferous forests, alt. 2,800-3,000m'. Both plants were described in Kew's *Bulletin of Miscellaneous Information,* published in 1910 (from which the two quotes are taken), their portraits jointly painted by Wilson and William Botting Hemsley. Each was also given an honorific epithet: that for *R. wiltonii* singling-out Sir Ernest Colville Collins Wilton, of His Britannic Majesty's Chinese Consular Service, who was Acting Consul at Ichang (now Yichang) in 1900 when Wilson first arrived in China; while that for *R. wasonii* applauded Cathcart Romer Wason, a Lieutenant-Commander in the Royal Navy, assigned to H.M.S. "Woodlark", a Woodcock class gunboat based at Chongqing on the upper Yangtze River between 1903 and 1904.

Two batches of *R. wiltonii* seed were introduced into British gardens during 1904, another from Wilson's third trip to China in 1908, and a fourth during his 1910-1911 expedition. A gap of seventy years then ensued before the species was re-encountered and reintroduced: by Keith Rushforth in 1980; with over a dozen additional gatherings made since; plus two extra finds given an affinity label. Taken as a whole, these plot a somewhat restricted wild distribution, the plant populations basically concentrated in central Sichuan around four peaks: Emei Shan, Erlang Shan, Wa Wu Shan and Xillingxue Shan.

Within both the series and the subsection, *R. wiltonii* could be described as being somewhat aberrant, for despite sharing many of their characteristics, the taxon has no close allies. Its bullate, rugose and deeply-veined upper leaf surface is unique, but should additional keying be required, the thick, ramiform through stellate to fasciculate abaxial leaf indumentum will do the trick, *R. aganniphum* and *R. wasonii* excepted. The lack of a surface pellicle across that leaf tomentum confirms an identification from the former, while the foliage shape - oblanceolate through obovate, rather than ovate-lanceolate - does so for the latter.

R. wasonii is highly distinctive within Series *Wightia* and when the leaf shape, unistrate indumentum, corolla texture, and hairy but eglandular ovary are all considered in combination, easily distinguished from its cohorts and indeed, all the other members of the subsection. As indicated above, *R. aganniphum* and *R. wiltonii* also possess a thick abaxial tomentum, which on the former is spongy in texture, coloured whitish or yellowish at maturity, with the hairs embedded in a silky and shiny surface pellicle. Differentiation from the woolly and basically brown covering of *R. wasonii,* sans a pellicle, is therefore a cinch, with the leaf shape differences - as already outlined - keying the species from *R. wiltonii*.

Wilson despatched a quartet of *R. wasonii* seed lots back to his employers at the Veitch Nursery in Chelsea towards the end of 1904, all matured on pink- or creamy-white-flowering plants. A subsequent collection was made in 1910-1911, and then in the mid 1930s, the trained team of assistants who worked for George Forrest, employed after his death by Henry McLaren, added another two batches. The species was reintroduced from Sichuan in 1989 by an expedition team whose membership included David Chamberlain, Peter Cox and Peter Hutchison, after which, the contents of capsules collected by Alan Clark were returned in 1997, and those found by Jens Nielsen, in 2012. Again, endemicity is now known to be restricted to central, west and northwestern Sichuan.

Back in 1923, Henry McLaren, the future Lord Aberconway, in partnership with his mother, then the current Lady Aberconway, exhibited a plant they had grown from Wilson 1876, this the field number covering the fourth batch of seed the plant hunter had returned in 1904. It won an Award of Merit from the RHS and was described as *R. rhododactylum* by author and expert John Guille Millais in the second volume of his *Rhododendrons and the Various Hybrids,* published in 1924. Yet despite bearing 'small loose trusses of campanulate

flowers, white with dull rosy markings along the centre of the outsides of the segments', Millais felt that the plant was 'not of much garden value'. As did the author of 'Easter Flowers at Vincent Square', a report published in the April 1923, edition of *The Garden,* the RHS's consecration notwithstanding.

Fifty-one years later, another Award of Merit was bestowed on a different specimen of *R. rhododactylum,* this plant grown at Windsor, a benediction that certainly supports the adage about listening to experts.

One of the McLaren introductions from the 1930s - under the field number AD 106 - had been given a *R. wasonii* affinity tag on account of its indumentum - 'thicker, darker and rougher' than the type - with the flowers - 'creamy-pink fading to white'. Both quotes come from the 1997-published *Encyclopedia of Rhododendron Species,* written by Peter and Kenneth Cox, who believe these plants require varietal status, though other specimens grown from the same gathering have been doyen-tagged as *R. bureavii* affinity.

The same mountain in Kangding County, Sichuan, from which Henry McLaren's seed had been gathered, sourced a reintroduction in 1990, two members of the expedition team each bagging capsules - Peter Cox under his field number Cox 5046; Ted Millais under EGM 122 - and the taxon's wild distribution was extended in 2007 when Alan Clark and Shelagh Newman found similar plants on Laojun Shan in Yunnan, and then Emei Shan in Sichuan, introducing their affinity finds under the field numbers C&N 5759 and 6145 respectively. But what it actually is, remains a mystery.

R. wasonii var. *wenchuanense* was formerly described by Ling Cheng Hu in 1986, the text published in Volume 6, Number 1, of the *Bulletin of Botanical Research, Harbin*. David Chamberlain reports that it is 'at one extreme of the variation exhibited by the species' in the RHS *Rhododendron Handbook* 1998, while Peter and Ken believe 'the description of the indumentum as thin, compacted and sub-agglutinate does not match any wild or cultivated material we have seen' and they regard the type specimen as 'probably a *R. wasonii* x *R. phaeochrysum* natural hybrid' (both quotes again culled from their fine *Encyclopedia*).

Given the propensity of the Subsection *Taliensia* rhododendrons to interbreed and foist innumerable natural hybrids and intermediates across the hills of China, a single specific species - *R. wasonii* - is maintained herein, with the first of the three forms outlined above - grown from W 1876 - consigned to Rhododactylum Group, and the third, housed in Wenchuanense Group, despite the apparent mismatch in observed indumentum thickness. As indicated, the second retains a quandary status.

Cultivation of both specific species is usually without problem, though specimens of *R. wasonii* prefer the cooler climes of the UK's northern counties to the hotter environs of the south, but will thrive in the latter if grown in the dappled shade of a woodland glade. Each has been gifted a H6-7 hardiness rating by the RHS and they open their blooms during April-May, however, while *R. wasonii* is free-flowering from a young age, with the added attraction of eye-catching young growth, *R. wiltonii* takes a while longer to begin setting flower buds, though specimens bloom freely thereafter and mature plants cover themselves in an annual mantle of white or pink trusses.

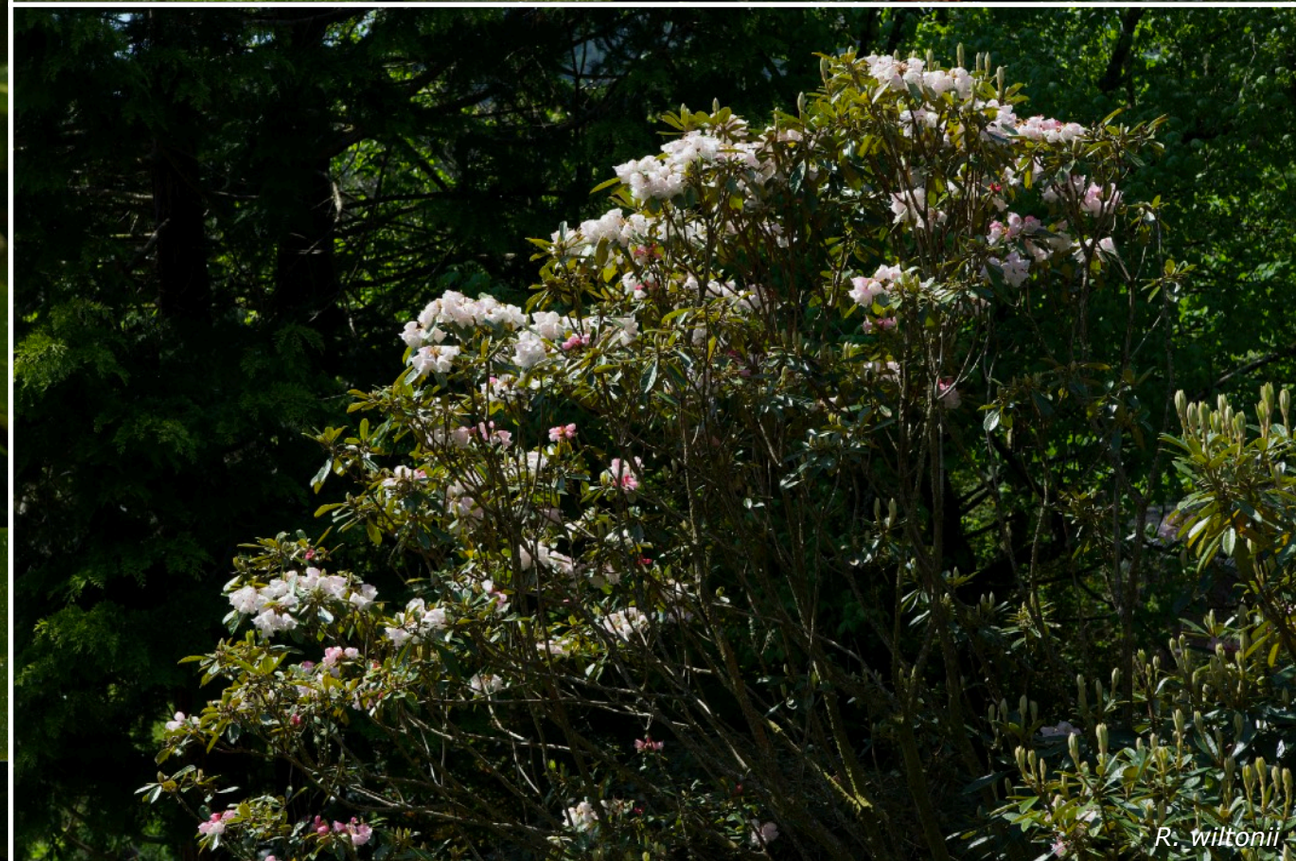
R. wiltonii is the taller of the two shrubs in British gardens, forming an upright bush to 2.5m in height, while most cultivated forms of *R. wasonii* develop into compact and rounded domes topping-out at around 1.5m. Be aware of a shortcoming, however: the latter will open up with age and become broadly upright if the tree canopy above is allowed to close-up and shut out too much light.



R. wasonii (CCH 3926)


R. wiltonii


R. wiltonii (W 4264)


R. wiltonii



R. wasonii aff. (McLaren AD 106)



R. wasonii



R. wasonii



R. beesianum (F 10195)

R. beesianum
Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
SE Tibet; SW Sichuan, & NW Yunnan, China; NE Upper Myanmar.
Growing in conifer forests and rhododendron thickets, and on sheltered mountain slopes, at elevations of 2,700-4,500m.

Identification:
Shrub or small tree, rounded to broadly upright, 1.8 to 9m high;
branchlets stout, floccose at first, becoming glabrescent, or glabrous.
Leaf buds sticky.
Leaves oblanceolate through oblong-lanceolate to elliptic,
9 to 30cm long by 2.6 to 8.3cm wide,
retained for 1-2 years;
upper surface dark green or pale green;
lower surface indumentum unistrate,
continuous, thin, compacted,
grey, fawn, pale cinnamon or brown,
the hairs radiate.
Petiole 13-30mm long, thick, rarely thin, deeply grooved above,
sometimes narrowly winged or ridged,
often coloured brick-red, upper surface flat,
glabrous or sparsely floccose.
Inflorescence flat-topped or rounded, 10-25-flowered;
the buds sticky.
Rhachis 5-30mm long, stout, pubescent.
Pedicel 14-29mm long,
sparsely through moderately floccose, or glabrescent.
Calyx minute to small, the lobes broadly triangular or rounded, each 0.5-2mm long,
their outer surface and margins rarely floccose.
Corolla 3.5 to 5.5cm long, broadly campanulate,
white, white flushed pink, white flushed rose, pink, rose, purplish through near red,
with or without crimson or purple spots, with or without a crimson or purple basal blotch.
Stamen filaments pubescent at the base.
Ovary densely white- through pale brown-tomentose.
Capsule 20-45mm long, floccose.

Seed Collections:

F 10195	1913	R 10908	1923/1924	R 22221	1932	R 155	1948/1949
F 10460	1913/1914	R 10916	1923/1924	R 22223	1932	R 164	1948/1949
F 10477	1913/1914	R 10987	1923/1924	R 22234	1932	R 176	1948/1949
F 10546	1913/1914	R 10988	1923/1924	R 23308	1932	SBLE 202	1987
F 11313	1913/1914	R 10990	1923/1924	R 23452	1932	SICH 1074	1992
F 13032	1913/1914	R 11004	1923/1924	R 23518	1932	SICH 1084	1992
F 13143	1913/1914	R 11017	1923/1924	R 23521	1932	SSNY 65	1992
F 13568	1913/1914	R 11021	1923/1924	R 23527	1932	SSNY 250	1992
F 14116	1917/1919	R 11068	1923/1924	R 23528	1932	SSNY 292	1992
F 14226	1917/1919	R 11099	1923/1924	R 23530	1932	SSNY 303	1992
F 14352	1917/1919	R 11110	1923/1924	R 23619	1932	SSNY 323	1992
F 14450	1917/1919	R 11112	1923/1924	R 23625	1932	KGB 20	1993
F 14461	1917/1919	R 11240	1923/1924	R 24307	1932	KGB 142	1993
F 14488	1917/1919	R 11334	1923/1924	R 24582	1932	KGB 172	1993
F 14605	1917/1919	R 11337	1923/1924	R 24583	1932	KGB 366	1993
F 14686	1917/1919	R 11349	1923/1924	R 25345	1932	AGS 1879	1994
F 14790	1917/1919	R 11463	1923/1924	McLaren D105	1932/1939	CNW 85	1994
F 14811	1917/1919	R 11501	1923/1924	McLaren D272	1932/1939	CNW 110	1994
F 15124	1917/1919	R 11636	1923/1924	KW 10497	1933	CNW 188	1994
F 16375	1917/1919	F 25513	1924/1925	Yu 10566	1937	CNW 189	1994
F 16474	1917/1919	F 25516	1924/1925	Yu 10685	1937	CNW 230	1994
F 16683	1917/1919	F 25983	1924/1925	Yu 13730	1937	CNW 269	1994
F 16693	1917/1919	KW 6953	1926	Yu 13765	1937	CNW 270	1994
F 16699	1917/1919	R 18149	1929	Yu 13920	1937	CNW 347	1994
F 16735	1917/1919	R 18150	1929	Yu 13926	1937	CNW 635	1994
F 16724	1917/1919	R 18440	1929	Yu 13931	1937	CNW 643	1994
F 16743	1917/1919	R 18443	1929	Yu 13989	1937	CNW 742	1994
F 16746	1917/1919	R 18445	1929	Yu 14663	1937	CNW 1178	1994
F 17407	1917/1919	F 29247	1930/1931	Yu 14947	1937	SICH 1445	1994
F 19010	1917/1919	F 29248	1930/1931	Yu 19074	1937	FED 206	1995
F 19011	1917/1919	F 30526	1930/1931	Yu 7927	1937	FED 308	1995
KW 4211	1921	F 30532	1930/1931	LS&E 13180	1946/1947	AC 1528	1996
F 19552	1921/1922	F 30892	1930/1931	R 8	1948/1949	AC 1780	1996
F 20451	1921/1922	F 30894	1930/1931	R 36	1948/1949	AC 1796	1996
F 21586	1921/1922	KW 9601	1931	R 42	1948/1949	AC 1821	1996
R 7795	1923/1924	R 22040	1932	R 109	1948/1949	AC 1861	1996
R 10896	1923/1924	R 22041	1932	R 117	1948/1949	AC 1905	1996
AC 1939	1996	Henriksen 071	1997	JN 300	1997		
AC 1984	1996	Henriksen 072	1997	JN 921	1999		
KR 4114	1996	Henriksen 110	1997	CNC 12012	2012		
KR 4150	1996	JN 8	1997	JN 12103	2012		
Henriksen 029	1997	JN 9	1997	JN 12160	2012		
Henriksen 032	1997	JN 235	1997	JN 12273	2012		
		JN 298	1997				



R. beesianum (F 10195)

Two years on from the Wilson discoveries of *R. wasonii* and *R. wiltonii,* during May 1906, George Forrest spotted *R. beesianum.* The population was established on the eastern side of the Lichiang Mountain Range in northwestern Yunnan, and it was a shrub around 6m high, growing in open pine woodland at the base of some cliffs, sporting rich, deep rose flowers, which caught his eye. Dried herbarium material was returned under Forrest 2323, with the Friedrich Diels-penned botanic description appearing in Volume 5 of *Notes from the Royal Botanic Garden, Edinburgh,* published in 1912, the botanist's choice of epithet, an obvious honorific for Arthur Bulley's Cheshire-based nursery, Bees Ltd, whose owner had sponsored the expedition.

Seven years later, in June 1913, the species was introduced into UK cultivation under the field number F 10195 and the date recorded for the first flowering of that collection of *R. beesianum* in a British garden - April, 1927, at Caerhays Castle, Cornwall, the home of J. C. Williams, a principal sponsor of many later Forrest expeditions - confirms that if any seed was returned to the Wirral in 1906 and successfully germinated, those youngsters didn't survive long. They certainly never left the premises.

But no matter, because across the two great eras of Western plant collecting in southwestern China, close to 170 batches of *R. beesianum* seed were gathered up and despatched back to the UK, the reintroduction post a 1949 Rock accrual taking place in 1987 courtesy of the Sino-British Lijiang Expedition, whose membership included David Chamberlain, Ron McBeath and Tony Schilling.

Out of flower, *R. beesianum* is only likely to be confused with the one other member of Series *Wightia* with a compacted indumentum, *R. wightii* itself, but the extra long leaves, 30cm in length and 8.3cm in width, narrowly decurrent along the petiole, plus the sticky leaf and flower buds, should resolve any uncertainty if one of the few mature examples of the latter taxon is encountered in a UK woodland garden, as despite another extensive listing of introductions, it is a far rarer find.

In the wild, *R. beesianum* nearly always grows in the shelter of trees, sometimes in pure stands, but always protected from the wind. Too exposed a planting site in cultivation will quickly demonstrate why, the leaf blades snapping off as the first violent gust hits. A 'difficult' reputation has therefore been garnered, although luckily, such a shady site is actually preferred, for it mirrors the plant's choice of endemic residence. Also, specimens do better when grown as grafted plants rather than on their own roots. However, they are slow growing and take many years to begin blooming freely, with some clones shy flowerers regardless of their age or placement. Others - which a prospective purchaser should seek out - produce multiple trusses on an annual basis and will sometimes be awash with colour during April-May. A H6-7 hardiness rating mitigates any other worries that a potential buyer might harbour.



R. beesianum (F 10195)

R. beesianum (F 10195)

R. traillianum

R. traillianum
Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
SE Tibet; SW Sichuan & NW Yunnan, China.
Growing in and at the margins of fir and conifer forest,
in rhododendron thickets, and on open mountain slopes,
at elevations of 3,000-4,600m.

Identification:
Shrub or small tree, rounded to broadly upright, 1 to 9m high;
branchlets moderately or densely tomentose,
the hairs brown, fawn or grey, the indumentum thin.
Leaves oblong-lanceolate through oblong-elliptic to oblong-obovate,
5.2 to 17cm long by 2 to 6.8cm wide,
retained for 3-4 years;
upper surface pale or dark green;
lower surface indumentum unistrate,
dense, continuous, thin, compacted and powdery,
yellowish at first, becoming pale brown, fawn, rufous-brown or cinnamon with age,
the hairs radiate.
Petiole 10-25mm long,
moderately or densely tomentose,
the hairs brown, fawn or grey, the indumentum thin.
Inflorescence 9-15-flowered.
Rhachis 5-13mm long, floccose.
Pedicel 8-25mm long,
moderately or densely floccose, rarely glabrous.
Calyx minute, the lobes triangular or rounded, each *c.* 1mm long,
their outer surface and margins glabrous or floccose.
Corolla 2.5 to 4cm long, funnel-campanulate,
white, white flushed rose, pink or rose,
with or without crimson spots, with or without a crimson-purple basal blotch.
Stamen filaments pubescent at the base.
Ovary glabrous or sparsely floccose.
Capsule 16-26mm long, rarely sparsely floccose.

Seed Collections:

F 5870	1910	R 11396	1923/1924	R 25259	1932
F 5872	1910	R 11421	1923/1924	R 25301	1932
F 10156	1912/1914	R 11454	1923/1924	R 25328	1932
F 10204	1912/1914	R 11459	1923/1924	R 25368	1932
F 15123	1917/1919	R 11460	1923/1924	R 25384	1932
F 15305	1917/1919	R 11461	1923/1924	Yu 10684	1937
KW 4860	1921	R 11470	1923/1924	Yu 10953	1937
F 21934	1921/1922	F 25740	1924/1925	Yu 13995	1937
R 6832	1923/1924	F 25918	1924/1925	Yu 14904	1937
R 7796	1923/1924	R 18437	1929	Yu 15157	1937
R 11246	1923/1924	R 18438	1929	CHM 2639	1986
R 11313	1923/1924	R 18439	1929	SBLE 204	1987
R 11314	1923/1924	R 18441	1929	SBLE 237	1987
R 11371	1923/1924	R 18444	1929	SBLE 565	1987
R 11372	1923/1924	F 30531	1930/1931	H&M 1452	1990
R 11373	1923/1924	KW 10012	1931	JN 719	1999
		R 25252	1932		


R. traillianum

May 1906 might also have been when George Forrest discovered *R. traillianum* - at least, according to the account in Volume 2 of H. H. Davidian's *The Rhododendron Species,* published in 1989, though no field number is given for the find and the species was not on the list of taxa featured in the Ludwig Diels-authored botanic summation of that expedition, *Plantae Chinenses Forrestianae,* which fills 1912's entire Volume 7 of *Notes from the Royal Botanic Garden, Edinburgh*. The official record denotes a collection made by the Scotsman in 1910 - under Forrest 5870; this from the western, rather than the eastern, flank of the Lichiang Mountain Range in northwestern Yunnan - as the type specimen, with the species botanic description - written jointly by Forrest and William Wright Smith - confirming such (*Notes,* Volume 8, 1914). Their chosen epithet is an honorific for George Forrest's father-in-law, George William Traill, who was an amateur botanist with a passion for marine and freshwater algae.

That same F 5870 gathering introduced *R. traillianum* into UK cultivation, along with a second batch of seed under F 5872. Another forty lots followed - from Forrest himself, and from Kingdon-Ward, Rock and Yu - up until 1937, after which, a near five-decades-long hiatus ensued, this ended when Peter Cox, Peter Hutchison and Donald Maxwell McDonald reintroduced the species during 1986. Since then, just five more authenticated gatherings have been made, although another three collections have been given affinity tags.

R. traillianum is most closely related to *R. phaeochrysum,* more especially to var. *dryophyllum,* and to a lesser degree, *R. beesianum.* It differs from all three in having a finely powdery, compacted abaxial leaf surface indumentum, rather than an agglutinated or felted covering as found on the two *R. phaeochrysum* varieties. The differences with *R. beesianum* are a little less distinct, but the non-sticky leaf and flower buds of *R. traillianum* will confirm the keying.

In British gardens, the shrub is easy to cultivate and makes a fine foliage plant, being fully hardy with a H6-7 rating, and forming upright or rounded specimens to around 3m in height. Flower bud set is frequently liberal, beginning at an earlier age than most other Subsection *Taliensia* species, and the white, or white flushed rose globular trusses, set against large, dark green leaves, opening during April-May, are first class. Beware however, of the few clones that sport quite small corollas in comparison to their leaf length.

R. dictyotum was partly described by Isaac Bayley Balfour, with the text completed by Harry Tagg and published in Volume 15 of *Notes,* during 1927. They used material collected by George Forrest on the mountains of the Doker La, in the Mekong-Salween Divide of southeast Tibet, this gathering made during June 1918, under the field number F 16734. These were designated the type specimens even though Forrest had actually discovered the rhododendron in fruit and introduced seed and dried specimens from those plants the year previously, a gathering made in September 1917 and listed as F 14809. Plant populations have also been found by Kingdon-Ward, Rock and Yu, and more recently, in the autumn of 1993, by members of the Kunming-Gothenberg Expedition, this the sole reintroduction, under their field number 485, these having white-flushed-rose corollas. Two affinity-tagged gatherings have also been made.

Specific ranking was retained until 1978, when the preliminary Edinburgh Revision paper went to print and *R. traillianum* var. *dictyotum* emerged, the full Subgenus *Hymenanthes* text (David Chamberlain, *Notes,* Volume 39, Number 2, 1982) stating that 'the differences between the two varieties are small and chiefly concerned with the leaf indumentum'. But once again, this is not the case, for unlike *R. traillianum,* many of the characteristics of *R. dictyotum* are highly variable. For instance, the branchlets: which can be glandular or eglandular; glabrous or sparsely, moderately or densely tomentose. And the petioles, rhachis, pedicels and ovary: which often show a similar amount of variation with regard to the presence or absence of hairs. Equally, the abaxial leaf indumentum is thin, felted and composed of long-rayed follicles with lengthy, ribbon-like arms. It is not finely powdery or composed of radiate hairs with pear-shaped arms as found on the leaves of *R. traillianum.* And Chinese botanists have more recently reported that the indumentum can also be quite thick (*Rhododendrons of China,* Volume 3, edited by Feng Guomei and Yang Zenghong, *Science Press,* Beijing, 1999).

A number of authors - Peter and Kenneth Cox in their *Encyclopedia of Rhododendron Species,* 1997; John McQuire and Mike Robinson in their *Pocket Guide to Rhododendron Species,* 2009 - now believe that *R. dictyotum* is almost certainly a natural hybrid between *R. phaeochrysum* and *R. beesianum,* citing the morphological evidence laid out above. It is therefore treated herein as *R. x dictyotum*.



R. traillianum



R. traillianum (CHM 2639)



R. traillianum (CHM 2639)





R. traillianum

R. aganniphum (CNW 150)

R. aganniphum

Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
SE Tibet; S Qinghai, N, W & SW Sichuan, & NW Yunnan, China.
Growing in open conifer forests, at forest margins and in thickets,
and amongst rocks on mountain slopes, at elevations of 2,700-4,700m.

Identification:
Shrub, compact and rounded, or broadly upright, 0.3 to 4m high;
branchlets glabrous or thinly, whitish- or fawn-tomentose,
occasionally short-stalked glandular.
Leaves thickly coriaceous,
broadly ovate-lanceolate through elliptic to oblong-elliptic or oblong,
3.5 to 12cm long by 1.5 to 6cm wide,
retained for 2-3 years;
upper surface dark green, matt or shiny, sometimes with a white 'bloom';
lower surface indumentum unistrate,
dense, continuous, thick, compacted through spongy,
with a silky and glossy pellicle,
whitish, whitish-grey or yellowish,
the hairs ramiform,
the midrib densely hairy, occasionally short-stalked glandular.
Petiole 8-20mm long,
glabrous, or floccose-tomentose at first, becoming glabrescent,
rarely sparsely short-stalked glandular.
Inflorescence 8-20-flowered.
Rhachis 4-5mm long,
rarely floccose, rarely short-stalked glandular.
Pedicel 8-30mm long,
glabrous, or sparsely floccose-tomentose, becoming glabrescent.
Calyx minute, the lobes triangular, ovate or rounded, each 0.5-1.5mm long,
their outer surface glabrous and eglandular,
their margins rarely ciliate, rarely sparsely glandular.
Corolla 2.6 to 4.5cm long, campanulate or funnel-campanulate,
white, white flushed pink, white flushed rose, pink, purplish-pink or rose,
with crimson or purple spots.
Stamen filaments sparsely pubescent at the base,
or densely pubescent along the lower third or two-thirds.
Ovary glabrous.
Capsule 10-25mm long.

Seed Collections:

KW 768	1913	R 23331	1932	CCH 4064	1989	Henriksen 095	1997
F 14021	1917/1919	R 23371	1932	CCH 4107	1989	JN 21	1997
F 14050	1917/1919	R 23401	1932	SSNY 138	1992	JN 22	1997
F 14134	1917/1919	R 23405	1932	SSNY 320a	1992	JN 189	1997
F 15038	1917/1919	L&S 811	1934	SSNY 322	1992	JN 379	1997
F 16451	1917/1919	L&S 1760	1936	KEG 317	1993	AC 3879	1998
F 16472	1917/1919	KW 13965	1937	KGB 22	1993	AC 3896	1998
F 16677	1917/1919	Yu 7872	1937	KGB 227	1993	CHC 8501	1998
F 16770	1917/1919	Yu 10679	1937	KGB 23	1993	JN 926	1999
F 19713	1921/1922	Yu 10690	1937	KGB 296	1993	AC 4469	2000
F 19716	1921/1922	Yu 13721	1937	KGB 597	1993	AC 4680	2000
F 19744	1921/1922	Yu 13729	1937	CNW 150	1994	AC 4683	2000
F 19758	1921/1922	Yu 13731	1937	CNW 445	1994	TARRVS 144	2002
F 19773	1921/1922	Yu 13732	1937	CNW 447	1994	TARRVS 146	2002
F 19828	1921/1922	Yu 13762	1937	CNW 1164	1994	TARRVS 215	2004
R 11097	1923/1924	Yu 13763	1937	CNW 1165	1994	SI04-04	2002
R 11125	1923/1924	Yu 13924	1937	CNW 1166	1994	DS 353	2004
R 11135	1923/1924	Yu 13925	1937	CNW 1174	1994	SI04-63	2004
R 11341a	1923/1924	LS&E 14395	1946/1947	CNW 1175	1994	SI04-64	2004
R 11343a	1923/1924	LS&E 15243	1946/1947	CNW 1176	1994	JN 12051	2012
R 11336	1923/1924	LS&E 15247	1946/1947	CV 9514	1995	JN 12097	2012
R 11339a	1923/1924	R 107	1948/1949	CV 9541	1995	JN 12266	2012
F 25520	1924/1925	CCH 3930	1989	KR 3528	1995	BE 13-14	2013
F 25960	1924/1925	CCH 3932	1989	AC 1831	1996	BE 13-46	2013
R 18152	1929	CCH 3938	1989	AC 3136	1997	MH 369-41	2018
R 23328	1932	CCH 3946	1989	AC 3677	1997	MH 369-44	2018

R. aganniphum resides in southeast Tibet, and on the mountains of southwestern China, its distribution in the latter taking-in southern Qinghai, north, west and southwest Sichuan, and northwestern Yunnan, where the populations often form vast acreages spread across the open slopes above the treeline. The species possess a thick and spongy abaxial leaf indumentum, whitish through yellowish at maturity, with a silky and glossy surface pellicle that does not split apart or break up into patches with age. And despite that extensive endemicity, the shrub's morphology is relatively stable across and between those populations. Some plants exhibit sticky glands or a thin tomentum on their branchlets, petioles, rhachis, pedicels and calyx margins, which can complicate identification, but the ovary, style and capsule are always glabrous and eglandular, with the abaxial leaf surface indumentum, unvaryingly unistrate. Except that on the ground in the wild, rather than in the managed surrounds of a typical UK woodland garden, the situation is muddied by extensive swarms of natural hybrids, many of which have been introduced, named and described. As a result, the true species is often lost in the morass. At least, in the hallowed environs of the herbarium.

Frank Kingdon-Ward was the first Western plant hunter to come across the species, doing so during July 1913, on the Doker La, part of the mountain range stretching along Tibet's international border with Yunnan. Dried material and seed were returned under the type number KW 768 and although the specimens were first thought to be *R. taliense,* this determination was quickly amended and a jointly-written botanic description - penned by Ward and Isaac Bayley Balfour - appeared in 1917's Volume 10 of *Notes from the Royal Botanic Garden, Edinburgh,* their chosen epithet translating as 'snowy'.

More than a hundred additional collections have been made since that first gathering, with seed being returned by a host of individuals and teams visiting the rhododendron-rich areas of Tibet, Sichuan or Yunnan. Extra batches have also been given affinity tags, or more recently, RHS Group status - Doshongense, Glaucopeplum and Schizopeplum (these previously recognised as specific species) - or varietal ranking - as with *R. aganniphum* var. *flavorufum,* for instance (pigeonholing those plants with a fissured abaxial indumentum that turns deep rusty-red on maturity). However, field study undertaken post-publication of the Edinburgh Revision texts, where these changes were formally adopted, along with new genetic discoveries, require the 1996 arrangements themselves to be revised:

For his PhD Thesis at the University of Edinburgh - *Hybrid Zones in Rhododendron Subsection Taliensia;* completed and published in June 2011 - botanist Tobias Marczewski decided to study the hybrid swarms extant between *R. roxieanum* var. *cucullatum* and *R. clementinae,* and those between *R. aganniphum* and *R. phaeochrysum,* and it is his work, on that latter pairing, which has resolved much of the confusion within the ranks of the *R. aganniphum* taxon. Analysis generated from a bevy of samples he gathered from the plant populations on the ground showed that genetically, the first generation crosses were identical to those individuals previously classified as *R. phaeochrysum* var. *agglutinatum.* Secondly, that *R. aganniphum* var. *flavorufum* was the product of a backcross, a pairing of that F1 hybrid with one of its parents, in this case, *R. aganniphum*. Both taxa are therefore natural hybrids, so must now be designated *R. x agglutinatum* and *R. x flavorufum*.

Peter and Kenneth Cox scotched another of the pretenders in their 1997-published *Encyclopedia of Rhododendron Species,* reporting that field observation 'lead us to conclude that Doshongense would be better considered a form of *R. phaeochrysum* var. *agglutinatum*'. Thus, by extension, another natural hybrid.

In their 2009-published *Pocket Guide to Rhododendron Species,* John McQuire and Mike Robinson described plants assigned to Schizopeplum Group as having an abaxial indumentum that splits longitudinally. In 1992's Volume 3 of *The Rhododendron Species,* H. H. Davidian had sunk this taxon under *R. flavorufum,* while the authors of the Edinburgh Revision had opted for synonymy under *R. aganniphum* var. *aganniphum.* Chinese botanists took a different view and assigned the shrub varietal status, for their specimens had a two-layered abaxial leaf indumentum, the upper surface of which would split into an irregular netlike pattern thereby revealing the white compact under layer beneath. Their covering of hairs was also without a shiny surface pellicle - see the *Flora of China* entry online - yet given the scientifically proven fate of *R. x flavorufum* with its fissured indumentum, and regardless of the unistrate-bistrate quandary - in fact, hybridity is more likely if the covering is indeed two-layered and sans a pellicle - another small 'x' should be applied. Such status would also allow the taxon to be maintained as *R. x schizopeplum,* negating the need for a botanically unrecognised horticultural cubbyhole.

And so, to the fate of *R. glaucopeplum:*

David Chamberlain reduced this taxon's specific ranked status to synonymy under *R. aganniphum* var. *aganniphum* in his Subgenus *Hymenanthes* revision (*Notes,* Volume 39, Number 2, 1982), because the type specimen of *R. aganniphum* was also found to possess glands amongst the hairs of the abaxial leaf indumentum and on the petioles. The RHS decided to maintain the epithet for horticultural purposes as Glaucopeplum Group - in effect, a more glandular expression of *R. aganniphum,* with a flatter leaf - except Peter and Kenneth Cox believe the plant to be 'midway between var. *aganniphum* and var. *flavorufum*' (to once again quote from their *Encyclopedia of Rhododendron Species*). The validity of the taxon's status must therefore be in doubt, given the now proven hybrid nature of *R. x flavorufum.* In consequence, it is treated herein, as *R. x glaucopeplum*.

Returning to *R. aganniphum* itself, H. H. Davidian is alone in stating that the abaxial leaf surface indumentum is bistrate. He describes the upper stratum as ramiform, these hairs having a medium or long stem and bearing medium to long, narrow branches, while the lower echelon is composed of rosulate hairs, these with long or shorter, narrow or ribbon-like arms. All the other Edinburgh Revision-associated 'forms' are excluded from his description, so there is no overlap with specimens of *R. doshongense, R. flavorufum* or *R. glaucopeplum,* which in his 1992 text retain their specific status and also sport a bistrate adaxial indumentum, though the hair characteristics vary. *R. doshongense* also lacks a pellicle and as indicated, *R. schizopeplum* was sunk under *R. flavorufum*. However, Davidian's analysis is at odds with the situation found on the ground.

Within Series *Wightia,* only *R. wasonii* and *R. wiltonii* sport leaves with an equally thick tomentum, but these are without a surface skin. The foliage of *R. wiltonii* is distinctly bullate above and oblanceolate-shaped, while that of *R. wasonii* has a felted or woolly indumentum that is brown, reddish-brown or cinnamon at maturity. *R. aganniphum* sports leaves broadly ovate-lanceolate through elliptic to oblong-elliptic or oblong in shape and once mature, their spongy indumentum will be whitish through yellowish in hue.

Although fully hardy, with a H6-7 rating that would see the species safely through the peaks and troughs of the UK's maritime climate, *R. aganniphum* is only rarely found in cultivation, even within the major collections, despite that abundance of gatherings. For it has garnered a reputation of being difficult to grow as a young shrub. When this is considered alongside the usual Subsection *Taliensia* traits of slow growth and a near double-decade brevity of bloom, few rhodophiles take up the challenge, especially as even a well grown, mature specimen, would not be ranked high-up the list of outstanding foliage plants. Nor, when flowering-size is eventually reached, could bud set be described as prolific. And when the crimson-purple spotted blooms do appear - be they in shades of white or pink, their 8 through 12 corollas gathered together into a fairly tight truss - while pleasant, they are nothing to write home about.



R. aganniphum (CNW 150)



R. aganniphum (Yu 13731)

R. aganniphum (Yu 13721)

R. phaeochrysum* var. *phaeochrysum
Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
SE Tibet; C, N & W Sichuan, & NW Yunnan, China.
Growing in fir forest and thickets, and on mountain slopes,
at elevations of 3,300-4,700m.

Identification:
Shrub or small tree, rounded to broadly upright, 1 to 6m high;
branchlets floccose, the tomentum thin,
the hairs whitish, brown or fawn, becoming glabrescent.
Leaves ovate-oblong through oblong-elliptic to elliptic,
8 to 14.5cm long by 2.5 to 5.5cm wide,
retained for 1-2 years;
upper surface dark green;
lower surface indumentum unistrate,
dense, continuous, felted,
yellowish-brown to golden brown,
the hairs radiate through sub-ramiform.
Petiole 8-24mm long,
variably floccose, the tomentum thin, the hairs whitish, brown or fawn,
usually quickly glabrescent, sometimes becoming glabrous.
Inflorescence 8-15-flowered.
Rhachis 10-15mm long,
glabrous or pubescent or floccose.
Pedicel 10-25mm long,
sparsely floccose, becoming glabrescent or glabrous.
Calyx minute, the lobes triangular or rounded, each 0.5-1mm long,
their outer surface rarely floccose,
their margins glabrous or floccose.
Corolla 3 to 5cm long, funnel-campanulate,
white, white flushed pink, or pink,
with crimson-purple spots.
Stamen filaments pubescent along the lower half.
Ovary glabrous or sparsely pubescent at the apex.
Capsule 13-30mm long.

R. phaeochrysum* var. *dryophyllum
Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
SE Tibet; Gansu, C, N & W Sichuan, & NW Yunnan, China.
Growing in fir forest and rhododendron thickets, and on mountain slopes,
at elevations of 3,000-4,500m.

Identification:
as var. *phaeochrysum* except:
Shrub, 1 to 4m high.
Leaves oblong-lanceolate through lanceolate,
4 to 14cm long by 1.4 to 5.2cm wide;
lower surface indumentum yellowish-brown, fawn or pale cinnamon.
Corolla 2 to 4cm long, campanulate or funnel-campanulate.


R. dryophyllum (AC 1757)

Seed Collections - var. *phaeochrysum:*

F 10547	1913	CCH 4065	1989	JN 581	1997
F 11321	1913/1914	Cox 5118	1990	JN 582	1997
F 16302	1917/1919	EGM 129	1990	JN 586	1997
F 17100	1917/1919	EGM 135	1990	AC 3931	1998
KW 4843	1921	EGM 148	1990	AC 3991	1998
F 19783	1921/1922	SSNY 108	1992	AC 4015	1998
F 21021	1921/1922	SSNY 112a	1992	AC 4040	1998
F 21390	1921/1922	SSNY 163	1992	JN 917	1999
F 21400	1921/1922	KGB 365	1993	AC 4651	2000
KW 5409	1922	KGB 574	1993	AC 4682	2000
R 11324	1923/1924	CNW 238	1994	AC 4839	2001
R 24317	1932	CNW 351	1994	AC 4945	2001
R 25314	1932	CNW 1229	1994	KR 5386	2004
R 25482	1932	SICH 1317	1994	SI04-61	2004
KW 11586	1935	SICH 1411	1994	SI04-64	2004
Yu 10795	1937	CV 9561	1995	SI04-65	2004
Yu 10952	1937	FED 146	1995	SI04-66	2004
SBLE 454	1987	FED 209	1995	CNC 12057	2012
CCH 4054	1989	Henriksen 004	1997	JN 12102	2012
		Henriksen 016	1997		



R. phaeochrysum (F 10547)

Seed Collections - var. *dryophyllum:*

F 14024	1917	R 11102	1923/1924	R 23394	1932
F 14041	1917	R 11103	1923/1924	R 23406	1932
F 14114	1917/1919	R 11104	1923/1924	R 24314	1932
F 14115	1917/1919	R 11105	1923/1924	R 24403	1932
F 14145	1917/1919	R 11106	1923/1924	R 24418	1932
F 14519	1917/1919	R 11107	1923/1924	R 24445	1932
F 16380	1917/1919	R 11119	1923/1924	R 24457	1932
F 16467	1917/1919	R 11120	1923/1924	R 24459	1932
F 16656	1917/1919	R 11121	1923/1924	R 24461	1932
F 16673	1917/1919	R 11149	1923/1924	R 25474	1932
F 16780	1917/1919	R 11323	1923/1924	KW 10533	1933
F 16836	1917/1919	R 11328	1923/1924	KW 10579	1933
F 17473	1917/1919	R 11333	1923/1924	Smith 13982	1934
F 19793	1921/1922	R 11338	1923/1924	KW 13708	1937
F 19798	1921/1922	R 11342	1923/1924	CHM 2517	1986
F 20318	1921/1922	R 11344	1923/1924	Cox 5057	1990
F 20330	1921/1922	R 11500	1923/1924	Cox 5132	1990
F 20418	1921/1922	R 11702	1923/1924	EGM 127	1990
F 20442	1921/1922	KW 6954	1926	EGM 142	1990
F 21011	1921/1922	R 18138	1929	EGM 144	1990
F 21012	1921/1922	R 18141	1929	SICH 650	1991
F 21018	1921/1922	R 18159	1929	SSNY 140	1992
F 21019	1921/1922	R 18168	1929	SSNY 144	1992
F 21047	1921/1922	R 18171	1929	KGB 21	1993
F 21048	1921/1922	R 18179	1929	KGB 486	1993
F 21052	1921/1922	F 29131	1930/1931	FED 210	1995
F 21287	1921/1922	F 29243	1930/1931	AC 1757	1996
R 10883	1923/1924	F 29253	1930/1931	AC 1760	1996
R 10936	1923/1924	F 29254	1930/1931	AC 1772	1996
R 11087	1923/1924	F 29325	1930/1931	AC 1777	1996
R 11090	1923/1924	F 29327	1930/1931	AC 1781	1996
R 11096	1923/1924	R 23350	1932	SICH 2244	2001
		R 23369	1932		



R. phaeochrysum (F 10547)



R. dryophyllum (F 20442)

As outlined above, Tobias Marczewski's PhD Thesis *Hybrid Zones in Rhododendron Subsection Taliensia* sanitised the mélange associated with *R. aganniphum* by showing that those individuals with an agglutinated or splitting leaf indumentum were actually natural hybrid crosses with *R. phaeochrysum*. Genetic analysis revealed that their DNA exactly matched that of plants previously classified as *R. phaeochrysum* var. *agglutinatum,* so he also sorted out a second taxonomic muddle, as the elimination of *R. x agglutinatum* from the ranks allowed the botanic profile of the two remaining components of that species - var. *phaeochrysum* and var. *dryophyllum* - to be tightened up.

George Forrest was the plant hunter who discovered *R. phaeochrysum,* the find made on the mountains northeast of the Yangtze Bend, in northwest Yunnan, during July 1913. Seed associated with the type collection under F 10547 was introduced later that same year and he described the species jointly with William Wright Smith in Volume 10 of *Notes from the Royal Botanic Garden, Edinburgh,* this published in 1917.

The credit for finding *R. dryophyllum* should have gone to Frank Kingdon-Ward, but his dried material, gathered at Atuntze in northwestern Yunnan during June 1913 under the field number KW 382, just like the later KW 768 collection, was wrongly determined to be *R. taliense.* This time however, the error was not swiftly corrected. Therefore it was material gathered by Forrest that was used to describe the species, with the Scotsman composing the text alongside Isaac Bayley Balfour from specimens collected in June and July 1917 under the field numbers F 14107 and F 14115 (*Notes,* Volume 11, 1919), with the first batch of seed to be returned also arriving in 1917, this catalogued in the plant hunter's listings under F 14024 (best not to ask).

Forrest was also responsible for discovering *R. levistratum* on the Mekong-Salween Divide in 1914, but the herbarium sheets for this gathering hold only samples of the foliage. Flowering specimens found to the north of Atuntze - F 14026 and F 14114 - were gathered in June 1917 and these were used to complete the botanic description, another Balfour-Forrest joint appraisal published in *Notes,* Volume 11. But on page 88, some thirty pages on from their description of *R. dryophyllum* on page 58, which in terms of botanical precedence is the equivalent of a geological epoch rather than a split hair.

In the years that followed, a plethora of lookalikes - far too many to mention - plus a few more unrecognised-at-the-time natural hybrids were encountered by the plant hunters, gathered-up and given specific status by the botanists. Most were made synonymous under either *R. phaeochrysum* or *R. dryophyllum* - the fate of *R. levistratum* sealed under the latter species - in Part 6 of *A Review Of Rhododendrons In Their Series,* written by H. H. Davidian and John MacQueen Cowan, and published in *The Rhododendron and Camellia Year Book* 1956. All well and good - the status of *R. agglutinatum* excepted - until in the mid-1970s, a new set of brooms arrived at Edinburgh Botanic, and immediately went to work on all those sheets of long dead leaves, stems and flowers stored in the herbarium. With a vengeance.

And they decided that the type specimen of *R. dryophyllum* was in fact closer to *R. phaeochrysum,* while all the remaining *R. dryophyllum* collections - of both dried material and living plants in cultivation - mirrored *R. levistratum*.

Thus was *R. phaeochrysum* split into three varieties - *agglutinatum, levistratum* and *phaeochrysum* - in the first of the Edinburgh Revision published texts, *A Preliminary Synopsis Of The Genus Rhododendron,* authored by James Cullen and David Chamberlain, and contained within 1978's Volume 36 of *Notes.* This arrangement was then confirmed in the subsequent Subgenus *Hymenanthes* review of 1982 vintage, in the concluding tome, *The Genus Rhododendron: Its Classification & Synonymy,* published in 1996, and in the 1998 RHS *Rhododendron Handbook,* which was also authored by Doctor Chamberlain.

Viewable online at the Edinburgh Botanic website, the holotype specimen of *R. dryophyllum* Forrest 14107 has leaves that are clearly oblong-lanceolate in shape rather than oblong-elliptic, the latter being the de facto silhouette of the foliage borne on *R. phaeochrysum*.

When the isotype sheet is examined, this becomes even more apparent.

The need to factionalise *R. dryophyllum* between two taxa - var. *phaeochrysum* and var. *levistratum* - is therefore redundant as all can now reside, indistinguishably, alongside their oblong-lanceolate-leafed var. *levistratum* sisters. Except that in order to comply fully with the nomenclature precedence rules, *R. phaeochrysum* var. *levistratum* must once again be reduced to synonymy under *R. phaeochrysum* var. *dryophyllum*.

And of course, that small 'x' applied to the *R. agglutinatum* epithet, which covers each and every one of those clones with an agglutinated or splitting abaxial leaf surface indumentum, removes them from the pack.

The two remaining extant varieties of *R. phaeochrysum* can be keyed from each other using their leaf shape, as indicated - though this is never clear-cut in real life - so should be considered alongside the colour of the abaxial leaf indumentum: the var. *phaeochrysum* leaves being wider in proportion, ovate-oblong through oblong-elliptic to elliptic in shape, with the tomentum yellowish-brown through golden brown in hue; the foliage of var. *dryophyllum* narrower in outline, oblong-lanceolate through lanceolate in shape, with their underside covering yellowish-brown, fawn or pale cinnamon in tone. The majority of plants filed under the var. *dryophyllum* epithet moreover, will also have smaller flowers than those found on var. *phaeochrysum,* respectively, corollas that are 2 to 4cm in length, and campanulate or funnel-campanulate in shape, as opposed to ones 3 to 5cm long and just funnel-campanulate in form.

On the ground in the wild both varieties will be found in southeast Tibet, central, north and western Sichuan, and northwestern Yunnan, with var. *dryophyllum* also resident in Gansu Province. In some areas the two populations merge, while in others, they are distinct. Both are widespread, often occupying huge swathes of hillside in locations that are apparently environmentally adverse to any other elepidote species, or simply the result of a we-got-here-first colonisation.

R. phaeochrysum bears non-sticky leaf and flower buds, so is easily split from either *R. beesianum* or *R. wightii*. Its stamen filaments are pubescent along the lower half, thereby eliminating *R. barkamense* and *R. bhutanense*. The leaf abaxial indumentum is felted, not compacted and powdery as on the underside of the *R. traillianum* blades. And the flowers of *R. phaeochrysum* are basically white through pink, funnel-campanulate in shape and carried in a truss of 8 through 15 corollas. They are not yellow, or widely campanulate in outline, or gathered into bunches of 12 through 30, as are those of *R. lacteum.* Yet if doubt remains about a correct identification between the latter pair, a check of the ovary will find that of *R. lacteum* densely tomentose, while on *R. phaeochrysum* it is glabrous, or with just a few hairs present, set around the apex. *R. przewalskii* is the only other member of Series *Wightia* likely to obfuscate the keying, but its abaxial leaf surface indumentum is very thin and agglutinated, not felted or suede-like, and more often than not, it becomes glabrescent or glabrous with age. Equally, its branchlets, petioles, pedicels and calyx lobes are completely glabrous.

Around sixty individual seed lots of var. *phaeochrysum* have been introduced into British gardens since Forrest set the ball rolling in 1917, with another fourteen additional batches given an affinity tag. The count for var. *dryophyllum* is closer to one hundred, with no similar-but-not facsimiles registered to date. In cultivation, plants of either variety are fully hardy, each being gifted a H6-7 rating, and they are usually easy to grow, providing a well-drained planting site is chosen and the root-run kept mostly in shade. As with all the Subsection *Taliensia* rhododendrons, they are slow growing and take many years to reach flowering-size, but once maturity is attained, most clones will then bloom freely during April-May. Over time, both will attain a height close to 5m, and if given the space, a similar or much wider spread.

Oh, and the 'Greenmantle' Award of Merit clone, is a hybrid.



R. phaeochrysum (SSNY 108)

R. phaeochrysum

R. dryophyllum

R. bhutanense

Hardiness:
H6-7.
Flowering Period:
March-May.
Distribution in the wild:
Mid, N & E Bhutan; Arunachal Pradesh, NE India.
Growing above the tree line in scrub and rhododendron thickets,
and on open rocky mountain slopes,
at elevations of 3,500-4,600m.

Identification:
Shrub, rounded and compact, 0.6 to 3m high;
branchlets stout, greyish or whitish floccose at first, becoming glabrous.
Leaves obovate through obovate-elliptic to elliptic,
6 to 12.5cm long by 3 to 5cm wide,
retained for 1-2 years;
upper surface dark green, matt;
lower surface indumentum unistrate,
dense, continuous, thin, somewhat granular, adpressed and felted,
brown, greyish-brown or orange-brown,
the hairs radiate,
the midrib hairy.
Petiole 3-10mm long, short, stout,
greyish floccose above, thinly brownish floccose below.
Inflorescence 8-22-flowered.
Rhachis 15-20mm long.
Pedicel 8-13mm long, slender, glabrous or pubescent.
Calyx minute, the lobes each *c.* 1mm long.
Corolla 2.5 to 3.5cm long, campanulate,
near white, white flushed rose, pale pink or deep pink, or near red,
with crimson spots, with a magenta basal blotch.
Stamen filaments glabrous.
Ovary glabrous.
Capsule *c.* 15mm long.

Seed Collections:

L&S 3081	1937	EGM 76	1988	NAPE 0163	2003
L&S 3218	1937	C&S 1643	1990	NAPE 0216	2003
L&S 3243	1937	C&S 1645	1990	AC 5436	2004
LS&H 16851	1949	C&S 1648	1990	AC 5442	2004
LS&H 18966	1949	Fox 91	1990	AC 5446	2004
LS&H 19039	1949	Fox 93	1990	AC 5447	2004
LS&H 19071	1949	Kinmouth 81	1990	AC 5448	2004
LS&H 20286	1949	KR 1750	1990	AC 5449	2004
Bowes-Lyon 15051	1969	KR 1751	1990	AC 5451	2004
KR 1219	1987	KR 1753	1990	AC 5493	2004
KR 1221	1987	KR 1756	1990	KR 8215	2005
CHM 3091	1988	GR 5012	2003	KR 9504	2008
EGM 75	1988	KCSH 033	2003	KR 9511	2008



R. bhutanense (C&S 1643)

R. bhutanense was only recognised as a unique species in 1989.

Roland Cooper had been the first Western plant hunter to collect it - in 1915, under the field number Cooper 4102 - the find made on the Yato (or Yuto) La Ridge at an altitude of 3,960m, in Bhutan's Tongsa District. A second collection made sometime later that same year - Cooper 4286 - although of a fruiting specimen, does not seem to have produced any viable seed. Equally, three gatherings made by Frank Ludlow and George Sherriff in 1937, and five by Ludlow, Sherriff and John Hicks during 1949, although introduced, appear not to be in cultivation today, with the same holding true for a Simon Bowes-Lyon collection made twenty years later in 1969.

The rhodo-savvy doyens of the time initially identified the two Cooper finds as *R. campanulatum,* the Ludlow and Sherriff, plus Hicks octet as either *R. campanulatum, R. phaeochrysum* var. *agglutinatum,* or *R. wightii,* and the Bowes-Lyon gathering as *R. campanulatum,* despite the field notes that accompanied the latter reporting it to be a probable new species. David Chamberlain re-examined the Cooper, L&S and LS&H specimens while working on his Subgenus *Hymenanthes* revision, but the morphological pairing of a radiate leaf indumentum with a glabrous ovary only resulted in their redetermination as a natural hybrid, one with a parentage judged to be *R. wightii* x *R. campanulatum* ssp. *aeruginosum*.

A Frank Kingdon-Ward collection of *R. phaeochrysum* from 1935 - KW 11586 - is also reportedly *R. bhutanense* (McQuire & Robinson, *Pocket Guide to Rhododendron Species,* 2009), but this has not been recorded as such in the redeterminations listed by David Long in his article *Notes Relating to the Flora of Bhutan: XIII Ericaceae,* published in 1989 within *Notes from the Royal Botanic Garden, Edinburgh,* Volume 45, Number 2. A full botanic description of *R. bhutanense,* jointly written by Long and Bowes-Lyon, also featured in that update, along with that for another long-overlooked Bhutanese species, *R. kesangiae*.

Credit for the first successful introduction of *R. bhutanense* into British gardens is currently assigned to Keith Rushforth, who returned two seeds lots from the summit of the Rudong La, in the Bumthang and Mongar Districts of Bhutan, during 1987, these gathered at an elevation of around 4,145m (field numbers KR 1219 and KR 1221). That dispensation would of course change if any living specimens from those pre-1969 gatherings were ever found sharing space in a UK woodland garden, though a clearly associated provenance trail would also have to accompany such a lucky strike.

The completely glabrous stamen filaments identify *R. bhutanense* from all the other Series *Wightia* species apart from *R. barkamense*. When in flower, distinguishing one from the other is simple: *R. barkamense* has a 7-8-flowered inflorescence and yellow corollas; *R. bhutanense,* 8 to 22, the corollas variously pigmented, but never yellow. Out of flower, reliance must be placed on the character of the abaxial indumentum: velutinous on the leaves of *R. barkamense,* and darkening with age to deep- or rusty-brown; a granular, adpressed and felted tomentum for *R. bhutanense,* greyish- or orange-brown in tone.

Close to thirty seed lots have been returned since 1987, and just as David Long foretold, the distribution of *R. bhutanense* has been confirmed to extend into the northeast Indian state of Arunachal Pradesh, with a number of gatherings made in the Tawang and West Kameng Districts. One reason why the slew of collections pre 1987 may no longer be found in cultivation is that *R. bhutanense,* like many of its cohorts, has proved extremely difficult to grow. A high altitude plant - Frank Ludlow and George Sherriff commented on the L&S 3218 herbarium holotype sheet that it was 'the highest growing rhododendron except the dwarfs' - experts at the specialist nurseries have found that specimens need very swift drainage and perfect soil conditions to survive and prosper.



R. bhutanense (C&S 1643)



R. bhutanense (C&S 1643)

R. barkamense

Hardiness:
H6.
Flowering Period:
April-May.
Distribution in the wild:
N Sichuan, China.
Growing in thickets on high mountain slopes,
at elevations of 3,400-3,800m.

Identification:
Shrub or small tree, to 4.5m high;
branchlets sparsely tomentose at first, becoming glabrescent.
Leaves ovate through ovate-oblong,
5.5 to 8cm long by 3.8 to 4.8cm wide,
retained for 2-3 years;
upper surface dark green, shiny;
lower surface indumentum unistrate,
continuous, thin, velutinous-tomentose,
pale brown, darkening to deep brown or rusty-brown with age,
the hairs radiate,
the midrib glabrous at maturity.
Petiole 10mm long, finely tomentose.
Inflorescence 7-8-flowered.
Rhachis 10-12mm long.
Pedicel 7-10mm long, sparsely tomentose.
Calyx minute, the lobes rounded, each *c.* 1mm long,
their outer surface and margins glabrous or hairy.
Corolla to 3.5cm long, campanulate,
pale yellow,
with crimson-purple spots.
Stamen filaments glabrous.
Ovary glabrous.
Capsule unknown.

Seed Collections:

AC 3989	1998
AC 3990	1998
AC 4046	1998
AC 4948	2001

The holotype specimen of *R. barkamense* was logged into the National Herbarium at the Institute of Botany, Chinese Academy of Sciences, by X. Li, on June 20th, 1957, under the field number 71626. This had been collected at a height of 3,800m on Barkam Xian (Ma-erh-Kang), the peak part of the Gong Zhang Mountain Range located in the north of Sichuan Province. David Chamberlain described the species from that dried material in his 1982 Subgenus *Hymenanthes* revision published in *Notes from the Royal Botanic Garden, Edinburgh,* Volume 39, Number 2, and sixteen years later in 1998, Alan Clark introduced the taxon into UK cultivation, collecting three seed lots from near Muge Che, to the northwest of Kangding. He also re-introduced the species in 2001, this gathering made on Huang Tu Liang Shan, in Pingwu County.

The yellow hued flowers and radiate abaxial leaf indumentum of *R. barkamense* show a clear alliance with *R. lacteum* despite that species being geographically distant from the known populations of the former and its foliage being both smaller and having a cordate rather than rounded base. The corollas too are not as large, the inflorescence not as populous, and the ovary is glabrous, rather than being densely tomentose. However, the salient identifier within the series must be the glabrous stamen filaments, which will distinguish *R. barkamense* from all the others members except *R. bhutanense,* this keying outlined on page 267.

Specimens from the AC 3989 gathering have now flowered, opening white blooms, lightly flushed pink, and the consensus view amongst the doyens, which also takes the leaf shape and the abaxial indumentum into account, is that they are actually a form of *R. phaeochrysum.* Whether this status also applies to those plants germinated from the other lots has not been reported, but photographs of one of the cultivated AC 3989 plants have been published on the website of the American Rhododendron Society's Danish Chapter, viewable at https://www.rhododendron.dk/barkamense.html.

Section *Leiorrhodium* Subsection *Thomsonia:*



R. thomsonii (C&S 1578)



Taxa:

- *R. cerasinum*
- *R. cyanocarpum*
- *R. eclecteum*
- *R. forrestii*
  - *R. forrestii* var. *chamaethomsonii*
  - *R. forrestii* var. *forrestii*
- *R. hookeri*
- *R. hylaeum*
  - *R. hylaeum* var. *faucium*
  - *R. hylaeum* var. *hylaeum*
  - *R. hylaeum* var. *subansiriense*
- *R. lopsangianum*
- *R. meddianum*
  - *R. meddianum* var. *atrokermesinum*
  - *R. meddianum* var. *meddianum*
- *R. stewartianum*
- *R. thomsonii*
- *R. trilectorum*
- *R. viscidifolium*

Taxonomic Revision:

The inclusion of the two *R. forrestii* varieties and *R. trilectorum* within the membership of Subsection *Thomsonia* is fully detailed within their respective entries, but is a consequence of the dataset published in the 2010 study *A Phylogeny of Rhododendron Subgenus Hymenanthes Based On Chloroplast DNA Markers,* the lead authors of which were Richard Milne and David Chamberlain.

That paper also requires Subsection *Thomsonia* to be transferred from Section *Ponticum* into Section *Leiorrhodium,* but otherwise, the botanic pigeonhole remains as defined in the 1996 Edinburgh Revision classification.

On-the-ground field study carried out post that review's publication however, has resulted in some ranking changes and the removal of a host of natural hybrids, most especially those associated with the *R. forrestii* and *R. chamaethomsonii* populations, which were skewing the treatment of what in fact was a single species.

Furthermore, this reporting has resulted in: varietal status under *R. hylaeum* being applied to *R. faucium* and *R. subansiriense;* and specific ranking returned to *R. lopsangianum.*

Subsection Morphology:

Shrubs, dwarf, low and medium, through to small trees, upright or rounded and spreading, rarely mounding or creeping, 0.1 to 14m high; branchlets glabrous, rarely tomentose, eglandular or short-stalked glandular; bark greyish-brown, sometimes fawn, reddish or purplish, rarely whitish, rough or smooth, often peeling.

Leaf bud scales deciduous, rarely persistent.

Leaves evergreen, coriaceous, sometimes rigid,
orbicular, broadly elliptic, obovate through oblong to oval and orbiculare,
1 to 17cm long by 0.8 to 8.2cm wide,
apex rounded or obtuse, and apiculate, rarely mucronate or retuse,
base cordate, cuneate, obtuse or rounded, rarely acute,
occasionally marginally to conspicuously decurrent on the petiole,
retained for 1-3 years;
upper surface bluish-green, olive-green, pale or dark green,
often glaucous, sometimes glossy, rarely rugose or rugulose, glabrous when mature,
the midrib usually grooved, sometimes hairy at the base, more rarely glandular,
the veins usually deeply impressed, the margins sometimes revolute;
lower surface pale green, rarely whitish or pale purple,
often glaucous, papillate or not, rarely mammillate,
glabrous at maturity,
occasionally with scattered fasciculate (branched or hook-like) hairs
or their vestigial bases overlying the lateral veins,
or with a thin dendroid indumentum, or a few branched hairs and glands towards the base,
sometimes with detersile sessile glands, rarely glandular or stalked-glandular,
the midrib usually prominently raised, rarely hairy, the veins often raised.

Leaf anatomy comprises a 2- or 3-layered upper epidermis,
with the cells roughly equal in size across the layers;
the cuticle is thin to between half or as thick as the cells are deep; water tissue is absent;
the lower epidermis cells are usually prolonged into papillae.
Sclereid cells are absent, or only sparsely present.

Petiole 3-30mm long, rarely winged,
hairy or glabrous, glandular, short-stalked glandular or eglandular.

Inflorescence umbellate, racemose-umbellate or sometimes shortly racemose,
rarely pendulous, lax or dense, 1-15-flowered, rarely 18-24-flowered.

Rhachis 0.5-45mm long,
hairy or glabrous, glandular, short-stalked glandular or eglandular.

Pedicel 5-30mm long,
hairy or glabrous, glandular, short-stalked glandular or eglandular.

Calyx usually well-developed, cupular, coloured, rarely minute, 5-lobed,
these sometimes fleshy and coloured, often unequal,
triangular, ovate, truncate, oblong or rounded, and 0.5-20mm long,
their outer surface usually glabrous and eglandular,
rarely short-stalked glandular or hairy at the base,
their margins usually glabrous and eglandular, but sometimes glandular-ciliate.

Corolla 2.5 to 6.5cm long, 5-lobed,
campanulate through funnel- or tubular-campanulate,
sometimes widely-funnel-campanulate, often thick and fleshy,
deep blackish-crimson, crimson through scarlet to carmine and pink, sometimes white,
creamy-white or yellow, rarely pale yellow flushed pink, or bi-coloured,
with or without darker spots, rarely with a basal blotch,
with 5 large and darker nectar pouches at the base,
the lobes emarginate.

Stamens 10, rarely 9, unequal;
the filaments glabrous or pubescent at the base.

Ovary conoid, sometimes ovoid, 3-8mm long, 5-10-locular, often grooved,
glabrous or tomentose,
sometimes densely rufous-tomentose and stalked-glandular, or eglandular.

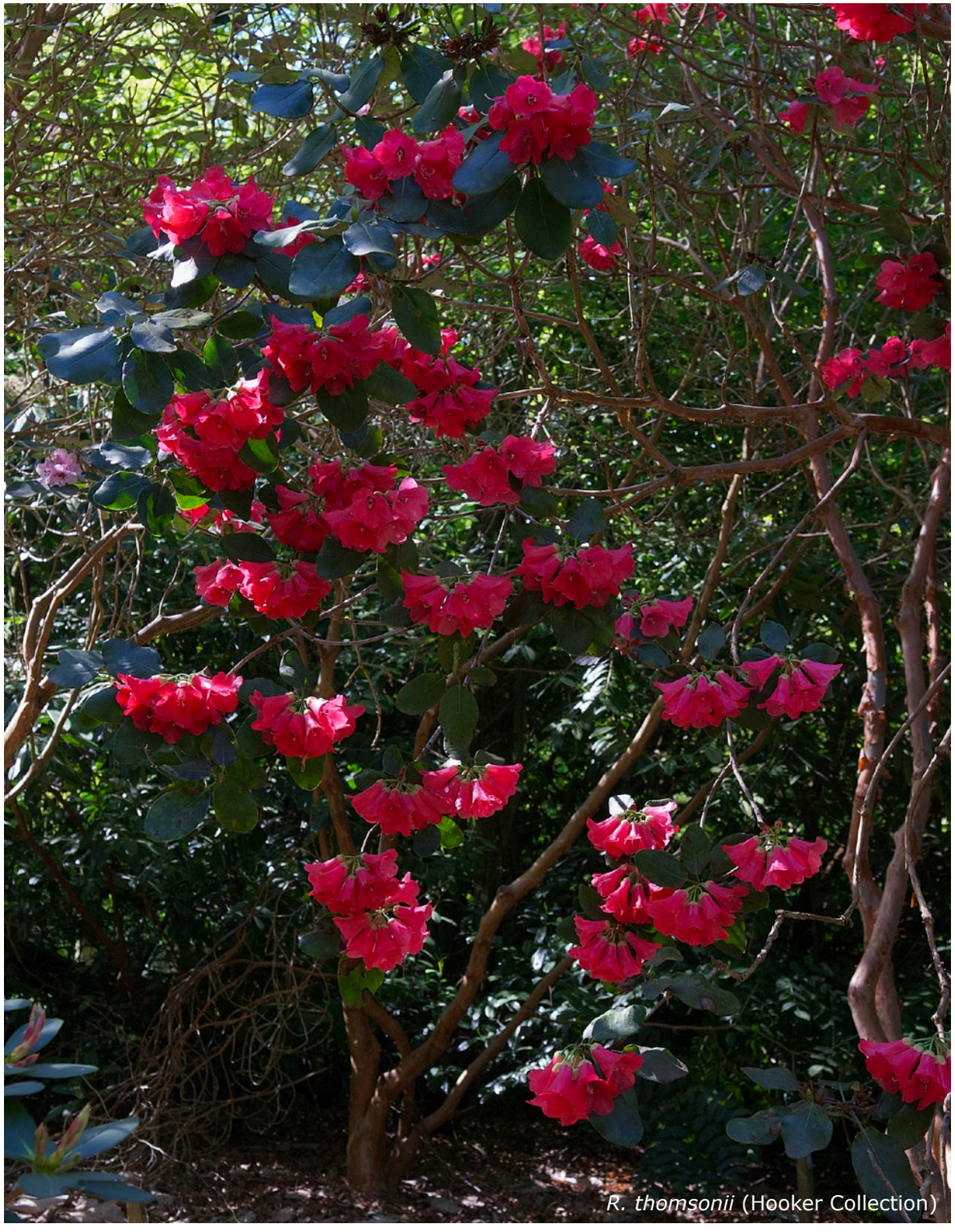
Style glabrous and eglandular,
rarely glandular to the tip, or pubescent at the base.

Capsule oblong, 10-30mm long, usually with a glaucous bloom,
glabrous or tomentose, sometimes densely so,
eglandular or glandular, sometimes variably short-stalked glandular.

Seeds elongate, narrowly winged to almost unwinged,
each end with appendages (these occasionally quite small).



R. hylaeum (KW 6833)



R. thomsonii (Hooker Collection)

R. thomsonii

Hardiness:
H4-5.
Flowering Period:
March-May.
Distribution in the wild:
E Nepal; SE Tibet; Bhutan; Sikkim & Arunachal Pradesh, NE India.
Growing in fir forests, mixed forests and rhododendron scrub,
at elevations of 2,400-4,300m.

Identification:
Shrub or small tree, rounded and spreading, or broadly upright, 1.3 to 7m high;
branchlets greenish, thinly glaucous, glabrous, sometimes sparsely glandular;
bark pale grey-brown, fawn, pink, pale orange-brown or reddish,
smooth, exfoliating in flakes.
Leaves thick, orbicular through broadly obovate,
4 to 11cm long by 3 to 7.5cm wide,
retained for 1-2 years;
lower surface glaucous or pale glaucous green, papillate, glabrous.
Petiole 10-30mm long, glaucous green, slender,
glabrous, rarely glandular.
Inflorescence 4-13-flowered.
Pedicel 8-27mm long,
glaucous or not, usually glabrous, rarely glandular.
Calyx upper half tinged red, lower half green, or wholly yellow, red or crimson,
irregularly split to cupular,
the lobes unequal, rounded or truncate, and each 5-20mm long,
their outer surface and margins glabrous and eglandular.
Corolla 3.5 to 6cm long,
campanulate or tubular-campanulate, fleshy,
deep crimson through deep blood red, often with a bloom,
and white or white flushed pink in the wild,
with or without spots.
Stamen filaments glabrous or pubescent at the base.
Ovary conoid, 5-7mm long, 6-10-locular, grooved,
glabrous and eglandular.
Style glabrous and eglandular.
Capsule oblong, 15-25mm long,
glaucous or not, glabrous, eglandular.

Seed Collections:

Cooper 2928	1914	McBeath 1279	1981	DSE 135	1995
Cooper 3991	1915	EN 13	1982	GR 5015	2003
L&S 18	1933	Dingle 18	1984	KCSH 0313	2003
L&S 31	1933	CHM 2054	1985	KCSH 0325	2003
L&S 595	1934	KR 1194	1987	AC 5418	2004
L&S 1283	1936	Bowes-Lyon 23	1987/1989	AC 5431	2004
L&S 2826	1936	CHM 3030	1988	AC 5444	2004
L&S 2847	1936	CHM 3057	1988	AC 5487	2004
KW 13662	1937	CHM 3088	1988	AC 5604	2004
KW 13712	1937	DF 86057	1988	KR 8299	2005
L&S 3042	1937	DF 86540	1988	KR 8579	2006
LS&T 3613	1938	EGM 84	1988	KR 9604	2008
LS&T 4034	1938	C&S 1578	1990	TDA 017	2011
LS&E 13589	1946/1947	C&S 1583	1990	TDA 066	2011
LS&H 16116	1949	C&S 1584	1990	TDA 360	2013
LS&H 16448	1949	C&S 1635	1990	TDA 361	2013
LS&H 18697	1949	C&S 1638	1990	TDA 362	2013
LS&H 18850	1949	Fox 47	1990	TDA 498	2013
LS&H 19046	1949	Fox 96	1990	TDA 499	2013
LS&H 20614	1949	Kinmouth 98	1990	TDA 502	2013
LS&H 21285	1949	Kinmouth 99	1990	TDA 505	2013
Stainton 244	1956	KR 1655	1990	TDA 777	2016
Bowes-Lyon 3255	1966	KR 1738	1990	TDA 78?	2016
BLM 228	1971	KR 1763	1990	TDA 789	2016
BLM 260	1971	Heasman 17a	1992	TDA 961	2016
BMW 153	1978	Sinclair 1722	1993	TDA 966	2016
Schilling 2474	1980	Sinclair 1724	1993	TDA 969	2016



R. thomsonii (Hooker Collection)



R. thomsonii (Hooker Collection)

Thomas Thomson (1817-1878), was a naturalist and surgeon who, between August 1847 and the end of 1849, was assigned to the Boundary Commission tasked to define the border between Kashmir and Tibet. But instead of returning home to England when that work was completed, he spent the next two years through until March 1851, accompanying his old friend Sir Joseph Dalton Hooker on a botanic tour through Sikkim. It was inevitable therefore, that one of the new species rhododendrons collected on that expedition should be named for Thomson, for as Hooker writes at the conclusion of the botanic description, he was 'my earliest friend and companion during my College life, and now my valued travelling companion' (*The Rhododendrons of Sikkim-Himalaya,* Part 2, 1851). The taxon chosen for that honorific epithet remains to this day one of the most spectacular red-flowering rhododendrons in the entire genus, with specimens described as 'exceptionally fine garden plants' and 'examples of perfection and great beauty' by no less an authority than H. H. Davidian (*The Rhododendron Species,* Volume 3, 1992).

Hooker's *R. thomsonii* seed was received at Kew during 1850 and quickly distributed to various botanic institutions, private gardens and commercial nursery firms. The Stanwell Nurseries of Mr Methven, on the Bonnington Road in Edinburgh, was one of those recipients and in April 1857, it was there where the species first flowered in UK cultivation. Standish and Noble at Sunningdale, Ascot, also received part of the largesse and a layer from one of those plants, growing in the nursery grounds, was transported from Surrey and replanted in Ray Wood, at Castle Howard, Yorkshire, in the late 1960s, by the last owner of that now defunct business, the plantsman and garden designer James Russell. A thriving small tree, it is - to my knowledge - the only labelled specimen in a UK garden open to the general public that today, can be directly linked to Sir Joseph's original 1850 introduction, though unlabelled plants grow elsewhere, such as at Stonefield Castle in Argyl.

Yet - as reported previously in this text - the accepted history may be in error and doing a disservice to the man alternative sources suggest not only discovered *R. thomsonii,* but introduced the plant into cultivation as early as 1830: the British East India Company's employee, Colonel William Henry Sykes.

> 'I have here a good many Himalayan species between seventy and eighty years old, including *falconeri, niveum, barbatum, thomsonii, lanatum, fulgens, campanulatum* of several varieties, *hodgsonii* and *arboreum.*'
> Colonel John Middleton Rogers, *Notes on the Garden of Riverhill, Sevenoaks*.
> *The Rhododendron Society Notes,* Volume 1, Number 1, 1916.

Other sources - the J. G. Millais 1917 tome *Rhododendrons and the Various Hybrids,* for instance - confirm the presence and age of the Himalayan plantings at Riverhill, though usually only in regard to a hybrid growing in the grounds, a directed cross or an undirected wild pollination between *R. falconeri* and *R. niveum,* the flowers of which were exhibited as early as 1882, with the plant subsequently named 'Colonel Rogers' in 1926.

Technically, the glabrous, eglandular, yet papillate abaxial leaf surface of *R. thomsonii,* the non-sticky ovary and style, and the crimson through blood-red flowers, when viewed in combination, will key the species from all its subsection relatives, so reference to the large and multi-coloured cupular calyx - the lobes persistent and vibrant long after the corollas have fallen - the olive-green orbicular leaves, and the brown, pink or reddish peeling bark, need only be made to further delight the senses.

Roland Cooper reintroduced *R. thomsonii* to British gardens from Bhutan in 1914, with George Cave next to do so in 1920 and again in 1923, though his field numbers have not been published. Ludlow and Sherriff first sent back seed in 1933, did so again the following year, this time from southeast Tibet, and many more times after that. Indeed, thanks to its westward distribution through Sikkim into eastern Nepal, as well as the populations found later in Arunachal Pradesh, *R. thomsonii* capsules have been gathered near-continuously by Western plant hunters across all the decades since. In consequence, any number of forms will be found growing in collections from Land's End to John o'Groats. Some have small leaves, others large. The flower colour spectrum encompasses vermilion, very deep rose, port-wine-red and deep red, in addition to the usual crimson and blood-red, and may soon feature white or white-flushed-pink blooms if those rare plants found in the wilds of Nepal and Sikkim are sampled by the plant hunters once the Nagoya Protocol restrictions are sorted out so in-situ seed collecting is once again permitted without all the bureaucratic hassle. Six to ten spotted or fleckless corollas per each open and lax truss are the norm, but some clones boast an inflorescence of twelve to thirteen flowers. And it goes without saying that the multi-hued peeling bark and smooth trunks of mature specimens are a joy to behold throughout the entire year, January to December.

Some forms of *R. thomsonii* often begin opening their flower buds as early as March, others through April into May, so spring frost protection is essential wherever the plants are grown. General hardiness is variable due to the range over which the species is found, H4-5 being the RHS assessment, therefore east coast and inland sites must provide extra shelter from cold winds and lower temperatures if the shrubs are to thrive. Powdery mildew attack will be a bane, sometimes badly disfiguring the foliage, with the choice to repeatedly spray or let nature take its course one even Hobson would baulk at. Many experts now believe the best advice is to do nothing, simply grin and bear the infestation, although any known host that can be removed, should be dug out and burnt, or at least replanted some distance away. Overhanging canopy branches need to be sawn back and the airflow around the plant maximised, all while not unduly amplifying the exposure. Recompense for the few heavily-despoiled blades will then be found in elegant bark, enduring calyces and those exquisite blooms.



R. thomsonii

R. thomsonii (McBeath 1279)


R. thomsonii (LS&H 21285)


R. thomsonii (L&S 2847)


R. thomsonii

R. thomsonii



R. hookeri

R. hookeri

Hardiness:
H4-5.
Flowering Period:
March-April.
Distribution in the wild:
SE Tibet; W Arunachal Pradesh, NE India.
Growing in fir forest, mixed forests and thickets on sheltered south-facing mountain slopes,
at elevations of 2,200-3,700m.

Identification:
Shrub or small tree, compact or broadly upright, 1 to 6m high;
branchlets glaucous, becoming green, with a waxy farina, glabrous;
bark grey, brown or maroon, smooth, flaking.
Leaves oblong-elliptic through obovate-elliptic to broadly oblanceolate,
6.3 to 17cm long by 3 to 7.5cm wide,
retained for 1-2 years;
lower surface pale green, glaucous, not papillate, glabrous,
except for isolated tufts of well-developed fasciculate hairs on the lateral veins,
these white at first becoming brown.
Petiole 15-30mm long, cylindric, slightly winged, glabrous.
Inflorescence 8-15-flowered.
Pedicel 7-16mm long, slender, glabrous.
Calyx membranous, greenish, yellowish, pink or reddish, cupular,
the lobes unequal, rounded or oblong,
often erose (irregularly toothed), each 5-10-20mm long,
their outer surface and margins glabrous.
Corolla 3.5 to 4.5cm long, campanulate or tubular-campanulate, fleshy,
deep rose to crimson and blood-red,
with or without a few darker but faint spots.
Stamens 9 or 10; filaments glabrous.
Ovary conoid, 5-7mm long, 7-8-locular,
glabrous and eglandular.
Style glabrous and eglandular.
Capsule broadly oblong or oblong-obovate, 20-25mm long.

Seed Collections:

KW 8238	1927/1928	HECC 10035	2002	AC 5358	2004
KW 13650	1937	AC 5329	2004	AC 5381	2004
LS&T 3652	1938	AC 5334	2004	KR 8142	2005
LS&T 3655	1938	AC 5344	2004	KR 9419	2008
LS&T 3676	1938	AC 5351	2004	KR 9434	2008
LS&T 6579	1938	AC 5354	2004	KR 10377	2012

R. hookeri is unique within Genus *Rhododendron* in having tufts of fasciculate hairs on the lateral veins of the leaf lower surface. This hair type forms a woolly indumentum on the leaves of *R. fulgens, R. wallichii, R. wiltonii* and the seed-pan-rogue natural hybrid named *R. x paradoxum* (thanks to its *R. wiltonii* x *R. pachytrichum* heritage), but on the underside of the *R. hookeri* blades, each floccus is a single, isolated hair. Large and robust. Visible to the naked eye. And they key the species from all the other members of the subsection, indeed the genus. Technically, they are dendroid hairs that have evolved to include a very stout stem, around three times as long as it is wide, though never more, and instead of resembling a tree, the follicles appear more like a sheaf of barley, the broad, ribbon-like arms hanging down as the ears and prompting the analogy to hooks.

The species was discovered in 'Bootan', as the Kingdom was then quaintly spelt in the journals of the day, by - rather appropriately - Thomas Booth. On December 17th 1849, to be precise, the plants 'solely forming thickets over the Oola Mountain, on the northern slopes of the Lablung Pass, accompanied by *Pinus excelsa*' to quote from the 1853 botanic description published in Volume 5 of *Hooker's Journal of Botany and Kew Miscellany,* this written by Thomas Nuttall (who was actually Booth's uncle and had raised many of the plants from the expedition at Nutgrove Hall, his home near St. Helens in Lancashire). Booth himself described making the find in a short article for *The Gardeners' Chronicle,* published in 1862, which included updated dairy extracts from his field notes:

December 16:
'Night coming on obliged us to encamp at the foot of the Oola Mountain, atmosphere very close and malarious'.

December 17:
'Started at our usual time; country densely wooded; observed the Rhododendron. Continued to ascend; came upon a dense thicket of *R. Jenkinsi*. I was very much disappointed at not being able to discover a single seed pod on these; soil apparently deep decayed vegetable matter. Continued our ascent; mountain less densely wooded; came upon large thickets of *R. argenteum, R. latifolium,* and *R. Jenkinsi;* seeds and flower buds abundant. Fine clear day; thermometer 81º at noon in shade. Continued to ascend, passing through large masses of Rhododendrons, with here and there a solitary tree of *Pinus longifolia* and Oaks. Continued to ascend; discovered *R. Falconeri* and *eximium,* growing in the crevices of protruding masses of sandstone rock; soil stiff and clayey; procured seeds and specimens. Attaining a higher elevation found a species of Primula, a Convallaria, and Sedum; at this elevation ice and snow abundant, proceeded on our way with difficulty. The road, a water-worn track, covered with ice and drifts of snow; a solitary gnarled Oak or Pinus struggling for existence. Found here *R. campylocarpum, R. Keysii,* and *R. Hookeri,* with leaves coiled up like so many Havannah cigars, and assuming a very wintery appearance. This vegetation, with slight variation, continued to the summit of the mountain; the day was advancing rapidly, and we were compelled to hasten our steps. The descent on the north eastern side was rapid; *R. Hookeri,* two or three species of Gaultheria, Primulas, &c., grew alongside our pathway; soil stony, and for the most part composed of clay. Proceeding downwards we came upon extensive thickets of *R. Kendrickii,* among which we encamped for the night; this is the coldest night I have experienced since leaving England. Thermometer 7º Fahrenheit'.

December 18:
'This morning the Coolies were glad to make an early start, for being thinly clad they had passed a miserable night'.



R. hookeri

That Bhutan does not feature in the accepted wild distribution of *R. hookeri,* which is restricted to southeastern Tibet and western Arunachal Pradesh, was apparently down to a geographic faux pas. For the locale where Booth made his find, was actually in northeast India. Frank Ludlow illuminated the boo-boo in a 1972 article for the Botanical Society of Edinburgh:

> 'All of Booth's collecting appears to have been done in the Balipara Frontier Tract and in the Aka and Daphla Hills, which have never during the past two and a half centuries formed part of Bhutan. The belief that Booth collected in Bhutan seems due to a loose application of the term "Bhutan Himalaya" to include tribal territory east of the 92nd meridian'.
> *Transactions,* Volume 41, Issue 3.

Nagoya Protocol-authorised plant hunters visiting the Balipara Frontier Tract today will find their GPS receivers plotting a location within the borders of the West Kameng District of Arunachal Pradesh, from whence a trek due west, across the mountains of Bhutan, will lead to Sikkim, where in 1849, the epithet honoree would also have been botanising.

R. hookeri first flowered in cultivation during April 1856 - at Mosley Hall, Liverpool, then the residence of a Mr Fairie - and the species has subsequently proved to be hardy in gardens all along the west coast and in the south, but not in those along the east coast or inland unless a very well-sheltered redoubt is provided, this despite a H4-5 rating. Red-flowering forms are particularly prone to bark split from spring frosts, as the blooms open in March-April and the new growth - wrapped in long crimson leaf bracts - starts extending soon afterwards, so all will be at risk if temperatures plunge.

Frank Kingdon-Ward reintroduced seed in the late 1920s, Frank Ludlow, George Sherriff and George Taylor followed suit a decade or so later in 1938, and sixty-plus years on, post the millennium, a team comprising Peter Hutchison, Philip Evans, Peter Cox and Kenneth Cox secured the first modern-day batch of seed in the autumn of 2002. Alan Clark and Keith Rushforth contributed eleven more lots before the axe fell in October 2014.



R. hookeri



R. hookeri (KW 8238)



R. hookeri (KW 8238)



R. hookeri

R. cyanocarpum

Hardiness:
H5-6.
Flowering Period:
February-April.
Distribution in the wild:
W Yunnan, China.
Growing at the margins of pine forest,
in bamboo brakes, in rhododendron thickets, in ravines and on open pasture,
at elevations of 3,000-4,000m.

Identification:
Shrub or small tree, broadly upright, 1 to 7.6m high;
branchlets yellowish-green, glaucous, glabrous, eglandular;
bark greyish or brown, rough, falling off in oblong flakes.
Leaves thick, broadly elliptic through orbicular,
5 to 13cm long by 4 to 9cm wide,
retained for 1 year;
lower surface pale green, glaucous, mammillate,
glabrous or with a few scattered hairs near the base of the midrib.
Petiole 10-30mm long,
grooved above, yellowish-green, glaucous, often slightly winged,
glabrous, sparsely glandular or eglandular.
Inflorescence 5-11-flowered.
Pedicel 10-20mm long, glabrous, eglandular.
Calyx greenish or pale pink, cupular, fleshy,
the lobes unequal, rounded or truncate, each 2-7-15mm long,
their outer surface and margins glabrous and eglandular.
Corolla 4 to 6cm long, campanulate or widely-funnel-campanulate, fleshy,
white, creamy-white to clear pink, rose-pink or purplish-rose,
usually without spots.
Stamen filaments glabrous.
Ovary conoid, 5-7mm long, grooved,
glabrous, rarely sparsely through moderately glandular.
Style glabrous and eglandular.
Capsule oblong, blunt, 10-25mm long, with a bluish-glaucous bloom.

Seed Collections:

F 6775	1910	AC 681	1993
F 6779	1910	AC 698	1993
F 11629	1912/1914	KGB 804	1993
F 15520	1917/1919	KR 2748	1993
F 15570	1917/1919	CNW 811	1994
F 15588	1917/1919	CNW 812	1994
R 6273	1923/1924	P&M 62	1994
SBEC 162	1981	P&M 83	1994
SBEC 244	1981	AC 1352	1996
SBEC 260	1981	KR 4051a	1996
SBEC 361	1981	CCHH 8230	1997
SBEC 535	1981	Henriksen 149	1997
SBEC 971	1981	Henriksen 162	1997
CLD 1275	1990	JN 1031	1999
CLD 1507	1990	ZH-G 079	2006
SSNY 370	1992	C&N 5904	2007
AC 676	1993	JN 11039	2011



R. cyanocarpum

The epithet chosen for *R. cyanocarpum* by Adrien Franchet in 1895, means 'with blue fruit', and the capsules of this species do indeed sport a bluish glaucous bloom, though identification within the subsection is usually made by examining the leaf underside and the corolla colour: a mammillate abaxial epidermis being the first key; non crimson corollas the second. Rhododendron aficionados will be familiar with the term 'papillate', referencing a lower leaf surface covered with minute pimples, so when 'mammillate' is used to describe the epidermis, those protrusions will be rather more developed, indeed, nipple-like. Further confirmation of a correct identification is provided by the glaucous and yellowish-green young stems and petioles, the latter somewhat flat above, and the leaf midrib, yellowish-green on both abaxial and adaxial surfaces.

Abbé Jean-Marie Delavay was the first Western plant collector to chance upon the species, finding a population of plants on Tsang chan in western Yunnan, bedecked in blunt, oblong capsules rather than bloom. So when the missionary's dried herbarium specimens arrived on Franchet's desk at the Muséum National d'Histoire Naturelle in Paris, the resemblance of the foliage to one of Sir Joseph Hooker's 1849 Sikkim collections was noted, this propelling the logic of deeming the discovery *R. thomsonii* var. *cyanocarpum,* and that combination duly appeared in 1895's Volume 9 of the *Journal de Botanique*.

George Forrest began the process of correctly identifying the species during July 1906 when he discovered a group of the plants in flower on the eastern side of the Tali mountain range (known today as the Cangshan), with herbarium material returned under F 4137, the collection date probably ruling out any accompanying seed and saving Arthur Kilpin Bulley yet more embarrassment. The Scotsman found the species again in 1910, which was when he officially introduced the taxon into UK cultivation, as well as on his third expedition to Yunnan that kicked-off in 1912, and examination of this additional material allowed William Wright Smith at Edinburgh Botanic to assign the species specific status in 1914, his update published in Volume 26 of the *Transactions and Proceedings of the Botanical Society of Edinburgh*.

Fast-forward to 2011, by which time a total of thirty-four batches of seed had been returned, and the endemic distribution will be seen to be very localised, restricted to just the Cangshan range in central west Yunnan, where *R. cyanocarpum* is isolated from its closest subsection relatives, namely *R. thomsonii* and *R. meddianum,* though it has been found to hybridise with *R. lacteum*. Wild plants can hit the 7m-height mark, but the species has a more restrained habit in British gardens, maxing-out at 3 or 4m with a slightly narrower spread courtesy of the upright branch structure. Specimens of the species will thrive in most southern and west coast gardens, but they require a well-sheltered spot to do so along the east coast. Yet despite mature plants putting on a fine annual floral display of white or rose flowers, *R. cyanocarpum* remains a rare find, present only in the larger rhododendron collections. One reason for this could be its susceptibility to the powdery mildew fungus, though all the Subsection *Thomsonia* plants share this Achilles heel, with *R. cyanocarpum* faring no better or worse than the other species. Another could be a reputation for being somewhat difficult in cultivation, so despite a multitude of young plants being germinated from close to a dozen expeditions to the Cangshan mounted from 1981 onwards, no noticeable hike in popularity has occurred over those four decades.



R. cyanocarpum (CLD 1507)



R. cyanocarpum (AC 676)

R. forrestii (KW 5846)

R. forrestii* var. *forrestii
Hardiness:
H5.
Flowering Period:
April-May.
Distribution in the wild:
E & SE Tibet; NW Yunnan, China; E Arunachal Pradesh, India; NE Upper Myanmar.
Growing on steep moist hillsides and rocky slopes,
in moist stony pasture and peaty moorland, and alongside streams or lakes,
at elevations of 3,000-4,600m.

Identification:
Dwarf shrub, creeping, prostrate or mounding, stems up to 0.6m long, 0.1 to 0.5m high;
branchlets sparsely tomentose or glabrous, short-stalked glandular.
Leaf bud scales persistent.
Leaves obovate through orbicular,
1 to 2.8cm long by 0.8 to 1.8cm wide,
retained for 2-3 years;
upper surface dark green, rugose, glabrous,
the midrib grooved, the veins impressed, the margins revolute or flat;
lower surface green, pale purple or whitish,
glabrous, or with a few branched hairs and glands towards the base,
or glaucous-papillate with some stalked-glands,
the midrib and veins raised.
Petiole 4-14mm long,
sparsely floccose-tomentose and short-stalked glandular,
rarely glabrous and eglandular.
Inflorescence 1-2-5-flowered.
Pedicel 6-25mm long,
densely tomentose and short-stalked glandular, rarely eglandular.
Calyx lobes 0.5-3mm long,
their outer surface glabrous, short-stalked glandular or eglandular,
their margins ciliate and short-stalked glandular, or glabrous and eglandular.
Corolla 2.5 to 4cm long, tubular-campanulate,
deep crimson through scarlet to carmine.
Stamen filaments glabrous.
Style glabrous.

R. forrestii* var. *chamaethomsonii
Hardiness:
H5-6.
Flowering Period:
March-May.
Distribution in the wild:
E & SE Tibet; NW Yunnan, China; E Arunachal Pradesh, India; NE Upper Myanmar.
Growing on steep moist stony hillsides,
in peaty moorland, on rocks and cliffs, and in dense thickets,
at elevations of 3,300-4,600m.

Identification:
as var. *forrestii* except:
Low shrub,
compact and dense to open and broadly upright with ascending stems,
0.3 to 1m high.
Leaf bud scales usually deciduous.
Leaves broadly obovate through oblong-obovate to oblong,
2 to 9cm long by 1.8 to 4cm wide;
upper surface rugulose.
Petiole sometimes stalked-glandular.
Calyx coloured, the lobes 1-7mm long.
Corolla 2.5 to 5cm long, campanulate through tubular-campanulate.
Stamen filaments sometimes pubescent at the base.
Style occasionally pubescent at the base.

Seed Collections - var. *forrestii:*

F 13259	1912/1914	KW 9629	1931	LS&E 15106	1946/1947
F 14011	1917/1919	L&S 1883	1936	LS&E 15170	1946/1947
F 14138	1917/1919	L&S 2653	1936	LS&E 15207	1946/1947
F 19515	1921/1922	KW 13225	1937	LS&E 15285	1946/1947
F 20027	1921/1922	Yu 19034	1937	LS&E 15292	1946/1947
F 21718	1921/1922	Yu 19341	1937	LS&E 15400	1946/1947
F 21786	1921/1922	Yu 20372	1937	LS&E 13663	1946/1947
F 22922	1921/1922	Yu 20614	1937	R 92	1948/1949
F 22924	1921/1922	Yu 20729	1937	Cox 6100	1992
KW 5417	1922	Yu 22946	1937	CV 9516	1995
R 10964	1923/1924	Yu 23275	1937	CV 9517	1995
R 10993	1923/1924	LS&T 3642	1938	KR 3501	1995
R 10994	1923/1924	LS&T 3783	1938	KR 3519	1995
R 10997	1923/1924	LS&T 3942	1938	CC 7516	1996
R 11033	1923/1924	LS&T 3995	1938	AC 3236	1997
R 11074	1923/1924	LS&T 4751	1938	AC 3250	1997
R 11169	1923/1924	LS&T 5572	1938	AC 3295	1997
F 25524	1924/1925	LS&T 6598	1938	DGEY 266	2001
F 25961	1924/1925	LS&E 13127	1946/1947	DGEY 272	2001
KW 5845	1924/1925	LS&E 13278a	1946/1947	TARRVS 069	2002
KW 5846	1924/1925	LS&E 13783	1946/1947	BE 09-20	2009
KW 6832	1926	LS&E 13969	1946/1947	BE 09-22	2009
KW 6912	1926	LS&E 15070	1946/1947	BE 09-23	2009
KW 6913	1926	LS&E 15098	1946/1947	BE 09-29	2009
KW 6935	1926			BE 12-17	2012

Seed Collections - var. *chamaethomsonii:*

F 21718	1921/1922
F 21723	1921/1922
F 21900	1921/1922
F 22674	1921/1922
F 22802	1921/1922
R 11036	1923/1924
R 11042	1923/1924
R 11597	1923/1924
F 25524	1924/1925
F 25961	1924/1925
R 23498	1932
R 22050	1932
LS&T 5544	1938
LS&E 13278b	1946/1947
LS&E 15102	1946/1947
C 6099	1992
CV 9544	1995
DGEY 259	2001



R. chamaethomsonii

The inheritance of organelles within the entirety of Genus *Rhododendron* follows the practice adopted by most other plants and animals on Planet Earth: they are the sole gift of the female parent, with a complement of such present in each and every one of her egg cells - chloroplasts for photosynthesis; mitochondrion for energy production; and a host of others, each individually tasked to a multitude of specific, integral functions.

Every one of those specialised cellular subunits has their own unique DNA, which does not participate in the genetic recombination that occurs between the nuclear chromosomes when a male sperm enters the female egg, or in the case of a rhododendron, the pollen tube enters the ovule.

And it is because this coding remains pristine and unmodified across the generations that its origin can be traced and the sequences that are present - on organelles from different rhododendron species - be compared. If these match, then a clear evolutionary association must exist between those individuals.

Evidence presented in *A Phylogeny of Rhododendron Subgenus Hymenanthes Based On Chloroplast DNA Markers,* published in 2010, showed that *R. forrestii, R. hookeri* and *R. thomsonii* all had the same chloroplast DNA chains.

The paper's lead authors, Richard Milne and David Chamberlain, put this down to a discordance between the morphology and the cpDNA results, writing that a dwarf alpine species assigned to Subsection *Neriiflora,* would likely only have a tenuous linkage to the Subsection *Thomsonia* rhododendrons.

Yet elsewhere within their data set, *R. hyperythrum* and *R. pseudochrysanthum* were correctly placed together in the same clade on the parsimony tree. And as the good doctors acknowledged, this relationship has been confirmed in four separate, independent research studies that each analysed different areas of their nuclear DNA.

Such corroboration therefore validates the analytical methodology and scientific techniques used to acquire those cpDNA determinations, as well as their accuracy.

Moreover, very little - other than height, length and width dimensions - needs to be changed in the Subsection *Thomsonia* general morphology lisitng to accommodate the new arrivals, with most of the attributes and characteristics found on *R. forrestii* already present and correct. And this includes the leaf anatomy, which is a mirror image.

Had the assignment been to almost any of the other subsections - *Arborea, Fulva, Grandia, Irrorata,* to name but four - clear mismatches across the feature set would have been immediately apparent and cries of derision would have been voiced by each and every rhododendron-savvy doyen worldwide if a transfer had been mooted.

But within Subsection *Thomsonia,* such a charge cannot be made.

Unfortunately, *R. forrestii* has not featured in any of the other major phylogenetic studies published to date - the Goetsch-Eckert-Hall RPB2 gene sequence investigation, for instance, published in 2005 - but its organelles clearly come from the female evolutionary forebear of the Subsection *Thomsonia* rhododendrons.

They were not the matriarchal gift of the Subsection *Neriiflora* primogenitor.

In consequence, *R. forrestii* is herein transferred from Subsection *Neriiflora* into Subsection *Thomsonia,* where it will still be somewhat aberrant, but no more so than it was within its previous home.

Regrettably, *R. chamaethomsonii* and *R. trilectorum* were not included in the Milne-Chamberlain chloroplast study, but given their close morphological relationship with *R. forrestii* - recent field study reporting clarifying and enhancing those affinities (as will be detailed shortly) - they too have been moved into Subsection *Thomsonia.*

Hopefully, an examination of their nuclear or subunit DNA in the not too distant future will confirm that this resettlement was not premature and made in error.

George Forrest was responsible for the discovery of both *R. forrestii* and *R. chamaethomsonii,* finding the former while ascending the Tsedjong Pass on the Mekong-Salween Divide in southeast Tibet in July 1905, the latter on the Salween-Kiu Chiang Divide in eastern Tibet sixteen years later during July 1921. He had also found the prostrate form of *R. forrestii,* at the time given specific status as *R. repens,* while exploring the Mekong-Salween Divide in northwest Yunnan, during June 1917, and would come upon a mounding, dome-shaped plant - described as *R. forrestii* var. *tumescens* - on a revisit to the Salween-Kiu Chiang Divide in June 1922.

Isaac Bayley Balfour and Frederick Ludwig Diels wrote the botanic description for *R. forrestii* that appears in Volume 5 of *Notes from the Royal Botanic Garden, Edinburgh,* published in 1912, while that for *R. repens* was written by Balfour in concert with Forrest and is included in *Notes,* Volume 11, which was sent to the printers in 1919.

R. chamaethomsonii was first described as a variety of *R. repens* by Forrest and Harry Tagg in *The Species of Rhododendron,* this published in 1930, though it would later be promoted to specific status by John Cowan and H. H. Davidian in 1951 (within Volume 6 of *The Rhododendron Year Book*). That same tome contained their joint description for *R. forrestii* var. *tumescens,* which was finally given botanic status some thirty years after its initial discovery and introduction.

The widespread distribution of the *forrestii-chamaethomsonii* clan across the high alpine moorland of southeast Tibet and northwest Yunnan, plus adjoining northeast Upper Myanmar and the Indian state of Arunachal Pradesh has, in the century since the first discovery was made, not surprisingly led to the introduction of a bevy of intermediate forms and individuals now recognised to be natural hybrids; five specific-ranked taxa - *R. repens, R. erastum, R. porphyrophyllum, R. pyrrhoanthum* and *R serpens;* one subspecies - *R. papillatum;* and four varieties - *R. chamaedoron, R. chamaedoxa, R. chamaethauma* and *R. tumescens*. They result from marginal character differences across the range, cross-pollinations between *R. forrestii* and *R. chamaethomsonii,* or more diverse interbreeding with the slew of rhododendrons growing and flowering nearby. One or two botanists would extend that argument further and suggest that *R. chamaethomsonii* itself is actually no more than a stabilised hybrid of *R. forrestii.* And there is merit in such an approach.

However - and as usual - with any debate on rhododendron classification where synonymy is involved or threatened, views are often polarised, and the history, long and interwoven. But in this case, there is now ample evidence from field study reporting to justify significant change, the call for such, not surprisingly, emanating from Glendoick:

In their *Encyclopedia of Rhododendron Species,* first published in 1997, Peter and Kenneth Cox put forward the view that within this alliance of plants, there is really only one 'good' species.

If the now obvious hybrids are excluded - nearly all of which have some degree of indumentum on their lower leaf surface, rather than just a few hairs near the base - a single taxon emerges that can be split on habit and size: one grouping for the creeping, prostrate or mounding forms that have small rounded leaves and minute calyx lobes; another for the low and compact to open and upright plants with longer, wider leaf blades and much larger calyx lobes. Subspecies status would apply if there were any geographic or altitudinal niche on which to hang it, but overwhelmingly, these two sets of plants are found growing in close association with each other across the entirety of their range, so the correct designation must be at varietal ranking, namely, *R. forrestii* var. *forrestii,* and *R. forrestii* var. *chamaethomsonii*.

Two intermediate forms, already made synonymous, can continue to be maintained as Repens Group and Tumescens Group under *R. forrestii* var. *forrestii*.

R. chamaedoron should be made synonymous under *R. chamaethauma* following the lead taken by Cowan and Davidian in the 1951-52 edition of *The Rhododendron Yearbook* (and as was also set out in Volume 3 of *The Rhododendron Species,* 1992), except a lower case 'x' should precede the epithet. Placement as natural hybrids should also be the fate of *R. erastum, R. porphyrophyllum, R. pyrrhoanthum* and *R. serpens,* all four of which exhibit a thin abaxial tomentum. All the other associated epithets are herein also considered synonymous. Note too, the *R. forrestii* ssp. *papillatum* determination is actually illegal under the nomenclature rules, as the terminating moniker had been used in 1922 by Balfour and Roland Cooper to describe a member of Subsection *Irrorata*.

A check of the petiole length will key either variety of *R. forrestii* from the only other member of Subsection *Thomsonia* likely to cause an identification crisis, *R. trilectorum,* which has subsessile leaves and a winged leaf stalk never more than 5mm long. A second easily spotted difference will be seen when the flowers are open: the stamens in the *R. forrestii* corolla are glabrous; those of *R. trilectorum,* pubescent towards the base. Flower colour is also currently an acceptable key - crimson through scarlet, against pale yellow flushed pink - though few would bet against a red form of *R. trilectorum* turning up before too long. Height will differentiate-out all of the subsection's other constituents, as it did for the Subsection *Neriiflora* membership previously, though not the glabrous leaves.

Credit for the introduction of both *R. forrestii* varieties, as well as the two group forms into British gardens goes to George Forrest, with ease of cultivation basically dependant on their innate height:

Specimens of *R. forrestii* var. *forrestii,* and those of Repens Group, are the hardest to grow successfully, though all the creeping or prostrate forms are difficult. They do best in northern climes, freed from the high summer temperatures of southern England. Here, specimens sited on a north-facing, steeply-sloping bank or rock wall - a raised bed will suffice if Mother Nature is locally lacking - in an open, yet sheltered position, without overhead shade, will have the best chance to develop into wide-spreading carpets no more than 15cm high. But it will be a slow process. So it is essential to select a free-flowering clone at the time of planting - Joseph Rock's 1923 collection under R 11169 (USDA 59174) fits the bill in this regard and is often advertised as being the best form of the species available in commerce.

The dome-forming plants gathered together under the Tumescens Group banner are slightly faster growing, with a somewhat more rugged constitution. They are not as fussy regarding siting and often cover themselves with flowers, as regular visitors to Glenarn Garden, near Helensburgh, will happily confirm.

R. forrestii var. *chamaethomsonii* can often be easier still, with many clones hale, hearty and even more floriferous. But a few are as temperamental as Repens Group, with one or two prone to flower bud loss if hit by as little as a degree or two of frost once the corollas begin to swell.

Returning to the issue of placement, one aspect of the cpDNA transfer has yet to be considered: the epithet chosen by George Forrest and Harry Tagg in 1930 to describe the Scotsman's 1921 find. Because when translated from Latin, *R. chamaethomsonii* gives 'dwarf *R. thomsonii*'. Which might count for nothing when set against the nucleotide coding on a strand of DNA, but given the stature of those two leading rhododendron experts, their nomination could hardly have been superficial or frivolous. And it was made solely from an appraisal of the morphology.



R. forrestii 'Tumescens Group'



R. forrestii (F 19515) 'Repens Group'

R. chamaethomsonii

R. forrestii (KW 5846)

R. stewartianum

R. stewartianum

Hardiness:
H4-5.
Flowering Period:
February-April.
Distribution in the wild:
SE Tibet; NW Yunnan, China; Arunachal Pradesh, India; NE Upper Myanmar.
Growing in rhododendron thickets, bamboo brakes and on stony slopes,
at elevations of 3,000-4,300m.

Identification:
Shrub, broadly upright or straggly, 0.5 to 3m high;
branchlets usually glabrous, often glandular;
bark brown or fawn, smooth or rough,
peeling on smaller branches, shredding into oblong plates on larger limbs.
Leaves obovate through elliptic,
4 to 12cm long by 2 to 6.5cm wide,
retained for 1-2 years;
lower surface mammillate,
with a thin veil of hairs or a farinose (powdery) fawn indumentum,
interspersed with sessile glands especially towards the base,
sometimes persistent, but often only present on new growth.
Petiole 5-20mm long, with or without wings,
usually glabrous, rarely sparsely glandular.
Inflorescence 3-7-flowered.
Pedicel 8-25mm long,
glabrous, sometimes sparsely stalked-glandular.
Calyx cupular, the lobes unequal, rounded,
oblong or broadly ovate, and each 1-5-15mm long,
their outer surface glabrous and eglandular,
their margins sometimes glandular-ciliate.
Corolla 3.5 to 5.5cm long, campanulate or tubular-campanulate,
white, soft yellow through pale rose (the hue highly variable),
with or without crimson or purple spots,
rarely with a crimson basal blotch.
Stamen filaments pubescent at the base, rarely glabrous.
Ovary conoid, 4-5mm long,
moderately through densely glandular.
Style glabrous and eglandular.
Capsule oblong, 15-30mm long, straight or slightly curved,
glandular or with the vestiges of glands, rarely eglandular.

Seed Collections:

Farrer 926	1919	F 25615	1924/1925	F 27475	1924/1925	R 22005	1932
KW 3096	1919	F 25618	1924/1925	F 27479	1924/1925	Yu 22935	1937
KW 3300	1919	F 25620	1924/1925	F 27482	1924/1925	LS&E 13155	1946/1947
F 21708	1921/1922	F 25642	1924/1925	F 27484	1924/1925	LS&E 13756	1946/1947
F 21763	1921/1922	F 25646	1924/1925	F 27492	1924/1925	R 169	1948/1949
F 21781	1921/1922	F 25814	1924/1925	F 27500	1924/1925	AC 661	1993
F 21787	1921/1922	F 25859	1924/1925	F 27577	1924/1925	AC 663	1993
F 21841	1921/1922	F 25864	1924/1925	F 27582	1924/1925	AC 669	1993
F 21885	1921/1922	F 25869	1924/1925	F 27586	1924/1925	AC 680	1993
F 21888	1921/1922	F 25873	1924/1925	F 27588	1924/1925	KR 2740	1993
F 21889	1921/1922	F 26921	1924/1925	F 27592	1924/1925	CCHH 8137	1997
F 21891	1921/1922	F 26929	1924/1925	F 27596	1924/1925	JN 761	1999
F 21918	1921/1922	F 26932	1924/1925	F 27629	1924/1925	DGEY 180	2001
F 21919	1921/1922	F 26962	1924/1925	F 27643	1924/1925	DGEY 249	2001
F 22610	1921/1922	F 26980	1924/1925	F 27647	1924/1925	KR 9950	2010
F 22611	1921/1922	F 26981	1924/1925	F 27649	1924/1925	KR 9992	2010
F 22612	1921/1922	F 26984	1924/1925	F 27652	1924/1925	KR 10027	2010
F 22613	1921/1922	F 26986	1924/1925	F 27659	1924/1925	OJL 10-57	2010
F 22614	1921/1922	F 26992	1924/1925	F 27667	1924/1925	TDA 661	2014
F 22615	1921/1922	F 26993	1924/1925	KW 5880	1924/1925	TDA 662	2014
F 22617	1921/1922	F 27013	1924/1925	KW 8294	1927/1928	TDA 664	2014
F 22618	1921/1922	F 27129	1924/1925	R 18350	1929	TDA 668	2014
F 22619	1921/1922	F 27131	1924/1925	R 18375	1929	TDA 692	2014
F 22620	1921/1922	F 27133	1924/1925	R 18376	1929	TDA 700	2014
F 22621	1921/1922	F 27135	1924/1925	R 18377	1929	TDA 704	2014
F 22702	1921/1922	F 27136	1924/1925	R 18378	1929	TDA 716	2014
F 24528	1924/1925	F 27138	1924/1925	F 29663	1930/1931	TDA 723	2014
F 24530	1924/1925	F 27143	1924/1925	F 29685	1930/1931	BE 15-11	2015
F 24598	1924/1925	F 27144	1924/1925	F 30533	1930/1931	BE 15-48	2015

R. stewartianum was named for Lawrence Baxter Stewart (1876-1934), the first occupant of the Plant Propagator post at Edinburgh Botanic and Curator of the gardens between 1932 and 1934. The rhododendron had first been encountered by George Forrest while on an ascent of the Tsedjiong Pass in the Mekong-Salween Divide of southeast Tibet, during June 1906. Viable capsules were probably absent that early in the season, so only herbarium material was returned to Edinburgh (much to Arthur Kilpin Bulley's relief), and as the historical accounts record, credit for introducing the species into UK cultivation later went to Reginald Farrer and Frank Kingdon-Ward, who individually returned seed from what was then northeast Upper Burma during 1919. The botanic description was written by Friedrich Diels and appeared in his *Plantae Chinenses Forrestianae* report in Volume 5 of *Notes from the Royal Botanic Garden, Edinburgh,* this published in 1912.

Within the subsection, *R. stewartianum* is most closely related to *R. eclecteum,* with the hue of its corollas encompassing a similar rainbow of tones. However, unlike that latter taxon, which has a glabrous and epapillate leaf, the *R. stewartianum* abaxial epidermis is mammillate, with nipples rather than mere pimples jutting out of the surface cells. Equally, when the leaves first expand, they are thinly indumented with either a covering of fawn-coloured hairs or a farinose tomentum, both of which may be interspersed with sessile glands. In addition, *R. eclecteum* has short petioles just 3-10mm long, which result in a distinct subsessile whorl of leaves at the branch tips, whereas the *R. stewartianum* leaf stalk is between 5 and 20mm long. Both species can show a narrowly winged petiole, have stamen filaments that are pubescent at the base and an ovary that is densely glandular, which while not keying one from the other, are features that will cleave them from the rest of the pack.

Well over one hundred individual seed lots of *R. stewartianum* have been returned since the species was first introduced, with all the major plant hunters contributing to the pot, Forrest and his collecting teams bagging more than seventy batches of capsules, and Alan Clark reintroducing the species from Yunnan in the autumn of 1993. As would be expected given the wide distribution and the wealth of material available, the species has a mixed reputation in cultivation. Positive observations indicate it is hardy and easy to grow, thriving in both east and west coast gardens. It also flowers from a young age and the best clones put on a beautiful floral display. Negative comments speak of a susceptibility to powdery mildew, highlight a lack of vigour, detail many poor corolla colour combinations, record frost damage due to the early bloom period - February for some forms - and report the life-expectancy of some clones as being somewhat fleeting.



R. stewartianum (F 24598)



R. stewartianum (F 24598)



R. stewartianum (F 25615)



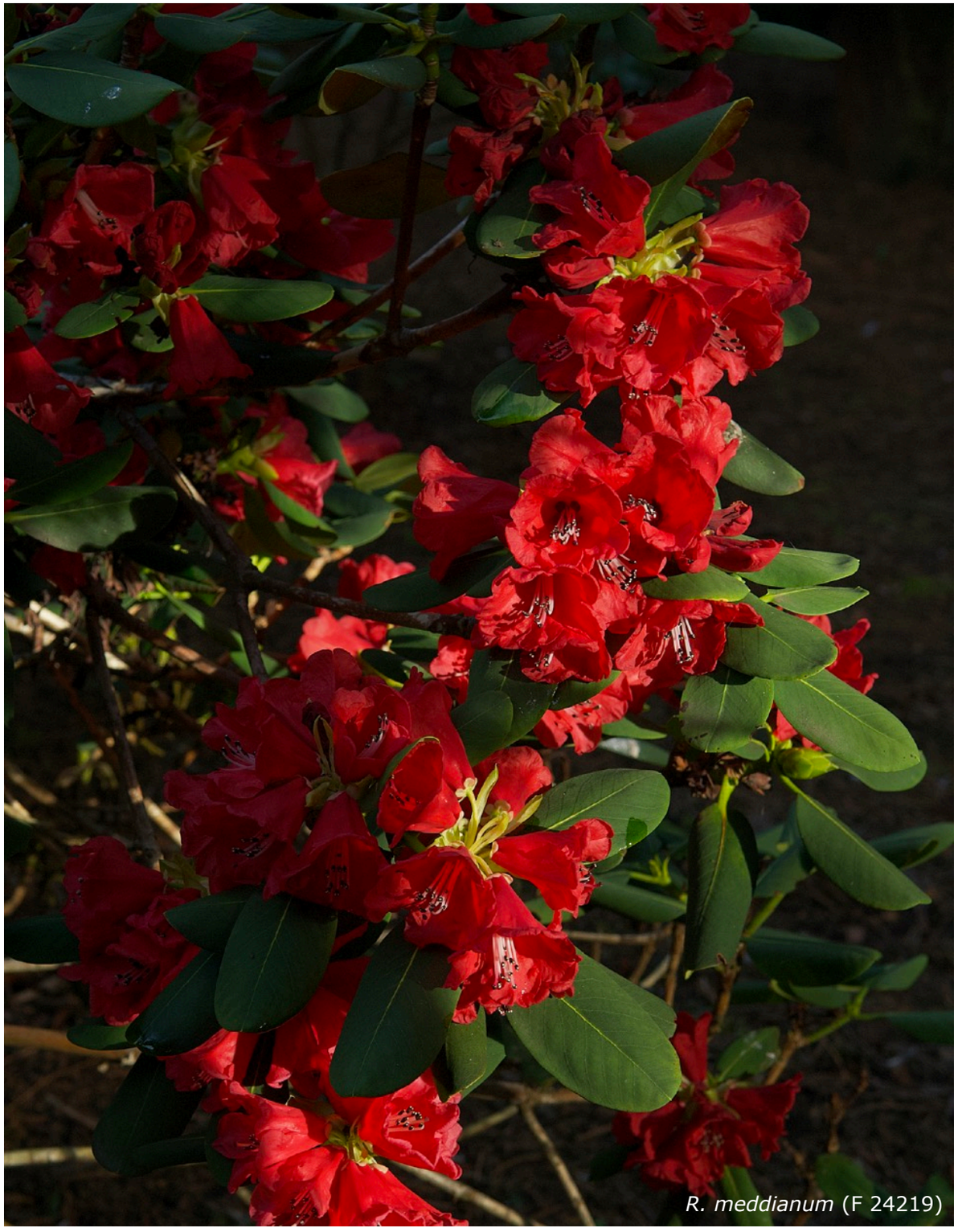
R. stewartianum (F 26929)



R. stewartianum (F 27138)



R. stewartianum (R 18375)


R. meddianum (F 24219)

R. meddianum* var. *meddianum

Hardiness:
H4-5.
Flowering Period:
April-May.
Distribution in the wild:
W Yunnan, China.
Growing in rhododendron thickets and on rocky slopes,
at elevations of 2,700-3,700m.

Identification:
Shrub, broadly upright, 1 to 2.4m high;
branchlets stout, glabrous and eglandular;
bark greyish, roughish, falling off in small irregular flakes.
Leaves obovate-elliptic through broadly elliptic,
5.5 to 15cm long by 3 to 8.2cm wide,
retained for 1-2 years;
lower surface pale green, glabrous, not papillate.
Petiole 10-30mm long, grooved above, glabrous.
Inflorescence 5-10-flowered.
Pedicel 10-20mm long, reddish, glabrous, eglandular.
Calyx crimson, cupular, fleshy, the lobes unequal,
broadly rounded or ovate, and each 3-12-20mm long,
their outer surface and margins glabrous.
Corolla 4 to 6.5cm long, tubular-campanulate, fleshy,
deep rose to deep crimson,
with or without a few darker spots, with or without a plum-like bloom.
Stamen filaments glabrous.
Ovary conoid, 4-5mm long, grooved,
usually glabrous, sometimes glandular.
Style glabrous and eglandular.
Capsule oblong, 15-20mm long, straight or slightly curved,
glaucous, usually glabrous, sometimes glandular.

Seed Collections:

F 15767	1917
F 17703	1917/1919
F 18036	1917/1919
F 24104	1924/1925
F 24219	1924/1925

R. meddianum* var. *atrokermesinum
Hardiness:
H4.
Flowering Period:
March-April.
Distribution in the wild:
W Yunnan, China; Arunachal Pradesh, India; NE Upper Myanmar.
Growing in rhododendron thickets and along stream banks,
at elevations of 3,200m.

Identification:
as var. *meddianum* except:
Branchlets glandular.
Leaves thinner.
Pedicel densely glandular.
Ovary densely glandular, viscid.
Capsule densely glandular.

Seed Collections:

F 26449	1925
F 26476	1925
F 26495	1925
F 26499	1925
F 27465	1925
F 27606	1925
F 27623	1925
KW 21006A	1953
KR 9720	2010
KR 10081	2010
BE 12-08	2012


R. atrokermesinum (KW 21006a)

R. meddianum was a George Forrest find made on the Shweli-Salween Divide in western Yunnan during June 1917. The species was introduced into UK cultivation that same year and described by the collector in Volume 12 of *Notes from the Royal Botanic Garden, Edinburgh,* published in 1920. The epithet is an honorific for Captain George Medd, agent for the Irrawaddy Flotilla Company, who was based at Bhamo in Kachin State, Upper Myanmar, and it was gifted because he made sure the many cases of specimens and seeds Forrest put into his charge were safely consigned back to England. Medd also frequently allowed Forrest to stay as a guest at Flotilla House, his own home and the company's residence in the town.

Expert opinion is agreed that *R. meddianum* is the eastern parallel of *R. thomsonii,* though the two are easily distinguished from one another not least by the fact that the leaf abaxial epidermis of the former is devoid of any papillae, while that of the latter is host to a bevy of minute pimples projecting out from the surface cells, as well as being decidedly glaucous to boot. In addition, the leaves of *R. meddianum* are a different shape - obovate-elliptic through broadly elliptic rather than broadly obovate through orbicular - and larger - by up to 4cm in length. And the corollas, although only slightly bigger, are decidedly more tubular-campanulate. Less clinically precise is a trait observed in cultivation where the previous year's leaves are shed from bushes of *R. meddianum* almost as soon as the new growth expands, while *R. thomsonii* retains its foliage for up to two years.

R. meddianum var. *atrokermesinum* was also discovered and introduced by George Forrest, a population of 2m-high shrubs with deep purple-crimson corollas flecked black-crimson found growing on the western side of the N'Maikha-Salween Divide in northeast Upper Myanmar during April 1925. The Latin epithet references the spotting, with the combination first published in *The Species of Rhododendron,* 1930, the text composed by Harry Tagg. A more useful hint at the keying, however, would have been a glandular citation, for the branchlets, petioles and ovary are all sticky to the touch, the latter being especially viscid.

To this day, George Forrest remains the only Western plant hunter to have ever encountered *R. meddianum* var. *meddianum* in the wild and returned seed to the UK, though its associate, var. *atrokermesinum* has been more accommodating, Frank Kingdon-Ward reintroducing the species in 1953 from The Triangle in Upper Myanmar, stands of the shrub growing in Arunachal Pradesh receiving a visit from Keith Rushforth in 2010, and lastly, capsules again culled from Myanmarese natives in 2012, the collector this time, Bent Ernebjerg from Denmark. In British gardens, var. *meddianum* is reported to be quite slow growing, hardy, but requiring shelter, with some forms difficult and lacking energy, while var. *atrokermesinum* is more sprightly, but not as tough. Both rhododendrons are rare in horticultural collections even though the floral display each puts on can be stunning and that of var. *atrokermesinum,* amongst the finest in the entire genus.



R. meddianum (F 24104)



R. atrokermesinum (F 26449)

R. atrokermesinum

R. eclecteum

Hardiness:
H5.
Flowering Period:
February-April.
Distribution in the wild:
SE Tibet; SW Sichuan & NW Yunnan, China; NE Upper Myanmar.
Growing in pine forests, bamboo brakes, rhododendron thickets,
and on open bouldery slopes, at elevations of 3,000-4,300m.

Identification:
Shrub, rarely a small tree,
broadly upright or lax, rounded and spreading, 0.6 to 4.6m high;
branchlets usually sparsely through moderately short-stalked glandular;
bark greyish, greyish-brown or brown, fairly smooth, falling off in long flakes.
Leaves obovate-elliptic through elliptic,
sometimes obovate-lanceolate (jargonelle- or fiddle-shaped),
4 to 15cm long by 2 to 6cm wide,
retained for 1-2 years;
lower surface pale green, not papillate, glabrous,
the midrib tomentose or glabrous, the hairs dense and straight.
Petiole 3-10mm long,
broad, flat and grooved above, narrowly winged, glaucous,
glabrous, rarely hairy, occasionally with a few stalked glands.
Inflorescence 5-12-flowered.
Pedicel 8-25mm long,
glaucous, glabrous, occasionally sparsely glandular.
Calyx usually cupular, the lobes unequal,
rounded, ovate or oblong-oval, each 2-7-20mm long,
their outer surface glabrous and eglandular,
their margins rarely hairy or glandular.
Corolla 3 to 5.3cm long, fleshy,
campanulate, tubular-campanulate or widely-funnel-campanulate,
rose to deep crimson, rarely yellowish, white or cream,
with or without crimson or purple spots.
Stamen filaments pubescent at the base.
Ovary conoid or ovoid, 4-6mm long, grooved,
moderately through densely short-stalked glandular.
Style glabrous and eglandular.
Capsule broadly oblong, 12-28mm long, straight, often glaucous,
short-stalked glandular.

Seed Collections:

F 14485	1917	R 11038	1923/1924	R 22269	1932
F 15293	1917/1919	R 11051	1923/1924	R 23481	1932
F 18901	1917/1919	R 11059	1923/1924	R 23509	1932
F 18943	1917/1919	R 11061	1923/1924	R 23510	1932
F 19952	1921/1922	R 11080	1923/1924	R 23511	1932
F 21013	1921/1922	R 11180	1923/1924	R 23512	1932
F 21769	1921/1922	F 25603	1924/1925	R 23516	1932
F 21838	1921/1922	F 25604	1924/1925	R 23621	1932
F 21840	1921/1922	KW 6869	1926	R 23630	1932
F 21842	1921/1922	KW 6896	1926	R 23632	1932
F 21881	1921/1922	KW 6920	1926	Yu 19740	1937
F 21882	1921/1922	KW 6921	1926	KW 228	1938/1939
F 22647	1921/1922	KW 6922	1926	R 29	1948/1949
F 22648	1921/1922	KW 6936	1926	R 33	1948/1949
F 22710	1921/1922	R 18415	1929	R 37	1948/1949
F 22728	1921/1922	R 18416	1929	R 123	1948/1949
F 22850	1921/1922	KW 9413	1931	R 131	1948/1949
F 22853	1921/1922	KW 9634	1931	R 148	1948/1949
F 22891	1921/1922	KW 10159	1931	KW 21006	1953
F 22892	1921/1922	KW 10160	1931	Cox 6054	1992
F 22893	1921/1922	R 22003	1932	Cox 6513	1994
R 10939	1923/1924	R 22100	1932	Cox 6534	1994
R 11032	1923/1924	R 22222	1932	BASE 9584	2000
R 11035	1923/1924	R 22224	1932	JN 12143	2012
		R 22230	1932		

R. eclecteum

With an endemic distribution stretching from southeast Tibet through to northeast Upper Myanmar that takes in southwest Sichuan and northwest Yunnan, the feature set of *R. eclecteum* was always going to be variable, and the eighty or so gatherings of seed introduced since the species was first discovered in 1917 have confirmed this to be the case. Habit, ultimate height and foliage size all vacillate wildly: from low shrubs no more than 0.6m high, all the way up to small trees topping 4.5m in height; leaves just 4cm long at one end of the scale, humbled by blades 15cm in length at the other. Yet such diversity is simply blown away by the gamut of colours that may pigment the flowers: white, white flushed rose, pink, salmon-pink, deep pink, rose, deep rose, deep rose-crimson, deep magenta-crimson, red, reddish-purple, purple, yellowish-red, yellow or pale yellow. And the corollas can be pure and unmarked, or heavily spotted, even flushed and stained to such a degree that they can credibly be described as bicoloured.

In a masterly understatement included within 1992's Volume 3 of *The Rhododendron Species,* H. H. Davidian reports that 'flower colour cannot be correlated with leaf size or with any other character'. And two other doyens, namely Peter and Kenneth Cox, writing in their 1997 *Encyclopedia of Rhododendron Species,* conclude succinctly that many of these forms 'are only fit for the bonfire'. Luckily for *R. eclecteum,* and despite its acknowledged high susceptibility to powdery mildew, a number of those introduced clones are simply out-and-out crackers.

The species was first collected off Ka-gwr-pw, part of the Mekong-Salween Divide in northwest Yunnan during July 1917, George Forrest finding plants in fruit and making three additional collections of capsules and herbarium material before the end of the expedition in 1919. The botanic description, written by the plant hunter and Sir Isaac Bayley Balfour, appears in Volume 12 of *Notes from the Royal Botanic Garden, Edinburgh,* which was published in 1920. In the text, Balfour writes that 'Forrest did not collect specimens in full flower', so the only corollas available at that time were 'withered ones, beginning to pass into fruit' on a herbarium sheet 'taken out by Forrest from the mass of specimens under this number - F 15298 - which now lie at the bottom of the sea somewhere between Britain and China, having gone down in a steamer torpedoed during the war'. So the tonal kaleidoscope of colour would come as a surprise when the various introductions first began to bloom, and even today, after much of the dross has been culled from the ranks, there are no less than ten different clones established in cultivation, each with a differently painted corolla.

Some characteristics exhibited by *R. eclecteum* however, are stable across the entire distribution and allow for a key: the leaf abaxial epidermis is not papillate, this immediately distinguishing the species from its closest relative, *R. stewartianum,* which has a similarly densely glandular ovary; the stamen filaments are usually pubescent at the base, and the short petioles are narrowly winged, these last two attributes separating out *R. hylaeum* var. *faucium* and *R. meddianum* var. *atrokermesinum,* which also possess a glandular ovary and an epidermis bereft of pimples, but have completely glabrous stamens filaments and unwinged leaf stalks. Moreover, those very short petioles, each just 3 to 10mm long, are equally distinctive, with the sessile leaves being unique within the subsection.

As would now be expected from the wide distribution, *R. eclecteum* hybridises in the wild with any number of other species, *R. forrestii, R. pocophorum, R. sanguineum* and *R. selense* to mention but four, with the progeny resulting from two of those pairings worthy of special note:

The mating with the second listed taxon - herein, *R. coelicum* var. *pocophorum* - gave rise to *R. hemigymnum,* which was introduced into UK gardens from southeast Tibet as early as 1922. Its epithet is now officially proceeded by a small 'x' even though a few intransigent rhodophiles continue to ignore the field study evidence and wrongly maintain the taxon as a variety of *R. chaetomallum* on account of its undisputed garden worthiness and stunning, freely-produced, crimson flowers.

R. x bellatulum resulted from a match with the fourth listed species, *R. selense* ssp. *selense*. First introduced as *R. anisocalyx,* again during 1922, it has a joint Forrest-Balfour botanic description and even managed to progress unscathed through David Chamberlain's 1982 Subgenus *Hymenanthes* update, though as *R. eclecteum* var. *bellatulum,* for the original nomen nudum epithet was replaced by Harry Tagg in 1930. It finally succumbed to an ineluctable reduction in rank a few years before the full and finalised version of the Edinburgh Revision was published in 1996.

In cultivation, the various clones of *R. eclecteum* have proved easy to grow when given good drainage despite being regularly ravaged by powdery mildew. They all flower from a young age and are able shrug off the wiles of a typical British winter with ease. However, as some plants can open their flowers as early as late January if the weather is mild, a sheltered and shaded woodland site will be needed to protect the blooms and the subsequent new growth from a likely inevitable encounter with Jack.

The language-of-the-dead epithet translates as 'picked out'.



R. eclecteum (F 18943)



R. eclecteum (F 21840)



R. eclecteum (KW 9413)



R. eclecteum (KW 21006)



R. eclecteum (R 23512)

R. hylaeum* var. *hylaeum

Hardiness:
H4-5.
Flowering Period:
March-May.
Distribution in the wild:
SE Tibet; NW Yunnan, China; Arunachal Pradesh, NE India; NE Upper Myanmar.
Growing in mixed forests and on mountain slopes,
at elevations of 2,700-3,700m.

Identification:
Shrub or small tree, compact and rounded, or broadly upright, 2.5 to 14m high;
branchlets glandular-hairy at first, glabrous and eglandular at maturity;
bark slate-grey, brown or purplish, smooth, peeling.
Leaves oblong-elliptic through obovate-elliptic,
8 to 15cm long by 2.5 to 5.7cm wide,
retained for 1-2 years;
lower surface pale green, glaucous, not papillate,
with scattered fasciculate hairs arising from red persistent hairs bases on the veins,
and detersile sessile glands.
Petiole 15-24mm long, slender, narrowly winged, glaucous,
stalked-glandular at first, becoming glabrescent then glabrous and eglandular.
Inflorescence 10-12-flowered, rarely 18-24-flowered.
Pedicel 8-15mm long, stout, glabrous or glandular.
Calyx greenish, cupular when well-developed, fleshy, 5-lobed or undulate,
these broad or rounded, often deflexed, each 2-8mm long,
their outer surface sometimes hairy at the base,
their margins glabrous, occasionally glandular-ciliate.
Corolla 3.5 to 5cm long, tubular-campanulate, fleshy,
pale rose or pink, with darker spots.
Stamen filaments glabrous.
Ovary conoid, 4-6mm long, 7-8-locular,
glabrous and eglandular.
Style glabrous and eglandular.
Capsule oblong, 14-25mm long, straight, glaucous, glabrous.

Seed Collections:

KW 3155	1919	KW 7484	1926	AC 4506	2000
F 20961	1921/1922	KW 9322	1931	AC 4521	2000
F 24660	1924/1925	KW 19431	1950	KR 8401	2006
KW 6833	1926	KW 19452	1950	KR 8433	2006
KW 7125	1926	BASE 9659	2000	JN 12135	2012

R. hylaeum* var. *faucium

Hardiness:
H5.
Flowering Period:
March-May.
Distribution in the wild:
SE Tibet; Arunachal Pradesh, NE India.
Growing at forest margins and on rock faces,
at elevations of 2,600-3,400m.

Identification:
as var. *hylaeum* except:
1.5 to 6.5m high.
Leaves thinner, obovate-elliptic through oblanceolate,
7 to 12cm long by 1.5 to 3.5cm wide;
lower surface with a few scattered fasciculate hairs near the base of the midrib
and persistent red punctate hair bases overlying the veins.
Petiole 7-15mm long.
Inflorescence 5-10-flowered.
Pedicel 5-10mm long, slender,
glabrous or stalked-glandular, sometimes with dendroid or crisped hairs.
Calyx chartaceous, 3-5mm long, glandular-ciliate, otherwise glabrous.
Corolla 3.5 to 4cm long, campanulate,
pink through white tinged pink, or rarely sulphur-yellow, with purple spots.
Ovary densely short-stalked glandular, glabrous.
Capsule short-stalked glandular

Seed Collections:

KW 6401	1924/1925	LS&E 13643	1946/1947	AC 3395	1997
LS&E 12019	1946/1947	LS&E 13755	1946/1947	AC 3412	1997
LS&E 12045	1946/1947	CV 9508	1995	AC 3573	1997
LS&E 12208	1946/1947	KR 3465	1995	AC 3584	1997
LS&E 12289	1946/1947	KR 3628	1995	KR 5024	1998
LS&E 12290	1946/1947	CC 7566	1996	KR 5040	1998
LS&E 12313	1946/1947	AC 3237	1997	KR 5043	1998
LS&E 12514	1946/1947	AC 3270	1997	KR 5053	1998
LS&E 13559	1946/1947	AC 3309	1997	KR 5181	1998
LS&E 13593	1946/1947	AC 3361	1997	KR 5189	1998
LS&E 13610	1946/1947	AC 3367	1997	KC 0123	2001
LS&E 13611	1946/1947			HECC 10028	2002

R. hylaeum* var. *subansiriense
Hardiness:
H4-5.
Flowering Period:
March.
Distribution in the wild:
Subansiri Division, Arunachal Pradesh, NE India.
Growing in mossy rain forest on the Ziro Ridge, Api Tani Valley,
at elevations of 2,550-2,750m.

Identification:
as var. *hylaeum* except:
Branchlets tomentose.
Leaves oblong through oblong-elliptic,
7 to 13cm long by 2 to 4cm wide;
lower surface with the vestiges of fasciculate hairs.
Petiole 10-15mm long, glabrous.
Inflorescence 10-15-flowered.
Pedicel 7-10mm long, glabrous, eglandular.
Calyx outer surface glabrous, the margins ciliate.
Corolla crimson-scarlet, with a few purple spots.
Ovary densely tomentose, eglandular.
Capsule tomentose.

Seed Collections:

C&H 418	1965



R. hylaeum (KW 6833)



R. subansiriense (C&H 418)

R. hylaeum (KW 6833)

R. faucium

The classification of *R. faucium, R. hylaeum* and *R. subansiriense* is currently still a work in progress, with three perfectly reasonable alternatives offered by the experts:

David Chamberlain, the author of the Subgenus *Hymenanthes* classification revision (*Notes from the Royal Botanic Garden, Edinburgh,* Volume 39, Number 2, 1982) sets all three taxa at specific species ranking. This position was maintained in *The Rhododendron Handbook 1998,* published by the Royal Horticultural Society, as he also wrote the included temperate species descriptions that feature within.

H. H. Davidian, in Volume 3 of his *The Rhododendron Species* (Batsford, 1992), takes the diametrically opposite view and makes *R. faucium* and *R. subansiriense* synonymous under *R. hylaeum,* which was first described in 1922 and so takes precedence under the nomenclature rules. After an extensive examination of all the herbarium material available, as well as of plants in cultivation, he concluded that these three rhododendrons should be considered identical.

Peter and Kenneth Cox, in their *Encyclopedia of Rhododendron Species* (Glendoick Publishing, 1997), wrote that 'although plants are cultivated under the name *R. hylaeum,* most are better placed in *R. faucium* and true *R. hylaeum* may not in fact be in cultivation. The two species should probably be merged'.

John McQuire and Mike Robinson chose to revise this position in their *Pocket Guide to Rhododendron Species* (Royal Botanic Gardens, Kew, 2009) by opting for varietal status, with *R. hylaeum* var. *faucium* reflecting the dense presence of short-stalked glands on that taxon's ovary and capsules, which are absent from *R. hylaeum* var. *hylaeum*. They also reduced the ranking of *R. subansiriense* to subspecies status under *R. hylaeum*. The Cox position regarding the latter reflects the status quo ranking of Chamberlain given 'the combination of red flowers, the glands on the lower leaf surface and the densely tomentose ovary' to again quote from their highly regarded *Encyclopedia*.

However:

After shedding all or most of the fasciculate hairs on their abaxial leaf surface, the three rhododendrons exhibit red punctate hair bases, overlying the veins, and have a non-papillate epidermis, which proves the trio are very closely related, as the likelihood of each developing such characteristics independently is remote.

Secondly - all three rhododendrons are endemic to Arunachal Pradesh, although two have distributions extending westward into southeast Tibet, with one member of this pair also venturing eastwards in Upper Myanmar.

Thirdly - the most significant morphological variance is the presence or not of glands or hairs on the ovary and capsule, with *R. faucium* densely stalked-glandular yet glabrous, *R. hylaeum* glabrous and eglandular, while *R. subansiriense* is densely tomentose yet eglandular.

The facet of detersile sessile glands - stalkless and quickly shed - on the leaf underside of *R. subansiriense,* which is highlighted by Cox and Cox, is also a feature of the *R. hylaeum* blades - see the entry in *The Species of Rhododendron,* written by Harry Tagg and published in 1930; and the Davidian-Cowan opus *A Review of Rhododendrons in their Series IV: The Thomsonii Series,* published within the RHS *Rhododendron Year Book 1951-52* (specifically page 171) - so cannot be used to distinguish one from the other. *R. faucium* is not mentioned in either of these texts because it was only conceived by David Chamberlain in 1978 (*Notes,* Volume 36).

Marginal differences in corolla colour, leaf size or shape, or petiole length, occur throughout Genus *Rhododendron* wherever a number of taxa have been grouped together, this following the removal of their specific or subspecies status or not. In many cases, such disparities are far more significant than the divergence exhibited by this trio and these associations have been accepted without hue or cry.

In consequence of the above, varietal status under *R. hylaeum* is adopted herein for *R. faucium* and *R. subansiriense,* this ranking more properly reflecting the minor anomalies in their feature set and their geographic distribution.

Within Subsection *Thomsonia,* the three *R. hylaeum* varieties are most closely related to *R. hookeri,* which of course retains its own fasciculate hairs on the lateral veins of the abaxial leaf surface.

A tangential relationship with the membership of Subsection *Irrorata,* specifically *R. anthosphaerum,* has been made previously on the basis of the oblong through oblanceolate leaf shape and other morphological characteristics, but this supposed affinity has not been evidenced to date in any published genetic studies.

R. hylaeum var. *hylaeum* was first found growing as 'a round-headed tree of 20-40 feet with a trunk remarkably smooth and bare and bald'. Reginald Farrer's field notes also report a date of May 15th, 1920, with the location given as the Chawchi Pass in northeast Upper Myanmar. Herbarium material was collected - 'though snow was all about and the flowers so far gone that only after a long search were specimens obtained' - but no capsules. These were supplied the following year by George Forrest under the field number F 20961, but following a re-examination of the dried material and plants grown from a Frank Kingdon-Ward collection made in Upper Myanmar during 1919, history will need to be rewritten - for KW 3155 proved to be *R. hylaeum* rather than *R. anthosphaerum*. The botanic description, compiled from Farrer's observations and Sir Isaac Bayley Balfour's examination of the dried specimens, appeared in Volume 13 of *Notes,* published in 1922.

R. hylaeum var. *faucium* was also retrospectively discovered by Frank Kingdon-Ward, in southern Tibet during 1924: an affinity form under KW 5732 being gathered off the Temo La in southeastern Tibet during early June (with this initially tagged as *R. eclecteum* var. *brachyandrum* aff.); and the true species found later in the year, herbarium specimens gathered under KW 6064, and seed introduced under KW 6401, both originally being filed as *R. hylaeum*. As indicated, the review of live and dried material carried out by David Chamberlain in preparation for his reworking of Subgenus *Hymenanthes* led to the conception of *R. faucium* in 1978, with the type specimen then assigned to a 1947 Frank Ludlow, George Sherriff and Henry Elliot collection under field number LS&E 12289 (this too starting-off its known-to-Western-science life as *R. anthosphaerum*).

R. hylaeum var. *subansiriense* also began its 'official' botanic existence under an alias, namely, *R. 'old baldy'*. This sobriquet was chosen because it was the only tree in the rain forest whose bark was devoid of moss when collected in the Subansiri Division of Arunachal Pradesh by Peter Cox and Peter Hutchison on April 18th, 1965. It was later rechristened *R. neriiflorum* affinity, then *R. hylaeum,* with the *R. subansiriense* epithet finally applied in 1978 following publication of the Chamberlain and Cox joint botanic description that also appeared in *Notes,* Volume 36. Yet despite any number of expeditions scouring northeast India for plants in the two decades immediately pre and post the Millennium, the species is still only known from the type collection, made on a ridge in the Api Tani Valley, where the field notes report it as 'fairly abundant'.

In UK cultivation, compact and rounded shrubs around 2m high, or broadly upright small trees topping 6m in height are the norm. All three varieties display exquisite bark and sport fine flowers, but their hardiness rating requires a sheltered site in a mild garden, as does the flowering period and the subsequent onset of new growth. *R. faucium* is the toughest of the trio, thriving along the east coast if protected, *R. subansiriense* the most tender, and effectively restricted to the cosiest of woodland locales along the west coast, where even amidst such swaddling, the young shoots will still get hit occasionally.

R. subansiriense (C&H 418)

R. hylaeum (KW 6833)

R. subansiriense (C&H 418)

R. cerasinum

R. cerasinum

Hardiness:
H5-6.
Flowering Period:
May-June.
Distribution in the wild:
SE Tibet; Arunachal Pradesh, NE India; NE Upper Myanmar.
Growing in coniferous forests,
at the margins of fir forest and in dense rhododendron thickets,
at elevations of 3,000-3,800m.

Identification:
Shrub, upright or rounded, 1.2 to 4m high;
branchlets green, glabrescent, soon glabrous, short-stalked glandular or eglandular;
bark greyish-brown, rough, exfoliating into thin and small irregular flakes.
Leaves thin, oblong-elliptic through narrowly obovate,
4.5 to 10cm long by 1.5 to 4cm wide,
retained for 1 year;
lower surface glaucous-green,
floccose at first, becoming glabrescent then glabrous,
papillate, with some red hair bases and sessile glands.
Petiole 7-20mm long, the upper surface flat,
sparsely rufous pubescent, sparsely short-stalked glandular or eglandular.
Inflorescence pendulous, 3-7-flowered.
Pedicel 15-30mm long,
sparsely glandular, these short-stalked or sessile, glabrous.
Calyx cupular, 5-lobed or undulate,
ovate, triangular or rounded, each 1-5mm long,
their outer surface often short-stalked glandular,
their margins short-stalked glandular.
Corolla 3 to 4.5cm long, campanulate, thick, fleshy,
crimson to scarlet, or bi-coloured creamy-white and cherry-red,
the nectar pouches purple or coal-black.
Stamen filaments glabrous.
Ovary conoid, 5-8mm long,
densely short-stalked glandular.
Style glandular throughout to the tip.
Capsule oblong, 20-25mm long, short-stalked glandular.

Seed Collections:

KW 5830	1924	LS&E 15280	1946/1947	TARRVS 190	2002
KW 6923	1926	LS&E 15281	1946/1947	TARRVS 191	2002
KW 8258	1927/1928	CV 9504	1995	KR 10426	2012
KW 11011	1933	KR 3440	1995	KR 10462	2012
KW 11043	1933	KR 3460	1995	KR 10516	2012
L&S 1873	1936	CC 7537	1996	KR 10681	2012
LS&T 3765	1938	CC 7510	1996	KR 10682	2012
LS&T 4955	1938	AC 3242	1997	TDA 666	2014
LS&T 5768	1938	AC 3266	1997	TDA 669	2014
LS&T 5869	1938	AC 3294	1997	TDA 670	2014
LS&T 6587	1938	AC 3303	1997	TDA 673	2014
LS&E 13108	1946/1947	AC 3308	1997	TDA 686	2014
LS&E 13205	1946/1947	HECC 10064	2002	TDA 691	2014
LS&E 15279	1946/1947			TDA 698	2014



R. cerasinum (KW 11011)



R. cerasinum (KW 5830) 'Coals of Fire'



R. cerasinum (KW 6923) 'Cherry Brandy'

R. cerasinum was first found growing in dense tangled thickets alongside a stream on the Doshong La Pass in southeast Tibet. The collector was Frank Kingdon-Ward, the date, June 1924, and the 3m-high bush, which was alight with glowing crimson-scarlet flowers, was eloquently christened "Coals of Fire" by the plant hunter due to the ring of five coal-black nectar pouches circling the ovary at the base of the corolla tube. Two years later, in June 1926, at Seinghku Wang in northeast Upper Myanmar, Ward met another form of the species in a similar thicket, but at the margins of an *Abies* forest. This 4m-tall shrub had bi-coloured flowers - cherry-red around the mouth of the bell, creamy-white encircling its base - so was gifted the field name of "Cherry Brandy". A third encounter with the species during May 1928 - in the Delei Valley of Assam, northeast India - failed to produce another indicative sobriquet, though Ward's field notes describe deep crimson flowers and large specimens, 3m in height, whose crisscross of branches had produced an impenetrable spinney in the woods and on the ridges.

Six years after its discovery and introduction into UK cultivation, Harry Tagg, writing in 1930's *The Species of Rhododendron,* published by the Rhododendron Society, finally described the taxon, the epithet translating as 'cherry-coloured'. Frank Ludlow and George Sherriff were next to find the species, returning some eleven lots from southeast Tibet in the years up until to 1947, after which, a forty-year hiatus ensued, this broken in 1986 when Warren Berg resampled the population on the Doshong La, members of the American Rhododendron Society able to purchase packets of seed through their 1987 exchange programme. Close to thirty gatherings were made subsequently, between 1995 and 2014, which was when the impervious membrane of the Nagoya Protocol dropped to forestall any further piecemeal collections.

Within Subsection *Thomsonia, R. cerasinum* is one of the easiest species to identify, as it flowers later in the season than all the other members - the blooms opening in May and June (and often again in the autumn if the weather remains mild, though this second, limited floral manifestation denudes the abundance of the following spring's display) - and is the only representative of the group whose corollas sport a style that is glandular from base to tip. When *R. souliei* and *R. wardii* were part of the picture - in the old Thomsonii Series - leaf and corolla shape had to be taken into account, but only *R. bonvalotii* from southwest Sichuan boasts a similar span of stickiness and to date, this Tatsienlu resident has not been introduced into British gardens, so resort to a ruler to check on leaf and flower length is currently avoided.

Three forms of *R. cerasinum* are cultivated, two under the "Coals of Fire" banner with crimson-scarlet or cherry-red flowers, and the bicolour "Cherry Brandy" with its creamy-white bells topped with cherry-red. The blooms are long-lasting, but being pendulous and often hanging down between the leaves, can be partially obscured by the foliage, which also droops in the winter. Some specimens have been reported not to set more than a few flower buds each year in a number of garden locales, but the majority of mature plants are annually awash with bloom. Hardiness is sufficient to cope with the climatic vagaries of most British gardens, with protection from strong winds the only de rigueur cultural requirement.


R. cerasinum

R. lopsangianum

R. lopsangianum

Hardiness:
H4-5.
Flowering Period:
April.
Distribution in the wild:
SE Tibet; Arunachal Pradesh, NE India; NW Myanmar.
Growing in thickets, on rocky slopes and on open hillsides,
at elevations of 2,500-4,300m.

Identification:
Shrub, upright and compact, 0.6 to 1.8m high;
branchlets greenish, glabrous, glandular or eglandular;
bark pale grey-brown, exfoliating in flakes.
Leaves oblong-elliptic through ovate,
2.7 to 6cm long by 2 to 4cm wide,
retained for 1-2 years;
lower surface glaucous, papillate, glabrous or sometimes sparsely hairy.
Petiole 6-30mm long, slender, glabrous, glandular or eglandular.
Inflorescence 4-8-flowered.
Pedicel 7-20mm long, usually glabrous.
Calyx upper half tinged red, lower half green, cupular,
the lobes rounded or truncate and each 2-4mm long,
their outer surface glabrous and eglandular,
their margins glandular.
Corolla 3 to 5cm long, campanulate or tubular-campanulate, fleshy,
deep crimson, with or without a glaucous bloom.
Stamen filaments glabrous or pubescent at the base.
Ovary conoid, 5-7mm long,
usually densely short-stalked glandular.
Style glabrous and eglandular.
Capsule oblong, 11-15mm long, straight, glabrous.

Seed Collections:

L&S 1651	1936	LS&T 3766	1938	AC 4460	2000
L&S 1718	1936	LS&T 3768	1938	AC 4578	2000
L&S 1776	1936	LS&T 3938	1938	AC 5370	2004
L&S 2736	1936	LS&T 3940	1938	AC 5374	2004
LS&T 3635	1938	LS&T 6561	1938	BE 09-24	2009
LS&T 3753	1938	CER 9922	1999	BE 09-27	2009

R. lopsangianum is named for the 13th Dalai Lama, Nga-Wang Lopsang Tup-Den Gyatso (1876-1933), or more formally, Ngawang Lobsang Thupten Gyatso Jigdral Chokley Namgyal, who was born in Thakpo Langdun, a small village in Takpo Province, where the species is common. The rhododendron was originally discovered nearby - at Migyitun, Tsari Chu, in late May, 1936 - by Frank Ludlow and George Sherriff, and described by John MacQueen Cowan in the 1937-published Volume 19 of *Notes from the Royal Botanic Garden, Edinburgh.* Happy coincidence or divine intervention brought the same two plant hunters, along with George Taylor, to that second population of shrubs in 1938.

Botanically, the species is most closely related to *R. thomsonii,* though clearly it is a much lower growing plant, in habit a shrub rather than a tree, with smaller leaves, calyx lobes and flowers. The endemic distribution is isolated in the southeast of Tibet, being to the north and east of the *R. thomsonii* populations found in the south of that country, and far distant from the main concentrations of the taxon in Nepal, Sikkim and Bhutan, though post the millennium, *R. lopsangianum* was collected in Arunachal Pradesh and northwestern Myanmar. Morphologically, the feature set nearly always includes a densely short-stalked glandular ovary and may sometimes take in a sparsely hairy abaxial leaf surface, attributes that are not replicated on any known specimen of *R. thomsonii.*

Yet in his Subgenus *Hymenanthes* revision text (*Notes,* Volume 39, Number 2, 1982), David Chamberlain assigned the taxon subspecies ranking under that species.

In contrast, H. H. Davidian chose to maintain the status originally gifted by Cowan, writing - in Volume 3 of *The Rhododendron Species,* published in 1992 - that the plant was ‘remarkably distinct’ and ‘differed markedly’ from *R. thomsonii.*

On the basis of those character variations, and the sequestered disposition set out above, that ranking is also retained herein, though a detailed genetic analysis may well upset the apple cart in the not too distant future.

Returning to that sometimes-present thin layer of indumentum on the leaf underside, its on-off existence has prompted suggestions that *R. lopsangianum* may have originated as a hybrid between *R. thomsonii* and *R. sherriffii* (Cox and Cox, *The Encyclopedia of Rhododendron Species,* 1997). However, while a perfectly valid postulation, if such is the case, the evidence is not yet sufficient to justify that presumably near-stabilised taxon’s removal from Subsection *Thomsonia* and its placement with *R. sherriffii* in Subsection *Fulgensia.* Nor its move to a new standalone subsection, in association with *R. sherriffii* and *R. miniatum,* which John McQuire and Mike Robinson detail in their 2009-published *Pocket Guide to Rhododendron Species,* especially as no matching, cladistic, genetic association has been published in any scientific study to date.

R. lopsangianum often unveils a fine floral display, but the 3 to 5 crimson corollas per inflorescence and the lower stature rarely outshine a mature tree of *R. thomsonii* in full bloom. Nevertheless, the shrub is hardy along the east coast if given a sheltered site and in time develops into a free-flowering, compact yet upright dome no more than 2m high or wide. So is the perfect cognoscente acquisition where acreage is constrained.

In the wild, mirroring *R. thomsonii, R. lopsangianum* is also believed to hybridise with *R. campylocarpum,* and in 1937, John Cowan described the offspring of this match, discovered by Ludlow and Sherriff in 1936, as *R. thomsonii* var. *pallidum* (*Notes,* Volume 19). Both David Chamberlain and H. H. Davidian subsequently listed this plant as being synonymous under what today is acknowledged to be *R. x candelabrum,* the natural hybrid between *R. thomsonii* and *R. campylocarpum,* but such a placement cannot stand, as the parentage is evidently different. *R. x pallidum* must therefore join the ranks in its own right, the larger calyx lobes and rose-pink rather than pale pink corollas removing the taxon from the embrace of its presumptive twin.



R. lopsangianum (LS&T 6561)





R. lopsangianum



R. lopsangianum

R. trilectorum

Hardiness:
H4-5.
Flowering Period:
March-May.
Distribution in the wild:
SE Tibet; Arunachal Pradesh, India.
Growing on rocky slopes at elevations of 3,600-4,300m.

Identification:
Shrub, prostrate and mounding, 0.15 to 0.3m high;
branchlets reddish-brown, glabrous.
Leaf bud scales persistent.
Leaves subsessile,
obovate through obovate-spathulate,
0.6 to 3.2cm long by 0.6 to 1.8cm wide,
base decurrent on the petiole;
upper surface rugose;
lower surface pale green, shiny, eglandular.
Petiole 3-5mm long, winged,
floccose, becoming glabrescent or glabrous.
Inflorescence 2-3-5-flowered.
Pedicel 20-30mm long,
Calyx lobes 1-3mm long,
their outer surface and margins glabrous.
Corolla 3 to 4cm long, funnel- through tubular-campanulate,
pale yellow flushed pink.
Stamen filaments densely pubescent towards the base.
Ovary glabrous.

Seed Collections:

HECC 10019	2002
HECC 10041	2002
KR 10456	2012
KR 10459	2012
KR 10537	2012

When he wrote the botanic description for *R. trilectorum* in 1953 - the text contained in Volume 21 of *Notes from the Royal Botanic Garden, Edinburgh* - John MacQueen Cowan chose an epithet that would honour the team of plant hunters who discovered the species, his moniker translating as 'three collectors'. The trio concerned were Frank Ludlow, George Sherriff and George Taylor, and they found the new-to-science species on June 16th, 1938, at Tsari Sama, near Langong, in Kongbo Province, southeast Tibet. Herbarium material was gathered under LS&T 5582 and three weeks later, at Tum La, near Nayii, also in Kongbo Province, a second population of plants was found and sampled, these catalogued under LS&T 5782. But no seed was secured so early in the season from either collection.

The dried specimens and the expedition's associated field notes clearly denote a plant closely related to *R. forrestii,* but with sessile foliage, which is decurrent on a very short leaf stalk, effectively making the petiole winged on both sides. Other differences are the hairy stamen filaments, the usually glabrous ovary, and the pale yellow flower colour.

R. trilectorum has not featured in any of the genetic phylogeny studies published to date, but the morphological relationship with *R. forrestii* saw it placed in the old Forrestii Subseries of the Balfourian classification's Neriiflorum Series, and later, within Subsection *Neriiflora* in the 1996 Edinburgh Revision texts. Post publication of that classification, a number of knowledgeable authors included it within an unofficial 'Forrestii Alliance' or 'Forrestii Group'. Therefore, in line with the cpDNA-motivated transfer of *R. forrestii* into Subsection *Thomsonia* - as detailed on page 288 - and the listed set of reasons prompting the inclusion of *R. chamaethomsonii* within that same relocation, *R. trilectorum* is likewise conveyed to a new botanical residence even though any hard science data to support such a resettlement is currently lacking.

Sixty-four years after its discovery, a four-man team of collectors were responsible for finally introducing the species into UK cultivation after securing seed in 2002: Peter and Kenneth Cox, Philip Evans and Peter Hutchison. Moreover, at the same time, they extended the known species distribution into the northeast Indian state of Arunachal Pradesh, which was where, ten years later, in both the West Siang and Mechuka districts, Keith Rushforth also encountered the rhododendron.

In a British garden, the requirements for successful cultivation mirror those for plants domiciled within *R. forrestii* var. *forrestii* Repens Group - a north-facing, fast draining site, sheltered from strong winds, but open to the sky. Equally applicable is the north-south divide on summer temperatures, which will again favour those wooded locales in the top half of the country and hinder anyone attempting to grow *R. trilectorum* in counties to the south of North Yorkshire.

R. viscidifolium (LS&T 6567)

R. viscidifolium
Hardiness:
H4-5.
Flowering Period:
May.
Distribution in the wild:
SE Tibet.
Growing in valleys along stream banks and on cliff faces near waterfalls,
at elevations of 2,700-3,350m.

Identification:
Shrub, rounded and compact, or broadly upright, 0.6 to 2.4m high;
branchlets slender, glabrous, glandular or eglandular;
bark pale grey-brown, smooth, exfoliating into thin and small irregular flakes.
Leaves obovate through oval to orbicular,
4 to 10cm long by 2.8 to 6.6cm wide,
retained for 1-2 years;
lower surface whitish, glaucous, densely papillate, glabrous,
with scattered viscid glands.
Petiole 10-25mm long, glabrous,
glandular at first, becoming eglandular.
Inflorescence pendulous, 1-3-flowered.
Pedicel 8-10mm long, reddish, glabrous,
sparsely through moderately stalked-glandular, or eglandular.
Calyx pale green, pink or coppery-red, cupular, the lobes divided to the middle,
ovate or rounded, and each 4-9mm long,
their outer surface glabrous,
their margins stalked-glandular-hairy.
Corolla 3.5 to 4.6cm long, tubular-campanulate, fleshy,
coppery-red or coppery-orange,
with darker crimson spots on the posterior side,
the nectar pouches crimson.
Stamen filaments crimson, glabrous or pubescent at the base.
Ovary conoid, 6-8mm long, 6-locular,
densely tomentose, moderately through densely short-stalked glandular.
Style glabrous and eglandular.
Capsule oblong, 20mm long, tomentose, sparsely glandular.

Seed Collections:

LS&T 6567	1938


R. viscidifolium (LS&T 6567)

R. viscidifolium has only once been encountered in the wild by Western plant hunters, Frank Ludlow, George Sherriff and George Taylor sharing the privilege on October 8th, 1938. According to their field notes, the locale where the discovery was made was the Lo La Valley, in the Pachakashiri District of southeastern Tibet, with the species quite common, a shrub 0.6 to 1.5m high, found growing against cliff faces close to waterfalls and alongside streams. Herbarium specimens were collected and seed gathered under LS&T 6567, with these successfully returned to GB. But then, a series of mix-ups ensued:

First off, in 1940, botanist John Hutchinson, Keeper of the Herbarium at the Royal Botanic Gardens, Kew, and one of the leading rhododendron doyens of the time, wrongly determined the material to be *R. lopsangianum*.

Next, the dried specimens were miscatalogued under LS&T 3750, so at a stroke of the filing cabinet, they became *R. thomsonii* var. *pallidum*. For almost thirty years.

But then, a change of luck occurred. For H. H. Davidian saw the plant in flower at the legendary rhododendron garden created by the brothers Archie and Sandy Gibson at their home, Glenarn, in Rhu, near Helensburgh - the collection now marvellously restored by Mike and Sue Thornley - and knew immediately that something different was to hand.

Davidian's botanic description appeared in *The Rhododendron and Camellia Year Book 1967,* and it portrayed a plant unlike any other in Genus *Rhododendron:*

Its rounded leaves, which may have resembled those of *R. thomsonii,* especially as they were also glaucous-papillate below, had an abaxial surface that was whitish and also sticky to the touch. Viscidly so - although comparisons with Harry Coover's cyanoacrylate may have been a little overstated at the time. Also, anyone needing help translating the epithet, has likely been breathing-in the fumes of such.

Equally, the foliage may have been evergreen, with the blades retained on the bush for around two years, but most of the leaves turned scarlet-crimson, bright red or bright yellow with the onset of autumn.

And stranger still were the pendulous flowers - often drooping between the leaves, one, two or three tubular-campanulate, fleshy corollas emerging from each flower bud, coppery-orange through coppery-red in colour, spotted darker crimson on the outside, with five very dark crimson nectar pouches encircling the base of the throat.

Oh, and within each of those straight-sided bells, the tube of the style, and the ten, unequal stamen filaments, were also flushed deep red.

R. viscidifolium had taken just seven years to bloom from seed in cultivation, opening its flowers for the first time at Glenarn in 1946, and as can been seen today, it developed into a compact to open, medium-sized shrub. The species is hardy in a sheltered site, but bark split is a known problem, especially if hit by a late spring or early autumn frost, so mollycoddle accordingly. Plus, any specimen being grown in the southern counties should be positioned in dappled shade.

One other rhodophile apart from the Gibson brothers is now known to have grown the species to flowering size from the original seed collection, the renowned German hybridiser, Dietrich Hobbie, who - given the parlous state his country was left in post Adolf Hitler's shenanigans - was especially quick off the mark when incorporating *R. viscidifolium* into his breeding programmes. 'Diane' was pollinated around 1950 to produce 'Viscy', as was *R. orbiculare* to birth 'Orbis', while 'Doctor V. H. Rutgers' received its dab of pollen a decade later in 1960, to give 'Silja'. Yet only the first named, with its large and long-lasting orange through coppery-yellow blooms in open trusses of nine, bests its parents and has been widely distributed in commerce.



R. viscidifolium (LS&T 6567)



R. viscidifolium (LS&T 6567)

R. viscidifolium (LS&T 6567)

Section *Leiorrhodium* Subsection *Williamsiana:*


R. williamsianum



Taxa:

R. williamsianum

Taxonomic Revision:

The Section *Ponticum* to Section *Leiorrhodium* transfer apart,
Subsection *Williamsiana* remains as defined in the 1996 Edinburgh Revision classification.

Subsection Morphology:

Dwarf, low or medium shrub,
compact and rounded, dome-shaped or spreading, 0.6 to 2.4m high;
branchlets slender, coppery-coloured, glabrous,
sparsely through moderately setulose-glandular;
bark brownish, smooth.

Leaves evergreen, coriaceous,
ovate-orbicular to broadly oblong,
1.5 to 5cm long by 1.3 to 4cm wide,
apex rounded or very broadly obtuse, and apiculate,
base cordate or truncate,
retained for 2-3 years;
upper surface bright or deep green, young growth bronzy, glabrous,
the midrib grooved, the veins deeply impressed;
lower surface greyish-white,
glaucous, papillate, glabrous or punctulate with the vestiges of hairs,
these interspersed with some red-coloured sessile glands,
the midrib raised, glabrous, sometimes sparsely setulose, the veins raised.

Leaf anatomy comprises a 2-layered upper epidermis,
with the cells in the top layer roughly equal in size to those in the layer below;
the cuticle is around half as thick as the cells are deep; water tissue is absent;
the lower epidermis cells are prolonged into papillae.
Sclereid cells occur occasionally.

Petiole 7-15mm long, flat above, rounded below, glabrous,
sparsely through moderately setulose-glandular,
these extending to the margin of the leaf base,
or not setulose-glandular.

Inflorescence umbellate or racemose-umbellate, lax,
2-3-flowered, rarely 5-6-flowered.

Rhachis 3-8mm long, sparsely glandular or eglandular.

Pedicel 10-30mm long, stout,
sparsely through moderately long-stalked glandular, rarely eglandular.

Calyx small, a wavy rim or 5-6-lobed,
these broadly triangular or rounded, and each 1-2mm long,
their outer surface and margins short- or long-stalked glandular-ciliate,
rarely eglandular or glabrous.

Corolla 3 to 4cm long, broadly campanulate,

pale pink to rose, or pale pink fading to white,
spotted darker,
without nectar pouches,
5-6-lobed, these emarginate.

Stamens 10-12-14, unequal, 15-30mm long;
filaments glabrous; anthers ovate, deep purple-red.

Ovary ovate or oblong-conoid, 4-5mm long, 5-6-locular,
densely short- or long-stalked-glandular, glabrous.

Style 35mm long, nearly equal in length to the corolla, glabrous,
glandular throughout to the tip;
stigma capitate.

Capsule oblong, 15-25mm long, straight,
eglandular or sparsely short- or long-stalked glandular.



R. williamsianum



R. williamsianum

R. williamsianum

Hardiness:
H5-6.
Flowering Period:
April-May.
Distribution in the wild:
SE Tibet; W Guizhou, C & SW Sichuan, & NE Yunnan, China.
Growing in open forests on mountain slopes and amongst rocks,
at elevations of 1,800-2,800m.

Identification:
Shrub, compact, spreading, dome-shaped, 0.6 to 2.4m high;
branchlets setulose-glandular.
Leaves ovate through orbicular,
1.5 to 5cm long by 1.3 to 4cm wide,
retained for 2-3 years.
Petiole often sparsely setulose-glandular.
Pedicel glandular.
Corolla 3 to 4cm long, 5-6-lobed, broadly campanulate,
pale pink to rose, or pale pink fading to white,
spotted darker.
Ovary glandular.
Style glandular, base to tip.

Seed Collections:

W 1350	1908
H&M 1469	1990

Ernest Wilson discovered *R. williamsianum* in June 1908 on his first expedition for the Arnold Arboretum of Jamaica Plain, Boston, this institute America's premier botanic garden, and also part of Harvard University. The find was made on Wa Shan, a mountain in western Sichuan, with the species recorded in Wilson's field notes as being rare on the ground and isolated, growing in thickets along a cliff face at an altitude of around 2,800m. Herbarium material was gathered and the plant hunter returned on October 15th of that same year to procure capsules and ripened seed, the species introduced into cultivation under the field number W 1350.

A plant first flowered in UK cultivation, under glass at Kew, during March 1916.

The species botanic description was written by Wilson and Alfred Rehder, their text appearing in Volume 1 of *Plantae Wilsonianae,* which was edited by the Arnold Arboretum's first director, Charles Sprague Sargent, and published in 1913.

Wilson writes that he:

> 'named the species for Mr J. C. Williams of Caerhays Castle, Cornwall, England, the first amateur to appreciate the horticultural value of the rhododendrons of western China; in his garden the best collection of these new introductions is now to be found'.

And almost immediately, the botanists of the day and a long line of their successors, were in a tizzy over where to place the find.

Because it was:

> 'an anomalous species in the Thomsonii Series on account of its dwarf spreading habit, with the corolla of the Campylocarpum subseries, the glandular style of the Souliei and Cerasinum subseries, and its main characteristics at the same time suggestive of some affinity with *R. chamae-thomsonii* of the Neriiflorum Series'.

The above quote paraphrases the account that John MacQueen Cowan and H. H. Davidian gave in their *Review of Rhododendrons in their Series IV: The Thomsonii Series,* which was published in *The Rhododendron Year Book 1951-52*.

Yet even that shortened but lengthy assessment fails to mention the fact that the corollas can also have 5 or 6 lobes.

So ultimately, *R. williamsianum* went into its own monotypic subseries.

That pigeonhole was upgraded into a full-blown subsection by the authors of the Edinburgh Revision because *R. leishanicum* - then and now, known only from the type collection made in eastern Guizhou in the early 1980s - was judged to have an affinity with *R. williamsianum*. However, the dense covering of indumentum on the petioles and abaxial midrib of *R. leishanicum* makes this association doubtful, with the morphology more reflective of the species in Subsection *Maculifera,* despite the hairs in question not being as 'dendroid' or matted. The taxon has yet to be introduced into British gardens or indeed, into cultivation anywhere else across the globe.

R. williamsianum itself was rediscovered on December 3rd, 1940, by the renowned Chinese botanist Wen-Pei Fang (1899-1983), who collected specimens under field number 14752. Regrettably, only herbarium material appears to have been gathered, though a portion of this was distributed to the UK's botanic institutes. A reintroduction may have taken place in 1990, with seed under H&M 1469 gathered in Sichuan by Charles Howick and William McNamara, but if so, their collection remains unauthenticated. Furthermore, according to the online version of *Flora of China,* several new populations of the species have been discovered in western Guizhou, southwest Sichuan, southeast Xizang - more properly, occupied Tibet - and in northeast Yunnan, but officially, the Western view still restricts the distribution to one, or possibly two mountains in central Sichuan.

All the cultivated forms of *R. williamsianum* originate from Wilson's 1908 collection, though many of the shrubs grown today are hand-pollinated offspring selfed from those seedlings rather than vegetatively-produced cuttings, this despite the species being easy to root. The dense, dome-shaped habit and bronzy young growth, along with the nodding pink flowers produced from a very young age, have assured the species a prodigious uptake among rhodophiles and the public at large, and of course, the hybridising fraternity have paired the plant with almost as many partners as *R. yakushimanum*. Mature specimens may have a dwarf and spreading habit that is no more than 0.6m tall, or be medium-sized shrubs building-up into mounds of around 1 to 1.5m high. In west coast locales, where the conditions are more favourable, domed plants averaging 2.4m are the norm.

Late frosts, a regular feature of the UK's spring climate along the east coast and inland, are problematic, as the new shoots begin to extend at the same time as the flowers open, so are often hit and damaged if temperatures plunge. This is not helped by the well founded recommendation of an open planting position to maintain the best habit, as only in the southern counties should a site offering dappled shade at midday be considered.

Various 'Special' clones are available, with 5-6 corollas in the truss instead of 1-3 bells, white-flowering forms, or others with marginally larger leaves and more blowsy blooms. But all pale against the pure species, for *R. williamsianum* is a literal gem.

R. williamsianum



R. williamsianum



R. williamsianum



R. williamsianum



R. williamsianum

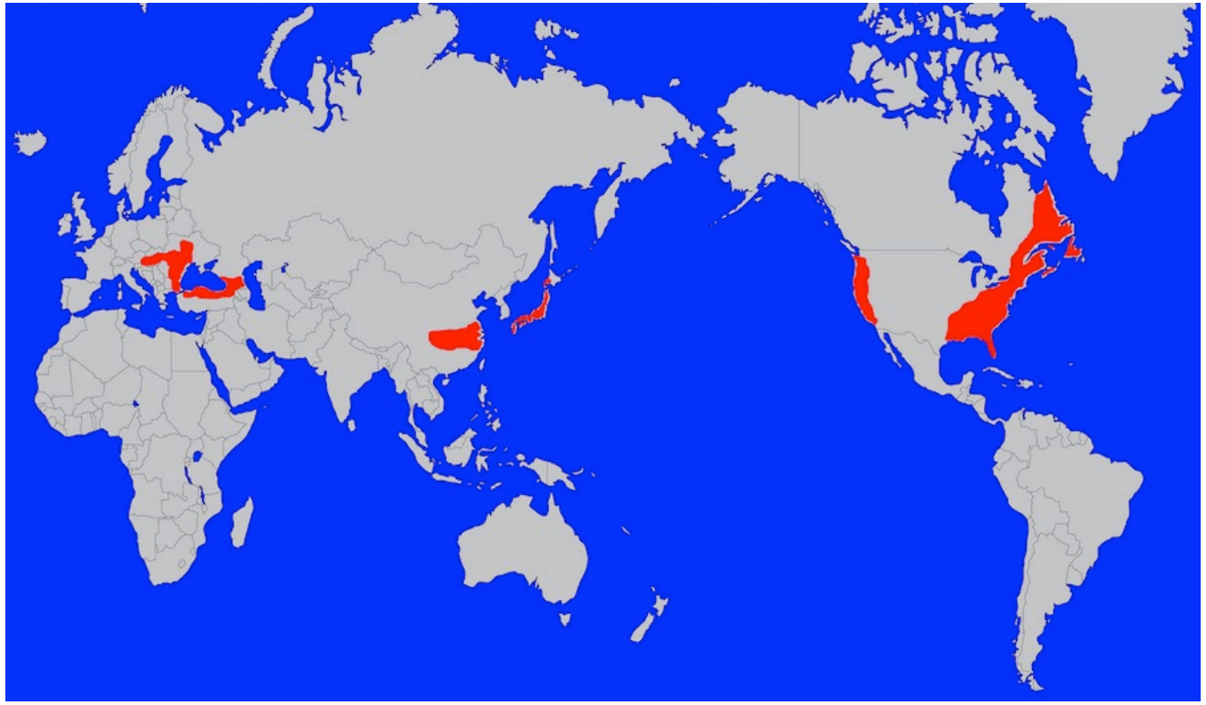
R. williamsianum

Section
Pentanthera

Section *Pentanthera:*



R. calendulaceum



Taxa:

R. alabamense
R. arborescens
R. atlanticum
R. austrinum
R. calendulaceum
R. canadense
R. canescens
R. colemanii
R. cumberlandense
R. eastmanii
R. flammeum
R. luteum
R. molle
    R. molle ssp. *japonicum*
    R. molle ssp. *molle*
R. occidentale
R. periclymenoides
R. prinophyllum
R. prunifolium
R. viscosum
    R. viscosum var. *serrulatum*
    R. viscosum var. *viscosum*

Taxonomic Revision:

Section *Pentanthera* contains the deciduous azalea species previously assigned to Subgenus *Pentanthera* Section *Pentanthera* Subsection *Pentanthera,* and Subgenus *Pentanthera* Section *Pentanthera* Subsection *Sinensia,* plus *R. canadense* from Subgenus *Pentanthera* Section *Rhodora,* these botanic pigeonholes defined in the 1996 Edinburgh Revision classification.

The new grouping and placement within Subgenus *Hymenanthes* reflects the dataset in the scientific study *The Molecular Systematics of Rhododendron (Ericaceae): A Phylogeny Based Upon RPB2 Gene Sequences,* which was written by Loretta Goetsch, Andrew J. Eckert, and Benjamin D. Hall, all then based at the Department of Biology, University of Washington, Seattle, USA, their paper published in *Systematic Botany* (2005), 30(3): pp. 616–626.

The results of that genetic analysis showed the deciduous species *R. calendulaceum, R. luteum, R. canadense, R. molle, R. canescens* and *R. occidentale,* to be present within the same clade as a larger group of evergreen species, amongst these, taxa such as *R. wardii, R. macabeanum, R. smirnowii* and *R. hyperythrum*.

This deciduous-evergreen association had previously been documented in the paper *Sectional Relationships in the Genus Rhododendron (Ericaceae): Evidence from matK and trnK Intron Sequences,* which was written by Yuji Kurashige, J. I. Etoh, T. Handa, K. Takayanagi, and T. Yukawa, and published in *Plant Systematics and Evolution* (2001), 228: pp. 1–14.

These two independent studies showed substantial agreement
between the *RPB2-1* and plastid DNA analyses.

However, in the otherwise supportive study
Infrageneric and Sectional Relationships in the Genus Rhododendron (Ericaceae)
Inferred from ITS Sequence Data,
written by Lian Ming Gao, D. Z. Li, C. Q. Zhang, and J. B. Yang,
and published in *Acta Botanica Sinica* (2002), 44: pp. 1351–1356,
the positions of the Section *Pentanthera* and Subgenus *Hymenanthes* clades
remain unresolved.

Nevertheless, on the evidence to hand, a reconsolidation of the classification was
considered to be both necessary and justified, resulting in the proposals outlined opposite,
which were accepted without demur
by acknowledged rhododendron experts in the botanic and horticultural communities.

Morphologically, all the species placed within the newly created Section *Pentanthera*
share the same characteristic of their vegetative growth emerging from
separate lateral buds below the terminal flower bud.



R. atlanticum

Section Morphology:

Shrubs or small trees, 0.3 to 10m high; spreading to upright; often stoloniferous;
branchlets bristly, hairy or glabrous.

Vegetative growth from buds below the terminal inflorescence.

Leaves deciduous, occasionally evergreen when immature, alternate or in whorls,
oblong-lanceolate through oblong-oblanceolate to obovate, elliptic to orbicular,
2 to 15cm long by 0.6 to 5.6cm wide,
fully or partially covered in simple hairs.

Petiole 1-8mm long, hairy or glabrous, often glandular.

Inflorescence terminal, usually with several buds per stem,
each 3-15-24-flowered, racemose;
the flowers appearing before, with or after the leaves.

Pedicel 2-25mm long, hairy or glabrous, often glandular.

Calyx minute to well-developed, 5-lobed, glabrous or hairy.

Corolla zygomorphic or actinomorphic,
funnel-shaped to rotate-campanulate,
sometimes two-lipped due to the fusion of the three upper lobes,
orange, pink, red, rose-purple, white or yellow,
with or without a blotch or spots,
often fragrant;
the outer surface usually pubescent and sticky,
with multicellular and/or unicellular hairs.

Stamens 5-10, usually declinate.

Ovary often hairy.

Style usually declinate, glabrous or pubescent or glandular along the lower half.

Capsule ovoid to oblong.

Seeds with or without wings, sometimes broadly winged,
lacking tails but each end with appendages,
the outer seed coat (testa) usually loose, but sometimes tightly appressed
and with the wings and appendages composed of unique bladder-like cells.

R. viscosum

R. viscosum* var. *viscosum

Hardiness:
H4-6.
Flowering Period:
June-July.
Distribution in the wild:
Coastal New England south to Florida, west through Georgia & Alabama to SE Texas, USA.
Growing in damp ditches and sandy fields, at the margins of swamps and marshes,
along the banks of slow flowing streams, and in moist thickets and woodland on mountains,
from sea level to elevations of 1,500m.

Identification:
Low shrub through small tree to 5m high; often stoloniferous;
young shoots yellowish-, greyish- or reddish-brown,
usually pubescent, setulose or strigose, eglandular.
Leaves ovate through elliptic to oblong-lanceolate,
2.1 to 10cm long by 1.5 to 3.8cm wide,
upper surface dark green, usually glabrous, the margins serrulate or strigose;
lower surface glabrous, the midrib often strigose.
Petiole often strigose.
Inflorescence 3-14-flowered, opening after leaf expansion,
sweetly fragrant, the scent spicy and clove-like.
Winter flower buds ovoid, with 8-12-15 rounded scales,
often mucronate or aristate at the apex,
their outer surface sparsely to densely pubescent,
their margins densely ciliolate, eglandular.
Pedicel setulose-glandular.
Calyx 1-3mm long,
the outer surface and margins usually setulose-glandular.
Corolla white, sometimes suffused pink or purple, rarely entirely pink;
the tube long and narrow, pubescent within, gradually expanding at the apex,
up to twice as long as the lobes, the outer surface densely setulose-glandular;
the lobes glandular outside, with long-stalked glands along the middle.
Stamens white,
between 1.5 and 2 times as long as the corolla-tube;
filaments pubescent along the lower two-thirds.
Style white,
longer than the corolla and the stamens,
pubescent along the lower half.
Ovary densely setulose-glandular.
Capsule setulose-glandular.

Seed Collections:

H&M 1287	1990	H&M 1320	1990	Sinclair 1753	1994

In addition to the three authenticated collections listed above,
members of the American Rhododendron Society
regularly contribute batches of seed to their annual exchange programme.

R. viscosum* var. *serrulatum

Hardiness:
H3-4.
Flowering Period:
May-October.
Distribution in the wild:
Coastal Virginia south to Florida and Louisiana, USA.
Growing on sandy flats, at the margins of swamps and marshes,
along the banks of slow flowing streams, and in moist thickets,
from sea level to elevations of around 100m.

Identification:
As var. *viscosum* except:
Height to 7m, markedly stoloniferous,
branchlets rusty-red.
Winter flower bud scales 15-20,
their margins banded red, with the inner scales acute and aristate.
Corolla tube glabrous within,
at least twice as long as the lobes.

Seed Collections:
Although no authenticated collections have been documented,
three gatherings of the variety have been listed on the ARS Seed Exchange,
these in 1974, 1979, and 2006.

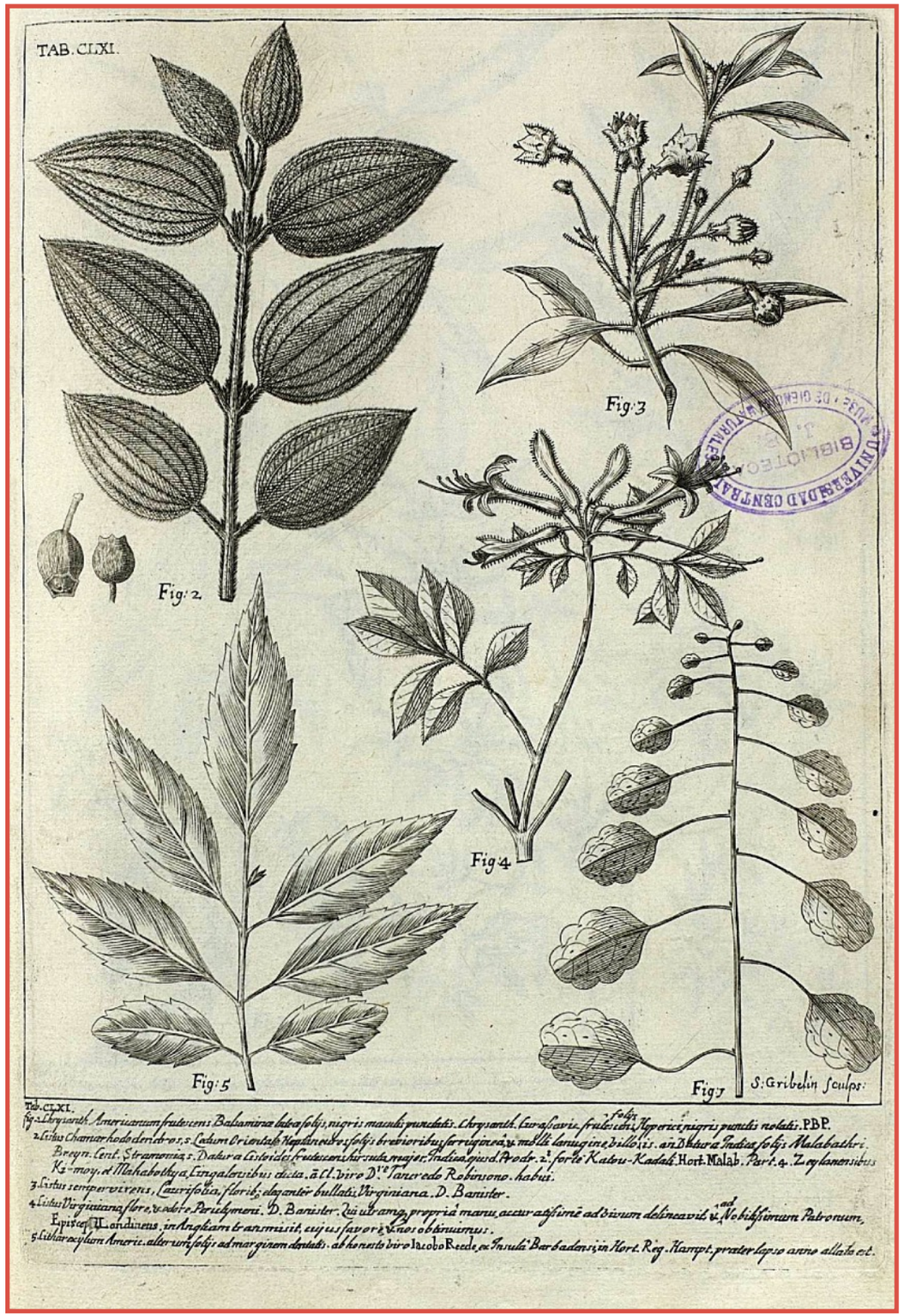

R. viscosum

Botanically, *R. viscosum* was the first Section *Pentanthera* azalea to be discovered, even though *R. luteum* had rather noticeably impacted human history back in the 4th century BC. Historically, John Banister, an English priest and university-trained naturalist who emigrated to Virginia in the late 17th century AD, is credited with finding the species sometime before 1691, the date when Henry Compton, then Bishop of London, supposedly received a drawing of the new discovery from his botanic acolyte. However, that reportage may be out by more than a decade and somewhat inaccurate, as Compton actually grew and flowered the azalea in the garden at his Fulham Palace residence, either from seed or a living plant sent by Bannister in 1680. And the said illustration, which appears in Volume 3 of *Phytographia,* published during 1692, was actually authored by Leonard Plukenet, who was supervisor of the King's garden at Hampton Court Palace. Carl Linnaeus would name the species *Azalea viscosa* in his two-volume 1753 work *Species Plantarum,* while a botanic description appeared in John Torrey's *Flora of the Northern and Middle States,* published in 1824, this introducing the epithet *Rhododendron viscosum*.

As would be expected from the wide geographic and altitudinal distribution, and the various niche habitats the species colonises, characteristics such as leaf size, colour and texture; flower size, colour and bloom time; height and spread; the degree of stoloniferous growth exhibited; vary enormously. Indeed, *R. viscosum* is noted to be North America's most variable azalea species. But before the synonymous hand of the Edinburgh Revision struck, the plants were divided into three specific species and a variety:

R. oblongifolium was first collected in 1850 from a plant population found growing close to Camden, in Arkansas, by August Fendler, and at almost the exact same time, by Charles Wright, from a different colony in Texas. John Kunkel Small described the species as *Azalea oblongifolia* in the first edition of his *Flora of the Southeastern United States,* published in 1903, and it differs from *R. viscosum* in having: larger leaves; petioles and young shoots that are pubescent; is rarely stoloniferous; and has an earlier flowering time. It also possesses a disjunct, isolated distribution west of the Mississippi River in Arkansas, Louisiana, Oklahoma and Texas, though that was not enough to maintain its specific status. *R. oblongifolium* was first introduced into British gardens by the director of Boston's Arnold Arboretum, Charles Sprague Sargent, during 1917, and post its 1993 sinking - in, *A Revision of Rhododendron Section Pentanthera,* by Kathleen Kron, *Edinburgh Journal of Botany,* Volume 50, Number 3 - horticulturalists have chosen to maintain its distinctiveness through the *Cultivated Plant Code* classification of *R. viscosum* Oblongifolium Group.

R. serrulatum has a more southerly distribution, this kicking-off in Virginia before running along the coastal plain of the Carolinas, Georgia and the Florida Panhandle, only to then sweep westwards along the Gulf Coast and end up in southeast Louisiana. Its flower buds have more scales than *R. viscosum* - 15 to 20, compared with 8 to 12 - and these display red banding along the margins in the winter months and are often awned at the apex. Also, these plants have been found to be highly stoloniferous, have shoots coloured red-brown and expand their leaves much earlier in the season than those of *R. viscosum,* despite the flowering period being later, with this often extending over the summer into October. Equally, the *R. serrulatum* leaf is smaller, and it has serrulate margins - basically forward-pointing notches like the teeth of a saw - which of course, gave the species its Latin epithet. The plant was first collected close to New Orleans in Louisiana around 1830 by Thomas Drummond, and again later in Florida, with the taxon originally named *Azalea serrulata* by John Kunkel Small in his 1903 *Flora* tome.



- opposite -
R. viscosum var. *viscosum* as illustrated by Plukenet in *Phytographia* (Plate 161, Figure 4, 1692), this drawn from the plant then resident at Fulham Palace, London.

Post implementation of the Edinburgh Revision mandated synonymy in 1993, wild plants and those in cultivation became *R. viscosum* Serrulatum Group, but the majority of rhododendron aficionados who knew the species as a familiar part of their local landscape, considered that sinking 'blinkered' and simply ignored it.

And they had a point.

Which was why in 2011, Alan Weakley, Curator of the University of North Carolina Herbarium and a well-respected botanic author, used the feature set outlined opposite to justify the re-establishment of varietal status in his exemplary *Flora of the Southern and Mid-Atlantic States*. A conclusion that is happily adopted herein.

R. viscosum var. *serrulatum* is believed to have been introduced into UK cultivation as early as 1919, with plants or seed arriving via the Arnold Arboretum. The species was certainly being grown at Tower Court, Ascot, in 1950 - the garden of John Barr Stevenson and his wife, Roza - with the US National Arboretum despatching plants to Edinburgh Botanic in the mid 1950s and early 1960s.

R. viscosum var. *glaucum* differed from the specific species in having a lower leaf surface that was glaucous, with this morphology also occasionally found on the upper surface. However, opinion was of the view that this characteristic did not warrant varietal or Group status, so the 1993-imposed synonymy was maintained.

However, two other Groups are recognised:

R. viscosum Aemulans Group contains plants that are native to south central Georgia and come from low elevations. They are slower growing than *R. viscosum,* bloom earlier in the season and have densely pubescent winter flower buds.

Members of *R. viscosum* Montanum Group come from high elevations on the Blue Ridge Mountains of North Carolina, so are dwarf- to low-growing plants. They also have winter flower buds that are densely pubescent, but instead of the usual complement of 12 to 15 protective scales, these are gifted with only 8.

R. viscosum was more widely introduced into British gardens by John Bartram during 1734, with either seed or live plants sent from America to Peter Collinson - Bartram's horticultural friend, and a Fellow of the Royal Society - who distributed the stock to other eminent gardeners. Within the Section, the very sticky white corolla is a key distinguishing feature, as are the clear-coloured stamens and style. The pubescent and setulose young shoots are equally distinctive.

Plants of var. *serrulatum,* and those of Oblongifolium Group, perform best in southern gardens, where the high summer temperatures can fully ripen the young growth, though *R. viscosum* is hardy throughout the British Isles and generally easy to cultivate if the soil is kept on the wet side of moist. Specimens are also very free flowering, but not arrestingly so, even when the bushes are completely covered in bloom, and the dry spicy scent that emanates from the corollas is not to everyone's taste.


R. viscosum


R. viscosum

R. luteum

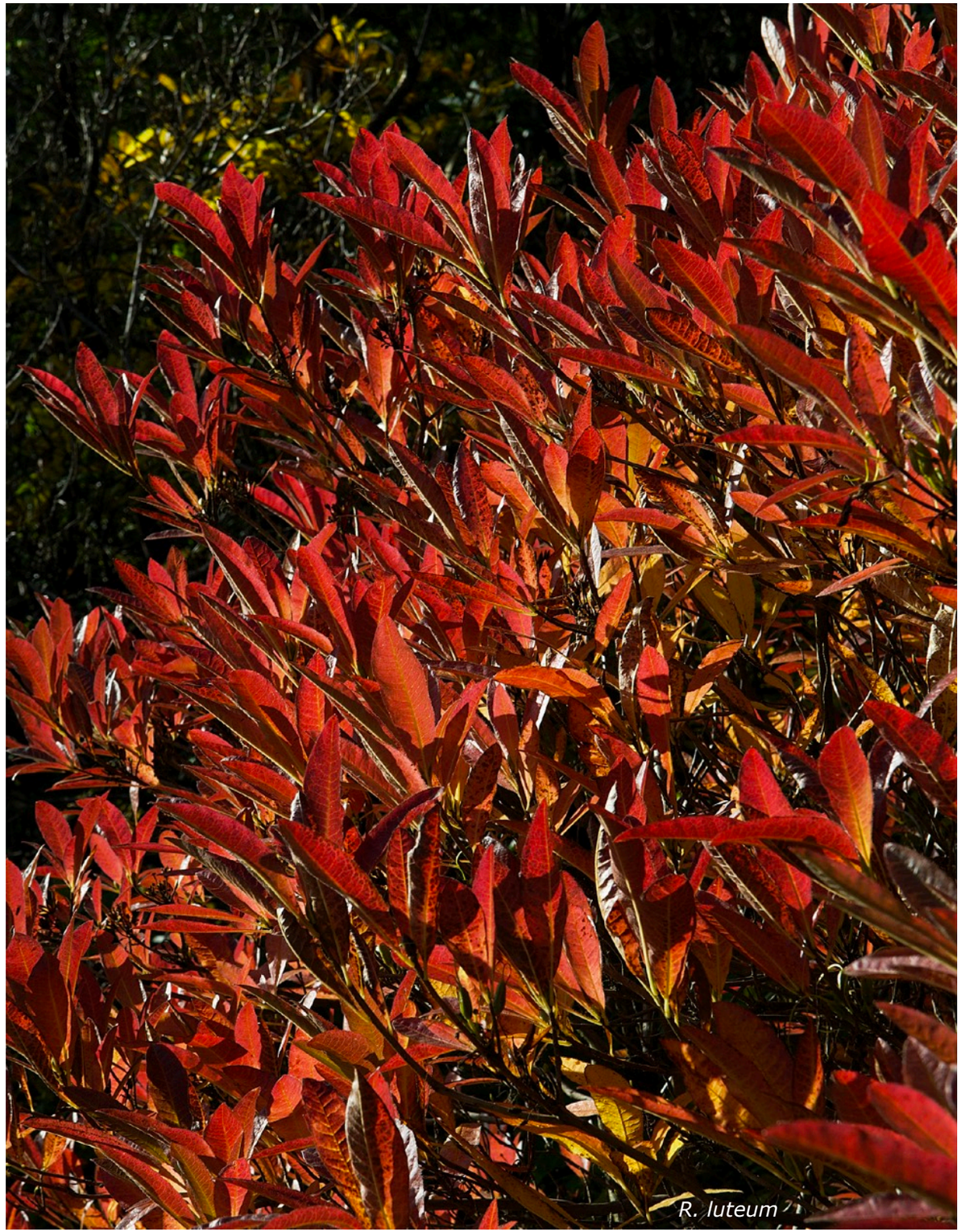
R. luteum

Hardiness:
H5-6.
Flowering Period:
May-June.
Distribution in the wild:
The Caucasus - Georgia & N Turkey; Poland; Slovenia; Ukraine.
Growing in and at the edges of thick woodland,
along stream and river banks, in swamps and on open grassland,
at sea level to elevations of 2,300m, though usually between 400-1,800m.

Identification:
Multi-branched shrub 0.6 to 3.6m high; strongly stoloniferous.
Young shoots glandular.
Leaves oblong through oblong-lanceolate,
5 to 14.6cm long by 1.3 to 4.2cm wide;
the upper and lower surfaces glabrous,
sparsely to moderately strigose-glandular;
the margins serrulate, strigose.
Petiole densely glandular.
Inflorescence 7-17-flowered, opening before or with leaf expansion,
strongly fragrant, sweetly scented.
Winter flower buds ovoid, with up to 20 ovate-oblong scales,
those at the base long-pointed, their margins glandular.
Pedicel 6-20mm long, moderate to densely glandular.
Calyx 1-7mm long, outside and margins glandular.
Corolla bright yellow with a deeper blotch,
the outer surface glandular-pubescent;
the tube relatively short, widening gradually above the middle.
Stamens 1.5 to 2 times as long as the corolla-tube.
Style longer than the stamens.

Seed Collections:

ACH 204	1962
TURX 131	1990



R. luteum

R. luteum

R. luteum was officially discovered sometime between 1700 and 1702 by the French botanist Joseph Pitton de Tournefort, who was on a collecting expedition to the Levant with the Jardin du Roi's illustrator-in-residence Claude Aubriet and the German botanist Andreas Gundesheimer. Described as *Azalea Pontica* by Carl Linnaeus in 1753, then *Anthodendron ponticum* by Ludwig Reichenbach during 1827, and then *Rhododendron flavum* by George Don in 1834, it was Robert Sweet, writing in the second edition of his *Hortus Britannicus,* published in 1830, who first established the *Rhododendron luteum* moniker. Of course, as any knowledgeable historian will tell you - thanks to the Greek military leader Xenophon's campaign reports published in the seven volumes of *Anabasis* around 370 BC - the plant was in fact widely known much earlier than this: specifically, at the start of the 4th century BC. For in 401 BC, during the Greek army's retreat from Mesopotamia, said general found out to his cost that honey made from the nectar of *R. luteum* contains grayanotoxin, which is a poison. His soldiers, referred to as the Ten Thousand, who were starving and bone-tired after crossing the Armenian plain, suffered vomiting, dizziness, loss of coordination, heart palpitations, and even death, after forcefully appropriating pots of the honey from the local residents. Reports of a modern-day re-enactment in the north of the plant's endemic distribution have yet to surface, with no "Pukin In The Ranks" headlines splashed across the front pages of the tabloids. At least, not yet. But who knows? Though Kyiv tends to keep these operations hush-hush. Grayanotoxin, by the by, which is found in the nectar of many rhododendrons and a host of other member species of the *Ericaceae* family, was named for the pre-eminent 19th century American botanist, Asa Gray, but whether the choice of honoree was made by friend or foe has yet to be established.

R. luteum is the only azalea species native to Eastern Europe and Turkey. The main distribution is to be found to the east of the Black Sea in the Caucasus mountains, with isolated populations in Poland, Slovenia and Ukraine, and small remnant groupings located in Austria, and on the Greek island of Lesbos. The plant is a tetraploid, with recent gene sequencing investigations showing that its closest living relations are the East Coast native American azaleas *R. atlanticum, R. austrinum, R. calendulaceum* and *R. colemanii*. All five species have been shown to have evolved from a common ancestor that existed around 40 million years ago at a time when the North American and Western Eurasian landmasses were still joined together. This was reported in an ARS Journal article titled *Rhododendron colemanii: A New Species of Deciduous Azalea,* published in the 2008 Spring edition of that magazine. Confirmation that *R. luteum* was indeed a tetraploid and not a diploid - as first reported in *Chromosome Numbers in Species of Rhododendron,* authored by Ammal, Enoch and Bridgwater, and published in *The Rhododendron Year Book 1950* - appeared in the Summer 2004 edition of *The Azalean,* the journal of the Azalea Society of America. This study, carried out by a team of Belgium botanists from the Department of Plant Genetics and Breeding, Centre of Agricultural Research, Ghent - Tom Eeckhaut, Leen Leus, Albert De Raedt and Erik Van Bockstaele - was titled *Occurrence of Polyploidy in Rhododendron luteum (Sweet), Hardy Ghent, and Rustica Hybrids.*

It stated that:

> 'The botanical species *R. luteum* appears to be tetraploid, which is contradictory to previous results obtained by chromosome counting. This was observed on samples collected on three different genotypes (seedlings growing at different places). A thorough ploidy screening for all 30 Pentanthera species is highly recommended, to find out whether even more are polyploid'.

That evaluation was carried out by Jeff Jones, Thomas Ranney and Nathan Lynch, of North Carolina State University, and Stephen Krebs, of the David G. Leach Research Station



R. luteum



R. luteum



R. luteum

at the Holden Arboretum in Ohio, with the results reported in the paper *Ploidy Levels and Relative Genome Sizes of Diverse Species, Hybrids, and Cultivars of Rhododendron.* This was published in the Fall 2007 issue of the *Journal American Rhododendron Society,* and its dataset too confirmed that *R. luteum* was a tetraploid, along with the four North American species already listed.

Within Section *Pentanthera,* the yellow, blotched, sweetly scented corollas with longer stamens and a comparatively short, gradually expanding tube, are features that clearly identify the taxon from its contemporaries when in flower. Out of bloom, the glabrous mature leaves are key.

The species was introduced into British gardens during 1793 by Peter Pallas, who collected in the Caucasus and sent seeds to the Hammersmith nursery of Lee & Kennedy, and reintroduced just three years later in 1796 by Anthony Hove, whose Ukrainian seed, collected at Oczakow on the Black Sea coast, was despatched to the Watson brothers' nursery in Islington where, grown under glass, the species first flowered in 1798. The deep yellow corollas, heavenly scent and fiery autumn colour proved immensely popular. So much so that today, *R. luteum* is the most widely cultivated azalea species in the UK and across Europe, despite the apparent dearth of authenticated collections. Fully hardy and a vigorous grower, a group of mature plants will provide a spectacular long-lasting display each season, the extended bloom time due to the flowers in each bud not opening all at once, but in succession. Autumn leaf colour varies in intensity, but is usually blazing red through orange to purple.

R. luteum has been used extensively by the hybridising fraternity, most notably when it was crossed with the North American azaleas to produce a range of offspring known collectively as the Ghent Azaleas. Easily grown from seed, the species was also used for many years as an understock onto which numerous otherwise hard-to-propagate deciduous hybrid cultivars were grafted. Unfortunately, as its strongly stoloniferous nature should have warned, that meant that over time, suckers from the rootstock - if left undisturbed - would overwhelm the weaker overstock and cause it to die-off, leaving a flourishing bush of *R. luteum* in its place.

The species also mirrors the overly fecund behaviour of its Near East, past namesake and evergreen relative *R. ponticum,* naturalising across the UK wherever conditions allow, though to a far lesser extent than its cousin, which to date, has allowed *R. luteum* to avoid the mostly confected approbation of environmentalists and the gardening press, yellow being so much nicer on the eye than washed-out purple.

R. luteum

R. periclymenoides

Hardiness:
H6-7.
Flowering Period:
May-June.
Distribution in the wild:
Georgia & Alabama, north to Ohio, Pennsylvania, New York & Vermont, USA.
Growing in moist or dry open woodland from near sea level to elevations of 1,150m.

Identification:
Multi-branched shrub to 3m;
young shots sparsely pubescent, eglandular.
Leaves elliptic through obovate,
3 to 11cm long by 1.3 to 3.5cm wide;
upper surface bright green, semi-glossy;
upper and lower surfaces near glabrous and eglandular,
the midrib densely pubescent.
Inflorescence 6-15-flowered, opening before or with leaf expansion,
moderately fragrant, the sweet scent musky;
winter flower buds ovoid, the scales chestnut-brown,
their outer surface glabrous,
their margins densely ciliolate.
Pedicels eglandular.
Calyx 1-2mm long,
the outer surface of the scales and their margins ciliate, eglandular.
Corolla deep pink, sometimes white, pinkish-white or pinkish-purple,
without a blotch;
tube longer than the lobes, dark pink to strawberry-red, expanding gradually,
the outer surface often densely pubescent, eglandular;
the lobes pubescent along the middle outside, eglandular.
Stamens usually around three times as long as the corolla-tube.
Style longer than the corolla, longer than the stamens,
pubescent along the lower third, eglandular.
Ovary densely villous, eglandular.
Capsule strigose, eglandular.

Seed Collections:

H&M 1339	1990

In addition to the singe authenticated collection listed above,
between 1979 and 2020, members of the American Rhododendron Society
contributed more than 58 individual batches of seed
to their annual exchange programme.

The discovery of *R. periclymenoides* is sometimes wrongly credited to the English naturalist and clergyman John Banister, who emigrated to America in the mid 1670s. The date cited for the premier encounter - sometime between 1725 and 1730 - is, however, many years after Bannister's accidental death from gunshot wounds, which were sustained in the spring of 1692. In fact, it was the Pennsylvania colonist John Bartram, regarded as 'the greatest natural botanist in the world' by no less a doyen than Carl Linnaeus, who made the find. Equally, the first introduction of the species into UK cultivation occurred in 1734 and was organised by Peter Collinson, one of Bartram's horticultural friends, rather than under the auspices of Henry Compton, Bishop of London and part-time botanist, to whom Banister sent his plants.

Azalea periclymenoides was described by André Michaux in his 1803 2-volume work, *Flora Boreali-Americana,* the species having previously been designated *Azalea lutea* in 1753, *Azalea nudiflora* in 1762, and *Rhododendron venustum* by Richard Salisbury in 1796. In 1805, *Azalea periclymena* would be suggested; John Torrey would opt for *Rhododendron nudiflorum* in 1824, and Ludwig Reichenbach, *Anthodendron nudiflorum,* in 1827. It thus fell to Doctor Lloyd Shinners, of the Southern Methodist University, based in Dallas, to reinstate Michaux's given name in 1962.

In the wild, *R. periclymenoides* grows across the Appalachian Mountains, spreading down to the coastal plain, opts for sites in open hardwood forest on dry to moist sandy soils, with these located anywhere from Georgia and Alabama in the south, to the lower New England States in the north, an enormous area. Across the distribution's higher latitudes, the species intermixes with *R. prinophyllum,* while in the south, *R. canescens* is its choice of alternate bedfellow. An absence of sticky hairs on any part of the plant quickly keys specimens of *R. periclymenoides* from those of its closest relatives, though separating the true species from the numerous pink-flowered and sweetly scented natural hybrid swarms that overlap the endemic populations wherever *R. canescens* and *R. prinophyllum* are encountered, will prove somewhat more difficult.

In cultivation in British gardens, *R. periclymenoides* rarely grows above the 2m mark, producing a dainty, multi-branched and domed bush that is fully hardy and free flowering when mature. Yet the general consensus is that the flowers are somewhat inferior to those of *R. atlanticum, R. canescens* or *R. prinophyllum,* and so the species is very rarely seen in gardens not boasting an extensive collection of rhododendrons.



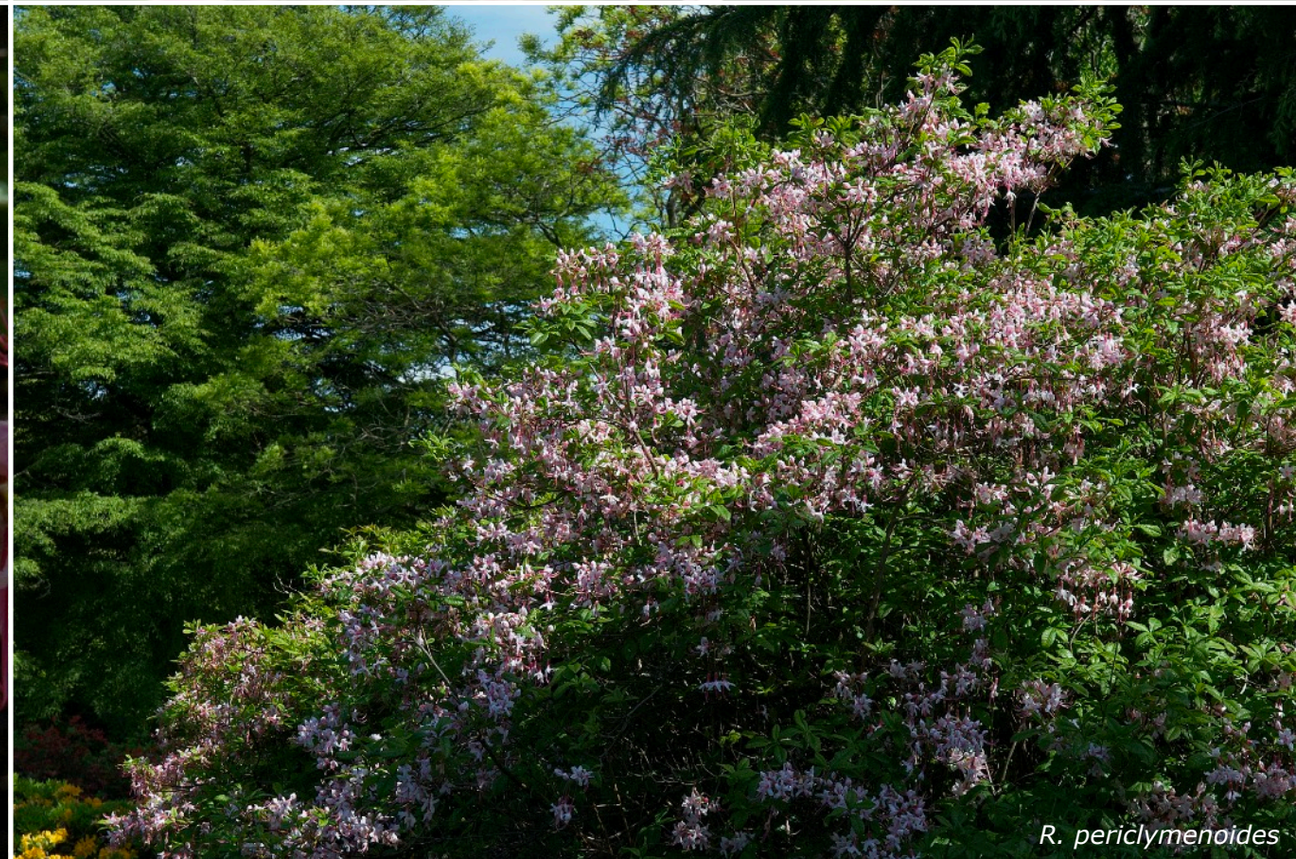
R. periclymenoides



R. periclymenoides



R. periclymenoides



R. periclymenoides

R. calendulaceum (S&E 62)

R. calendulaceum

Hardiness:
H6.
Flowering Period:
May-June.
Distribution in the wild:
The Appalachian Mountains,
from southern Pennsylvania down through West Virginia,
and the Carolinas to northern Georgia, USA.
Growing on cliffs and hillsides in open woodland and along the banks of streams,
at elevations of 180-1,800m.

Identification:
Upright, spreading shrub, or rarely a small tree, 3-10m high;
young shoots pubescent and strigose; not stoloniferous.
Leaves ovate through obovate to elliptic,
3 to 9.1cm long by 1.3 to 3.8cm wide;
upper and lower surfaces pubescent or strigose.
Petioles densely pubescent and strigose.
Inflorescence 5-9-flowered, opening before or with the leaves;
winter flower buds glabrous, the scale margins glandular.
Calyx 1-4mm long,
the outer surface of the scales and their margins densely setulose and glandular.
Corolla 3 to 5cm wide,
yellow through orange to red, with a blotch,
rarely fragrant, the scent not sweet;
tube as long or shorter than the lobes, its outer surface pubescent and glandular,
the hairs long-stalked.
Stamens three times as long as the corolla-tube, with the style as long or longer.
Ovary densely appressed pilose, glandular.

Seed Collections:

S&E 62	1981

In addition to the singe authenticated collection listed above,
between 1974 and 2020, members of the American Rhododendron Society
contributed more than 300 individual batches of seed
to their annual exchange programme.

John Torrey wrote the first full description of *R. calendulaceum* for his book *Flora of the Northern and Middle States,* published in 1824. Previous to that it had been known variously as *Azalea lutea,* then *Azalea nudiflora* - both epithets conceived by Carl Linnaeus for editions of his *Species Plantarum,* which respectively went to print during 1753 and 1762 - as *Azalea flammea* (from a 1774 assessment of a plant population growing in northern Georgia made by William Bartram and published in his tome *Travels,* of 1791 vintage), as *Azalea calendulacea* (from a 1795 collection made on North Carolina's Blue Ridge Mountains by André Michaux and detailed in his 1803 two-volume work *Flora Boreali-Americana*) and finally as *Azalea aurantiaca,* which was also an 1803-dated conception, but one made by the German botanist Friedrich Gottlieb Dietrich.

Documented evidence shows the species was introduced into UK cultivation around 1806, as part of a shipment of American plants made by John Lyon, with at least two nurseries offering orange-flowered clones by 1812. As *Azalea aurantiaca* it may have been introduced earlier, sometime before 1800, but no records have survived to confirm such, although Bartram is believed to have sent a living specimen of his *Azalea flammea* to Sir Joseph Banks sometime after 1774, writing that:

> 'It is the most brilliant, showy, and gay flowered shrub, perhaps in the world; it grows four, six or eight feet high, increases greatly by suckers, and the flowers make a most splendid show in the vast plains, and on the sides of the hills, in west Georgia and lower Cherokee country, in the months of April and May. The flowers are of all shades, from a pale cream colour to a splendid golden yellow, orange, and the most perfect scarlet or flame colour; and all these colours are sometimes seen on different branches of the same plant, as well as on separate plants, but the rose-blush or purple tint never occurs in the flowers of this species'.
> *Curtis's Botanical Magazine,* Volume 41, Tab 1721, published 1814-1815.

Closely allied to *R. cumberlandense, R. calendulaceum* can easily be distinguished from the former by not being stoloniferous (despite the above assessment); by having leaf upper and lower surfaces that are pubescent and strigose; by the ovate and rounded scales on it's winter flower buds; and by flowering before or as the new leaves appear. Genetically, the species is a tetraploid (having four sets of chromosomes), while *R. cumberlandense* is a more normal diploid (inheriting one set of chromosomes from each parent).

R. calendulaceum is one of the easiest azalea species to grow, being fully hardy across the whole of the British Isles, vigorous, free-flowering and late blooming, with the added benefit of fine autumn leaf colouring. It is worth noting that a number of the earliest Ghent deciduous azalea hybrids - such as R. Coccinea Speciosa, and the various R. Aurantiacum/Aurantium clones - are believed likely to be straight nursery selections of *R. calendulaceum* plants raised from seed.



R. calendulaceum (S&E 62)



R. calendulaceum



R. calendulaceum

R. calendulaceum



R. canadense

R. canadense

Hardiness:
H6-7.
Flowering Period:
April-May.
Distribution in the wild:
Labrador, Newfoundland & Quebec, Canada;
New England, northeast Pennsylvania & northern New Jersey, USA.
Growing in swamps, moist woodland and along river banks,
at elevations from sea level to 1,900m.

Identification:
Multi-stemmed upright shrub to 1.2m, the branchlets puberulous at first;
stoloniferous.
Leaves elliptic through oblong,
2 to 5.7cm long by 0.6 to 2.3cm wide;
upper surface matt bluish-green, strigose;
lower surface densely minutely puberulous, not strigose.
Autumn leaf colour bluish-purple where the corolla colour is rose-purple,
and yellowish when it is white.
Inflorescence 3-6-flowered, opening before the leaves expand,
not fragrant;
winter flower buds small, ovoid, pale pink in hue.
Corolla rotate-campanulate, no more than 1.9cm long,
2-lipped:
the upper with three short lobes fused together almost to the top and held erect;
the lower with two lobes, divided almost to the base, spreading apart.
Tube effectively absent.
Stamens 7-10, unequal, as long as the corolla.
Ovary often densely pilose, moderately glandular.
Capsule pale red-brown in hue, densely puberulent and glandular.

Seed Collections:

GMNW 4	2004

In addition to the singe authenticated collection listed above,
between 1974 and 2020, members of the American Rhododendron Society
contributed some 42 individual batches of seed
to their annual exchange programme.



R. canadense

Considered to be so distinct when first discovered as to warrant classification as a new genus, *Rhodora canadensis* was so described by Carl Linnaeus in the second edition of his *Species Plantarum,* published in 1762. The plant was introduced into UK cultivation just five years later by Sir Joseph Banks, but then had to wait until 1839 before a John Torrey-penned botanic revision transformed it into *Rhododendron canadense* within the pages of the *Geological Survey, New York State Assembly, No. 50*.

The two-lipped, rotate-campanulate corolla, missing a tube, easily distinguishes the taxon from all the other Section *Pentanthera* species, as does the low but upright habit, and the plant's ability to spread stoloniferously via underground root runners.

On the genetic front, historically, *R. canadense* was reported to be a tetraploid with 52 chromosomes (*Chromosome Stability in the Genus Rhododendron,* Karl Sax, *American Journal of Botany,* Volume 17, Number 4, 1930), this state confirmed in the 1950 large-scale study carried out by an RHS team at Wisley led by E. K. Janaki Ammal and published in *The Rhododendron Year Book 1950*.

However, much more recent research has challenged this accepted view:

Firstly, by only recording specimens that were diploid.

And secondly, by documenting the fact that only 24 chromosomes resided within the nucleus of each cell.

This is a lower base number than all the other known members of the genus except for *R. camtschaticum,* the progenitor species, the ancestral taxon from which all the world's rhododendrons evolved. It is expressed as $2n = 24$. So, two identical sets of 12 chromosomes. Every other diploid rhododendron has two sets of 13 chromosomes and so conforms to the equation $2n = 26$.

This evidence was first published in 2008, within the paper *Rhododendron colemanii: A New Species of Deciduous Azalea* (*Journal American Rhododendron Society,* Volume 62, Number 4), though at the time only one clone of *R. canadense* had been tested. Professor Thomas Ranney of North Carolina State University was among the report's authors and he decided that further investigation was warranted. This was carried out with assistance from Jason Lattier, a Graduate Research Assistant, and Nathan Lynch, a Research Specialist, and the results of their work were published in the spring of 2013 within Volume 67, Number 2, of *JARS,* in a paper that was titled *History and Cytological Reassessment of Rhododendron canadense*.

Samples of the species were gathered from eleven locations across the range, covering virtually the entire geographic distribution, and using flow cytometry, the genetic material was 'weighed'. All the collections proved to be diploid, with not a single tetraploid found amongst them. In addition, the results also showed that *R. canadense* had a much smaller genome size - the physical amount of genetic material present within each cell - relative to the other diploid deciduous azalea species. The team therefore decided to perform a second, separate cytometric analysis to confirm this, comparing the genome size of *R. canadense* with that of *R. periclymenoides,* and using *Pisum sativum* 'Ctirad' (a bog-standard pea plant), as a control. These results detailed a genome that held 26% less DNA by weight than that of *R. periclymenoides,* which prompted a further investigation into the *R. canadense* base chromosome number. This was carried out using traditional cytological techniques - basically, the Mark 1 Human eyeball and a microscope - with the chromosomes in metaphase from more than 20 individual root-tip cells well-resolved and recorded as photomicrographs at 1000x magnification. These observations and the photographs not only confirmed *R. canadense* to be a diploid, but also one with just 24 chromosomes, and not 26. In conclusion, the authors of the paper wrote that:

'The plants in the genus *Rhododendron* have been thought to have a uniform base chromosome number of $n = 13$, with the exception of plants in the basal subgenus *Therorhodion* with $n = 12$. Curiously, *R. canadense* and *R. camtschaticum* share certain traits, such as rhizomatous growth, July blooms of speckled pink/purple flowers, connate petals with a tubeless corolla, and 10 stamens. Perhaps *R. canadense* retained the ancestral chromosome number of $2n = 24$, similar to plants in subgenus *Therorhodion,* but that is unlikely, based on recent phylogenetic analysis. Alternatively, various processes such as translocations, inversions, insertions or deletions can lead to chromosome fusion resulting in reduced chromosome numbers. This may also be the case in *R. canadense*.'

Lattier, Ranney & Lynch, *History and Cytological Reassessment of Rhododendron canadense* [citations removed herein].

Journal American Rhododendron Society, Volume 67, No 2, 2013.

One wonders then, how soon it will be before a *R. canadense* x *R. camtschaticum* pairing is logged with the International Registrar?

R. canadense forma *albiflorum* only differed from the species in having white flowers, so is now considered synonymous.

Completely hardy in UK cultivation, free-flowering, with the buds opening earlier in the season than most of it's Section *Pentanthera* contemporaries, *R. canadense* ideally requires a damp site that doesn't completely dry out in summer to do best.



R. canadense

R. canadense

R. prinophyllum

Hardiness:
H6-7.
Flowering Period:
May.
Distribution in the wild:
SW Quebec, Canada;
New England to Virginia, and E Oklahoma, Arkansas & S Missouri, USA.
Growing on upland and mountainous areas in open woodland and thickets,
along stream banks and by the edges of bogs,
at elevations of 150-1,500m.

Identification:
Shrub to 3m high;
young shoots densely pubescent, usually eglandular.
Leaves coppery-coloured at first, elliptic through obovate,
3 to 8.7cm long by 1.2 to 3.7cm wide;
upper surface dull bluish-green, lumpy,
the veins impressed, usually pubescent, the margins strigose;
lower surface densely villous.
Petiole densely pubescent.
Inflorescence 4-13-flowered, opening before or with leaf expansion,
fragrant, the scent spicy, clove-like;
winter flower buds ovoid, the 9-10 scales densely pubescent.
Calyx minute, the scale outer surface and margins glandular.
Corolla deep to rose pink, sometimes white,
with or without a reddish-brown blotch;
the tube long, deep pink to strawberry-red, gradually expanding,
its outer surface pubescent and densely glandular;
the lobes slightly shorter than the tube,
their outer surface moderately glandular, the hairs long-stalked along the middle.
Stamens twice as long as the corolla-tube.
Style longer than the corolla and the stamens, pubescent near the base.
Ovary densely villous, moderately glandular.
Capsule setulose-glandular.

Seed Collections:
No authenticated gatherings have been documented,
but between 1974 and 2020, members of the American Rhododendron Society
contributed some 65 individual batches of seed to their annual exchange programme.

It is not known for certain who first discovered *R. prinophyllum,* but the most likely candidate is Friedrich Wangenheim, probably whilst out collecting in New York State during 1787, even though he mistook the species for a variety of *R. periclymenoides* (then known as *Azalea nudiflora*). John Kunkel Small conferred specific status on *Azalea prinophylla* in 1914, his description appearing in *North American Flora,* Volume 29.

The species has a disjunct distribution, with one range an oval to the west of the Mississippi River running from eastern Oklahoma, through Arkansas into southern Missouri, the other an ellipse descending from southwest Quebec Province in Canada, through New Hampshire, Vermont and Massachusetts, to New York, Pennsylvania, eastern Ohio, West Virginia and western Virginia, the fringe clipping three other States - Kentucky, Tennessee and North Carolina. Established populations can be found in the cooler, upland regions of the two distributions, but never do these extend down onto the coastal plain.

R. prinophyllum can be distinguished from *R. periclymenoides* by its sticky glandular hairs, present on the outer surface of the corolla when in bloom, and on the calyx, ovary and capsules at other times. From *R. canescens,* by the shorter stamens, which are only twice as long as the corolla-tube, a slightly longer pedicel and by seed capsules that are decidedly stickier. Swarms of natural hybrids abound where the distributions cross.

The species was first introduced into British gardens in 1812 - though it had reached Continental Europe some years earlier - with subsequent re-introductions on a number of occasions, Charles Sprague Sargent sending a consignment of seed from the Arnold Arboretum in 1922, for instance. Fully hardy across the whole of the UK, and due to its high latitude distribution extending into Canada, able to do well and succeed in northern Scotland as well, *R. prinophyllum* has been found to be easy to grow, with a usually profuse flowering each season once mature, the blooms accompanied by a delightful scent, bewitching on calm evenings.

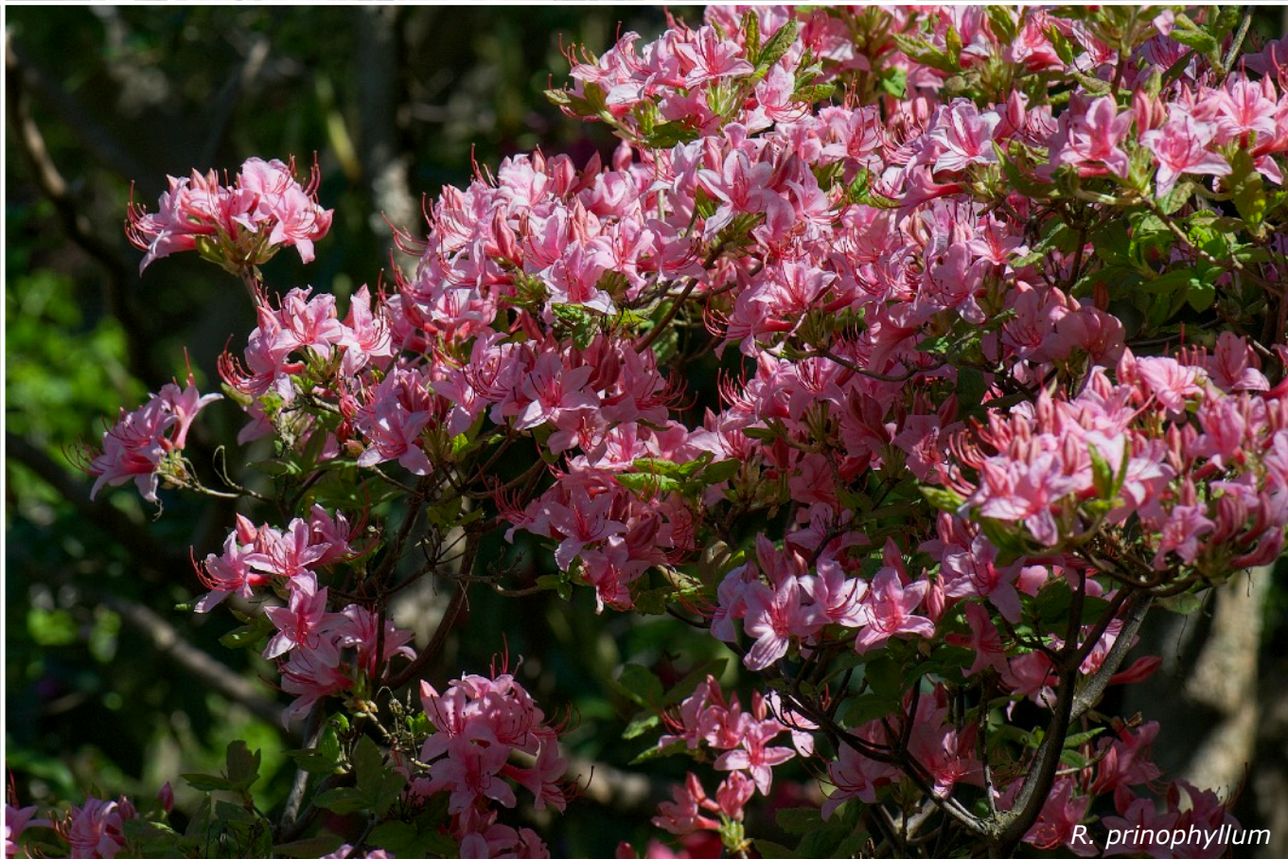


R. prinophyllum


R. prinophyllum


R. prinophyllum


R. prinophyllum


R. prinophyllum

R. flammeum

Hardiness:
H4-5.
Flowering Period:
May.
Distribution in the wild:
Central Georgia and adjoining South Carolina, USA.
Growing in open woodland, on sandy ridges, clay buffs and hills, often across large areas,
along the Savannah and Edisto river basins,
at elevations from sea level to 500m.

Identification:
Low shrub 0.3 to 2.5m high;
young shoots densely pubescent and strigillose;
not stoloniferous.
Leaves ovate through obovate to elliptic,
3 to 8.2cm long by 1.3 to 2.7cm wide;
upper surface ciliate and strigillose;
lower surface densely pubescent to near glabrous, strigose along the midrib.
Inflorescence 6-15-flowered, opening before or as the leaves expand,
only slightly fragrant, the scent acrid;
winter flower buds ovoid, with 9-12 scales, pubescent, the margins ciliolate.
Corolla tubular-funnel-shaped, orange to scarlet,
with a large blotch,
eglandular, pubescent and pilose;
the tube longer than the lobes, widening abruptly at the apex.
Stamens twice as long as the corolla-tube, filaments pubescent on the lower half.
Style longer than the stamens, pubescent on the lower third.
Ovary densely setulose, eglandular.
Capsule strigose, eglandular.

Seed Collections:
No authenticated gatherings have been documented,
but four members of the American Rhododendron Society have between them
contributed 3 individual batches of seed to their annual exchange programme,
these listed in 1980, 1982 and 2005.

Again, there are no records of when *R. flammeum* was discovered or who first found the species, but William Aiton, the premier director of what would later become the Royal Botanic Garden, Kew, described the plant as *Azalea nudiflora* var. *coccinea* in 1789 and it was illustrated in Volume 5 of *Curtis's Botanical Magazine,* this published in 1796. Various name changes followed - two coming from the pen of André Michaux (*Azalea fulva* in 1792 and *Azalea calendulacea* var. *flammea* in 1803) - before Carl Ludwig Wildenow, of the Berlin Botanic Garden, opted for *Azalea Speciosa* in 1811, which was then revised into *Rhododendron speciosum* by Robert Sweet in 1830. There are as many dates for the taxon's introduction into UK and European cultivation as there are stabs at an epithet, but it is thought that the credit should go to William Bartram, who most likely sent plants sometime before 1789. Kew were growing the species as *Azalea coccinea major* by 1881 and it was re-introduced in 1916 by Professor Charles Sprague Sargent of the Arnold Arboretum who, in 1917, writing in Volume 1, Number 3, of the *Rhododendron Society Notes,* finally settled on *R. flammeum* for the plant's botanic moniker.

The species is closely related to three other North American azaleas:

An earlier bloom period in the wild, with the flowers appearing before or with leaf expansion set *R. flammeum* apart from *R. cumberlandense* and *R. prunifolium* (which flower much later and after their leaves have fully developed), while pubescent flower buds and an eglandular corolla-tube identify the species from *R. calendulaceum,* where both characteristics are glandular.

Natural hybrids involving crosses with *R. canescens* usually have vivid pink, highly fragrant flowers, most with a yellow blotch, which can be identified when out of bloom by winter flower buds that are glabrous at the apex, yet have pubescent scales at the base.

Unlike many of its Deep South relatives, *R. flammeum* is not widely cultivated in British gardens because our cooler maritime climate does not allow the young growth to fully ripen before the onset of winter. But in those locales where it can be successfully established, the species is free-flowering, heat tolerant and easy to grow, forming a neat dome to around 1m high.

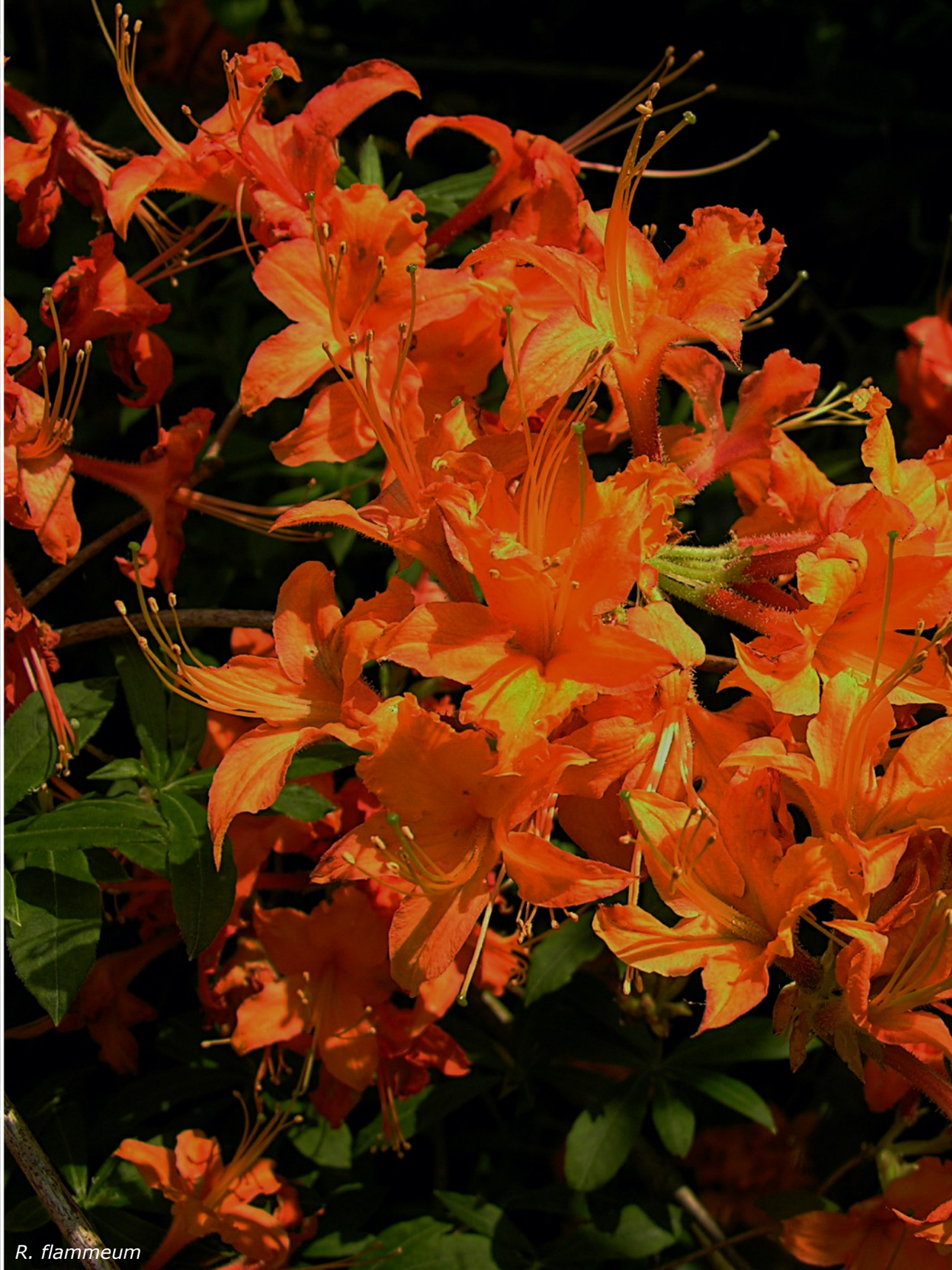
Recent genetic analysis has found a few specimens of *R. flammeum* to have twice the number of chromosomes as usual, fifty-two instead of twenty-six, making them tetraploids instead of diploids, the species norm. The scientists who wrote the paper *Ploidy Levels and Relative Genome Sizes of Diverse Species, Hybrids, and Cultivars of Rhododendron* - Jeff Jones, Thomas Ranney, Nathan Lynch and Stephen Krebs, which was published in the fall 2007 edition of the *Journal American Rhododendron Society* - believe that 'additional sampling from wild populations would be desirable to confirm this finding'. An epithet for this possibly new tetraploid species has therefore yet to be conceived.



R. flammeum



R. flammeum



R. flammeum

R. arborescens

Hardiness:
H5-6.
Flowering Period:
May-July.
Distribution in the wild:
New York and Pennsylvania south through Maryland, Virginia,
West Virginia, North and South Carolina,
Kentucky and Tennessee, to Georgia, Alabama and Mississippi, USA.
Growing - often abundantly - in the foothills by streams, in moist woodland,
in open woodland, and on the tops of mountains,
at elevations of 300-1,500m.

Identification:
Large shrub to 6m high;
branchlets yellow-brown and glabrous, without bristles;
tightly stoloniferous.
Leaves ovate through obovate to elliptic,
3 to 10.5cm long by 1.1 to 3cm wide,
lustrous;
upper surface glabrous, not strigose; lower surface glabrous.
Inflorescence 3-8-flowered, opening after the leaves have fully extended,
very fragrant, the sweet scent heliotrope-cinnamon;
winter flower buds ovoid, with around 10 scales, the basal ones long-pointed.
Pedicel 5-20mm long.
Calyx 1-8mm long, lobes unequal.
Corolla large, 2.5 to 4.5cm wide,
white, often tinged pink,
only rarely with a yellow blotch,
the outer surface glandular.
Stamens and style twice as long as the corolla, filaments pink to red.
Capsule setulose-glandular, unicellular hairs sparse, multicellular dense.
Seeds granular, without wings.

Seed Collections:
No authenticated gatherings have been documented,
but between 1977 and 2018, members of the American Rhododendron Society
contributed over 70 individual batches of seed to their annual exchange programme.

Discovered by John Bartram and grown successfully in his Philadelphia garden, the species was later described by Frederick Pursh in 1814 from plants found on Pennsylvania's Blue Mountain. Previous to this, André Michaux had seen *R. arborescens* in full flower on North Carolina's Blue Ridge Mountains in May 1795, but he either gathered no specimens or they were lost when the botanist was shipwrecked returning to France in 1797.

Growing across twelve American States, at different altitudes and in a variety of habitats, features such as height, leaf size, pedicel and calyx length can vary enormously, but the pink to red stamens and style, the wide corolla, distinctive scent and smooth branches, leaves and pedicels, readily identify *R. arborescens* from its closest relative, the equally widespread *R. viscosum*. Across the entirety of its range, *R. arborescens* naturally hybridises with *R. calendulaceum, R. cumberlandense, R. periclymenoides, R. prinophyllum* and *R. viscosum* wherever the distributions overlap, with the resulting offspring reported to have vividly coloured blooms.

The species was introduced into British gardens during 1818, or possibly earlier, and if given time and space, will grow into a dense multi-stemmed dome some two metres high and more across that is covered from top to bottom in deliciously scented white to pink flowers in late June through early July. *R. arborescens* is fully hardy and easy to grow.



R. arborescens

R. arborescens

R. arborescens

R. arborescens



R. molle

R. molle* ssp. *molle

Hardiness:
H4-5.
Flowering Period:
April-June.
Distribution in the wild:
Principally Hubei, Jiangxi and Zhejiang Provinces,
but widely distributed across the whole of eastern China.
Growing on open hillsides, amongst scrub and grass, and in open pine woodland,
from sea level to elevations of 2,400m.

Identification:
Upright shrub to 1.3m; young shoots villous, eglandular.
Leaves oblong through oblong-elliptic,
6 to 15cm long by 1.8 to 5.6cm wide;
upper surface eglandular, the margins serrulate;
lower surface densely and entirely white pubescent at first, eglandular.
Petiole setulose, eglandular.
Inflorescence 3-13-flowered, opening before or with leaf expansion;
winter flower buds with 9-12 ovate scales, their outer surface minutely puberulous.
Pedicel 10-25mm long, sometimes setulose, eglandular.
Calyx outer surface and margins eglandular.
Corolla widely funnel-shaped,
golden-yellow,
with a large greenish blotch composed of many small dots;
the tube relatively short.
Stamens nearly twice as long as the corolla-tube, equal in length to the corolla.
Capsule sparsely hairy.

Seed Collections:

W 800	1908
R 11316	1923/1924
F 25477	1924/1925
CNW 1085	1994
AC 1991	1996
AC 4965	2001
AC 4966	2001
AC 4967	2001
AC 4968	2001

R. molle is endemic to China's eastern provinces, yet like many of its Section *Pentanthera* American compatriots, who first discovered the species or sent back seeds is not known. Historical records show it being sold as *Azalea sinensis* by the Hackney-based Loddiges nursery in 1823, with the official botanic description credited to George Don a decade later (in Volume 3 of the botanist's *A General History of Dichlamydious Plants,* published in 1834), despite George Loddiges previously figuring the plant in the ninth edition of his *Botanical Cabinet,* which went to print in 1824, and Robert Sweet describing the species in 1829 as *R. sinense* var. *flavescens,* this text appearing in Volume 3 of the *British Flower Garden*.

Numerous packets of seed arrived at the UK's botanic institutions over subsequent years - Robert Fortune to the RHS in 1845, Ernest Wilson via the Arnold Arboretum and hence to Kew in 1908, Joseph Rock in 1923-24, and George Forrest in 1924-25 (to list but four) - yet the true species remains a rare find in British gardens today, basically because it has been deemed to be somewhat tricky in cultivation. Specimens are inclined to be sparsely branched and *R. molle* ssp. *molle* is not as free flowering, nor as vigorous or hardy as *R. molle* ssp. *japonicum,* though this temperamentality has not stymied in any way its use by the hybridising fraternity, who produced the 'Mollis Azalea' multitude when crossing the species with its subspecies Japanese counterpart, plus Lionel de Rothschild used it extensively when creating the 'Exbury Strain' of the 'Knap Hill Azalea' flock.

Mature plants of *R. molle* are of lower stature than *R. japonicum,* topping out around the 1.3m mark as opposed to the dizzying height of 2m attained by its cousin from across the Sea of Japan. Yellow flowers with a greenish blotch, stamens almost double the length of the corolla-tube, young leaves with a white pubescent under surface, and only sparsely hairy capsules, are the other distinct characteristics that differentiate the two subspecies.

Alan Clark, Jens Nielsen and Murray Wilson kicked-off the modern day reintroductions in 1994, with Alan returning another five batches of seed through until 2001.



R. molle



R. molle



R. molle

R. occidentale

R. occidentale

R. occidentale

R. occidentale
Hardiness:
H4-5.
Flowering Period:
June-July.
Distribution in the wild:
S Oregon & California, USA; Baja California, NW Mexico.
Growing in moist or wet areas alongside streams, in meadows, on hillsides,
in shrubby thickets and in conifer forest,
from sea level to elevations of 2,700m.

Identification:
Multi-branched, domed bush or upright small tree to 8m;
young shoots glabrous through to densely pubescent,
glandular or eglandular.
Leaves mostly oblanceolate, but also near linear through to orbicular,
2.5 to 10.8cm long by 1.2 to 3.6cm wide;
upper surface often glossy, sparsely pubescent, the margins glandular-strigose;
lower surface pubescent, the hairs both unicellular and gland-tipped multicellular.
Inflorescence 3-5-12-25-54-flowered, opening with or after leaf expansion,
sweetly scented;
winter flower buds ovoid, with 9-12 scales, acuminate or mucronate at the apex.
Pedicel usually glandular-hairy.
Calyx 1-4-9mm long, ciliate or glandular.
Corolla tubular-funnel-shaped, 3.5 to 10cm across,
white, white flushed pink, pink, rarely red, yellow or orange-pink,
with or without stripes and spots,
and usually with a yellow or orange blotch on the upper lobe;
the tube long, narrow, gradually dilating upward at the apex;
the lobe margins entire, frilled or notched;
the tube and the lobes glandular outside.
Stamens equal in length to the corolla.
Style longer than the stamens, pubescent towards the base.
Ovary densely glandular-hairy.
Capsule sparsely glandular-hairy.

Seed Collections:

S&M 5	1965/1975	S&M 112	1965/1975	S&M 163	1965/1975
S&M 7	1965/1975	S&M 113	1965/1975	S&M 176	1965/1975
S&M 12	1965/1975	S&M 120	1965/1975	S&M 183	1965/1975
S&M 21	1965/1975	S&M 125	1965/1975	S&M 186	1965/1975
S&M 22	1965/1975	S&M 126	1965/1975	S&M 189	1965/1975
S&M 24	1965/1975	S&M 127	1965/1975	S&M 238	1965/1975
S&M 29	1965/1975	S&M 136	1965/1975	S&M 245	1965/1975
S&M 30	1965/1975	S&M 147	1965/1975	S&M 282	1965/1975
S&M 33	1965/1975	S&M 148	1965/1975	S&M 283	1965/1975
S&M 34	1965/1975	S&M 151	1965/1975	S&M 602	1965/1975
S&M 35	1965/1975	S&M 153	1965/1975	W&H 212	1986
S&M 36	1965/1975	S&M 154	1965/1975	W&H 235	1986
S&M 53	1965/1975	S&M 157	1965/1975	P&C 12	1991
S&M 55	1965/1975	S&M 160	1965/1975	P&C 71	1991

In addition to the authenticated collections listed above,
between 1974 and 2020, members of the American Rhododendron Society
contributed more than 700 batches of seed
to their annual exchange programme, the majority of these gathered up by a single
individual, a resident of San Jose, California - Mike McCullogh.
Documenting and photographing the best forms of the species from central Oregon’s
northern outlier populations, all the way down through the Cascade and Sierra Nevada
ranges to southern California’s Palomar Mountains, plus the various coastal sites, over the
past thirty years he has secured seed from all of the standout plants and growth types,
often self-pollinating the flowers by hand and tagging the branches on a spring visit,
for collection in the autumn.
And made the contents of those capsules available to rhodophiles around the world.

R. occidentale was discovered in 1827 during the three-year exploration of the Pacific Northwest and the Bering Strait by the Royal Navy's HMS *Blossom,* the vessel under the command of Captain Frederick William Beechey. Throughout the voyage, the botanic collections were primarily undertaken by two of the ship's officers, Messrs. Lay and Collie, and an account of all the plants they discovered, with species descriptions written by Sir William Hooker and George Walker-Arnott, was published in 1841: *The Botany of Captain Beechey's Voyage*. Hooker and Arnott chose *Azalea calendulacea* for the species epithet, which John Torrey and Asa Gray changed to *Azalea californica* in 1855, then *Azalea occidentalis* in 1856, with Gray finally settling on *Rhododendron occidentale* in Volume 1 of the *Geological Survey of California,* published in 1876, and to which he contributed the botanic text on the *Gamopetalae.*

The backbone of the Rocky Mountains separates *R. occidentale* from all the other native American deciduous azalea species, so on the ground identification in the wild should be a cinch. In gardens and other horticultural venues however, the comparatively tall habit and vigorous growth, strong branches and glossy leaves, will provide useful identifying characteristics for out-of-bloom plants, while the yellow-blotched white through pink, sweetly scented, sometimes pinkish-red striped and frilly flowers of late June and July will prove unmistakeable at bloom time.

While collecting in California for the Veitch Nurseries, William Lobb became the first plant hunter to introduce the species into UK cultivation around 1850, the germinated results of his endeavours first flowering during 1857, and despite those young plants being tricky to establish, especially in areas prone to early autumn frosts, *R. occidentale* is today, very well represented in Britain's gardens, even though it is slightly less hardy than its East Coast cousins. Specimens do best when the soil stays moist to damp throughout the summer months, so allowing new growth to fully mature and harden-off. Autumn colour is striking, but in some areas, plants can suffer from the effects of powdery mildew fungus on the foliage, causing early leaf drop.

Endemic along some 1200 miles of North America's western coastline, from southern Oregon, through California and down into the topmost part of Mexico's Baja peninsula, with a sea level to mountain top altitudinal range that encompasses many diverse habitats, the characteristics of *R. occidentale* will clearly vary enormously. These differences, bought about as plant communities adapted to shifting environmental challenges, have produced a great many distinctive clones scattered across the species distribution and beginning in the 1950's, Brit Smith and Frank Mossman, two members of the American Rhododendron Society, began searching out the various populations and making selections of the best plants they found. Over time, they collected hundreds of cuttings, which they numbered and propagated, and the best of these were named and distributed. Clones such as 'Crescent City Double', 'Humboldt Picotee', 'Stagecoach Cream' and 'Stagecoach Frills' now flourish in many of the UK's rhododendron gardens, providing sumptuous floral displays season after season. Smith and Mossman also collected seed from some of the specimen plants they encountered and made it available via the American Rhododendron Society Seed Exchange. Taking up that mantle, for the past thirty plus years, as indicated overleaf, Mike McCullough has more than made it his own.

On the genetic front, recent tangential DNA lab work has hinted at a possible link between *R. occidentale* and the two *R. molle* subspecies. All three azaleas are diploids and share some leaf characteristics, plus they have corollas with an upper lobe blotch that is composed of distinct spots. At the moment, evidence for a common ancestor from which the species evolved is still weak, but proponents of the theory are postulating that as western North America, Japan and East Asia may have been closely joined together as part of the same landmass many millennia ago, the Tertiary Relict distribution situation vis-à-vis West Asia's *R. luteum* and the American East Coast tetraploid species, may well be duplicated for *R. occidentale* and *R. molle*.

With regard to polyploidy, throughout the populations, forms have been found that have 52 chromosomes instead of 26, these therefore tetraploids rather than diploids, and each, effectively, a new species. A paper published in the Fall 2007 edition of the *Journal American Rhododendron Society - Ploidy Levels and Relative Genome Sizes of Diverse Species, Hybrids, and Cultivars of Rhododendron* - written by Jeff Jones, Thomas Ranney, Nathan Lynch and Stephen Krebs, reported that:

> 'The best example of a natural polyploid series in *Rhododendro*n species appears to be *R. occidentale,* where both diploid and tetraploid accessions were observed. These data suggest there is a range of ploidy levels within this species as is naturally found in many others species - [*Galax urceolata* is given as an example] - representing an evolutionary progression'.

In the included table of results, the *R. occidentale* clones 'Humboldt Picotee' and 'Tatum's Deep Pink' were listed as diploids, while 'Double Dig Twelve' was recorded as a tetraploid, which likely means - given their extra floral oomph - that many of those 1950s and 1960s Smith-Mossman-named clones will also prove to be eye-catching polyploids.

Currently, the known tetraploids are randomly dotted about across the entire endemic distribution in potential pocket colonies. But they have not - as yet - standardised their gene pool through interbreeding, nor speciated at any specific locale, so the addition of a small 'x' in front of 'Double Dig Twelve' and any other named $2n = 52$ clone discovered will best highlight their standalone status - genetically different from each other yet able to breed with their tetraploid cohorts, though not with their $2n = 26$ parents. Fast-forward a few thousand years however, and tomorrow's rhodophiles will probably be discussing the rise and intrinsic merits of the newly named taxon *R. pseudo-occidentale*.

Bog-standard *R. occidentale* has frequently featured in the hybridisation programmes of the leading plant breeders, both past and present, the species being crossed with members of the 'Exbury', 'Ghent' and 'Knap Hill' azalea strains on numerous occasions. Well-known historic hybrids borne of such matings - 'Delicatissima', 'Exquisita' and 'Irene Koster' (to name but three) - are frequently available from the nursery trade and long-established specimen plants, stunningly beautiful when in bloom and deliciously fragrant, are a common sight in UK gardens. Indeed, they are probably present on the ground far more so than the actual species.

R. occidentale (S&M 28) ‘Crescent City Double’

R. japonicum

R. molle* ssp. *japonicum

Hardiness:
H6-7.
Flowering Period:
May.
Distribution in the wild:
SW Hokkaido, Honshu, Kyushu & Shikoku, Japan.
Growing in open grasslands and moorland,
amongst thin scrub, at the edges of swamps, and on cliffs,
from near sea level to elevations of 2,100m.

Identification:
Upright shrub to 2m; young shoots setulose, eglandular.
Leaves oblong through oblong-elliptic,
5 to 11.5cm long by 1.8 to 3.5cm wide;
upper surface and margins strigose;
lower surface glabrous, the midrib and lateral veins moderately strigose.
Petiole setulose.
Inflorescence 3-13-flowered, opening before or with leaf expansion;
winter flower buds with 9-12 ovate, dark- or purple-brown scales,
their outer surface glabrous.
Pedicel 8-23mm long, setulose.
Calyx margins densely setulose.
Corolla widely funnel-shaped,
orange, yellow, red through pink,
with a large orange blotch composed of many small dots;
tube relatively short.
Stamens longer than the corolla-tube, shorter than the corolla.
Capsule moderately to densely hairy.

Seed Collections:

W 7192	1914/1915	Doleshy 27	1967
W 7670	1914/1915	BH 4348	1979
Doleshy 14	1965	Russell 871	1987
Doleshy 26	1967	W&H 673	1987

In addition to the eight authenticated collections listed above,
members of the Japanese Rhododendron Society
contributed some 34 batches of seed to the American Rhododendron Society's
annual Seed Exchange programme between 1978 and 2018.

Strangely, it was an American botanist, Asa Gray, who wrote the botanic description for *Azalea japonica,* this text appearing in Volume 6 of *Memoirs of the American Academy of Arts and Sciences,* published between 1858-59. Who it was who first discovered the plant remains a mystery, but the species was introduced into European cultivation around 1830 and it arrived in British gardens during 1861.

Confinement to the islands of Japan is a clear on-the-ground geographic identifier, but when more than endemicity is required to distinguish the subspecies from its closest relative *R. molle* ssp. *molle* - in bloom, the ssp. *japonicum* corolla has an orange blotch and stamens that, while longer than the corolla-tube, are shorter than the corolla itself. Out of bloom, the under surface of the young foliage is lacking any dense covering of white pubescent hairs, with any trichomes present only on the midrib and lateral veins, and the scales protecting the winter flower buds are more purple in colour, with the seed capsules considerably more hairy. Peter and Kenneth Cox detail between 5 and 60 hairs per square millimetre for ssp. *japonicum,* as compared with the ssp. *molle* total of 1 to 4, in their 1997-published *Encyclopedia of Rhododendron Species*.

Flowering from an early age when grown from seed, easy to cultivate and tolerant of less acidic soils than it's American cousins, *R. japonicum* is fully hardy across the UK, this especially so if clones emanating from Hokkaido, Japan's northernmost island, are sought out. A mature bush 2m wide and almost as tall, completely covered in bloom, is a stunning sight in any garden, with the added bonus of fiery autumn leaf colours to come.



R. japonicum



R. japonicum



R. japonicum



R. japonicum



R. japonicum

R. austrinum

Hardiness:
H3-4.
Flowering Period:
May.
Distribution in the wild:
the coastal plains of N Florida through Georgia and Alabama, to southeast Mississippi, USA.
Growing on bluffs, in woods and alongside streams,
from sea level to elevations of 100m.

Identification:
Shrub or small tree, 3 to 5m tall; young shoots densely pubescent;
older branchlets pubescent and glandular, reddish-brown.
Leaves ovate through obovate to elliptic,
3 to 9cm long by 2 to 4cm wide,
the margins strigose;
upper and lower leaf surfaces, including the midrib, densely minutely pubescent,
and sometimes glandular.
Petiole densely pubescent and glandular.
Inflorescence 6-24-flowered, opening before or with leaf expansion,
fragrant, but only moderately so, sweetly scented;
winter flower buds ovoid, the 12-15 scales greyish pubescent, the margins glandular.
Pedicel pubescent and glandular.
Calyx 1-2mm long,
the lobe outer surface and margins pubescent and glandular, the hairs long-stalked.
Corolla yellow through orange-yellow to orange,
the tube purplish, longer than the lobes, widening abruptly at the apex,
densely pubescent and glandular outside.
Stamens almost three times as long as the corolla-tube, the style even longer.
Ovary densely appressed-pilose, the hairs short-stalked, whitish, glandular.
Capsule 1.8-2.5cm long, finely pubescent, appressed glandular.

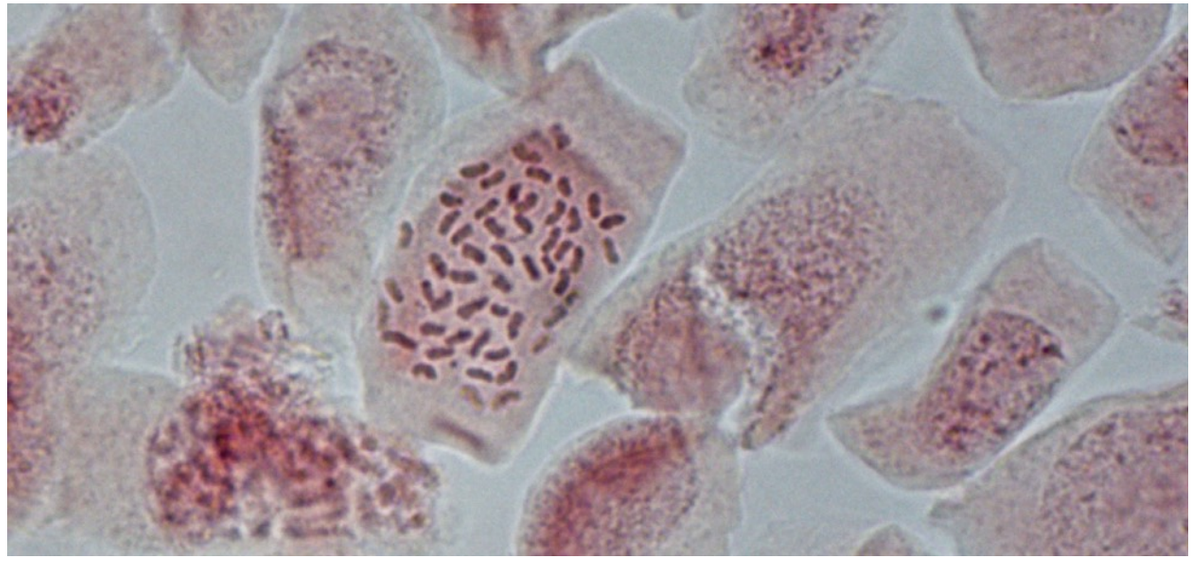
Seed Collections:
No authenticated gatherings have been documented,
but between 1979 and 2012, members of the American Rhododendron Society
contributed close to 40 batches of seed to their annual exchange programme.

- *opposite* -
The root tip cells of *R. austrinum,* showing the chromosomes during prophase (2*n* = 52).

Doctor Alvan W. Chapman found *R. austrinum* sometime before 1865, naming it *R. nudiflorum*. It was rediscovered and collected again in 1880 by Allen Curtiss, who christened his find *R. nudiflorum* var. *luteum*. Doctor John Kunkel Small consolidated the two when writing a species botanic description in 1913, this text appearing in the second edition of his *Flora of the Southeastern United States,* where it was entered as the new-to-science taxon, *Azalea austrina*. The final epithet change - to *R. austrinum* - was assigned by Alfred Rehder when writing in the sixth volume of Liberty Hyde Bailey's *Standard Cyclopaedia of Horticulture,* published in 1917.

Morphologically, *R. austrinum* resembles *R. canescens* in many of its major features, differing from that species in the long- and short-stalked glandular branches, petioles, leaf margins and pedicels, in the yellow or orange corolla colour, the purplish tube, and in the densely finely pubescent upper and lower leaf surfaces. Yet its closest relative in North America is *R. calendulaceum,* both plants being tetraploids, the distinctive characteristics of *R. austrinum* being the pubescent flower buds, smaller corolla, greater number of flowers in the truss and the faint, but sweetly-scented fragrance. Earlier reporting published in *The Rhododendron Year Book 1950,* which listed the species as a diploid with 26 chromosomes, could not be duplicated from the 20+ samples tested by the authors of *Ploidy Levels and Relative Genome Sizes of Diverse Species, Hybrids, and Cultivars of Rhododendron,* this treatise appearing in the autumn 2007 edition of the *Journal American Rhododendron Society*. That the 1950 count was a direct observation of the chromosomes in prophase suggests that the sample tested was not, for whatever reason, actually *R. austrinum,* which is a rare find in British gardens even today. The culprit supplied may have been one of the natural hybrids that arise between that taxon and *R. canescens,* which have yellow flowers, a dark reddish-pink tube and eglandular flower bud margins, for they occur in the wild where the distributions overlap and germinate in the seed pans of botanic institutions and specialist nurseries alike, despite the apparent tetraploid-diploid mismatch.

R. austrinum was first introduced into UK cultivation during 1916 by Charles Sprague Sargent, premier director of the Arnold Arboretum, and performs well in the south, where the higher summer temperatures allow it to fully ripen its young growth and flower freely. In more northerly climes, the species acquits itself poorly, as the cooler conditions prevent the attainment of full winter hardiness, and specimens soon succumb as a result.




R. austrinum


R. austrinum


R. austrinum

R. alabamense

Hardiness:
H3-4.
Flowering Period:
May-June.
Distribution in the wild:
Alabama, Florida, Georgia and Tennessee, USA.
Growing on dry ridges and hilltops, in open oak and pine woods,
at sea level to elevations of 500m.

Identification:
Shrub to 3m high;
young shoots densely strigose, usually eglandular.
Leaves obovate through elliptic to oblong-obovate,
3 to 6.3cm long by 1.3 to 3cm wide;
lower surface glaucous and densely pubescent;
the crushed leaves give off a spicy aroma.
Inflorescence 6-12-flowered, opening with the leaves,
sweetly lemon-scented;
winter flower bud scales are glabrous on the outside, their margins eglandular.
Calyx minute,
the lobe outer surface and margins eglandular.
Corolla white with a yellow blotch,
the tube narrow, longer than the lobes, glandular,
the lobes glandular on the outside along the middle.
Stamens twice as long as the corolla-tube.
Capsules appressed pilose, eglandular.

Seed Collections:
No authenticated gatherings have been documented,
but between 1977 and 2016, members of the American Rhododendron Society
contributed 13 batches of seed to their annual exchange programme.

R. alabamense was first seen by Doctor Charles Mohr in 1883 while he was carrying out a botanical study of the forests of Alabama for the US Department of Agriculture. He later described the species as *Azalea nudiflora* var. *alba,* effectively decreeing it to be a white form of *R. periclymenoides*. This misconception was corrected by Alfred Rehder and Ernest Wilson, who gave the plant specific status in their 1921 publication *A Monograph of Azaleas*.

Closely related to *R. canescens,* with which it hybridises and merges, as well as to both newly described members of Section *Pentanthera* - *R. eastmanii* and *R. colemanii* - out of flower *R. alabamense* can be differentiated from *R. canescens* by the glabrous winter flower buds and eglandular calyx, and when in bloom, by the yellow blotch, and its stamens, which are less exserted. From *R. eastmanii,* an absence of marginal glands on the flower bud scales should do the trick, especially as flowering takes place before or as the leaves expand. The differences with *R. colemanii* are somewhat more esoteric - unless a portable flow cytometry kit or high-power microscope is to hand: *R. alabamense* being a diploid; *R. colemanii* a tetraploid - but *R. alabamense* is deemed to have shorter flower buds, with scales that have distinct brown edges; it sports only white-blotched-yellow flowers; the seed capsules feature long-stalked glands, which are appressed and pilose, but not all that sticky; and the shrub tends to have only one or two main stems. The species is distantly related to *R. periclymenoides,* with which it also hybridises wherever the two ranges meet, but again, the blotched and glandular flowers are distinctive when in bloom.

Introduced into UK cultivation during the early 1920s, to grow *R. alabamense* well requires a site subject to long periods of excessively high summer temperatures, these needed to ripen the new growth sufficiently enough to survive the typical frosts of autumn and winter that follow. Given the months of July through September in the UK are usually wet and cool (climate change notwithstanding), the species will prove to be a very rare find outdoors in a British garden, but if successfully established in such a scorched nirvana and the soil kept damp through human hand, the prize will be a bush of around 1.5m high and 2m wide, abundantly free-flowering and sweetly-scented, although the lack herein of any accompanying photographs, may cast doubt on the viability of this scenario.

R. prunifolium

Hardiness:
H3-4.
Flowering Period:
July-August.
Distribution in the wild:
Alabama-Georgia border, USA.
Growing in cool, moist ravines, and alongside streams, at elevations of 90-300m.

Identification:
Shrub or small tree to 5.5m;
young shoots dark purplish-red, glabrous, smooth, eglandular.
Leaves ovate through obovate to elliptic,
3 to 15.2cm long by 1.5 to 4.2cm wide;
upper surface usually dark green, glabrous, the margins ciliate;
lower surface glabrous, the midrib and primary veins moderately strigose, eglandular.
Petiole glabrous, eglandular.
Inflorescence 4-7-flowered, opening after full leaf expansion,
not fragrant;
winter flower buds ovate, greenish to light brown,
the scales glabrous, their margins densely ciliolate, eglandular.
Pedicel setulose, rarely glabrous, eglandular.
Calyx minute,
the scale outer surface puberulous, sometimes glabrous,
their margins setulose, eglandular.
Corolla crimson, vermillion, scarlet through red to orange,
with or without a darker orange-red blotch;
the tube long, expanding gradually above the middle, glabrous or very nearly so;
the lobes shorter than the tube, eglandular or very nearly so.
Stamens almost three times as long as the corolla-tube;
filaments pubescent along the lower half.
Style longer than the stamens, glabrous, eglandular.
Ovary densely hairy, eglandular.
Capsule sparsely setulose, eglandular.

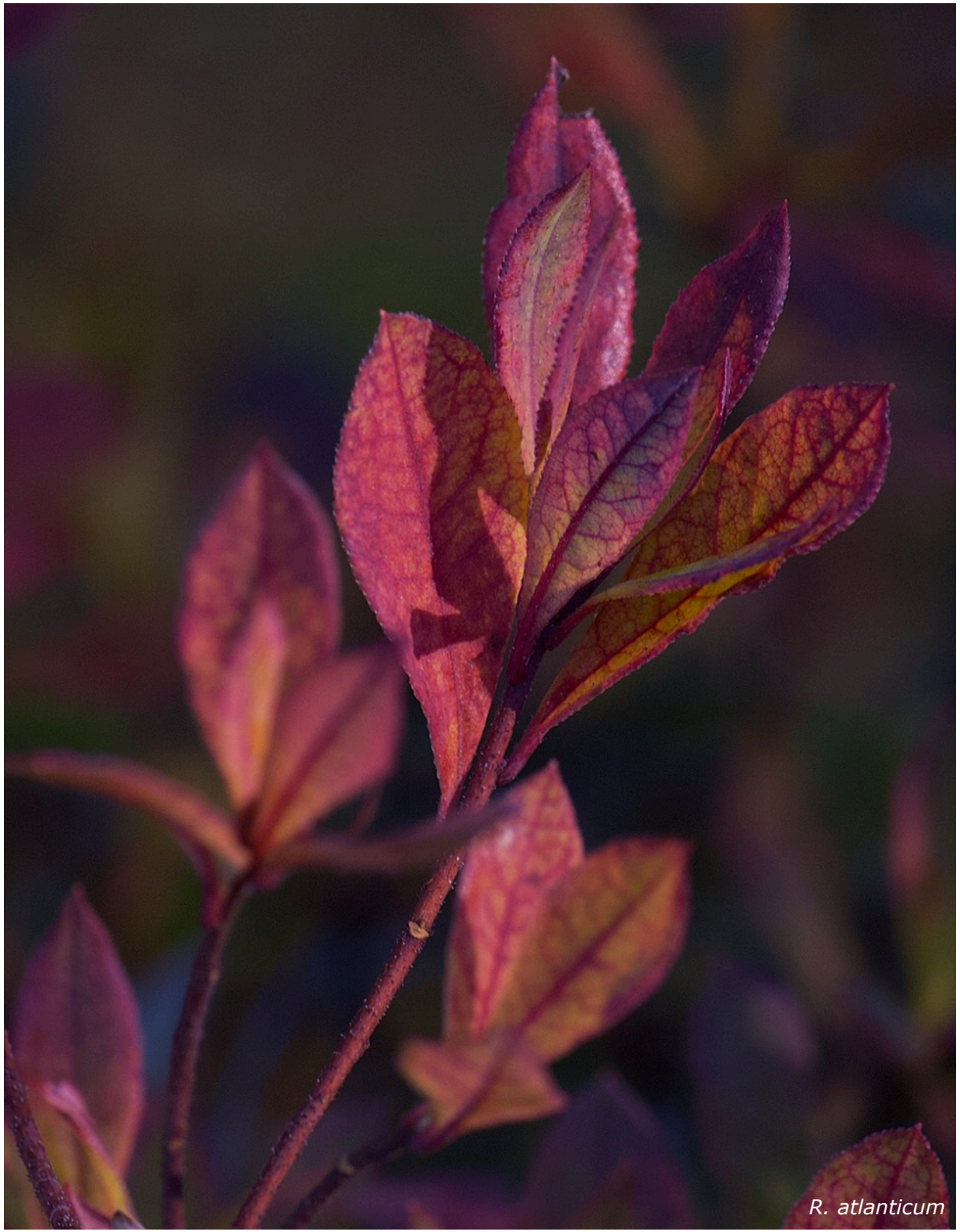
Seed Collections:
No authenticated gatherings have been documented,
but between 1974 and 2016, members of the American Rhododendron Society
contributed 13 batches of seed to their annual exchange programme.

The wild, endemic population of *R. prunifolium* is restricted to just eleven counties along the Georgia-Alabama border, with the plants only found growing in shady and moist ravines, or along the banks of streams. Flowering later in the season than any other East Coast native azalea, with some clones opening their blooms during early September, the species is therefore rarely able to interbreed with its relatives. This lack of natural hybrids with the potential partner azaleas that share its range - *R. alabamense, R. arborescens, R. canescens, R. periclymenoides* and *R. viscosum* - plus being geographically isolated and disjunct from the likes of *R. calendulaceum, R. cumberlandense* and *R. flammeum,* which grow close by but only rarely overlap territories, has resulted in a very stable species, with few if any wildly varying characteristics.

A colony of plants growing northwest of Cuthbert, in Randolph County, Georgia, were the first to be discovered in 1903, the botanist Roland McMillan Harper the encounter's other party. John Kunkel Small wrote the first species description ten years later in the revised second edition of his *Flora of the Southeastern United States,* published in 1913, in which he named the plant *Azalea prunifolia*. This was corrected to *R. prunifolium* by John Guille Millais in his 1917 tome, *Rhododendrons and the Various Hybrids.*

An almost complete lack of hairs on the branchlets, leaves, winter flower buds and corolla-tube are the key factors used to distinguish *R. prunifolium* from its closest relatives, especially with regard to the tube, where such glabrousness is a unique trait within the section (though some long-stalked glands may be present). Flowering after the leaves have fully expanded, the dark red through orange corolla colour, and that late in the season bloom time, are also prescient.

Professor Charles Sprague Sargent, through the auspices of the Arnold Arboretum, first sent seed of *R. prunifolium* to the UK back in 1918, but as with a number of its Deep South relatives, the shrub's constitution does not benefit from our comparatively cool maritime climate. Moreover, in the handful of southern gardens where the species can be grown, and despite those 'warmer' summer temperatures aiding establishment, specimens rarely grow much more than a metre or so high, lack vigour, and produce few flowers. Those blooms are also not as deeply hued as plants found in the wild.



R. atlanticum

R. atlanticum
Hardiness:
H5-6.
Flowering Period:
May-June.
Distribution in the wild:
Southern Pennsylvania and Delaware, through Virginia and the Carolinas to Georgia, USA.
Forming large colonies in and at the margins of pine forest, along streams,
on damp ditches, by swamp margins,
and in dry sandy pasture on the coastal plains and inland,
at sea level to elevations of 150m.

Identification:
Stoloniferously spreading, low shrub to around 1m high; branchlets arching.
Leaves relatively small, obovate through through oblong-obovate,
2.2 to 6.3cm long by 0.8 to 2.2cm wide;
upper surface glaucous, the bloom bluish-green;
both the upper and lower surfaces glabrous, not strigose.
Inflorescence 4-13-flowered, opening before or with the leaves,
very fragrant, with a sweet musky scent;
winter flower buds ovoid, with 9-12 ovate scales, eglandular.
Pedicel 6-20mm long.
Calyx 1-4mm long, the lobes unequal and densely glandular.
Corolla white, often flushed pink,
without a blotch,
the tube darker, widening gradually at the apex, longer than the lobes,
the corolla outer surface glandular,
the hairs long-stalked on the tube and along the middle of all the lobes.
Stamens twice as long as the corolla-tube, the style even longer.

Seed Collections:
No authenticated gatherings have been documented,
but between 1977 and 2017, members of the American Rhododendron Society
contributed 40 batches of seed to their annual exchange programme.

Once again, it is not known who actually discovered *R. atlanticum,* but the species was first described as *Azalea atlantica* by William Willard Ashe when writing in Volume 13 of the *Bulletin of the Charleston Museum,* published during 1917. Alfred Rehder and Ernest Wilson adjusted this to *R. atlanticum* in their 1921 tome, *A Monograph of Azaleas*.

The species is allied to four other native rhododendron species, but can quickly be distinguished from *R. viscosum* and *R. arborescens,* by the flowers appearing before or as the leaves expand; from *R. viscosum, R. periclymenoides* and *R. canescens,* by the lower habit of growth and smaller leaves; and from *R. canescens,* by the glaucous, near glabrous, leaves. Moreover, as outlined in a 2007 article published in the *American Rhododendron Society Journal - Ploidy Levels and Relative Genome Sizes of Diverse Species, Hybrids, and Cultivars of Rhododendron,* written and researched by scientists Jeff Jones, Thomas Ranney and Nathan Lynch of North Carolina State University, and Stephen Krebs of the David G. Leach Research Station at the Holden Arboretum in Ohio - recent genetic analysis has shown *R. atlanticum* to be a tetraploid and therefore most closely related to *R. austrinum, R. calendulaceum, R. colemanii* and *R. luteum*. This new evidence, ascertained from specimens gathered throughout the species population range, contradicts earlier findings published in *The Rhododendron Year Book 1950,* which reported the taxon as being a diploid. Yet no *2n* = 26 forms were found 'despite extensive sampling of taxa from diverse sources and geographical origins' - some 30 collections of *R. atlanticum* made in total across the distribution - so again, the validity of the sample being examined under the microscope some seventy years ago, must be raised, as the likelihood of the scientific team miscounting 52 little maggots as 26 is improbable.

One answer to this conundrum, which again transpires despite differences in their ploidy values, is the natural integration with *R. periclymenoides.* This occurs wherever the two populations meet in the northern area of the *R. atlanticum* range and has produced a range of natural hybrids - notably *R. x pennsylvanicum* - that have collectively become known as the Choptank River hybrid swarm. So a seed pan rogue mistaken for the real deal could explain the missing 26 chromosomes. In the south of its distribution, the species freely hybridises with *R. canescens,* again despite the apparent diploid-tetraploid mismatch that should be a barrier to such replication, with the few viable seeds produced resulting in triploid hybrids with reduced fertility. Assuming the meiosis cell division process did in fact complete without further error when pairing-up the imbalance. That this is not the case requires further investigation, with a chromosome count of those offspring and a detailed look at sections of the DNA to confirm the parentage. This should show how Mother Nature has somehow gotten around the 52-meets-26 obstacle to reproduction more times than the scientific prognosis would factor.

Out in the wilds, *R. atlanticum* will tolerate grazing, roadside hedge cutting, and recover swiftly following a brush fire, all on account of its highly stoloniferous nature. In UK cultivation, where it has been grown successfully since its introduction in 1922, the species is fully hardy, flourishes in almost any position in the garden - though it prefers a slightly more moister soil than its close relatives - flowers freely from a very young age and forms large but low-spreading dense clumps.


R. atlanticum


R. atlanticum

R. cumberlandense

Hardiness:
H5-6.
Flowering Period:
June-July.
Distribution in the wild:
The Cumberland Plateau in Kentucky and Virginia,
down through Tennessee and western North Carolina, to Georgia and Alabama, USA.
Growing in open woodland, along ridges and on mountain tops,
at elevations of 900-1,800m.

Identification:
Low, multi-stemmed and twiggy shrub, around 0.6m high, rarely to 3m;
branchlets moderately bristly; stoloniferous.
Leaves ovate through obovate to elliptic,
3 to 8cm long by 1.3 to 3.5cm wide;
upper surface glossy, smooth, glabrous;
lower surface often glaucous, eglandular.
Inflorescence 3-7-flowered, opening 5-6 weeks after leaf expansion,
slightly fragrant, the scent acrid;
winter flower buds yellow-brown, glabrous, outer scales aristate (awned).
Pedicels and calyx eglandular.
Corolla orange through red, and yellow,
with an orange-yellow blotch,
the outer surface densely pubescent, sparsely glandular.
Stamens twice as long as the corolla-tube.

Seed Collections:
No authenticated gatherings have been documented,
but between 1978 and 2017, members of the American Rhododendron Society
contributed 39 batches of seed to their annual exchange programme.

R. cumberlandense was described by E. Lucy Braun in 1941, when writing in Volume 43 of *Rhodora,* the journal of the New England Botanical Club. However, the species was previously named *Azalea bakeri* in 1938, with an accompanying botanic description written by W. P. Lemon and J. A. McKay appearing in Volume 19 of *Bartonia: Proceedings of the Philadelphia Botanical Club.* This was later revised to *R. bakeri* in *Azaleas: Kinds and Culture,* penned by H. H. Hume and published in 1949, which made *R. cumberlandense* synonymous. All well and good except for the fact that the Lemon-McKay description had been based on herbarium specimens of *R. bakeri c*ollected in northern Georgia, which have recently been shown to be a natural hybrid - a *R. flammeum* x *R. canescens* cross - an error that makes the specific name invalid, resurrects Braun's *R. cumberlandense* from its premature sinking and requires the wild cross to become *R. x bakeri.*

The true species is a diploid with 26 chromosomes and throughout its distribution, will most often be confused with either *R. calendulaceum* or *R. flammeum.* The differential characteristics from *R. calendulaceum* when in bloom are the eglandular pedicels and smaller flowers with thinner tubes, which open several weeks after leaf growth is complete; when out of bloom, the eglandular calyx, glaucous lower leaf surface, moderately bristly branchlets and a usually lower, twiggy growth habit that is clearly stoloniferous should do the trick. From *R. flammeum,* the keying relies on flowers again opening well after the leaves have fully expanded, along with a much later bloom time of May through July.

Where their distributions meet, *R. cumberlandense* hybridises with *R. calendulaceum,* producing offspring that are nigh impossible to identify correctly outside of a laboratory despite one being a diploid and the other a tetraploid, and with *R. arborescens* and *R. viscosum,* the progeny in this case being blessed with pink flowers, in varying shades.

R. cumberlandense has actually been in UK cultivation since the early 1950s, masquerading as *R. bakeri,* an epithet - sans the little 'x' - that still appears on many a garden label. Identifying true from false, species from hybrid, relies on three criteria, with plants of *R. x bakeri* displaying non-glandular ciliate hairs on the flower bud scale margins, a dense covering of pubescent hairs on the leaf undersides when they first expand, and both pubescent and glandular hairs on the outer surface of the corolla tube and lobes. *R. cumberlandense* on the other hand, has near glabrous leaves and only glandular hairs on the flower bud scale margins and flowers. Specimens of the bona fide species are fully hardy, usually low growing, and begin to open their red to orange flowers in late June, the display extending through most of July.

R. cumberlandense

R. eastmanii

Hardiness:
H4-5.
Flowering Period:
May-June.
Distribution in the wild:
South Carolina, USA.
Growing on circumneutral soil with a pH value between 6.0 and 6.7,
in woodland, on steep north-facing buffs and alongside streams,
at elevations of up to 500m.

Identification:
Shrub or small tree to 5m;
branchlets reddish-brown, densely pubescent, eglandular;
not stoloniferous.
Leaves ovate through obovate to elliptic,
4.3 to 7.1cm long by 1.8 to 2.9cm wide,
moderately to densely pubescent, eglandular.
Inflorescence 5-9-flowered, opening after leaf expansion,
very fragrant, the sweet scent, fresh, heliotrope;
winter flower bud scales edged chestnut-brown,
their outer surface glabrous,
their margins pubescent in the upper third, glandular below.
Corolla tubular-funnel-shaped,
white,
with or without a yellow blotch,
the outer surface pubescent, sparsely glandular.
Stamens twice as long as the corolla-tube, the filaments white to pink in the upper half.
Style as long or longer than the stamens, white to pink in the upper half.

Seed Collections:
No authenticated gatherings have been documented,
but two members of the American Rhododendron Society
have contributed a total of 3 batches of seed to their annual exchange programme,
these listed in 2011, 2013 and 2016.

R. eastmanii was first described in November 1999 by Doctor Kathleen Kron, Professor of Botany at North Carolina's Wake Forest University, and Mike Creel of the South Carolina Department of Natural Resources. Although it had been discovered during the early 1980's in South Carolina's Santee State Park by Charles Eastman, after whom the plant is named, the find was merely considered to be either a late flowering form of *R. alabamense,* or yet another natural hybrid. A combination of detailed field work and laboratory analysis over the years leading up to the millennium, finally proved conclusively that a new North American azalea species had been found.

A bloom time of mid-May in the wild, flowers opening after the leaves have fully expanded, and sticky glandular hairs virtually absent from the outer surfaces of the corolla and tube, are the characteristics which allow *R. eastmanii* to be identified from its closest relative, the aforementioned *R. alabamense*. Out of flower, only the presence or absence of glands on the flower bud scale margins can accurately distinguish between the two species, but while this trait singles-out *R. eastmanii* from the other white-flowered azaleas endemic to the East Coast of North America, both *R. calendulaceum* and *R. cumberlandense* possess similar sticky bud scales.

Some plants of *R. eastmanii* show an affinity with *R. arborescens* in their glossy dark green leaves, in presenting a style and stamens with red filaments, and in their smooth branches, though the majority of plants in the populations can be identified and keyed when out of flower by the densely pubescent pelt of reddish-brown hairs that usually reside on those stems.

R. canescens, R. periclymenoides and *R. viscosum* all have distribution patterns that include South Carolina, and members of these species have been found growing in areas close to those where *R. eastmanii* is established. However, the on-site investigations reported above have discounted the possibility that the new species is the product of recent natural hybridisation, as concurrent bloom times do not occur. Moreover, the plant populations of *R. eastmanii* have only been found to grow where the soil is circumneutral, specifically, giving a pH reading of between 6.0 and 6.7.

The species is therefore extremely rare in the wild, restricted to just seven counties in South Carolina, though plants at a further four sites are being evaluated, with only around 500 individual bushes in total currently thought to exist. In consequence, the best forms of these are being propagated and distributed, with some youngsters recently available to UK aficionados at one or two specialist nurseries. As indicated opposite, seed has also been available via the ARS exchange.

R. eastmanii is a diploid with twenty-six chromosomes.

R. colemanii

Hardiness:
H4.
Flowering Period:
Early May.
Distribution in the wild:
The upper coastal plain of southern Alabama & western Georgia, USA.
Growing on sandy ridges and banks alongside streams,
on north facing bluffs in moist woodland,
at elevations of up to 500m.

Identification:
Multi-stemmed shrub or small tree to 7m tall;
young shoots cinnamon-brown, eglandular;
not stoloniferous.
Leaves obovate through oblong,
4 to 8cm long by 2 to 4cm wide.
Inflorescence 8-10-flowered, opening after leaf expansion,
fragrant, sweetly lemon-scented and musky;
winter flower bud scales brownish-green, awned.
Pedicel densely glandular.
Corolla tubular to broadly flared,
white or pink,
with or without a yellow blotch, this rarely entirely yellow,
the outer surface glandular,
the tube glandular, the hairs often in rows along the ridges.
Ovary usually eglandular.
Capsule cylindrical,
with prominent sutures and small, raised, warty bumps towards the distal end.

Seed Collections:
No authenticated gatherings have been documented,
but in 2016, two members of the American Rhododendron Society
each contributed a batch of seed to their annual exchange programme.

R. colemanii is the most recently discovered North American species azalea. Found growing across the Red Hills of Alabama and Georgia, it is named after S. D. Coleman Sr., who first collected, propagated and distributed the species. Ron Miller wrote the botanic description, his appraisal appearing in the Spring 2008 edition of the *American Rhododendron Society Journal.*

Most closely resembling *R. alabamense* or one of its natural hybrids, with which it has often been confused, *R. colemanii* was given specific status after genetic research showed it to be a tetraploid where 2*n* equalled 52, rather than 26. DNA sequencing and flow cytometry carried out by two teams - one at the North Carolina State University, the other at the University of Washington, Seattle (led respectively by Professors Thomas Ranney and Benjamin Hall) - also confirmed that *R. alabamense* was a diploid. But far more importantly, the research showed that the five Section *Pentanthera* tetraploid species - *R. atlanticum, R. austrinum, R. calendulaceum, R. colemanii* and *R. luteum* - were all descended from a common ancestor, which genetically diverged from the diploid azalea species more than forty million years ago, at a time when continental drift had yet to pull North America and Western Eurasia apart. This was evidenced when gene sequences from the diploid species were compared with those from the tetraploids and the RPB2-I gene being examined, showed absolutely no resemblance or correlation between the two groups. This effectively ruled out the possibility of a more recent birthing of the tetraploids from interspecific hybridisation.

Across its endemicity, *R. colemanii* associates with *R. alabamense, R. canescens* and *R. prunifolium.*

The distinguishing features separating the taxon from *R. alabamense* are a flowering period some four weeks later; a multi-stemmed, upright, domed habit, between 3 and 7m tall; longer more elongated flower buds, without dark edges to the scales; a thicker and almost opaque corolla, white, pink or yellow, with or without a yellow blotch; and seed capsules without appressed hairs but with small raised warts, especially towards the apex.

From *R. canescens,* those characteristics are a flowering period some six weeks later; leaves that are not rough or elongate; young growth that is not matted or rusty-coloured; and flower buds that are brownish-green in hue, not dusty grey.

From *R. prunifolium* - a flowering period some eight weeks earlier; a corolla colour that is not orange through red; smaller leaves that are not bullate; young growth that is not coloured chocolate-brown; and larger flower buds.

R. colemanii has as yet not been introduced into UK cultivation.


Section
Ponticum

Section *Ponticum:*



R. ponticum

The November 2004 edition of the journal *Molecular Phylogenetics and Evolution* (Volume 33, Issue 2) included a paper written by botanist, geneticist and currently Senior Lecturer in Evolutionary Biology at the University of Edinburgh, Doctor Richard Milne. Titled *A Phylogeny And Biogeography Of Rhododendron Subsection Pontica, A Group With A Tertiary Relic Distribution,* it concluded that:

> '*Pontica* is, as suggested by its Tertiary relic distribution, probably the oldest group within subgenus *Hymenanthes.* It may be separated into two clades, one with a Tertiary relict distribution excluding SE China/Himalayas, and the other concentrated in that region and absent from America'.

Six years later, when *A Phylogeny of Rhododendron Subgenus Hymenanthes Based On Chloroplast DNA Markers: Between-Lineage Hybridisation During Adaptive Radiation?* was published in *Plant Systematics and Evolution* (Volume 285, No. 3/4, March 2010), that statement would require amendment, because the new study's authors - Richard Milne, Doctor David Chamberlain, Chantel Davies, Ruby Prickett and Lucy Inns - had evidenced in their dataset far more than a simple disjunct. The chloroplast organelle DNA examined implicitly showed that two of those Subsection *Pontica* species - *R. degronianum* and *R. smirnowii* - along with *R. adenopodum* (then pigeonholed in Subsection *Argyrophylla*), were sister to a clade of sixty Southeast Asian evergreen elepidote rhododendron species - these identified as Clade H in the diagram presented opposite - while a second phylogenetic residence - Clade P - contained the remaining eight *Pontica* species, plus three clear-sky thunderbolts: *R. calophytum* and *R. praevernum* - previously consigned within Subsection *Fortunea;* and *R. insigne* - then a resident of Subsection *Argyrophylla.*

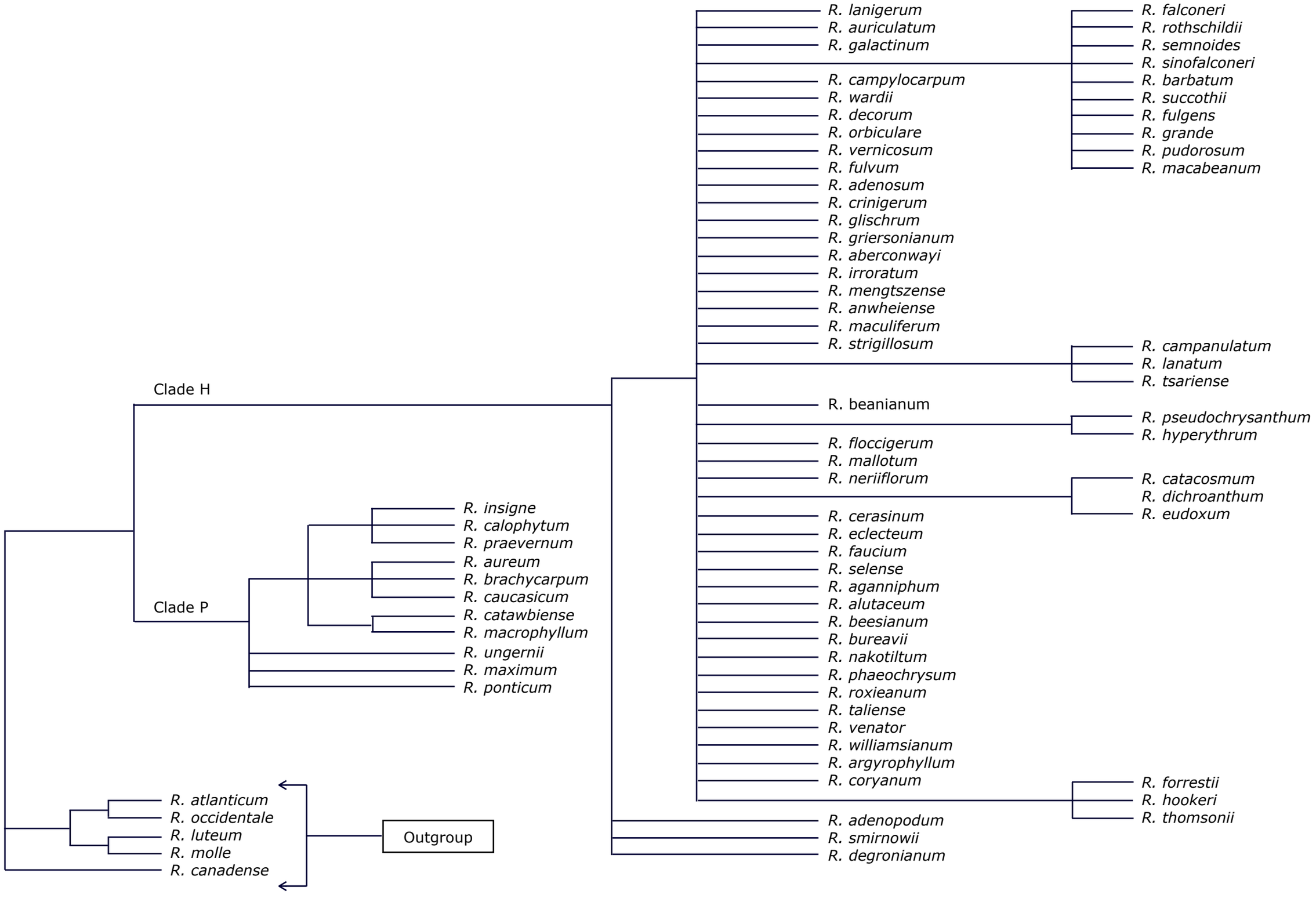
Chloroplasts are organelles, membrane-bound plastid subunits within each cell that perform a specific task, in this case photosynthesis. Within Genus *Rhododendron,* mirroring most other forms of life on Earth, they are the exclusive gift of the female parent, present within each of her egg cells. So for those three named species to have acquired *Pontica* chloroplasts, natural hybridisation with one of the forebears of the eight other species in Clade P had to have occurred. The progeny resulting from those pairings coped better with the environmental challenges local to where they grew - north of the main distribution of Genus *Rhododendron* in Southeast China - and speciated over time into the taxa we know today: *R. calophytum, R. insigne* and *R. praevernum.*

Within the overall Clade P grouping, three sub-cladal associations are evident from the dataset: the first holding the three thunderbolts, *R. calophytum, R. insigne* and *R. praevernum;* the second, *R. aureum, R. brachycarpum* and *R. caucasicum;* and a third, *R. catawbiense* and *R. macrophyllum.* These are respectively denominated herein Subsections *Calophyta, Auria* and *Catawbiensia,* with the remaining three species - *R. maximum, R. ponticum* and *R. ungernii* - held within a fourth residence, namely, Subsection *Maxima,* these epithets chosen according to precedence.

R. sutchuenese and *R. asterochnoum* were not included in the group of species tested for the 2010 paper, but their endemic distribution and morphological characteristics are so similar to those of *R. calophytum* and *R. praevernum* as to require the maintenance of their continued association even though specific genetic evidence denoting the presence of any *Pontica* chloroplasts is currently lacking.

Treatment of *R. brachycarpum* ssp. *fauriei* mirrors that applied to the *R. degronianum* subspecies within Section *Leiorrhodium* Subsection *Smirnowia.*

- opposite -
The chloroplast dataset as evidenced in the study
A Phylogeny of Rhododendron Subgenus Hymenanthes Based On Chloroplast DNA Markers.


Clade H
Clade P
R. lanigerum
R. auriculatum
R. galactinum
R. campylocarpum
R. wardii
R. decorum
R. orbiculare
R. vernicosum
R. fulvum
R. adenosum
R. crinigerum
R. glischrum
R. griersonianum
R. aberconwayi
R. irroratum
R. mengtszense
R. anwheiense
R. maculiferum
R. strigillosum
R. beanianum
R. floccigerum
R. mallotum
R. neriiflorum
R. cerasinum
R. eclecteum
R. faucium
R. selense
R. aganniphum
R. alutaceum
R. beesianum
R. bureavii
R. nakotiltum
R. phaeochrysum
R. roxieanum
R. taliense
R. venator
R. williamsianum
R. argyrophyllum
R. coryanum
R. adenopodum
R. smirnowii
R. degronianum
R. falconeri
R. rothschildii
R. semnoides
R. sinofalconeri
R. barbatum
R. succothii
R. fulgens
R. grande
R. pudorosum
R. macabeanum
R. campanulatum
R. lanatum
R. tsariense
R. pseudochrysanthum
R. hyperythrum
R. catacosmum
R. dichroanthum
R. eudoxum
R. forrestii
R. hookeri
R. thomsonii
R. insigne
R. calophytum
R. praevernum
R. aureum
R. brachycarpum
R. caucasicum
R. catawbiense
R. macrophyllum
R. ungernii
R. maximum
R. ponticum
R. atlanticum
R. occidentale
R. luteum
R. molle
R. canadense
Outgroup

Section *Ponticum* Subsection *Auria:*


R. aureum



Taxa:

R. aureum
R. brachycarpum
R. brachycarpum ssp. *brachycarpum*
R. brachycarpum ssp. *fauriei*
R. caucasicum

Taxonomic Revision:

Within the redefined Section *Ponticum,* the newly-created Subsection *Auria* reflects the Clade P species associations detailed in the 2010 Milne-Chamberlain study *A Phylogeny of Rhododendron Subgenus Hymenanthes Based On Chloroplast DNA Markers.*

Subsection Morphology:

Shrubs or rarely small trees, prostrate to compact and rounded, 0.1 to 5m high; branchlets glabrous, minutely puberulous or tomentose.

Leaf bud scales persistent or deciduous.

Leaves evergreen, coriaceous, convex or flat,
oblanceolate or oblong-obovate through ovate to broadly elliptic,
2.3 to 15cm long (rarely to 25cm) by 0.8 to 7cm wide (rarely to 9cm),
apex rounded or obtuse,
base cuneate, rounded or obtuse, rarely slightly decurrent on the petiole,
the blades retained for 2-3 years;
upper surface bright green, olive-green or dark green,
somewhat rugulose or not, glabrous,
the midrib grooved, usually glabrous, the veins usually deeply impressed,
the margins recurved or flat;
lower surface pale green, glabrous,
but under magnification often punctulate with minute hairs,
or tomentose, the indumentum unistrate, continuous, thin and compacted,
the dendroid hairs fawn, brown or yellowish,
the midrib prominent, glabrous or hairy, the veins usually raised.

Leaf anatomy comprises a 2-layered upper epidermis,
with the cells in the top layer equal in size to those in the layer below;
the cuticle is thin, or as thick as the top cells are deep;
water tissue is mostly absent;
the cells of the lower epidermis are usually not prolonged into papillae.
Sclereid cells are absent, or only sparsely present.

Petiole 5-20mm long, usually grooved above, glabrous or tomentose,
the margins rarely slightly winged.

Inflorescence candelabroid, loose or dense, 3-8-21-flowered;
the bud scales persistent or deciduous.

Rhachis 5-50mm long, tomentose.

Pedicels 25-48mm long,
sometimes elongating in fruit to between 45 and 60mm long, tomentose.

Calyx 5-lobed, rarely an undulate rim, minute to small,
the lobes ovate or triangular in shape, each 0.5-3mm long,
their outer surface and margins hairy.

Corolla 2 to 3cm long, 5-lobed, funnel-campanulate, usually broadly so,
white, creamy white, white flushed lemon-yellow, white flushed pink,
pale or deep rose pink, pale lemon-yellow or yellow,
usually with green, red or purplish flecks or spots,
without nectar pouches;
the outer surface glabrous, the inner surface pubescent towards the base of the tube;
the lobes emarginate.

Stamens 10, unequal, shorter than the corolla;
filaments pubescent at or towards the base, often densely so.

Ovary conoid or ovoid, 2-7mm long, 5-celled.

Style slender, glabrous, shorter, equal to or longer than the corolla.

Capsule 6-20mm long, oblong through oblong-oval,
straight or slightly curved, ridged, tomentose.



R. brachycarpum

R. aureum (BH 4355)

R. aureum

Hardiness:
H6-7.
Flowering Period:
March-April.
Distribution in the wild:
SE Jilin & Liaoning, China; Hokkaido & Honshu, Japan, N & S Korea; Mongolia;
Kamchatka, Kuriles, Sakhalin & C & E Siberia, Russia.
Growing on exposed grassy alpine slopes, amongst scree, rocks and boulders,
and in the lee of dwarf pines, often spreading across entire mountainsides,
at elevations of 1,000-2,700m.

Identification:
Dwarf shrub, prostrate, semi-prostrate, mounding or compact, 0.1 to 1m high;
branchlets glabrous or densely minutely puberulous,
annual growth short.
Leaf bud scales persistent for up to four years.
Leaves flat, very variable in shape even on a single plant,
oblanceolate through ovate to broadly elliptic,
2.3 to 9.5cm long by 0.8 to 4cm wide,
retained for 2-3 years;
lower surface pale green, glabrous at maturity or with the vestiges of a juvenile tomentum,
under magnification punctulate with minute hairs,
the midrib glabrous or hairy.
Petiole 5-20mm long, glabrous or densely pubescent.
Inflorescence loose, 3-8-flowered;
the bud scales persistent.
Rhachis 5-10mm long, moderately through densely pubescent.
Pedicel 25-48mm long, erect,
extending in fruit to between 45 and 60mm long, and remaining erect;
sparsely through densely rufous pubescent.
Calyx lobes 0.5-3mm long,
their outer surface and margins pilose or floccose.
Corolla 2 to 3cm long, broadly campanulate, thinly textured,
cream to pale yellow,
sparsely spotted or flecked red or purple on the upper lobe;
the outer surface glabrous.
Stamens 10.
Ovary ovoid, 2-5mm long, densely rufous- or brown-tomentose.
Capsule 6-14mm long, rufous-tomentose.

Seed Collections:

Doleshy 503	1971	AGS 366	1988
Doleshy 518	1971	ESUS 101	1994
BH 4013	1979	ESUS 170	1994
BH 4355	1979	EHOK 68	1997
Kurashige 461	1987	MW 10 R	1997
AGS 139	1988	MW 133	1997

In addition to the authenticated collections listed above,
between 1974 and 2014, the American Rhododendron Society Seed Exchange
listed an additional 32 gatherings,
these mostly made by members of the Japanese Rhododendron Society.



R. aureum (BH 4355)

R. aureum was described by the German botanist, naturalist and geographer Johann Gottlieb Georgi in 1775, when writing in the premier volume of *Bemerkungen einer Reise im Russischen Reich im Jahre 1772,* and the species is thought to be the oldest elepidote rhododendron extant today. It is certainly the most northerly growing, with a vast endemic distribution that stretches eastwards from the Altai Mountains of western Siberia, through Mongolia and northern China into Kamchatka and across to Sakhalin Island. From there it curves south through the Kurile Islands to Japan, with plants found on Hokkaido and northern Honshu. Populations have also been discovered in the Chinese provinces of Jilin and Liaoning, as well as on the Korean peninsula, and there may be more individual wild plants of this rhododendron resident on planet Earth than any other member of the genus. The species carpets boundless areas of those windswept mountain slopes above the 1000m contour and at some locales, may be found established cheek by jowl with the now-acknowledged progenitor of the genus, *R. camtschaticum*.

Within Subsection *Auria, R. aureum* is most closely related to *R. caucasicum,* another creamy-yellow flowering plant, although distinguishing which is which is usually without problem, despite both being low growing, as the abaxial leaf surface of the former is glabrous - unless observed through a microscope, when the epidermis will be seen to be punctulate with minute hairs - whereas the latter has a thin yet continuous covering of yellowish-brown hairs. The habit of *R. aureum* is also distinctive, with short internodes and annual growth on prostrate or obliquely ascending branches equally petite and unlikely to be confused with the wide-spreading dome of *R. caucasicum*.

A second manifestation of the species, *R. aureum* var. *hypopitys,* which was described by Antonina Pojarkova in 1952 - Volume 18 of *Flora Unionis Rerumpublicarum Sovieticarum Socialisticarum* - is taller growing, with longer internodal growth and larger leaves, plus it has leaf and flower bud scales that are semi- or fully deciduous rather than persistent. However, the variety is only found in the far east of Russia, where it grows along the banks of two rivers in the Sikhote-Alin mountain range - between Primorsky Krai and Khabarovsk Krai - and to date, it has not been introduced into UK cultivation.

Yet despite the species being fully hardy and easily able to shrug-off the lowest winter minimums experienced across the British Isles, *R. aureum* is a difficult subject to grow well, with the foliage often appearing chlorotic. Specimens and seed from Russia first arrived in 1796 and amazingly, these are still the plants most commonly found in UK gardens today, having developed into semi-prostrate mounds around 0.6m high, usually with a far wider spread. Young plants are notably slow growing, flowering will not occur for at least a decade if raised from seed, and even then some forms only produce a few trusses each season, though in fairness, others can be awash with bloom. More recently, the species has been introduced from Japan, and these are truly prostrate plants, never reaching to more than a few centimetres in height at most, with small leaves to 3cm long and flowers to 2cm. But in a table turn, they are apparently easier to grow than their Russian counterparts.

R. aureum is clearly an ideal subject for the rock garden, especially as its cultural needs can be much more easily accommodated in a raised position, isolated by surrounding rocks. Those requirements are served best where the climate is colder and more continental, so well away from the wetter areas along the west coast, with gardens in northeast England and eastern Scotland offering the most favourable spots. Even so, the species still remains a rare find, but is well worth the extra effort.


R. aureum


R. aureum

R. aureum

R. caucasicum
Hardiness:
H6.
Flowering Period:
April-May.
Distribution in the wild:
NE Turkey; the Caucasus Mountains (Armenia, Azerbaijan, Georgia & Russia).
Growing in forests, above the tree-line on open mountain slopes, and on granite ledges,
at elevations of 1,800-3,000m.

Identification:
Dwarf to low shrub, compact and wide-spreading, 0.3 to 1m high;
branchlets variably tomentose, the covering thin, the hairs whitish or fawn.
Leaf bud scales persistent.
Leaves usually flat, oblong through obovate to elliptic,
4 to 14cm long by 1.3 to 4.5cm wide,
slightly decurrent on the petiole or not,
retained for 1-2 years;
lower surface thinly tomentose,
the unistrate indumentum continuous, compacted, fawn, brown or yellowish,
the midrib glabrous or sparsely hairy.
Petiole 5-15mm long, the margins slightly winged or not,
variably tomentose, the covering thin, the hairs whitish or fawn.
Inflorescence loose, 3-15-flowered;
the bud scales persistent.
Rhachis 5-35mm long, densely pubescent, the hairs rufous or dark brown.
Pedicel 25-30mm long, erect,
extending in fruit to 60mm long, and remaining erect,
densely rufous pubescent, the hairs rufous or dark brown.
Calyx lobes 1-3mm long,
their outer surface and margins moderately through densely pilose or floccose.
Corolla 2.3 to 3.5cm long, broadly campanulate through funnel-campanulate,
thinly textured,
white flushed lemon-yellow, cream through pale lemon-yellow, sometimes flushed pink,
with or without greenish spotting;
the outer surface glabrous.
Stamens 10.
Ovary ovoid or conoid, 4-7mm long,
densely tomentose, the hairs rufous or brown.
Capsule 12-20mm long,
moderately through densely tomentose, the hairs rufous or brown.

Seed Collections:

Davis 20904	1952	ACH 206	1962
ACH 114	1962	EENET 35	2008
ACH 147	1962	Brown 127	2010



R. caucasicum, illustrated in *Curtis's Botanical Magazine,* Volume 28, t. 1148, in 1808.

Forming dense thickets above the tree-line on the mountain slopes of northeastern Turkey and the adjoining Caucasus Mountains - the latter a region that previously could conveniently be described as 'adjacent areas of the USSR', but which is now a hodgepodge of feuding countries, autonomous states, and decidedly tenuous 'de-facto' independent enclaves set between the Black and Caspian Seas - *R. caucasicum* was first introduced into British gardens during 1803, with the shrub's premier flowering in UK cultivation taking place at the Hackney nursery of Conrad Loddiges during August 1807 - this recorded for posterity by Sydenham Edwards, illustrator at *Curtis's Botanical Magazine* (Volume 28, Tab 1145). Two decades before its UK arrival, the renowned German botanist Peter Pallas had described the species in Volume 1 of *Flora Rossica* (the full tongue-twisting title of said tome being *Flora Rossica seu Stirpium Imperii Rossici par Europam et Asiam Indigenarum Descriptiones et Icones*), which had been published in St. Petersburg during 1784.

Basically a larger growing version of *R. aureum, R. caucasicum* shares all the major characteristics that quickly distinguish that species from the rest of the Section *Ponticum* pack - persistent leaf and flower bud scales; perpendicular pedicels, which extend to double their length in fruit yet remain erect; and obovate through elliptic foliage. Luckily for the gardening fraternity, *R. caucasicum* adds a compacted, unistrate indumentum to the leaf undersides, so differentiating itself from either variety of its more bijou twin. Genetically however, the disjunct distributions notwithstanding, the taxon is also closely allied to the two *R. brachycarpum* subspecies, one of which also has a persistent indumentum on the abaxial leaf surface, while the other - ssp. *fauriei* - looses its covering of hairs by the time the blade has matured.

That early 19th Century introduction into cultivation and its later widespread use by the hybridising fraternity should have seen *R. caucasicum* widely established in horticultural venues from Land's End to John o'Groats, but in fact - a number of named selections posing as full-on hybrids excepted - the species per se remained a rare find in the UK's major rhododendron collections until the early 1950s, when Peter Hadland Davis reintroduced seed from the Caucasus, and ten years later, in 1962, John Apold, Peter Cox and Peter Hutchison returned capsules from northeastern Turkey. John Guille Millais details why the species became so uncommon in UK cultivation in Volume 1 of his *Rhododendrons and the Various Hybrids,* published in 1917:

> 'For a long time it was considered that so great an affinity existed between this species and *R. chrysanthum* [aureum] that the latter was regarded by early writers, such as Pallas, Paxton, Loddiges, Regal, and even Hooker, as merely a variety of the true species, and it is certain that as soon as specimens of *R. caucasicum* (imported in 1803) flowered in this country it was mated extensively (especially by Scottish nurserymen) with *R. chrysanthum* (imported in 1796), which has already been in cultivation for some years. The result was to impart a yellow tint to all subsequent plants that were issued to the public and other nurserymen, and so in time no plants of the true species *R. caucasicum* were available, since no one thought it worth while to import it afresh from the Caucasus. Even today it is doubtful if there is a plant of true *R. caucasicum* in British gardens, so we must regard all so-called species and plants showing a yellow tinge in the flowers as merely hybrids with some of the original *R. chrysanthum* strain in them'.

Millais more or less back-pedals on his Volume 1 explanation in 1924's Volume 2, but that original take on the matter is vindicated by none other than Sir Isaac Bayley Balfour, who writes:

> 'That the so-called *caucasicum* in cultivation is a mongrel I have had proof abundantly. Never have we got a pure bairn from caucasicum seed acquired in different quarters - anything from pink flowered to yellow flowered offspring - and I have as little doubt that the yellow colour of all the so-called *caucasicum* is derived from *chrysanthum*. Further evidence of its hybrid character is to be found in the indumentum. Not one of the plants we have had as *caucasicum* has typical *caucasicum* indumentum. All of them show an approach to *chrysanthum*. To your question then: How many forms of *caucasicum* are in cultivation? I would answer - to my knowledge, none!'.
> Professor Bayley Balfour to Mr J. C. Williams, letter dated October 19th, 1916.
> Reproduced in Volume 1, Number 1, of *The Rhododendron Society Notes*.

In fact, despite the various reintroductions, the shrub remains an uncommon presence in British gardens, especially in comparison with the numerous crosses that boast its genes. Yet *R. caucasicum* is easy to grow, free-flowering from quite a young age despite being a relatively slow grower, and it comes with the perfect habit for the smaller suburban plot. In bloom, it is reportedly delightful, especially the forms with pale cream flowers held in upright, candelabroid trusses of up to fifteen corollas. However, seedlings from the Hadland Davis 20904 collection, at least the specimen growing at Edinburgh Botanic - the only plant with an attached *R. caucasicum* label found during an extensive, multi-decade photographic peregrination around the UK - unfortunately offers white-flushed-pink corollas with a pronounced blotch of greenish-yellow and reddish-purple spots-and-speckles across the dorsal lobes, plus non-indumented, extra large and wrongly-shaped leaf blades, which potentially indicate that it too may not be the real McCoy.



R. caucasicum (Davis 20904)

R. caucasicum (Davis 20904)

R. caucasicum (Davis 20904)



R. brachycarpum

R. brachycarpum* ssp. *brachycarpum
Hardiness:
H6-7.
Flowering Period:
June-July.
Distribution in the wild:
N & C Japan; E, C & N Korea.
Growing in forests or above the tree-line at elevations of 200-2,300m.

Identification:
Shrub or small tree, rounded and compact,
more open with age and lax in shade, 1.2 to 5m high;
branchlets thinly tomentose, the hairs fawn or brown, becoming glabrescent,
glabrous at maturity.
Leaf buds pointed; the scales deciduous.
Leaves usually convex, oblong through obovate,
7 to 15 to 25cm long by 2.6 to 7 to 9cm wide,
retained for 2-3 years;
upper surface midrib yellow;
lower surface thinly tomentose,
the unistrate indumentum continuous, compacted, greyish, fawn or brown,
the midrib glabrous or sparsely tomentose.
Petiole 10-20mm long, yellow, glabrous or with the vestiges of hairs.
Inflorescence dense, 8-21-flowered;
the bud scales deciduous.
Rhachis 20-50mm long, moderately through densely pubescent.
Pedicel 20-48mm long, variably tomentose.
Calyx lobes 1-2mm long,
their outer surface and margins moderately through densely tomentose.
Corolla 2.5 to 3cm long, broadly funnel-campanulate,
white through pale or deep rose-pink,
often lined and flushed, spotted greenish or brown;
the outer surface glabrous.
Stamens 10.
Ovary ovoid or conoid, 3-5mm long,
densely tomentose, the hairs brown or dark brown.
Style shorter than the corolla and the longest stamens.
Capsule 14-30mm long, moderately through densely brown-tomentose.

Seed Collections:

Doleshy 13	1965	Kurashige 16	1987
Doleshy 15	1965	W&H 576	1987
Doleshy 28	1967	W&H 632	1987
Doleshy 53	1967	W&H 686	1987
Doleshy 89	1967	W&H 708	1987
Doleshy 521	1971	AGS 43	1988
Doleshy 527	1971	AGS 69	1988
BH 4236	1979	KFB 48	1989
Doleshy 712	1983	KFB 57	1989
Doleshy 821	1983	RJL 056	1991
Doleshy 823	1983	H&S 92/232	1992
Doleshy 824	1983	HC 970147	1997
Doleshy 827	1983	EJE 102	2003
Doleshy 829	1983	EJE 276	2003
Doleshy 810	1984		

In addition to the authenticated collections listed above,
between 1976 and 2020, the American Rhododendron Society Seed Exchange
listed an additional 65 gatherings,
these mostly made by members of the Japanese Rhododendron Society.

It is not known who first discovered *R. brachycarpum,* but the species was described by the brothers Don - David and George - in Volume 3 of *A General History of the Dichlamydeous Plants,* published in November 1834. Endemic across the mountains of north and central Japan, as well as the Korean peninsula - minefields and political borders notwithstanding - *R. brachycarpum* arrived in British gardens towards the end of the 19th Century, with an entry in Volume 129 of *Curtis's Botanical Magazine* detailing seed sent to Kew from the Imperial Gardens of St. Petersburg in 1895. Those young plants flowered for the first time during June 1902, but may not have been the premier introduction.

The once specific-ranked *R. fauriei* is now rightly regarded to be a subspecies of *R. brachycarpum* and may be separated from its near twin by the hairless undersides of its mature leaves. That same distinction can also be used to distinguish the thinly-indumented ssp. *brachycarpum* from the abaxially glabrous *R. catawbiense,* the taxon it otherwise most closely resembles within Section *Ponticum,* although here the yellow-coloured leaf midrib and petiole, plus a style shorter than both the corolla and the longest stamens, will also assist. So too will the pointed vegetative buds and in the main, the colour of the inflorescence, *R. catawbiense* having predominantly lilac-purple blooms, although some forms have been found with white or pinkish flowers. The corollas of the American species vary from between 3 to 4.5cm in length, so will nearly always be larger than those of ssp. *brachycarpum,* where the maxima is 3cm.

Currently enjoying Group status, the form of *R. brachycarpum* ssp. *brachycarpum* that is found in central and northern Korea, as well as on the island of Ulleung-do some 75 miles to the east of the Korean Peninsula in the Sea of Japan (formerly Dagelet Island), was previously gifted subspecies or varietal status on account of its larger leaves - 15 to 25cm long and up to 9cm wide, compared with the type length of 7 to 15cm and breadth of 7cm - and much wider corollas - some 7cm across at the mouth. Introduced to the Mustila Arboretum in southern Finland in 1931 from Kongosan in central Korea, they are named for the garden's former owner Doctor Carl-Gustaf Ludwig Tigerstedt. Of greater stature than their fellows in the east of Korea and Japan - small trees to 5m high rather than 3m tall shrubs - Tigerstedtii Group plants also grow more robustly and in cultivation at least, have proved far hardier. They may in fact be the hardiest rhododendrons discovered to date, having been the only members of the genus to survive the coldest winter on record at Mustila Arboretum, that of 1939-1940, when temperatures plunged to as low as -45°C.

The batch of seed sent to Mustila, gathered from plants on the Pungsan Mountains, was incorrectly labelled as *R. aureum,* but the germinated seedlings swiftly showed they were something quite different. Doubt remained about their provenance until 1976, when Tor Gustaf Nitzelius, on an expedition to Korea, found a population of plants that exactly matched those growing in the Arboretum.

In cultivation, *R. brachycarpum* is free-flowering and usually happy to get on with life without any further fussing from its overly protective owners, though gardens where late spring frosts are a regular occurrence will need to protect the new growth, which begins extending quite early in the season and often masks the trusses somewhat. Tigerstedtii Group plants may bloom up to three weeks earlier than typical ssp. *brachycarpum,* but this is not fixed in stone and often the two forms flower together.

The chosen epithet for *R. brachycarpum* translates as 'with short fruit', a reference to the length of the mature capsules.



R. brachycarpum (Doleshy 15)



R. brachycarpum (KFB 57)

R. brachycarpum

R. brachycarpum ‘Tigerstedtii’

R. brachycarpum ‘Tigerstedtii’

R. brachycarpum* ssp. *fauriei

Hardiness:
H6-7.
Flowering Period:
June-July.
Distribution in the wild:
N & C Japan; Korea.
Growing in forests or above the tree-line, at elevations of 200-2,300m.

Identification:
Shrub, rounded and compact,
more open with age and lax in shade, 1 to 3m high;
branchlets thinly tomentose, the hairs whitish, fawn or brown, becoming glabrescent,
glabrous at maturity.
Leaf buds pointed; the scales deciduous.
Leaves usually convex, oblong through obovate,
6.6 to 10.3cm long by 3 to 5cm wide,
retained for 2-3 years;
upper surface midrib yellow;
lower surface pale green,
glabrous at maturity or with the vestiges of a juvenile tomentum,
under magnification punctulate or not,
the midrib glabrous.
Petiole 10-16mm long, yellow, glabrous or with the vestiges of hairs.
Inflorescence dense, 12-20-flowered;
the bud scales deciduous.
Rhachis 13-20mm long, moderately through densely pubescent.
Pedicel 20-27mm long, variably tomentose.
Calyx lobes 1-2mm long,
their outer surface and margins moderately through densely tomentose.
Corolla 2.1 to 2.5cm long, broadly funnel-campanulate,
white or yellowish,
often lined and flushed pink along the middle of the petals, spotted greenish;
the outer surface glabrous.
Stamens 10.
Ovary ovoid or conoid, 3-5mm long,
densely tomentose, the hairs brown or dark brown.
Style shorter than the corolla and the longest stamens.
Capsule 9-13mm long, oblong, straight or slightly curved, ridged,
moderately through densely brown-tomentose.

Seed Collections:

Kurashige 491	1987	Kurashige 499	1987	MW 131 R	1997

In addition to the three authenticated collections listed above,
between 1974 and 2019, the American Rhododendron Society Seed Exchange
listed an additional 19 gatherings,
these mostly made by members of the Japanese Rhododendron Society.

R. fauriei was the last of the Subsection *Auria* species to be found, the French missionary priest, Urbain Jean Faurie, after whom the plant is named, encountering the shrub on Mount Shichinohe, a peak in Aomori Prefecture, at the northern tip of Honshu, Japan's main island, during the spring of 1886. Adrien Franchet would describe the taxon in Series 7, Volume 10, of the *Bulletin Annuel de la Société Philomatique de Paris,* which was actually published later that same year.

Only one significant difference sets specimens of *R. fauriei* apart from their otherwise doppelgänger, *R. brachycarpum,* the lower surface of the leaves, which are devoid of a thin, compacted covering of indumentum. Yet despite that dissimilitude, and having slightly smaller features overall, the Edinburgh Revision botanists would have liked to reduce the ranking still further - to varietal status - or even applied synonymy. Staying their hand was a lack of applicable field study data for part of the distribution, and this remains the case due to the political situation on the Korean Peninsula, where both subspecies are found. In Japan, there is no distinct geographic separation between the two, so if the same mixed population is repeated across North Korea, a merger will likely take place soon after the ruling Kim family dictatorship is finally consigned to the annals of history (the spellchecking software responsible for inserting the second 'n').

R. brachycarpum ssp. *fauriei* is very similar to *R. catawbiense* when out of flower, though the yellow midrib and petiole distinction still holds true, as does the pointed leaf buds, and the mature foliage will generally be found to be around one third shorter than its New World cousin. In bloom however, corolla size and colour will quickly differentiate the two: *R. fauriei* displaying small, white or yellowish flowers; *R. catawbiense* larger and lilac-purple toned blooms (though as indicated above, pink, rose or white forms of the American species have also been found in the wild and are widely grown in cultivation).

Like its sister subspecies, the exact date when *R. fauriei* was introduced into British gardens is now lost. Edinburgh Botanic have records of a plant arriving from the Reuthe nursery in Kent during 1916, but expert opinion believes the species was being grown in the UK much earlier than that. Hardiness and cultural requirements match those of ssp. *brachycarpum,* but reports indicate that some specimens of ssp. *fauriei* are decidedly shy flowerers.



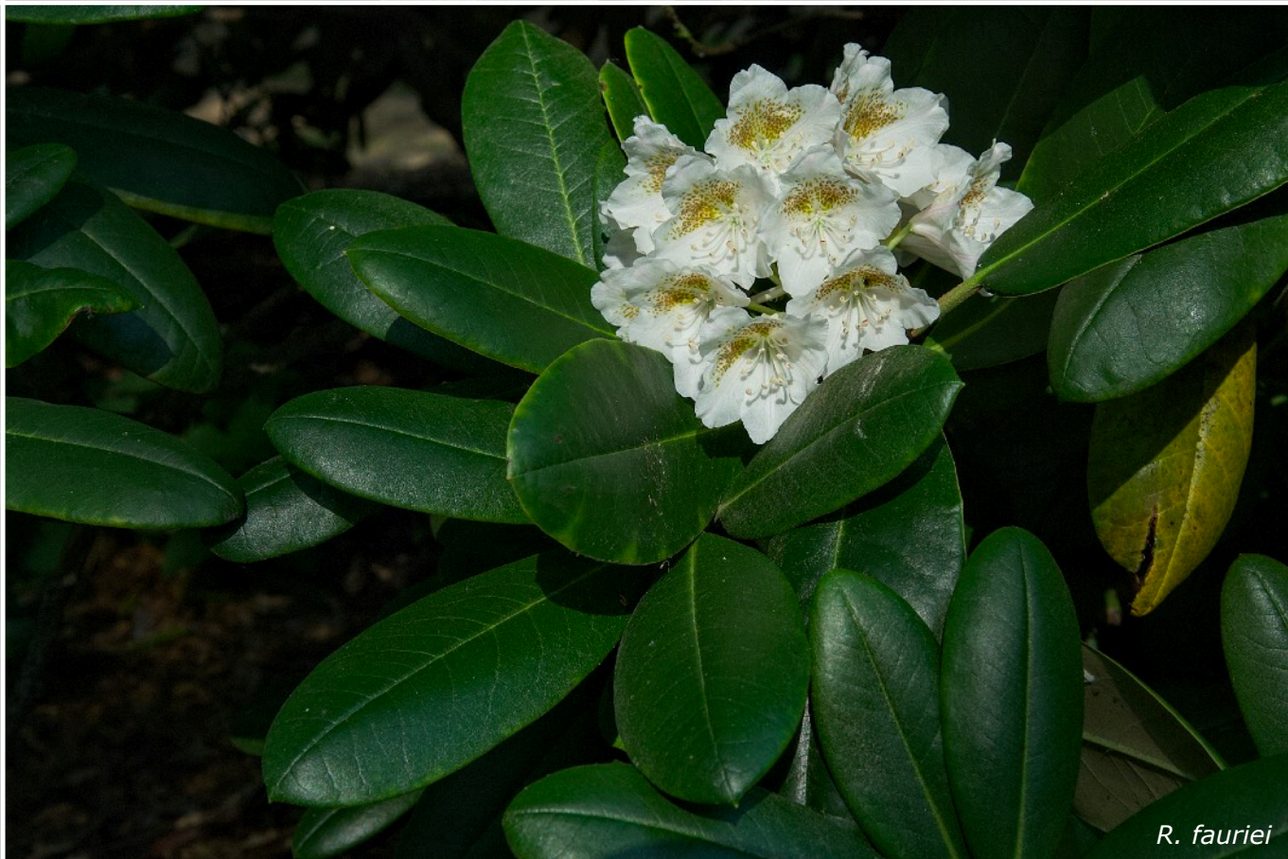
R. fauriei (Kurashige 499)



R. fauriei



R. fauriei



R. fauriei

Section *Ponticum* Subsection *Calophyta:*



R. calophytum



Taxa:

R. asterochnoum
R. calophytum
R. calophytum var. *calophytum*
R. calophytum var. *openshawianum*
R. calophytum var. *pauciflorum*
R. insigne
R. praevernum
R. sutchuenense

Taxonomic Revision:

Close to eighty individual rhododendron species were genetically examined
to produce the dataset that informs the 2010 scientific study
A Phylogeny of Rhododendron Subgenus Hymenanthes Based On Chloroplast DNA Markers.
As those results built up, all were run of the mill and as expected,
until the cpDNA readings for *R. praevernum* hit like a botanic bolt out of the blue.

To say the intrinsic relationship they detailed came as a shock to the team carrying out the investigation would be an understatement, for they were so completely
out of left field as to prompt the botanists to quickly secure a second specimen to test.
One moreover, with a totally different wild provenance to that of the first.
Yet it produced exactly the same results and so confirmed the genetic association
with the eight Clade P *Pontica* species.

R. calophytum and *R. insigne* would likewise upset the apple cart.

The methodology adopted for the study and the laboratory techniques employed
by those carrying out the research were sound,
as evidenced by the sub-cladal association of *R. hyperythrum* with *R. pseudochrysanthum,*
which has been independently confirmed by four other teams,
and in the splitting of the old Subsection *Pontica* into two clades,
this confirming the findings of Richard Milne's earlier 2004 investigation
A Phylogeny And Biogeography Of Rhododendron Subsection Pontica,
A Group With A Tertiary Relic Distribution.

Various alternative hypotheses to explain how these three species could have sourced
their *Ponticum* organelles were advanced in the paper that followed:
recent plastid transfer, either in the wild or in cultivation;
chloroplast transfer or capture as a result of introgression following hybridisation;
convergent or reticulate evolution.

Chloroplast capture following hybridisation with a now extinct Clade P species won out,
especially as the biogeography supported such a concept:
R. calophytum, R. insigne and *R. praevernum* have an endemic distribution to the north
and the northeast of the main *Hymenanthes* evergreen species disposition,
while the Clade P species have an even more northerly endemicity.

Therefore it is perfectly possible to envision a Clade P lineage forebear species
progressing southwards until it entered the range of the Clade H rhododendrons,
hybridising with those species it encountered,
and leaving their descendants with its Clade P chloroplasts.

The interloper then succumbed to either the changing environmental challenges,
or was hybridised out of existence through genetic swamping.
This process can occur simultaneously with chloroplast capture and has been scientifically
documented in studies such as the January 2004-published paper
Hybridization As A Mechanism Of Invasion In Oaks
(Petit et. al., *New Phytologist,* Volume 161, Issue 1, pages 151-164).

Yet all those newly-minted offspring would display and retain
the morphology of their Clade H forebears through their nuclear germplasm,
because 50% of this had been inherited from the male parent at conception and would
likely be increased through backcross interbreeding and the speciation process.

The Clade P organelles however, would remain inviolate,
passed on across the generations,
to present today's botanists with a mind-boggling biological fait accompli.

It should again be noted that *R. asterochnoum* and *R. sutchuenense* were not amongst the
eighty or so rhododendrons whose cpDNA was sampled by the Milne-Chamberlain team,
their presence herein, within the newly formulated Subsection *Calophyta,*
a judgement call based on their matching endemicity and morphological characteristics.

Subsection Morphology:

Shrubs or small trees, rounded-spreading or broadly upright, 1 to 15m high;
branchlets stout, sparsely through densely whitish tomentose, eglandular.

Leaves evergreen, coriaceous, flat, sometimes rigid or with a V-shaped profile,
elliptic-lanceolate through broadly oblanceolate to oblong-elliptic,
6.8 to 36cm long by 1.6 to 9cm wide,
often broadest above the middle,
apex acuminate, sometimes abruptly so, acute, rounded or obtuse,
occasionally apiculate, sometimes cuspidate;
base tapered, cuneate, rounded or obtuse,
usually narrowly decurrent on the petiole,
retained for 1-2 years (*R. insigne,* 3-5 years);
upper surface glabrous, olive-green or dark green, matt, rarely glossy,
often tomentose at first but glabrous when mature,
the midrib grooved, the veins usually deeply impressed,
the margins occasionally recurved;
lower surface pale green, glabrous, or with the vestiges of a juvenile indumentum,
rarely tomentose, but *R. insigne* with a shiny, unistrate,
white through tawny-grey to fawn, plastered indumentum,
embedded in a shiny surface film that develops a coppery sheen with age,
the midrib prominent, glabrous or tomentose, eglandular, the veins raised

Leaf anatomy comprises a 2-layered upper epidermis,
with the cells in each layer roughly equal in size;
the cuticle is half to as thick as the cells are deep; water tissue is present;
the lower epidermis cells are usually not prolonged into papillae, but if so, are very small.
Sclereid cells are present in the *R. insigne* blades and may occur in the other species.

Petiole 10-30mm long, stout, usually grooved,
flat above, rounded below, the margins with narrow wings,
glabrous or tomentose, eglandular.
Inflorescence racemose, 3-10-15-30-flowered.

Rhachis 8-25mm long, glabrous or tomentose, eglandular.

Pedicels 10-80mm long, slender or somewhat stout, sometimes elongate,
sometimes coloured scarlet or red,
glabrous, sparsely tomentose, or glabrescent, eglandular.

Calyx minute or small, rarely disc-like, 5-lobed, these ovate or triangular in shape,
each 1mm long, more rarely 2-4mm long,
their outer surface and margins glabrous and eglandular, rarely tomentose.

Corolla 2.8 to 7.5cm long, widely campanulate through funnel-campanulate,
sometimes tubular-campanulate,
usually set oblique to the pedicel and ventricose,
white, white flushed pink, pink, pinkish-lilac, rose, rosy-white or purple,
with or rarely without a dark crimson, red or purple blotch at the base,
with or rarely without dark crimson or purple spots and flecks,
without nectar pouches;
the outer surface glabrous, eglandular, rarely pubescent towards the base of the tube,
the inner surface glabrous,
or more rarely, pubescent towards the base of the tube, eglandular;
5-7-lobed,
these often unequal, rounded, emarginate, sometimes deeply so.

Stamens 10-25, unequal, shorter than the corolla;
filaments glabrous or pubescent at or towards the base, sometimes densely so.

Ovary conoid, ovoid or oblong, 5-10mm long, 8-16-celled, glabrous, eglandular,
R. insigne densely tomentose.

Style somewhat stout, glabrous, eglandular;
stigma swollen, discoid, 5-8mm wide, more rarely small and 2-4mm wide,
glabrous, eglandular.

Capsule 15-45mm long, oblong through oblong-oval, oblique or obliquely-ovoid, straight,
rarely slightly curved, ridged, glabrous, eglandular,
R. insigne densely tomentose.

Seeds usually as long as they are broad, or elongate,
winged, often prominently so, each end with large appendages.

R. calophytum* var. *calophytum

Hardiness:
H5-6.
Flowering Period:
February-April.
Distribution in the wild:
SE Gansu, C & N Guizhou, W Hubei, S Shaanxi, C, W & E Sichuan & NE Yunnan, China.
Growing in forests, at elevations of 1,800-4,000m.

Identification:
Large shrub or small tree, upright and spreading, 2 to 9m high, occasionally to 15m;
young shoots stout.
Leaves flat or with a somewhat V-shaped profile,
oblong-oblanceolate through oblong-lanceolate,
11 to 36cm long by 4 to 8.5cm wide, broadest above the middle,
apex abruptly acuminate,
base cuneate and tapered, decurrent on the petiole,
retained for 1-2 years;
upper surface sparsely silver-tomentose at first, but soon becoming glabrous;
lower surface usually with the vestiges of a juvenile indumentum,
at the base of the midrib, along its lower half or more rarely along the whole length.
Petiole 16-25mm long, flattened above, grooved, the margins narrowly winged,
usually glabrous, but sometimes thinly white-tomentose.
Inflorescence 15-30-flowered.
Rhachis 15-25mm long, glabrous, or with whitish tufts of hairs.
Pedicel elongate, 26-80mm long, stout, red,
glabrous, or more rarely sparsely tomentose.
Calyx minute, the 5 lobes 1-1.5mm long, glabrous.
Corolla 4 to 6cm long, open-campanulate, ventricose, oblique to the pedicel,
white through pink to pale pinkish-mauve, rose or purple,
with a dark red or purple basal blotch and flecks;
outer and inner surfaces glabrous,
the 5-7-lobes unequal and deeply emarginate.
Stamens 15-22;
filaments glabrous or puberulent at the base.
Ovary glabrous and eglandular.
Style glabrous and eglandular;
the stigma swollen, 5-8mm wide.
Capsule obliquely-ovoid, 20-45mm long, straight and ridged,
glabrous and eglandular.

Seed Collections:

W 1523	1904	EGM 118a	1990
W 1224	1908	CEE 209	1991
W 1367	1908	CEE 511	1991
W 1369	1908	SICH 1630	1994
W 4279	1910	SICH 1656	1994
KR 141	1980	C&H 7111	1995
KR 142	1980	C&H 7116	1995
KR 143d	1980	EFH&M S 1630	1995
EN 3551	±1985	EFH&M S 1656	1995
CCH 3908	1989	EGM 341	1995
CCH 3911	1989	AC 5166	2002
CCH 3923	1989	JN 12325	2012
Cox 5021	1990		


R. calophytum

R. calophytum* var. *openshawianum

Hardiness:
H5-6.
Flowering Period:
February-April.
Distribution in the wild:
SW Sichuan & NE Yunnan, China.
Growing in forests, at elevations of 1,400-2,800m.

Identification:
as var. *calophytum* except:
Height to 6m.
Leaves 10 to 18.6cm long by 2 to 4.2cm wide,
apex acuminate, often acutely so, cuspidate.
Inflorescence 5-12-flowered.
Corolla open-campanulate,
white through pinkish-white, with or without a blotch,
5-lobed.
Stamens 18-25.

Seed Collections:

W 1209a	1908	AC 5021	2002
W 3414	1908	C&N 6003	2007
SICH 1640	1994	C&N 6005	2007
C&H 7055	1995	C&N 6009	2007
EGM 318	1995	CNC 12107	2012
AC 5019	2002	JN 12067	2012

R. calophytum* var. *pauciflorum

Hardiness:
H5-6.
Flowering Period:
February-April.
Distribution in the wild:
Nanchuan District, Chongqing, China.
Growing in forests, at elevations of 1,800-2,100m.

Identification:
as var. *calophytum* except:
Leaves broadly oblanceolate through oblong,
apex acuminate.
Inflorescence 3-7-flowered.
Rhachis *c.* 10mm long.
Corolla campanulate,
5-lobed.

Seed Collections:

AC 1054	1995



R. calophytum

R. calophytum (W 4279)

R. calophytum (W 4279)

Tree-like specimens of *R. calophytum* were discovered in 1870 growing in woodland as high up as the 4,000m contour by the French missionary priest Jean Pierre Armand David while he was botanising on the mountains near Moupin (Baoxing) in China's Sichuan Province. Herbarium material was gathered and later sent back to the Muséum National d'Histoire Naturelle in Paris, where Adrien Franchet described the new species in Volume 33 of the *Bulletin de la Société Botanique de France,* this published in 1886. British gardeners had to wait some thirty-four years post Père David's initial find before an Ernest Wilson seed lot arrived in 1908 and ushered one of the most magnificent rhododendron species in the entire genus into UK cultivation.

R. calophytum can be distinguished from *R. praevernum* and *R. sutchuenense* by the larger stigma, 5-8mm across rather than 2-4mm; by the ventricose nature of the openly-campanulate corolla; by the stamen count, 15-22 instead of 13-17; and by leaves that are longer and narrower, have a flat or V-shaped profile, and which are without recurved margins. A complete lack of stellate indumentum hairs on the leaf underside separates it from the more recently introduced *R. asterochnoum,* while the blades of *R. insigne* are graced with a plastered, white, tawny-grey or fawn indumentum that is embedded in a shiny surface film, this developing a coppery sheen with age.

Two other forms of the species are also extant: *R. calophytum* var. *openshawianum,* and *R. calophytum* var. *pauciflorum*.

The former was discovered in September 1908 by Wilson at Yungching Hsien, Wa-wu-shan, which is also in western Sichuan, with the plant described jointly by the plant hunter and Alfred Rehder in Volume 1 of *Plantae Wilsonianae,* published in 1913. It was given specific status and named for the Reverend Henry James Openshaw, a member of the American Baptist Foreign Missionary Society (who Wilson had met in China). Two seed lots were secured and mature plants from one, or perhaps both gatherings, can still be seen at Dawyck Botanic Garden near Peebles in the Scottish Borders, these planted out when Frederick Balfour was developing the arboretum in the early years of the 20th Century. Until 1994, when a sequestered population of plants was found in southern Sichuan and seed re-introduced, many horticulturalists and gardeners had merely considered the taxon a second-class form of *R. calophytum,* due to the smaller leaves and less populous flower truss, so there was no overly loud hue and cry when its ranking was reduced in the second *Preliminary Synopsis* paper of 1979 vintage (James Cullen & David Chamberlain, *Notes from the Royal Botanic Garden, Edinburgh,* Volume 37).

The latter variety was described in 1988 by Wen Kwang Hu, writing in Volume 26 of *Acta Phytotaxonomica Sinica,* or more correctly *Chih su fen lei hsüeh pao*. It is known from only one location, a forested site on Chongqing's Jianfushan Mountain, and has even fewer corollas in the flower truss than var. *openshawianum* - 3 to 7, as opposed to 5 to 12; with the var. *calophytum* norm, 15 to 30. Alan Clark was the first and so far only Western collector to secure seed - under the field number AC 1054 - when visiting the area in October 1995 on a joint expedition with the Kunming Institute of Botany.

Chinese botanists recognise a fourth form of the species, *R. calophytum* var. *jinfuense,* which is apparently native to deciduous broad-leaved woodland in the Nanchuan District of the Chongqing municipality, where it can be found growing at altitudes between 2,200 and 2,300m. The leaves are more diminutive than the type species, 10 to 14cm long by 3 to 4cm wide, the pedicels shorter, to just 2.5cm in length, and the purple corollas 5-lobed and also smaller. It is not yet in cultivation in a British garden.

Wilson's 1904 introduction of *R. calophytum* was followed by five more lots from the maestro in 1908, two of which ushered var. *openshawianum* into UK cultivation. A final batch of seed arrived in 1910, but post that gathering, none of the other visiting collectors of the time - Forrest, Kingdon-Ward, Rock, Ludlow and Sherriff - rediscovered the species before China closed its doors to Western plant hunters in 1949, and it was only after those hillsides were re-opened that Keith Rushforth was able to kick off the twenty lot re-introduction of seed that began in 1980.

John Guille Millais details the premier blooming of *R. calophytum* in a UK garden within the first volume of his *Rhododendrons and the Various Hybrids:*

> 'The finest plants in England are at Caerhays. They are about 10 years old and are about 5 feet in height. The two largest are in full sun, which induces them to flower, and would doubtless have been larger if grown in shade. The first specimen to flower was one of these, which carried one dense truss of 30 flowers, whitish-lilac in colour with an intense dark blotch on the upper interior of the corolla. The scarlet pedicels were a striking feature. The date of flowering was April 15th, 1915'.

In general cultivation, *R. calophytum* has been found to be one of the hardiest large-leaved species available, free-flowering once mature and if allowed to, growing into a huge, long-lived, umbrella-shaped tree. Woodland protection for such a specimen is essential, the shelterbelt gentling the wind and allowing the leaves to fully develop. Lacking such would soon see a rash of broken petioles. Of course, spring frosts will inevitably mar the early-season display and sometimes damage the emerging foliage, but if the weather is benign, a mature plant, covered in white or pink blooms, is simply jaw-dropping.

A point to note: during severe winter cold spells, the leaves of *R. calophytum* will droop and roll tightly up into tubes, only unfurling and returning to their normal stance once temperatures moderate.



R. calophytum (EFHM 1656)

R. calophytum



R. openshawianum

R. pauciflorum (AC 1054)

R. sutchuenense

R. sutchuenense

Hardiness:
H5-6.
Flowering Period:
February-April.
Distribution in the wild:
Chongqing, Gansu, Guangxi, Guizhou, W Hubei, NW Hunan, E Sichuan & S Shaanxi, China.
Growing in mixed woodlands, often with evergreen oaks or bamboo,
at elevations of 1,500-2,400m.

Identification:
Shrub or small tree, broadly-upright or rounded-spreading, often umbrella-shaped,
1 to 5m high, but often to 10m.
Leaves oblong-lanceolate through oblong-obovate,
9 to 30cm long by 3 to 7.6cm wide,
apex obtuse, rounded or acute,
base cordate, rounded or broadly cuneate,
slightly decurrent on the petiole,
retained for 1-3 years;
upper surface with recurved margins;
lower surface with a moderately through densely
whitish-floccose indumentum along the entire length of the midrib.
Petiole 15-30mm long, narrowly ridged or winged along the margins,
moderately through densely white-tomentose at first,
the covering thin and becoming glabrescent.
Inflorescence 8-20-flowered.
Rhachis 10-25mm long, glabrous, but sometimes white-pubescent at the base.
Pedicel 10-36mm long, stout, glabrous,
but sometimes sparsely through moderately white-pubescent or floccose.
Calyx disc-like, the 5 lobes 1-4mm long,
their outer surface and margins glabrous or sparsely through moderately hairy.
Corolla 5 to 7.5cm long, 5-6-lobed, open- through funnel-campanulate,
white flushed pink, pink, lilac- through rose-pink to deep rose,
with darker rose-crimson or red spotting on the upper lobes;
the outer surface glabrous, or puberulous at the base of the tube,
the inner surface densely puberulous at the base of the tube;
Stamens 12-17, rarely 22, anthers reddish-brown;
filaments moderately through densely pubescent at the base.
Ovary glabrous and eglandular.
Style glabrous and eglandular;
the stigma reddish or pink, 2-3mm wide, rarely to 6mm.
Capsule oblong, 18-36mm long, straight or slightly curved, ridged,
glabrous and eglandular.

Seed Collections:

W 1232	1901	SICH 1821	1994	C&N 6135	2007
W 509	1907	SHX 001	1995	C&N 6140	2007
CEE 172	1991	C&N 6126	2007	JN 11023	2011



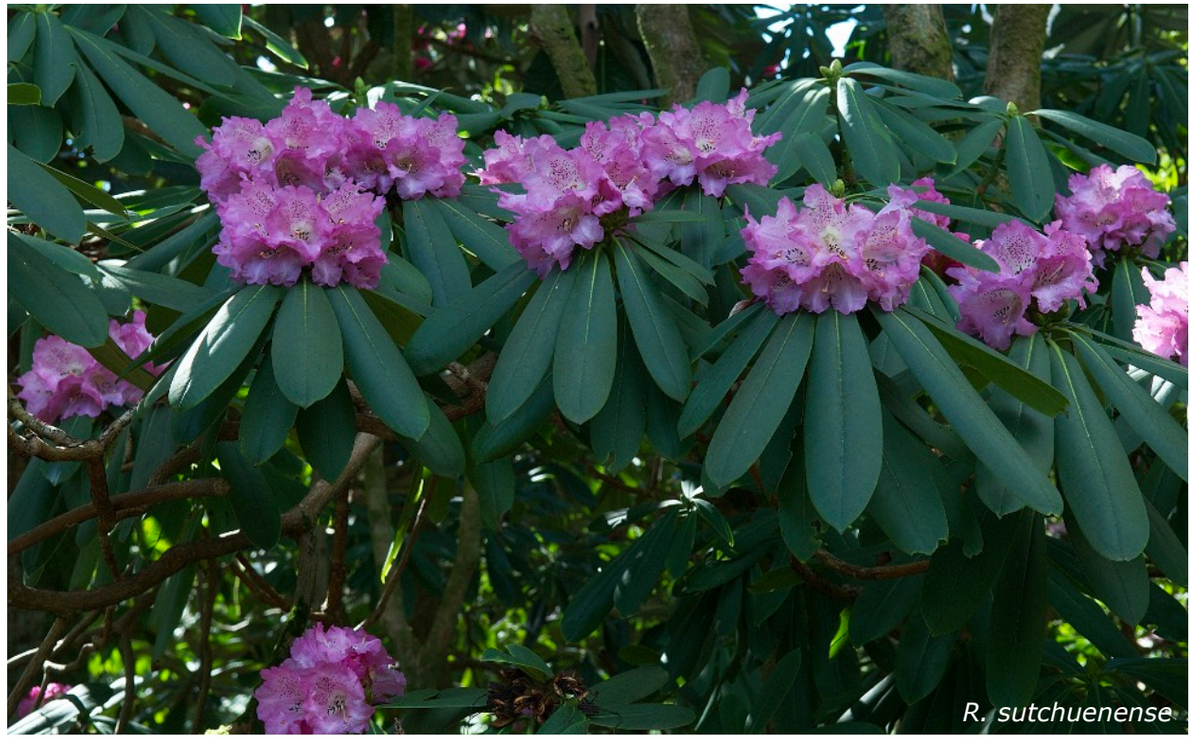
R. sutchuenense

Although Augustine Henry was the first plant hunter to encounter *R. sutchuenense* in the wild, sending dried specimens to Kew in 1888 from a population of plants he discovered in western Hubei, recognition for the find would be a long time coming. The reason for this was mundane, and typically British: the sheer volume of new plant collections coming into the Kew Herbaria from all over the world at that time simply overwhelmed the staff. It meant that many of the Irishman's mounted pressings were only given cursory attention and even today, botanists are finding specimens of species amongst those 158,000 preserved herbarium sheets where credit for an initial find was given in good faith to another plant hunter. Such was the case here, with the French botanist Adrien Franchet unaware of the earlier Hubei discovery when he named and described material gathered near Tchen-keou-tin in the east of Sichuan by Père Paul Guillaume Farges between 1891 and 1894, his description of *R. sutchuenense* appearing in Volume 9 of the *Journal de Botanique,* published in 1895.

An unblotched though usually spotted corolla, and woolly hairs along the leaf lower surface midrib, are the clear-cut features that distinguish *R. sutchuenense* from its closest relative *R. praevernum,* as well as from the natural hybrid mating between the pair, *R. x geraldii.* The latter, for a time, was merely considered to be a crimson-blotched variety of *R. sutchuenense,* but is now acknowledged to be a pollinator-engendered cross. The true species is also regularly mistaken for *R. calophytum,* but again, is quickly identified from that taxon when in bloom by the lack of any blotched flowers, plus an unswollen stigma at the end of the style. At other times, the broader, shorter leaves with recurved margins must suffice.

Ernest Wilson again gets the credit for introducing *R. sutchuenense* into British gardens, returning seed during his first expedition to China in 1901. But as the plant hunter acknowledges, he was guided to the gathering spot in western Hubei after spending a month in discussions of all things botanical with Augustine Henry at Simao and Mengzi, and no doubt further helped by employing the Irishman's own trained native plant collectors once he arrived at Yichang. Seed gathered under W 1232 germinated, and those plants reached flowering size just nine years later, the blooms opening in the spring of 1910 at the Coombe Wood nursery of his expedition's sponsors, Harry and James Veitch. The species has been in UK cultivation ever since, though apart from a second batch of capsules secured by Wilson in 1907, it took until the early 1990s for *R. sutchuenense* to be rediscovered and reintroduced.

Mirroring *R. calophytum* in that its leaves curl up into tubes and hang dejectedly in heavy frost, *R. sutchuenense* is actually one of the hardiest species rhododendrons grown in the UK. It is most at home in a woodland setting, where shelter from the surrounding trees filters the wind and attenuates Jack's bite, and if given adequate space, plants will attain their full height, often adopting an umbrella-shape with age, which when completely covered in trusses of deep rose-pink flowers early in the season, will literally stop you in your tracks.


R. sutchuenense


R. sutchuenense

R. sutchuenense



R. insigne

R. insigne
Hardiness:
H5-6.
Flowering Period:
May-June.
Distribution in the wild:
C & S Sichuan, China.
Growing in thickets, woodlands and alongside streams, at elevations of 700-3,000m.

Identification:
Shrub, 1.5 to 6m high,
rounded and compact, sometimes broadly upright, but leggy in shade;
branchlets thick, moderately through densely whitish-tomentose,
the covering thin and becoming glabrescent with age;
bark turning grey with age.
Leaves thick and stiff, elliptic through obovate-elliptic to oblanceolate,
6.8 to 14cm long by 1.6 to 5cm wide,
apex acuminate,
retained for 3-5-years;
upper surface dark green, usually glossy, glabrous,
the veins deeply impressed, the margins recurved;
lower surface indumentum unistrate,
white through tawny-grey to fawn, plastered,
embedded in a shiny surface film that develops a coppery sheen with age.
Petiole 10-30mm long, variably whitish-tomentose.
Inflorescence 6-16-flowered, in a compact to lax truss.
Rhachis 10-20mm long, brown or whitish floccose, or glabrous.
Pedicel 20-40mm long, sometimes extending to 50mm, slender,
stout and erect at first, becoming lax,
variably brownish-floccose.
Calyx lobes 1-1.5mm long,
their outer surface and margins floccose.
Corolla 2.8 to 5cm long, openly-campanulate,
pink, white flushed rose, or very rarely red,
with a darker median stripe along each lobe,
sometimes spotted crimson at the base.
Stamens 10-15, unequal;
filaments densely floccose along the lower half or only at the base, or glabrous.
Ovary 8-10 locular, densely white or fawn woolly-pilose.
Capsule ridged, densely brownish woolly-pilose.

Seed Collections:

W 1339	1908


R. insigne

Only one Western plant hunter has gathered seed from *R. insigne* in the wild - Ernest Wilson. Visiting the sole known population of these plants on the slopes of Ta Wa Shan in central-southern Sichuan during July 1903, on his second Veitch-sponsored expedition to China, he secured the official type herbarium specimens, but no seed. Fast-forward five years, add in a change of sponsor, and this time, returning to the same location far later in the season, ripe capsules were secured under the field number W 1339.

Texts that report Augustine Henry and Antwerp Pratt separately collecting specimens of the species subsequent to Wilson's 1903 visit are in error, for Henry left China in December 1900 and Pratt, with his German assistant collector, Herr Kricheldorf, explored the mountain in 1889. So it is to that date that herbarium specimens of *R. insigne* can be traced to each man - Henry's under the collector reference 8859, Pratt's to lot number 349. Or more accurately, to their teams of Chinese collectors.

Chris Callaghan, of the Australian Bicentennial Arboretum, has written two exhaustive articles for the International Dendrology Society about the plant discoveries made around Ta Wa Shan and he considers the mountain a botanic hot spot superior to the nearby Shangri-La of Emei Shan, little more than 22 miles distant. Tangentially, his research also shows that the history of the *R. insigne* discovery needs to be amended somewhat:

Augustine Henry never actually visited western Sichuan, but his trained troop of native collectors did and they were there in the summer of 1889. In his 1945 book *Plant Hunting in China,* with regard to Pratt and Kricheldorf, Euan Cox writes that their Chinese assistants also spent the summer months of 1889 at Ta Wa Shan, while their two European employers carried on to sample the delights of Tachien-lu (Kangding). Cox reports on an apparent lack of specimens collected by the Pratt-Kricheldorf team during this time, but is unaware that with Henry's lead Chinese collector put in overall charge, the bulk of the finds - a tally of some 200 to 250 field numbers - were given Henry designations and sent off as usual to Hong Kong and Kew, possibly without first going to Hainan, where the Irishman had been based since leaving Yichang that spring.

What happened to the *R. insigne* specimens post their arrival in England is unclear. The species botanic description would certainly have been written by William Botting Hemsley, the principal recipient of Henry's material, and published much earlier than 1910 - when it appeared in the *Kew Bulletin of Miscellaneous Information* as a collaborative submission penned with Wilson - had the herbarium sheets been fully examined. But given the vast bulk of new material then coming in to Kew as previously reported, it seems likely they were simply overlooked. Moreover, in an 1892-published article in Volume 29 of the *Journal of the Linnaean Society of London,* which he titled *Observations on a Botanical Collection made by Mr. A. E. Pratt in Western China,* Hemsley himself makes no mention of any rhododendron specimens.

So should credit for the discovery go to Augustine Henry, Antwerp Pratt or remain with Ernest Wilson? And how did Wilson locate the clearly illusive *R. insigne* population?

Wilson would have gained direct knowledge of Ta Wa Shan's botanic significance from Augustine Henry when the two collectors met in Simao, Yunnan, at the start of Wilson's first expedition to China. He also employed the Irishman's fabled Chinese collector, who likely led him directly to the mountain at the beginning of his second Veitch-sponsored trip, for instead of going to Emei Shan, Wilson went first to Ta Wa Shan, even though the former was closer to his point of departure at Leshan and more easily reached. As to crediting the discovery, it is clear that Ernest Wilson himself was present on site when the type herbarium specimens under W 3965 were collected, unlike either Henry or Pratt, so he surely has the greater claim even though their earlier-sourced dried material went astray. Of course, in today's world, credit would justly go to the person who actually found and collected the plant, the highly regarded Man Yang, whom both Henry and Wilson placed in charge of their squad of locally-recruited assistants.

Chinese botanists recognise a second form of *R. insigne,* namely var. *hejiangense,* although the differences between the two are minor. As set out in *Flora of China* online, var. *hejiangense* has oblong-lanceolate leaves, an abaxial leaf indumentum that remains white, pedicels 20-25mm long, and glabrous stamen filaments, while the foliage of var. *insigne* is obovate-elliptic in shape, the indumentum develops a distinctive coppery sheen, the flower stalks are 30-50mm in length, and the stamen filaments are densely floccose at the base. Western botanists would argue that - quite literally - this is simply splitting hairs, the stated differences acceptable natural variation within a single species population making varietal separation un-necessary. Unless it was accompanied by a niche or disjunct endemicity, which is not the case, as altitudinally, the two forms overlap.

Separating *R. insigne* from its old Subsection *Argyrophylla* cohorts can almost be considered child's play, as the shiny rigid leaves, coppery lustre of the lower leaf surface indumentum and the deeper-coloured median lines down the corollas are all absolutely distinctive key identifiers, and remain such within its new residence, Subsection *Calophyta*. *R. thayerianum* was previously decreed to be the taxon's closest relative, but has persistent leaf bud scales (perulae), plus glands on its branchlets, abaxial leaf surface, petioles, rhachis, pedicels, flower bud scales, calyx, ovary, style and capsule. In comparison, *R. insigne* quickly sheds its leaf bud scales and is completely eglandular.

As the Seed Collections table indicates, the original Wilson gathering remains the only batch of seed introduced into cultivation and a number of rhododendron experts believe the species might now be extinct in the wild, this stance indirectly evidenced through a lack of photographs in the publications *Sichuan Rhododendron of China* (1986), and the three-volume work *Rhododendrons of China* (1988-1992), not to mention all those highly-motivated Western plant hunting teams coming away empty handed from their visits to Sichuan. Luckily, *R. insigne* has proved to be easy to grow in British gardens, being fully hardy and developing into a bushy dome when grown in an open position, well-filled with those glossy and distinctive, spear-point blades, and heavily laden with bloom most years. Yet the species is not without its quirks, as young plants grown from hand-pollinated seed exhibit a distinct dislike to the application of any fertiliser, be it granular or foliar, while older specimens, even when swiftly dead-headed, refuse to send out young growth from flowering shoots until the following season. Regardless of these foibles, *R. insigne* is rightly popular and considered to be one of the very best species rhododendrons to grow. Mature specimens can be found in innumerable gardens, both public and private, and J. G. Millais reports that the species first flowered in UK cultivation during July of 1922, at Logan, near Stranraer, in Dumfries and Galloway (*Rhododendrons and the Various Hybrids,* Second Edition, 1924).



R. insigne (W 1339)



R. insigne (W 1339)



R. praevernum

R. praevernum

Hardiness:
H6.
Flowering Period:
February-April.
Distribution in the wild:
Guizhou, W Hubei, Shaanxi, E Sichuan & NE Yunnan, China.
Growing in oak and bamboo woodland, at elevations of 1,500-2,500m.

Identification:
Shrub or small tree, rounded-spreading or upright,
1.5 to 5m high, sometimes to 7m.
Leaves oblong-obovate through elliptic-oblanceolate to elliptic-lanceolate,
9 to 21.5cm long by 2 to 7.5cm wide,
apex obtuse or acute,
base broadly cuneate or tapered,
slightly decurrent on the petiole,
retained for 1-2 years;
upper surface with revolute margins.
Petiole 15-25mm long, stout, flat above,
with a thin, whitish tomentum at first, becoming glabrous,
the margins with very narrow ridges or wings.
Inflorescence 7-15-flowered, the truss open-topped.
Rhachis 8-13mm long, sparsely pubescent or glabrous.
Pedicel 13-30mm long, fairly stout, glabrous.
Calyx minute, the 5 lobes 1-2mm long,
their outer surface and margins glabrous.
Corolla 5 to 6.2cm long, campanulate through tubular-campanulate,
white, white flushed pink, pink, pinkish-lilac through pinkish-purple to rose,
with a conspicuous crimson or dark purple basal blotch,
and usually crimson or purple flecks or spots above this,
the outer surface glabrous,
the inner surface densely pubescent towards the base of the tube,
5-lobed.
Stamens 10-13-16, anthers brown;
filaments densely pubescent at the base.
Ovary glabrous.
Style glabrous.
Capsule oblong, 16-40mm long, straight, ridged, glabrous.

Seed Collections:

W 17	1900
W 2537	1900
W 509	1907
C&N 6142	2007

History currently records that *R. praevernum* was discovered by Ernest Wilson in western Hubei while on his first expedition to China for the Veitch Nurseries emporium. Two collections were made, in April and September 1900, but a gap of twenty years ensued before a botanical description of the species appeared, this penned by John Hutchinson for an item in *The Gardeners' Chronicle* (Volume 67, Series 3, 1920). The reason for the delay is humdrum in the extreme - the plants were first identified as *R. sutchuenense,* by both the plant hunter and the botanists who examined the collected specimens. In that 1920 article, Hutchinson concludes the Latin description paragraph for *R. praevernum* with a revised list of the collections made up to that date, the last noted being:

'South Patung, 6,000 ft., Henry 5285'.

Augustine Henry, Assistant Medical Officer and Customs Assistant in the Imperial Customs Service, who was based at Yichang in western Hubei from March 1882 until February 1889, collected *R. sutchuenense* in 1888. Hutchinson, based at Kew, where the Irishman's vast collection of herbarium specimens were held, went back through the cartridge paper sheets and decided the Do Patung specimen received in March 1889 was *R. praevernum,* not *R. sutchuenense* as first thought. And that means that once again, history needs to be rewritten.

Confusion still exists over the Wilson collection numbers, with H. H. Davidian and John Hutchinson correctly citing W 17 (April 1900) and W 2537 (September 1900) from the first Veitch-sponsored expedition as *R. praevernum,* though on the official seed lists they are recorded as the natural hybrid *R. x geraldii* and *R. sutchuenense*. The two herbarium cards held at Edinburgh Botanic were formally reclassified as *R. praevernum* by David Chamberlain in 1977 and are both filed under W 17, but with the dates shown as April 1900 and September 1901 (the sheet at Kew confirms the 1900 date). Two further collections from the expedition, W 517 and W 1232, have respectively been authenticated as *R. x geraldii* and *R. sutchuenense,* but a later 1907 collection - W 509 - apparently yielded plants of all three - the two species and the natural hybrid - so amid such disarray, it is easy to see why these are the most oft-mislabelled rhododendrons in UK cultivation. Yet there are distinct differences between all three:

R. praevernum is slower and lower growing. It has smaller and narrower leaves, and smaller and narrower corollas, which may or may not have spots or flecks. Critically, the prominent midrib on the leaf underside is glabrous, without any hairs whatsoever along its entire length, and the flowers always have a dark blotch at the base of the upper lobe.

*R. sutchuenens*e is a more vigorous grower, ultimately topping out about 2m higher than *R. praevernum* and it has a broader spread. Its leaves are longer, and in the main, wider, and it sports slightly longer but much more open-campanulate corollas. Key to a correct identification however, are the whitish hairs found on the lower leaf surface midrib, these present in variable quantity along the entire length of the blade and usually floccose (woolly), with the absolute clincher being spotted corollas that are never blotched.

The natural hybrids found in the wild run the gamut between the two, with the named *R. x geraldii* often a mirror of *R. sutchuenense* except for the presence of a large red or crimson blotch at the base of the upper lobe. Hutchinson described the midpoint taxon in his *Gardeners' Chronicle* write-up as having a hairy midrib and white flowers, with the corollas sporting a blotch that was not as dark as in *R. praevernum* and 'broken up'.

Within the subsection, the larger stigma of *R. calophytum* - 5-8mm across rather than 2-3mm - the openly-campanulate, ventricose corollas, complete with more stamens - 15-22 instead of 13-17 - plus the longer and narrower leaves, with their flat or V-shaped profile, should prove adequate to the task of differentiation.

Within its old botanic residence, *R. praevernum* also had the potential to be confused with *R. davidii,* but the latter's densely glandular ovary and calyx, plus an extra long rhachis would usually distinguish one from the other.

Providing the chosen site locale offers the foliage protection from strong winds, in British gardens, cultivation of *R. praevernum* is usually without problem. Young plants are quick to bloom, with the first flush of buds set when specimens are still compact bushy shrubs less than a metre high. However, as those buds can begin to open as early as February, unless that said locale is also gifted with a west coast microclimate, frost damage will often be inevitable. But on those quite frequent occasions when Jack is busy elsewhere and milder conditions prevail, a mature plant covered in bloom, is an arresting sight. Yet the species, especially when correctly labelled, is a rare find in the UK's horticultural establishments where more often, it will be found masquerading as *R. sutchuenense,* or with even less dignity, as the hybrid between the two.



R. praevernum

R. praevernum

R. asterochnoum

Hardiness:
H5.
Flowering Period:
February-April.
Distribution in the wild:
C, S & W Sichuan, China.
Growing in forests, valleys and amongst boulders in ravines,
at elevations of 2,200-3,600m.

Identification:
Small tree, 3 to 7m high, occasionally to 15m.
Leaves broadly oblanceolate through oblong-elliptic,
17 to 26cm long by 3 to 9cm wide,
apex obtuse or rounded, apiculate,
base cuneate and narrowly decurrent on the petiole;
lower surface indumentum composed of stellate hairs, whitish through fawn,
sparse and discontinuous, but more concentrated on the midrib and veins.
Petiole 15-30mm long, stout, flattened above,
the margins narrowly winged,
thinly floccose at first.
Inflorescence 11-20-flowered.
Rhachis 16-25mm long, with whitish stellate hairs.
Pedicel 30-60mm long, slender, glabrescent.
Calyx minute, the 4-5 lobes 1.5-2mm long, unequal.
Corolla 3 to 5cm long, 5-lobed,
campanulate through funnel-campanulate, the base narrow and oblique to the pedicel,
white through pale pink, often flushed rose,
with a dark crimson blotch at the base of the upper lobe,
the outer and inner surfaces glabrous and eglandular.
Stamens 18-20;
filaments pubescent at the base.
Ovary glabrous and eglandular.
Style glabrous and eglandular;
the stigma swollen, *c.* 5.5mm wide.
Capsule oblique, 15-30mm long.

Seed Collections:

C&H 7051	1995
EGM 314	1995
JN 12058	2012

A German botanist and plant collector, Hans Wolfgang Limpricht, was the first Westerner to encounter *R. asterochnoum,* doing so in April 1914. He was a member of the Walther Stötzner expedition to the mountains north of Kangding (Tatsienlu) and found the plants close to Wen-shan-hsien in the Min valley. The species was later described by Friedrich Diels when writing in the 1921-published Volume 17 of *Fedde's Repertorium Specierum Novarum Regni Vegetabilis.* The Stötzner expedition is of course better known through its faunal contributions to the world of science rather than its floral, the five-man team being the first Europeans to see a living Giant Panda, indeed buying an infant bear held captive by local villagers after the party's hunting dogs had failed to chase down an adult and bring it within rifle range. Needless to say, the youngster soon succumbed to rough handling.

Panda baiting aside, their newly discovered rhododendron proved to be most closely related to *R. calophytum,* especially in the leaf shape and size, the long pedicles, the flower truss, stamen number and discoid stigma. The corollas of *R. asterochnoum* however, have a narrower base and are not ventricose, while the leaf lower surface boasts a sparse covering of stellate hairs. This latter characteristic is of course a feature of the Subsection *Parishia* membership, but the red flower colour and distinct nectar pouches of *R. elliottii* and its sister taxa will swiftly eliminate any ambiguity.

Whether that scant presence of stellate hairs on the leaf undersides of *R. asterochnoum* is sufficient to warrant specific status is arguable. Certainly the Edinburgh Revision botanists made far more sweeping synonymic changes in their 1996 classification. Equally regrettable is the fact that the species was not one of the rhododendrons chosen for the cpDNA study of 2010, given its close alliance with *R. calophytum* and a similar wild distribution to the north and east of the main evergreen *Hymenanthes* concentration. Had that association with the Clade P *Pontica* species been categorically proven, rather than as herein, inferred, a more appropriate placement, at subspecies or varietal ranking under *R. calophytum,* might also have resulted.

Chinese botanists on the other hand, split the taxon into two, *Flora of China* describing var. *asterochnoum* as having a pedicel length of between 30-60mm and corollas that are 4 to 5cm in length, while in var. *brevipedicellatum* these features are smaller, 13-20mm and 3 to 3.5cm respectively. The latter variety apparently occupies the lower 200m of the altitudinal range but is otherwise without a niche distribution and in fact, the authors of the online text actually question the merit of the variety's status, noting that measurement differences between the type herbarium specimens were not as significant as first indicated.

The 1914 Limpricht collection was only of herbarium material and it was not until 1995 that seed was finally introduced into UK gardens under C&H 7051 and EGM 314, both lots collected on the same expedition to southern Sichuan by, respectively, Peter Cox and Peter Hutchison, and Ted Millais. Those infant plants have now reached flowering size, with reports of white flushed pale pink trusses with a darker crimson blotch at the base of the upper lobe decorating the bushes. Cultivation requirements are an exact match with those for *R. calophytum,* especially the need for wind shelter.

Section *Ponticum* Subsection *Catawbiensia:*


R. macrophyllum



Taxa:

R. catawbiense
R. macrophyllum

Taxonomic Revision:

Within the redefined Section *Ponticum,* the newly-created Subsection *Catawbiensia* reflects the Clade P species associations detailed in the 2010 Milne-Chamberlain study *A Phylogeny of Rhododendron Subgenus Hymenanthes Based On Chloroplast DNA Markers.*

Subsection Morphology:

Shrubs or small trees, spreading or rounded, to broadly upright,
1 to 4m high, rarely to 6 or 9m;
branchlets glabrous, or sparsely through moderately floccose, but becoming glabrescent,
usually eglandular, rarely short-stalked glandular.

Leaf bud scales deciduous.

Leaves evergreen, coriaceous, convex or flat,
oblong-oval through elliptic to oblong-elliptic or oblong-lanceolate,
6.5 to 23cm long by 2.6 to 7.5cm wide, broadest at or above the middle,
apex abruptly acute or obtuse, often broadly so,
base cuneate, rounded or obtuse,
retained for 2-3 years;
upper surface olive-green or dark green, shiny or matt, glabrous,
the midrib slightly grooved, glabrous, the veins slightly or deeply impressed,
the margins flat or slightly recurved;
lower surface pale green or pale whitish-green, glabrous,
but under magnification often punctulate with minute hairs,
the midrib prominent, glabrous or hairy, rarely short-stalked glandular,
the veins slightly raised.

Leaf anatomy comprises a 1- or 2-layered upper epidermis
(*R. catawbiense* has a single layer),
with the cells in the top layer (when present) equal in size to those in the layer below;
the cuticle is thin, or as thick as the top cells are deep;
water tissue is mostly absent;
the cells of the lower epidermis are usually not prolonged into papillae.
Sclereid cells are absent, or only sparsely present.

Petiole 10-40mm long, grooved above,
glabrous, or sparsely through moderately floccose, becoming glabrescent,
eglandular, rarely short-stalked glandular.

Inflorescence candelabroid, dense, 8-20-flowered;
the bud scales persistent or deciduous.

Rhachis 15-40mm long,
moderately through densely tomentose, or glabrous, eglandular.

Pedicels 18-60mm long, glabrous, or variably tomentose, rarely short-stalked glandular.

Calyx 5-lobed, these minute to small,

ovate or triangular in shape, rarely lanceolate, each 1mm long, rarely to 2 or 3mm,
their outer surface glabrous, eglandular,
their margins glabrous or floccose, eglandular, or sometimes short-stalked glandular.

Corolla 2.8 to 4.5cm long, funnel-campanulate through broadly campanulate,
lilac-purple, pink, rose, rosy-purple or white,
with reddish-brown, olive-green or yellowish flecks or spots;
the outer surface glabrous, eglandular,
the inner surface moderately through densely pubescent at the base of the tube,
5-lobed, these rounded or sometimes oblong-oval, usually emarginate,
sometimes with crinkled margins.

Stamens 10, unequal, shorter than the corolla;
filaments pubescent at or towards the base, often densely so.

Ovary conoid, ovoid or oblong, 2-5mm long, 5-celled,
densely rufous-tomentose, rarely glabrous, sometimes short-stalked glandular.

Style slender, glabrous, eglandular.

Capsule 14-25mm long, oblong, straight or slightly curved, ridged,
rufous-tomentose, eglandular, rarely densely short-stalked glandular.

Seeds elongate, narrowly winged, each end with appendages (sometimes large).



R. catawbiense



R. macrophyllum

R. catawbiense (Sandeman 161)

R. catawbiense (Sandeman 161)

R. catawbiense

Hardiness:
H6-7.
Flowering Period:
May-June.
Distribution in the wild:
North Carolina & Virginia, USA.
Growing on exposed mountain summits and slopes, at elevations of 1,200-2,000m.

Identification:
Shrub, rounded and spreading, 2 to 3m high, rarely to 6m;
branchlets sparsely through moderately tomentose, becoming glabrescent.
Leaf bud scales deciduous.
Leaves usually convex,
oval through obovate to broadly elliptic,
6.5 to 15cm long by 2.6 to 6.3cm wide;
lower surface pale whitish-green,
glabrous at maturity but with persistent hair bases,
viewed under magnification, punctulate with minute hairs,
the midrib glabrous or hairy.
Petiole 16-40mm long, sparsely through moderately floccose, becoming glabrescent.
Inflorescence dense, 8-20-flowered;
the bud scales deciduous.
Rhachis 16-40mm long, moderately through densely floccose, or glabrous.
Pedicel 20-50mm long, variably floccose,
occasionally short-stalked glandular.
Calyx lobes 1mm long, rarely to 2 or 3mm
their outer surface glabrous, their margins floccose or glabrous.
Corolla 3 to 4.5cm long, funnel-campanulate,
lilac-purple, sometimes rose, pink or white, faintly spotted olive-green,
the outer surface glabrous.
Stamens 10.
Ovary oblong or conoid, 3-5mm long,
densely rufous-tomentose, rarely glabrous, sometimes densely short-stalked glandular.
Capsule 14-23mm long,
rufous-tomentose, rarely densely short-stalked glandular.

Seed Collections:

Sandeman 161	1934
S&E 18	1981
W&H 177	1985

In addition to the three authenticated collections listed above,
between 1977 and 2019, members of the American Rhododendron Society
contributed around 90 batches of seed to their annual exchange programme.

Sole credit for the discovery of *R. catawbiense* has historically been assigned to John Fraser (1750-1811), although the exact date of the find is unclear. This is because he travelled to America on several occasions from the mid 1780s onwards. Equally, he was not alone on those expeditions, but no mention is made of his companions in most published botanical texts.

To give an example, Fraser first trekked the Allegheny Mountains during 1789, not alone, but accompanied by Françoise Michaux, the son of André, and it is to this date that the initial encounter with a population of *R. catawbiense* has been assigned. However, the biologist and author Robert Hogg, in his text *The Life of John Fraser* - this published within Volume 8 of *The Cottage Gardener,* 1851-2 - makes no mention of him finding the species at this time, even though the two plant hunters did visit the top of Roan Mountain (as reported by Frederick Brendel in his 1879-published article *Historical Sketch of the Science of Botany in North America from 1635 to 1840,* this published in Volume 13 of *The American Naturalist*). Hogg does write that in 1799, for the sixth time, Fraser crossed the Atlantic - along with his own son, John - intent on exploring territory in the Northern and Southern States and that it was on this occasion 'on the summit of the Great Roan, or Bald Mountain, that he discovered the *Rhododendron Catawbiense*'. And it was John Fraser Jr., then 'at an advanced age', who spoke of that day to Hogg:

> 'I shall never forget so long as I live the day we discovered that plant. We had been for a long time travelling among the mountains, and one morning we were ascending to the summit of the Great Roan, in the midst of a fog so dense that we could not see further than a yard before us. As we reached the top the fog began to clear away, and the sun to shine out brightly. The first object that attracted our eye, growing among the long grass, was a large quantity of *Rhododendron Catawbiense* in full bloom. There was no other plant there but itself and the grass, and the scene was beautiful. The size of the plants varied from seedlings to about two feet in height, the habit being evidently diminutive, from the high altitude at which they grew. We supplied ourselves with living plants, which were transmitted to England, all of which grew, and were sold for five guineas each'.
> *The Life of John Fraser,* by Robert Hogg.
> *The Cottage Gardener,* Volume 8, 1851-2, pp. 250-252.

If those recounted memories are accurate, the collected specimens spent the next decade 'acclimatising' at the Charleston nursery run by the Fraser family in South Carolina before being shipped to England in 1809. Other sources - *Curtis's Botanical Magazine,* Tab 1671, Volume 40, published in 1814 - indicate that the consignment of seed and specimens was in fact gathered from a different population of plants the Frasers had found during 1808, these growing close to the source of the Catawba River in the Blue Ridge Mountains.

To confuse matters even more, André Michaux recorded details of *R. catawbiense* in his notes as early as 1796 and was the first botanist to formerly describe the plant in Volume 1 of his *Flora Boreali-Americana,* published in March 1803. It is also known that the Frenchman visited Roan Mountain in 1794 and 1795, as the historical marker on State Highway 226 in Bakersville, North Carolina, details.

Basically then, be it John Fraser, his son, John Jr., André Michaux, or his son, Françoise, credit for who actually found *R. catawbiense* and when, is completely down to conjecture.

Officially, the species flowered for the first time in UK cultivation during June 1813 at both the Hammersmith nursery of Messrs Lee & Kennedy, and at the Stockwell Common emporium of Messrs Malcolm & Sweet. Unofficially, according to the online edition of *Bean's*

Trees & Shrubs, Michael Waterer was hybridising the species with *R. maximum* at his Knap Hill nursery in 1811, which given the convolutions of the narrative set out above, should surprise no one.

Within Section *Ponticum, R. catawbiense* most closely resembles *R. brachycarpum* ssp. *fauriei,* especially when out of flower. Three features key the two apart: the latter has distinctly pointed leaf buds, plus petioles and upper leaf midribs that are coloured pale yellow. The foliage of *R. fauriei* is also smaller - by around a third - while that of *R. brachycarpum* has a thin, compacted indumentum on the abaxial surface. Any hesitancy in distinguishing the species will be dispelled once the flowers open, for the corollas of the two *R. brachycarpum* subspecies do not exceed 3cm in length and are usually white, whereas those of *R. catawbiense* are between 3 and 4.5cm long and most often - at least in the wild - lilac-purple in tone.

To a lesser extent, *R. catawbiense* also mirrors *R. macrophyllum, R. maximum* and *R. ponticum*.

Superficially a more rounded and domed habit can help distinguish mature specimens of *R. catawbiense* from this troika of taxa, but specific characteristics will be needed to confirm the keying: hairy pedicels as opposed to glabrous flower stalks in the case of *R. macrophyllum,* with the usually convex-shaped foliage of *R. catawbiense* providing an added endorsement, though as the images on pages 428 and 429 make clear, this is not definitive in cultivation; an abundance of short-stalked glandular hairs on the constituent elements of *R. maximum* are decisive, as *R. catawbiense* only rarely displays such on its pedicel, ovary and capsule, and they are never found on its branchlets, pedicels or calyx lobes; and the leaf silhouette with regard to *R. ponticum,* whose blades in the main are long, flat and lanceolate through oblanceolate in shape, as opposed to oval through elliptic and convex. *R. ponticum* also has a glabrous ovary, while that of *R. catawbiense* is densely rufous-tomentose.

Genetically however, the 2010 cpDNA analysis has shown that *R. catawbiense* is most closely related to *R. macrophyllum* even though their populations occur on opposite sides of the North American landmass and courtesy of the north-to-south backbone of the Rocky Mountains, do not currently overlap. Equally mystifying, their shared endemicity across the Southern Appalachian Mountains notwithstanding, the relationship between *R. catawbiense* and *R. maximum* is far more distant.

John Guille Millais includes 'an account of a trip in June 1892 to the Roan Mountain in North Carolina' taken by Professor Charles Sprague Sargent of the Arnold Arboretum within the *R. catawbiense* entry penned for Volume 1 of his *Rhododendrons and the Various Hybrids* (Longmans, Green and Co., 1917):

> 'Along the borders of the forest, sometimes scattered individually and often in broad masses, covering hundreds of acres, the Rhododendron grows, mixed with bushy plants of the Mountain Alder. No one can judge of the extent of the Rhododendron fields on this mountain, for the extent is so vast that the eye cannot estimate areas; certainly there are spots on the summit from which thousands of acres covered with Rhododendrons and Alders can be seen at once. The thickets are impassable except where bears and cattle have forced tortuous trails among the bushes which ten days ago were covered with flowers. These are nearly all of one colour, deep rosy-pink, although an occasional plant with darker flowers can be found. The soil where these plants grow is rich black vegetable mould, varying from 18 inches to 2 feet in depth. Although saturated with moisture, as small springs are common, the surface soil is perfectly drained, being underlain by coarse gravel mixed with large stones. Abundant atmospheric moisture, for rarely a day passes without clouds settling over the summits of the Roan, increases the vigour of the plants. On the open slopes they rarely grow more than 4 or 5 feet high, but when protected by the Balsams (Abies Fraseri), specimens 10 to 12 feet high are not uncommon. These natural conditions seem to indicate that Rhododendrons of the catawbiense blood require rich, moist, well-drained soil, constant atmospheric moisture and protection from high winds, and that, under such conditions, they can support excessive winter cold, as the temperature on the summit of the Roan has been known to fall in winter to 30º below zero, while ice probably forms during every month of the year except July and August'.

In 1892, the 'zero' Sprague was referring to was located on the Fahrenheit scale, where water freezes at 32º, so those plants at the top of Roan Mountain were surviving winter lows of -34ºC as then measured.

Primarily distributed throughout North Carolina and Virginia, the endemic range of *R. catawbiense* extends into West Virginia, Tennessee and northern Georgia, with isolated colonies found in eastern Kentucky and northern Alabama. There is also a lowland form that grows in the southern Piedmont and the upper coastal plain of North Carolina, with larger leaves and flowers than the type, which are now designated as Insularis Group. These plants are much more heat resistant than the type species and prefer a shaded environment in deciduous woodland rather than the open, fully exposed and much colder sites favoured by their mountain dwelling cohorts. They inhabit areas where the elevation is between 50 and 320m, rather than 1,200 through 2,000m, prefer north-facing bluffs along rivers or streams and benefit from many more frost-free days and far less severe winter temperatures, the lows dropping down to -12°C rather than -40°C, so garnering a H5 rating in UK gardens.

Insularis Group plants were first described as *R. catawbiense* forma. *insularis* in an article for the *Journal of the Elisha Mitchell Scientific Society,* written by William Chambers Coker and published during October 1919. Today, their wild distribution is restricted to a dozen known sites, three of which are owned, managed and protected by the North Carolina Botanical Garden. Full DNA sequencing may well prompt a re-examination of their botanical status.

The high elevation form of *R. catawbiense* is usually grown without problem in British gardens, succeeding wherever the soil is suitable for rhododendrons, including exposed sites that would be a challenge for most other species. It has been used extensively by hybridisers on both sides of the Atlantic, first to create a host of 'ironclad' crosses and then later, individuals with a degree more panache. Rare, white-flowered forms, discovered in the wild and propagated, have been 'selfed' - sometimes over and over, again and again - to produce 'cultivated selections' such as R. Catalgla or R. Powell Glass, second and third generation crosses respectively, which are herein treated as hybrids. Insularis Group plants are better suited to the woodland gardens of southern and southeast England, which better mirror their natural environs, but unlike the specific species, they will prove to be a rare find in UK cultivation.



R. catawbiense



R. catawbiense



R. catawbiense (Sandeman 161)

R. catawbiense (Sandeman 161)

R. macrophyllum

Hardiness:
H5-6.
Flowering Period:
May-June.
Distribution in the wild:
British Columbia, Canada; California, Oregon & Washington, USA.
Growing in and at the margins of woodland, from sea level to elevations of 1,200m.

Identification:
Shrub or small tree, upright or broadly rounded, 1.8 to 9m high;
branchlets quickly glabrous, rarely short-stalked glandular.
Leaf bud scales deciduous.
Leaves flat, broadly elliptic through oblong-obovate to oblong-lanceolate,
6.5 to 23cm long by 3 to 7.5cm wide;
lower surface pale green, glabrous at maturity,
viewed under magnification, without punctulate hairs,
the midrib glabrous, rarely hairy, rarely short-stalked glandular.
Petiole 10-30mm long, quickly glabrous, rarely hairy, rarely short-stalked glandular.
Inflorescence dense, 9-20-flowered;
the bud scales persistent or deciduous.
Rhachis 15-30mm long, glabrous or densely puberulous.
Pedicel 18-60mm long, glabrous or puberulous,
rarely short-stalked glandular;
barely extending in fruit.
Calyx lobes 1mm long,
their outer surface glabrous,
their margins glabrous, hairy, or short-stalked glandular.
Corolla 2.8 to 4cm long, broadly campanulate,
pink through rosy-purple, rarely white,
spotted or flecked yellowish or reddish-brown,
the outer surface glabrous, the lobe margins often crinkled.
Stamens 10.
Ovary conoid or ovoid, 2-5mm long,
moderately through densely rufous-pilose.
Capsule 18-25mm long, moderately through densely rufous-pilose.

Seed Collections:

Leamy 90	1978
P&C 72	1991

In addition to the two authenticated collections listed above,
between 1977 and 2020, members of the American Rhododendron Society
contributed close to 150 batches of seed to their annual exchange programme.

R. macrophyllum was found by Archibald Menzies in early May 1792 at Discovery Bay, Washington State, on the northwest Pacific coast of America. The plants were not then in flower, but by June the blooms were out enabling Menzies to write in his journal "we also met here pretty frequent in the wood with that beautiful native of the Levant the purple rhododendron", thereby confusing his new-to-science species with *R. ponticum*. On the return journey to England in 1794, a South Atlantic storm washed overboard all the live plants he had collected, but Menzies was at least able to present the dried herbarium material he had collected to his sponsor, Sir Joseph Banks, when the ship finally docked. David Don would later use those sheets to describe the shrub, his scintillatingly original Latin epithet - 'long-leaved rhododendron' - and botanic specification appearing in Volume 3 of brother George's 1834-published *A General History of the Dichlamydeous Plants*.

William Lobb was the first plant hunter to introduce the species into UK cultivation, sending seed from California to the Veitch Nursery in 1850, and it took just five years for those seedlings to flower, one opening four large, rose-coloured trusses in 1855, when little more than 0.3m high.

For many years, botanists had believed that *R. macrophyllum* was most closely related to *R. maximum,* which is endemic to the east coast of North America and widely distributed from Georgia up to Nova Scotia in Canada. Recent genetic evidence however, has shown the true alliance to be with *R. catawbiense,* to which it bears a strong resemblance. Cleaving the two apart is basically reliant on the presence of hairs on the pedicels and the profile of the leaves: flat blades and glabrous flower stalks will proclaim *R. macrophyllum* is to hand; densely floccose stalks and leaves with a convex cross section, *R. catawbiense*. Distinctions such as an upright growth habit or darker flower colour are much less precise tools, but can assist an identification.

R. maximum will be seen to have a unistrate indumentum on the lower leaf surface and although this is decidedly thin and film-like, plus it often becomes patchy with age, enough remains in place to identify specimens from the equally flat but completely glabrous foliage of *R. macrophyllum*. Confirmation is provided by the ovary: densely short-stalked glandular for *R. maximum;* eglandular for *R. macrophyllum*.

To key out *R. ponticum* and so avoid potentially embarrassing journal entries that future generations might take a delicious delight in mocking, an inspection of the ovary is also required: glabrous, and your specimen will indeed be from Asia Minor; densely covered in long, soft, rusty-coloured hairs, and it will have originated from the land of the Beach Boys and Microsoft. Differing leaf characteristics will also help separate the pair, with the *R. macrophyllum* blades basically oblong-obovate and matt, while on *R. ponticum* these features will be lanceolate and shiny.

In British gardens, *R. macrophyllum* has developed a reputation for being difficult, though some establishments grow it with ease. Lowland forms are best along the west coast and in the south, clones from higher elevations succeeding along the east coast at milder sites such as Edinburgh Botanic, but not elsewhere. When happy, plants will flower freely and prove quite vigorous, the habit upright or rounded, but rarely balanced, with mature height in cultivation around 3 or 4m, rather than the 9m-high small trees found in the wild. Bloom time is late in the season, May into June, with the darker pink or rose-purple clones the most showy, but prospective buyers should be aware that some of the paler forms are decidedly wishy-washy.



R. macrophyllum (Leamy 90)



R. macrophyllum (P&C 72)



R. macrophyllum

Section *Ponticum* Subsection *Maxima:*



R. ponticum 'Cheiranthifolium'



Taxa:

R. maximum
R. ponticum
R. ungernii

Taxonomic Revision:

Within the redefined Section *Ponticum,* the newly-created Subsection *Maxima* reflects the Clade P species associations detailed in the 2010 Milne-Chamberlain study *A Phylogeny of Rhododendron Subgenus Hymenanthes Based On Chloroplast DNA Markers.*

Subsection Morphology:

Shrubs or small trees, compact, rounded and spreading, to lax or broadly upright,
1 to 7m high, rarely to 12m;
branchlets glabrous, floccose, becoming glabrescent, or tomentose,
eglandular or moderately through densely short-stalked glandular.

Leaf bud scales deciduous.

Leaves evergreen, coriaceous, flat, more rarely convex,
ovate-lanceolate, lanceolate through oblanceolate,
to oblong-obovate through broadly elliptic,
6 to 30cm long by 2.1 to 9cm wide, broadest at or above the middle,
apex acute, obtuse or rounded, sometimes apiculate and/or mucronate,
base tapered, cuneate, rounded or obtuse,
retained for 2-6 years;
upper surface dark green, shiny or matt, sometimes slightly rugulose,
glabrous or with the vestiges of hairs,
the midrib grooved, glabrous, the veins slightly or deeply impressed,
the margins flat or slightly recurved;
lower surface pale green, glabrous, eglandular,
under magnification punctulate with minute hairs or not,
or thinly tomentose, the unistrate indumentum continuous at first,
embedded in a surface film, becoming patchy,
but persistent at the leaf base close to the midrib,
or densely tomentose, the bistrate indumentum continuous, thick, woolly,
whitish or fawn,
the upper layer composed of ramiform hairs,
the lower layer with small to large rosulate hairs,
and sparsely long-stalked glandular,
the midrib prominent, glabrous or hairy, eglandular or short-stalked glandular,
the veins raised, sometimes concealed.

Leaf anatomy comprises a 2-layered upper epidermis
with the cells in the top layer equal in size to those in the layer below
(for *R. ponticum* the lower layer cells are larger);
the cuticle is thin, or as thick as the top cells are deep;
water tissue is mostly absent;
the cells of the lower epidermis are usually not prolonged into papillae.
Sclereid cells are absent, or only sparsely present.

Petiole 10-40mm long, usually grooved above,
glabrous, floccose or tomentose, eglandular or short-stalked glandular.

Inflorescence candelabroid, dense, 6-30-flowered;
the bud scales persistent or deciduous.

Rhachis 10-60mm long,
glabrous or floccose, eglandular or short-stalked glandular,
rarely long-stalked glandular.

Pedicels 20-50mm long,
glabrous or tomentose, eglandular or short-stalked glandular,
rarely long-stalked glandular,
sometimes extending in fruit to 60mm long.

Calyx 5-lobed, minute to small,
the lobes ovate, oval, rounded, triangular, or lanceolate,
each 1-9mm long, equal or unequal,
their outer surface and margins glabrous or hairy, eglandular or short-stalked glandular.

Corolla 2.3 to 5cm long, campanulate through funnel-campanulate, sometimes widely so,
white through pinkish-purple to rose-purple, mauve or purple,
with or rarely without green, yellowish-green or brownish flecks or spots,
the outer surface glabrous or pubescent towards the tube base,
eglandular or short-stalked glandular towards the tube base,
rarely long-stalked glandular,
the inner surface pubescent at the base of the tube, rarely glabrous,
5-lobed, oblong-oval or rounded, emarginate or not.

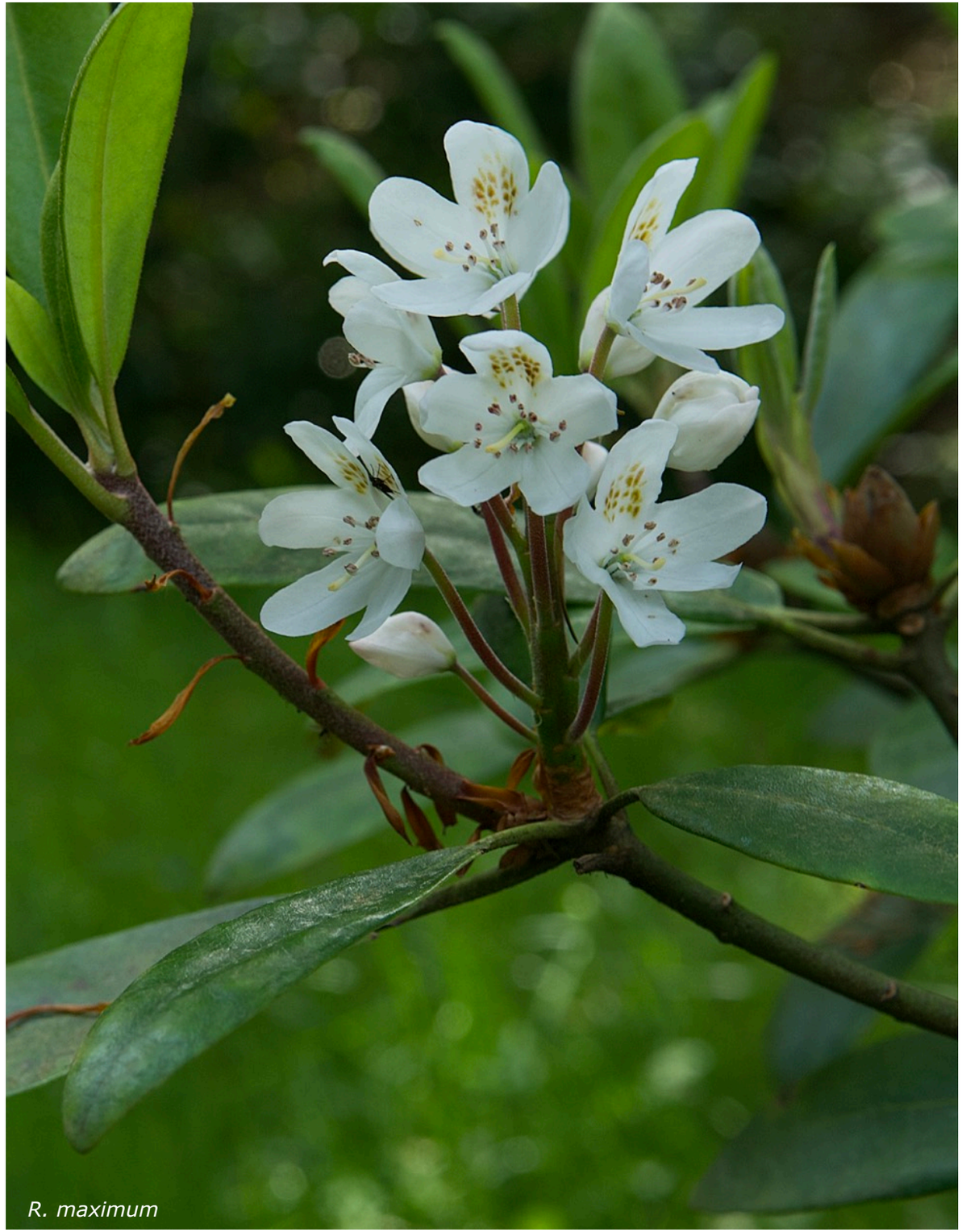
Stamens 10, rarely 8-12, unequal, shorter than the corolla;
filaments pubescent at or towards the base, often densely so.

Ovary conoid, ovoid or oblong, 3-6mm long, 5-celled,
glabrous or tomentose, eglandular or short-stalked glandular,
rarely long-stalked glandular.

Style slender, glabrous, eglandular.

Capsule 8-28mm long, oblong through oblong-oval, straight or slightly curved, ridged,
glabrous, eglandular or short-stalked glandular,
rarely long-stalked glandular.

Seeds elongate, narrowly winged, each end with appendages (sometimes large).



R. maximum

R. maximum

R. maximum

Hardiness:
H6-7.
Flowering Period:
July.
Distribution in the wild:
New Brunswick, Nova Scotia, Ontario & Quebec, Canada;
Maine, then south along the Appalachian Mountains to N Georgia, USA.
Growing in conifer or deciduous woodland, from near sea level to elevations of 1,700m.

Identification:
Shrub or small tree, compact, rounded, spreading or broadly upright,
1 to 3.7m high, rarely to 12m;
branchlets floccose, but quickly becoming glabrescent,
moderately through densely short-stalked glandular.
Leaf bud scales deciduous.
Leaves flat, ovate-lanceolate through oblanceolate to elliptic,
9 to 30cm long by 2.5 to 7cm wide,
retained for between 3 and 6 years;
lower surface thinly tomentose,
the unistrate indumentum continuous at first, embedded in a surface film,
becoming patchy, but persistent at the leaf base close to the midrib,
the rosulate hairs small or large, whitish, fawn or brown,
under magnification punctulate with minute hairs,
the midrib glabrous or tomentose, short-stalked glandular or not,
the veins concealed or glabrous.
Petiole 16-40mm long,
sparsely floccose, short-stalked glandular or not.
Inflorescence dense, 12-30-flowered;
the bud scales persistent or deciduous.
Rhachis 10-56mm long,
floccose or glabrous, short-stalked glandular.
Pedicel 20-30mm long,
floccose or glabrous, variably short-stalked glandular;
extending in fruit to between 50 and 60mm long.
Calyx lobes 3-7mm long,
their outer surface and margins hairy or glabrous, variably short-stalked glandular.
Corolla 2.3 to 3.1cm long, campanulate,
white through pinkish-purple to rose-purple,
spotted or flecked yellowish-green on the posterior lobe,
the outer surface glabrous or pubescent towards the tube base,
short-stalked glandular towards the tube base or not.
Stamens 10, rarely 8-12.
Ovary conoid or ovoid, 3-5mm long,
glabrous or pilose, densely short-stalked glandular.
Capsule 10-20mm long, glabrous,
moderately through densely short-stalked glandular.

Seed Collections:

W&H 96	1985
H&M 1318	1990

In addition to the two authenticated collections listed above,
between 1976 and 2020, members of the American Rhododendron Society
contributed close to 130 batches of seed to their annual exchange programme.


R. maximum

With a wild distribution stretching from the eastern provinces of Canada, down across the US state of New England and along the spine of the Appalachian Mountains to northern Georgia, *R. maximum* has the largest natural endemicity of any rhododendron found in the New World. The species grows on wooded hillsides, often in dense shade, as well as in damp ravines and other cool but moist locales, its population the dominant understory plant from the 300m-contour up to around 1700m, and in places establishing down to near sea level. The shrubs moreover, are fully adapted to thrive in their often extremely harsh environment, being exceptionally hardy and holding on to their leaves for up to six years. In freezing temperatures, the blades droop and roll-up lengthwise like many other rhododendron species, the tube furling more tightly as the mercury plummets until only the outside of a very slim hollow cylinder is exposed to the elements. That same robustness, employed over the southern half of the range in areas where the climatic conditions are far less extreme, allows the species to form vast impenetrable thickets.

In flower, the blooms of *R. maximum* are restrained, dainty almost, the individual corollas quite small, and held in an upright candelabroid truss. Yet when thirty or more are grouped together, even the gloom under a near-closed canopy is enlivened.

Rhodo-savvy botanists long-believed that a Section *Ponticum* species native to the west coast of North America, *R. macrophyllum,* was the closest relative to the east coast-dwelling *R. maximum,* but scientific study has now proved this not to be the case. A phylogenetic analysis of DNA sequences in the genomes of the entire section membership has allowed the correct interrelationships to be determined and that for *R. maximum,* is with *R. ponticum,* regardless of their current distributions on continents separated by the Atlantic Ocean. The explanation, according to Richard Milne, the botanist who carried out the study, was that at some point in the past - millions of years ago on a geological timeline - when the two landmasses were one, the common ancestor of these two rhododendrons was widespread. Continental drift then split the population apart and reaction to subsequent environmental change, different at each locale, led to the tweaked feature set each has today. Yet the underlying core remains the same.

Tertiary Relic Distribution is the official designation for this plate tectonic concept and Doctor Milne's more recently published genetic study examining the chloroplast DNA of these plants, confirmed those relationships.

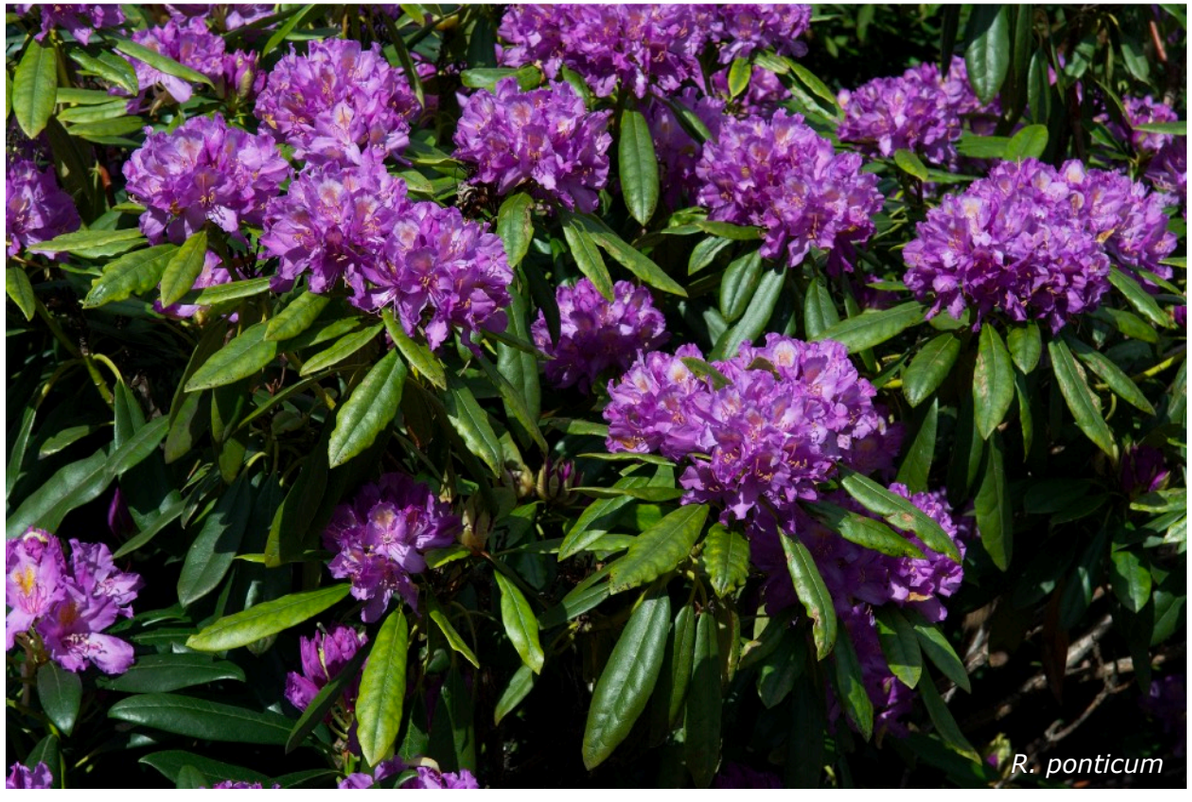
The modified morphology for *R. maximum* includes the addition of a thin but patchy indumentum on the abaxial leaf surface, and sticky glands on many of its facets, most notably the ovary and capsule. Together, they are traits that unequivocally key the species from *R. catawbiense, R. macrophyllum* and *R. ponticum,* as well as all the other members of the section.

R. maximum was introduced into British gardens during 1736, the Pennsylvania-based American botanist, horticulturalist and explorer John Bartram sending plants to Peter Collinson, a cloth merchant who was also an avid gardener and financier of Bartram's expeditions, marketing the seeds and live specimens his partner collected. The species was first described by Carl Linnaeus in Volume 1 of his *Species Plantarum,* this published during May 1753. However, despite its longevity in cultivation and extensive use in hybridisation, *R. maximum* is now a rare find in the UK's rhododendron collections, for even though the flower buds open late in the season, the plant's floral attributes cannot compete with the flamboyant offerings subsequently returned from South East Asia.


R. maximum


R. maximum





R. ponticum

Hardiness:
H5-6.
Flowering Period:
June-July.
Distribution in the wild:
Armenia; Georgia; N Turkey; Lebanon; Bulgaria; Spain; Gibraltar; Portugal.
Growing in deciduous or confer forests, in rhododendron thickets, or on open sites in scrub, from sea level to elevations of 1,800m.

Identification:
Shrub or small tree, broadly upright or lax, compact and dense to leggy,
2 to 5m high, rarely to 8m;
branchlets glabrous, rarely short-stalked glandular.
Leaf bud scales deciduous.
Leaves usually flat,
lanceolate through oblanceolate to oblong-obovate or broadly elliptic,
6 to 21cm long by 2.1 to 7.5cm wide,
retained for between 2 and 4 years;
lower surface pale green, glabrous at maturity,
under magnification sometimes punctulate with minute hairs.
Petiole 10-20mm long, usually glabrous,
sometimes sparsely floccose-tomentose and sparsely short-stalked glandular.
Inflorescence dense, 6-20-flowered;
the bud scales persistent or deciduous.
Rhachis 10-50mm long, glabrous,
sometimes moderately through densely tomentose,
the hairs velutinous through lanate.
Pedicel 20-45mm long, glabrous, puberulous or tomentose,
more rarely short-stalked glandular.
Calyx lobes 1-2mm long,
their outer surface and margins glabrous, rarely short-stalked glandular.
Corolla 3 to 5cm long, campanulate,
pale lilac-pink through pinkish-purple, mauve or purple,
spotted, flecked or blotched greenish-yellow or brownish,
the outer surface glabrous.
Stamens 10.
Ovary conoid or oblong, 3-6mm long,
glabrous, rarely tomentose, rarely short-stalked glandular.
Capsule 12-28mm long, glabrous.

Seed Collections:

ACH 205	1962
TURX 120	1990

R. ponticum was first described by the most famous botanist of the 18th Century, Carl von Linné - Carl Linnaeus pre his 1761-ennoblement - the entry appearing in the 1762-published second edition of *Species Plantarum*. Subsequently, a disjunct endemicity the cause, several other specific ranked taxa were described, although these have all now been made synonymous under the Linnaeus epithet.

One is worth highlighting, however: *R. baeticum*.

This epithet referred to the European forms of *R. ponticum* that are found on the Iberian Peninsula - Spain, Portugal and Gibraltar - which have a velutinous or lanate covering of hairs on the rhachis. Unfortunately for Pierre Edmond Boissier and George François Reuter, who penned the description and conceived the moniker, such emergences are also found on plants native to northeastern Turkey and the Caucasus Mountains, albeit a minority of such, but even so, their presence renders the 1856 determination null and void nonetheless (but see below).

Keying *R. ponticum* from the rest of the section's membership basically hangs on the majority of those plants being glabrous, with no hairs found on the shoots, petioles, leaves, pedicels, calyx lobes or ovary. The shiny rather than matt leaves, with no abaxial indumentum whatsoever, distinguish specimens of *R. ponticum* from their closest ally, *R. maximum,* which always retains some indumentum at the leaf base close to the midrib, even if it is shed from the rest of the leaf. This eastern North American species is also far more glandular, especially on the ovary, where a dense concentration of sticky hairs will be found, this characteristic clear and decisive despite some clones of *R. ponticum* attempting to blur the distinction with a light tacky freckling of their own. *R. catawbiense* has elliptic through oval-shaped leaves, wider proportionally in comparison, which are also convex in profile, while *R. macrophyllum,* from the west coast of North America, has a densely hairy ovary and matt leaves.

A number of sports have arisen from the species in cultivation, 'Cheiranthifolium' and 'Variegatum' being the two most often found in gardens today, though the freak list was longer in Victorian times. 'Cheiranthifolium' has small and narrow, twisted leaves with wavy margins and small corollas, while 'Variegatum' boasts smaller-than-type foliage with a creamy-white band around the margins. Natural hybrids also occur on the ground wherever the distribution of *R. ponticum* overlaps that of another elepidote species, *R. x sochadzeae,* a cross with *R. caucasicum,* being the most notable.

Following its introduction into British gardens from Gibraltar in 1763, *R. ponticum* was used extensively in hybridisation to pass on its large trusses and range of colours. The species also became the understock of choice when propagating those offspring and later, many other hybrids and species, because at that time, grafting was often the best and quickest option to produce saleable plants. Nurserymen and amateur growers en masse have continued to use the species in this role until quite recently, even when the drawbacks of doing so became known and alternatives were found, for *R. ponticum* stocks were easy to produce, perfect to work with, and gave great results.

Except they inevitably swamped the scion above.

Sending out new shoots from the rootball or the wood below the union.

And even though these were fairly obvious, they still had to be spotted and removed by those who had purchased the plants. Members of the general public. Who might be able to differentiate between a rose and a rhododendron, but not necessarily between similar looking branches and leaves on the same plant.

Plus, further suckers would manifest if vigilance was not maintained.

Putting aside this prodigious flourish of shoots from the understock, *R. ponticum* was also planted in its own right, often by the gross, as cover for game birds on the estates of the landed gentry, either as boundary hedges, as windbreaks, or for screening. That it could spread across vast swathes of the countryside by airborne seed or a self layered branch was dismissed for years without consideration and even highly regarded authors and the Royal Horticultural Society praised its virtues:

For instance, John Guille Millais, in Volume 1 of his *Rhododendrons and the Various Hybrids,* published in 1917:

> "Great masses of *R. ponticum* when in full flower are certainly very beautiful, and are seen at their best when planted in full sun on cliffs or hill slopes, rising ground in a park, or on the edges of lakes. I always think they look best in places like the Surrey hills above Albery, where one can see hundreds of plants hanging on the hillsides in great lilac-purple masses, intensified by their dark green background".

Or the RHS *Rhododendron Handbook* of 1967:

> "naturalized in so many of our woods, it can be a splendid sight when in full flower".

W. J. Bean, writing in *Trees and Shrubs Hardy in the British Isles:*

> "it is seen at its best in the open spots fully exposed to the sun, where it can take its natural form and spread in its own way, and from its habit of taking root at the branches there is scarcely a limit to its extension".

Or H. H. Davidian, in Volume 3 of *The Rhododendron Species,* 1992:

> "an attractive sight when covered with masses of flowers in woods and on hillsides".

And Peter Cox, writing in 1990, the quote taken from the revised edition of *The Larger Rhododendron Species:*

> "huge areas in full flower make a vivid mass of colour and are a charming sight scattered through the wooded hillsides".

But others were more cautious.

Frederick Street gave this tangential warning in his 1965 tome *Rhododendrons:*

> "The foliage of *Rhododendron ponticum* is lush and dark green, the growth is strong and vigorous - so strong and vigorous that an old stump of a rhododendron was used as a chopping block for two years and then thrown out into the garden, where it started to grow again".

Tourist agencies even featured photographs of these plant colonies in full flower on their promotional material and postcards, with the mile upon mile of shrubs in Scotland's Great Glen, or on the lower slopes of Snowdonia in North Wales, loudly proclaimed to be the coach trip highlight of your holiday.

Until conservationist groups placed the species on their list of alien invaders.

Alongside Japanese knotweed.

And then it was found to harbour both *Phytophthora ramorum* and *Phytophthora kernoviae*.

Which was when *R. ponticum* became:

> "the most famous or infamous rhododendron species in the British Isles where it has naturalised itself in many areas and become a serious pest".

To quote Peter Cox, clearly post his road to Damascus transformation, writing with his son Kenneth, in their *Encyclopedia of Rhododendron Species,* 1997.

R. ponticum

R. ponticum

At which point:

A flood of scientific literature berating the invasive appeared almost overnight.

The tabloid press went into hyperdrive.

And the farming, forestry and horticultural industries found out just how resilient *R. ponticum* was to chemical attack and systematic beheading.

And everyone discovered that it would be the work of Heracles to eradicate the species from the face of the British Isles.

For in imitation of the dreaded Hydra, but on a whole new level, each plant cut to the ground would sprout not two, but a host of new shoots from the decapitated stems, as well as direct from the rootball.

So either the entire root system had to be dug up and removed, or the stumps treated with herbicide immediately they were guillotined and then monitored for regrowth, with those shoots, or any small 1m-high seedlings, sprayed with glyphosate three years after being hacked.

Alternatively, a lingering death could be organised with a cordless drill and a forestry herbicidal spot gun, the above-ground remains removed some three years later after annual checks and repeat applications where necessary, although a plant's demise was only guaranteed if each stem 3cm or larger was treated below the lowest fork and as close to the roots as it was possible to get. A more labour intensive technique would be hard to fathom given the acre upon acre of plants that had to be removed at sites from Land's End to John o' Groats, but there you go.

Just one other rhododendron species, of the hundreds introduced into the UK, has spread beyond the confines of the garden boundary wall: *R. luteum,* a second Pontic import with out-of-proportion suckering and seeding abilities, though its naturalisation has taken place with far less alacrity than that of *R. ponticum,* the spread much more confined, and consequently, adverse headlines near absent.

Very few published sources will highlight the fact that both plants were likely to have been part of the natural flora of the British Isles before the glaciers of the last Ice Age wiped the land clean; indeed, fossilised specimens of seed, fully developed capsules and bracts of *R. ponticum* have been found at sites across Ireland that can be dated to the Hoxnian interglacial period, a 50,000-year-long respite from the cold that began 424,000 years ago. So, given its native status pre Nature's big freeze, recolonisation following reintroduction should not have come as a total surprise.

Within the slew of reports on *R. ponticum,* the most pertinent is that written by Richard Milne and Richard Abbot, and published in 2000: *Origin and evolution of invasive naturalised material of Rhododendron ponticum in the British Isles* (Volume 9 of *Molecular Ecology,* pages 541-556). The two botanists secured samples from around 260 individual populations across the whole of the UK, of which 89% carried chloroplast DNA haplotypes associated with the plant populations native to Spain, and just 10% with those found in Portugal. Only a minority of the accessions tested - 27 samples - displayed genetic markers that indicated input from *R. catawbiense,* these predominantly from the coldest regions of eastern Scotland, with the foreign DNA totalling less than 5% of their overall genetic makeup. A handful of specimens showed a similar association with *R. maximum* and one other, unidentified, rhododendron.

James Cullen, of Edinburgh Revision fame, references the Milne-Abbott report in his 2011-published text *Naturalised rhododendrons widespread in Great Britain and Ireland* (*Hanburyana,* Volume 5), but regrettably sticks with morphological traits to wrongly conclude that the populations are a mixed-blood-melange that he describes as *R. x superponticum.* Of course, the media machine went bonkers at that and even the sluggish bureaucracy of the European Union began to grind out new legislation, the proposed wording set to ban not just the invasive species, but any hybrids that had been bred from it. That *R. ponticum* was then a native plant of three member states - Spain, Portugal and the British Overseas Territory of Gibraltar (along with a fourth, had Turkey been granted membership) - seems to have slipped the Commission's collective conscious, but not that of a rhododendron doyen with impeccable credentials: Ken Cox.

That the drawn-out furore and poorly informed reporting has got his blood boiling is clear from an article published in the Centenary Edition of the RCMG's yearbook *Rhododendrons, Camellias & Magnolias 2016*. Extensively researched, erroneous claims that *R. ponticum* is allelopathic are savaged in the text, as is the late Dr Cullen, who:

> "makes the mistake of observing that some hybrid characteristics are apparent in some populations and then assumes that all *R. ponticum* naturalised in the UK should therefore be regarded as hybrids. There is simply no scientific evidence for this. It is at best a hunch. For which he provides no evidence".

Moreover:

> "the Cullen paper is responsible for a great deal of misinformation (you'll find lots of articles which refer to it on the internet) and it was featured by James Wong on BBC television in *The Great British Garden Revival* in January 2015."

From personal observation he notes that Turkish-sourced plants are not invasive in the UK, nor the Iberian forms in their native distribution, the latter only spreading uncontrollably when moved to a more conducive environment (such as that of the UK). To distinguish between the two, Ken proposes that the taxon again be divided, with *R. ponticum* ssp. *ponticum* covering the eastern-domiciled population, which generally have a more upright, less dense habit and broader leaves, and an exhumed ssp. *baeticum* for their Iberian counterparts, including those plants naturalised in the UK, all of which bear leaves with a pointed apex. *R. x superponticum,* with 'no validity or scientific basis', should be made synonymous under ssp. *baeticum,* or better still, abandoned entirely.

In his conclusion, Ken describes the species as:

> 'an out of control, noxious weed, which is causing significant environmental damage in the UK, Ireland and parts of France'.

And that:

> 'the sale and planting of it should be outlawed in all areas where it poses an environmental threat, though it must be concluded that the horse bolted from this particular stable a long time ago'.

David Chamberlain, when writing the Subgenus *Hymenanthes* revision published in 1982 (*Notes from the Royal Botanic Garden, Edinburgh,* Volume 39, No. 2), considered the disjunct distribution and minor morphological differences between the two populations and concluded that there was 'no justification in maintaining the two taxa at any rank', ssp. *baeticum* then being made synonymous under *R. ponticum*. H. H. Davidian concurred with that opinion and it is maintained herein. Equally well intentioned are the calls to ban its sale or proscribe the species by law. However, practical measures to remove the escapees from our shores are pie in the sky, even if every single plant could be eradicated from the hundreds of thousands of private and public gardens where they grow.

Because the financial resources needed to remove the millions of wild invaders now established in and spreading across parts of the countryside, are simply not available.

Critical voices might also want to note that the problem is of our own making and that *R. ponticum* is the innocent party in the furore, unfairly castigated, as it is merely doing what it has done naturally for millennia.

And far from being a 'noxious weed', the species is actually one of the most beautiful rhododendrons ever introduced into UK cultivation, a fact surely evidenced by the vast number of plants that have been surreptitiously dug-up from the 'wild' and transferred to the nation's front or back gardens. So regardless of the downside, if specimens from seed wild collected in Turkey or on the Iberian Peninsula can be obtained, *R. ponticum* is most certainly worth planting. Light shade will prolong the usually deeply-hued corolla colour - in comparison with that of the escapees - those nearby trees also mitigating the severity of any damage from a really hard frost, for the species is nowhere near as 'ironclad' hardy as has been advertised, and as those who garden along the east coast or inland in the northern counties will know from experience. Annual deadheading will likely become a necessary bore even though it will encourage the production of yet more flower buds, but every few years the secateurs can be brought out to keep things in check.

Of course, suckers should literally be ripped from the ground as soon as they are spotted, though any layers can be lifted and removed with a touch more decorum.

And perhaps offered to an envious neighbour?



R. ponticum 'Cheiranthifolium'



R. ponticum 'Imbricatum'



R. ponticum 'Variegatum'

R. ponticum ‘Iberian Form’

R. ungernii
Hardiness:
H6.
Flowering Period:
June-July.
Distribution in the wild:
Georgia; NE Turkey.
Growing on hillsides up to the tree-line,
in spruce or fir forest, shady rhododendron thickets and in mixed scrub,
at elevations of 800-2,000m.

Identification:
Shrub or small tree, compact, rounded or broadly upright, 1 to 7m high;
branchlets variably tomentose, the covering woolly, the hairs whitish,
and sparsely through moderately long- or short-stalked glandular.
Leaf bud scales deciduous.
Leaves convex or flat,
oblanceolate through obovate to oblong-oblanceolate,
9 to 25.5cm long by 2.8 to 9cm wide,
retained for between 2 and 3 years;
lower surface densely tomentose,
the bistrate indumentum continuous, thick, woolly, whitish or fawn,
the upper layer composed of ramiform hairs,
these with a long or medium length narrow stem,
and long and very narrow or short and broad filamentous branches,
the lower layer with small to large rosulate hairs,
sparsely long-stalked glandular,
the midrib densely woolly tomentose or glabrous, the veins concealed.
Petiole 10-30mm long,
densely tomentose, the covering woolly, the hairs whitish or fawn,
and sparsely through moderately long-stalked glandular,
becoming glabrescent and eglandular with age.
Inflorescence loose or dense, 12-30-flowered;
the bud scales persistent or deciduous.
Rhachis 25-60mm long,
floccose-tomentose or glabrous,
and moderately through densely long- or short-stalked glandular.
Pedicel 20-45mm long,
sparsely through moderately floccose-tomentose, the covering persistent and woolly,
rarely glabrous,
and moderately through densely long- or short-stalked glandular, the hairs persistent;
extending in fruit to between 50 and 60mm.
Calyx lobes unequal, 4-9mm long,
their outer surface glabrous, moderately through densely short-stalked glandular,
their margins glabrous, rarely floccose-tomentose, short-stalked glandular or not.
Corolla 3 to 4.5cm long, funnel-campanulate,
white, sometimes flushed pink, or pale rose,
with or without greenish spots or flecks;
the outer surface pubescent and long- or short-stalked glandular on the tube.

Stamens 10, rarely 12.
Ovary conoid or oblong, 5-6mm long,
glabrous, rarely sparsely tomentose, the hairs white and longer than the glandular hairs,
and densely long- or short-stalked glandular, the hairs brown.
Capsule 8-17mm long, glabrous,
densely long-stalked glandular.

Seed Collections:

ACH 119	1962
ACH 121b	1962


R. ungernii

If the text in 1910's Volume 136 of *Curtis's Botanical Magazine,* Tab 8332, is accurate, the history of *R. ungernii,* from its discovery in 1885 through to its UK introduction in 1886, precisely mirrors that for *R. smirnowii,* with the cast of central characters, exotic locations and scripted actions an exact repeat, though the date of first flowering at Kew is different.

Except, there is a problem.

As previously indicated within the *R. smirnowii* entry.

So too with *R. ungernii:*

For the accepted chronology of the events that took place and the people involved, is disputed.

By the late Professor Mieczyslaw Czekalski, of the Agricultural University, Poznan.

As detailed in his article *Rhododendrons in the former Soviet Union,* published in the *Journal American Rhododendron Society,* Volume 52, Number 2, 1998.

Unchallenged are the roles of Ernst Rudolf von Trautvetter and his colleague Eduard August von Regel, both employed at the Imperial Botanical Garden of St. Petersburg, who named and described the new species in 1885. But their choice of epithet honouring the then recently deceased Baron Franz Ungern-Sternberg, was made in recognition of his botanical work on the flora of the Caucasus Mountains, not because he had made the find. For in fact, the discovery of *R. ungernii* had actually been made eleven years earlier in 1874, by G. N. Kazbek, albeit on the same hillsides above Artvin where *R. smirnowii* would later be found growing. The botanist and collector Michael Nikolajèwitsh Smirnow plays no apparent part in the proceedings, although seed collected by W. A. Massalsky in 1886 - as with his gathering of *R. smirnowii* capsules that were made at the same time - still remains the first to have arrived in the UK via St. Petersburg and Kew.

Glandular hairs on the capsules, ovaries and outer surface of the corolla tubes, in combination with the larger calyx lobes and more populated flower trusses will identify *R. ungernii* from its endemic hillside companion, *R. smirnowii,* while the thick and bistrate indumentum on the undersurface of the leaf blades will cleave it from each of the fifteen other members of Section *Ponticum*.

R. ungernii prefers a well-shaded site out of direct sunlight, a sheltered spot where the leaves can extend fully and confirm the claim that the species is a first class foliage plant. Happily, it is also remarkably free-flowering in such a locale, the tall and upright candelabroid trusses pale pink beacons in the gloaming. That the blooms open quite late in the season is a further bonus, especially as those on the best clones, with an inflorescence boasting thirty corollas, are superior to many a *discolor-auriculatum* cross. In cultivation, *R. ungernii* is usually a 2m-high shrub rather than a small tree, though a few such individuals can be found in quite contrasting locations, with the specimen growing at Dawyck Botanic Garden in the Scottish Borders seemingly defying the odds and thriving despite the cold, near continental climate.


R. ungernii


R. ungernii

Photographic Acknowledgements:

Mirroring the first three volumes, details of where each of the plant portraits was photographed is set out below, along with the website details of those collections visited. Thanks is again extended to each establishment for allowing images taken in a private-use capacity, to be reproduced here. Gratitude is also due the institutions, organisations and individuals who allowed the portrait photographs of historical and noted figures associated with the genus to appear alongside the text.

Key: AL - above left; AC - above centre; AR - above right; ACL - above centre left; ACR - above centre right; BL - below left; BC - below centre; BR - below right; BCL - below centre left; BCR - below centre right; L - left; R - right.

Arduaine Garden, Oban, Argyll:
https://www.nts.org.uk/visit/places/arduaine-garden
p. 41; p. 43-BL; p. 89-AL; p. 109-BR; p. 111; p. 139-R; p. 143-BR; p. 265-R; p. 241-AL; p.243-BR; p. 246-BR; p. 298-BR; p. 321-R; p. 325-R; p. 340; p. 450-BR; p. 451-AR.

Benmore Botanic Garden, Argyll:
https://www.rbge.org.uk/visit/benmore-botanic-garden/
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Bibloteca Digital del Real Jardín Botánico:
https://bibdigital.rjb.csic.es/
p. 336-R, *R. viscosum* var. *viscosum,* as illustrated by Plukenet in *Phytographia* (Plate 161, Figure 4, 1692).

Branklyn Garden, Perth:
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Brodick Castle Garden, Isle of Arran:
https://www.nts.org.uk/visit/places/brodick-castle-garden-country-park
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Camera Press, London:
https://www.camerapress.com/
p. 154-ALL, Edmund de Rothschild, photograph by Eric Coop.

Crarae Woodland Glen, Inveraray, Argyll:
https://www.nts.org.uk/visit/places/crarae-garden
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Dawyck Botanic Garden, Stobo, Peebles:
https://www.rbge.org.uk/visit/dawyck-botanic-garden/
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Exbury Gardens, Hampshire:
https://www.exbury.co.uk/
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Glenarn Gardens, Rhu, Helensburgh:
https://www.discoverscottishgardens.org/garden/glenarn-glorious-gardens-of-argyll-and-bute/
p. 47-BR; p. 287; p. 312; p. 320; p. 323.

Glendoick Gardens Ltd, Perth:
https://glendoick.com/
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Howick Hall Gardens & Arboretum, Alnwick, Northumberland:
https://howickhallgardens.com/
p. 137-BR; p. 164-BRA, BRB; p. 169-AR; p. 184-BR; p. 185-R.

Inverewe Gardens, Poolewe, Wester Ross:
https://www.nts.org.uk/visit/places/inverewe
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Lakeland Horticultural Society, Holehird Gardens:
https://holehirdgardens.org.uk/the-society
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Manderston, Duns, Berwickshire:
https://www.manderston.com/
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North Carolina State University, Department of Horticultural Science:
https://cals.ncsu.edu/horticultural-science/news/
p. 374-BR, root tip cells of *R. austrinum,* showing the chromosomes during prophase. A photomicrograph by Professor Thomas Ranney, originally taken for the scientific paper *Ploidy Levels and Relative Genome Sizes of Diverse Species, Hybrids, and Cultivars of Rhododendron,* published in Volume 61, Number 4, of the *Journal American Rhododendron Society*.

Nymans Garden, Handcross, West Sussex:
https://www.nationaltrust.org.uk/nymans
p. 77-AR; p. 112; p. 196-BR; p. 199; p. 295-BL; p. 314-AL.

Public Domain:
p. 110-R, U Maung Maung Kyaw, Burmese Imperial Forest Service; p. 173-R, Sir Isaac Bayley Balfour, photographed by Maull & Fox, London, in 1882; p. 394-R, *R. caucasicum,* illustrated by Sydenham Edwards, from Volume 28 of *Curtis's Botanical Magazine,* tab 1145, published in 1808.

Ray Wood, Castle Howard, North Yorkshire:
https://www.castlehoward.co.uk/visit-us/the-gardens/the-woodland-garden
p. 20-BL; p. 44-BL, R; p. 52-BR; p. 61-BR; p. 64; p. 131-AR; p. 272-L; p. 273-AR, BR; p. 281-BR; p. 282-BR; p. 298-AR; p. 218-AL; p. 337-AR; p. 346; p. 348-L.

Royal Botanic Garden, Edinburgh:
https://www.rbge.org.uk/visit/royal-botanic-garden-edinburgh/
p. 5-Title Page; p. 27-BR; p. 28-L; p. 32-AL, AR, BL, BR; p. 37; p. 39-AR, BR; p. 43-AR; p. 45; p. 46-AL, BL; p. 56-L, R; p. 59-BL; p. 61-BL; p. 62-BR; p. 63-BR; p. 69-AR; p. 85-BR; p. 86-R; p. 95-R; p. 114-BL; p. 115; p. 122-L, AR, BR; p. 123; p. 127; p. 140-AL, BL; p. 141; p. 142-R; p. 144-AL, BL, BR; p. 145; p. 146; p. 147-R; p. 148-AR, BR; p. 151; p. 169-BL, BR; p. 185-BL; p. 188-BR; p. 197-AR, BR; p. 202; p. 203-BR; p. 220-BR; p. 221-B; p. 226-AL; p. 229-BR; p. 231; p. 233-AL, BL; p. 234-BR; p. 235-AR, BR; p. 242-BR; p. 253-BR; p. 261-BL; p. 262-AL; p. 265; p. 276-AR; p. 281-L, AR; p. 283-AR; p. 284; p. 289-BR; p. 290; p. 291; p. 292; p. 296-L; p. 297-R; p. 301; p. 302-BR; p. 303-BR; p. 331; p. 332-AL; p. 333-BL; p. 345-AR, BL, BR; p. 349; p. 351; p. 352-BR; p. 353; p. 359; p. 362-L; p. 363-BL, AR, BR; p. 370; p. 371-BR; p. 372-AL, BL, R; p. 378-L; p. 379-BR; p. 385; p. 388-AL; p. 392-BR; p. 393; p. 395-BR; p. 396; p. 397; p. 400-BR; p. 403; p. 405-AL, BL; p. 410; p. 411; p. 425-BR; p. 428-AL; p. 429-BL, R; p. 430; p. 431; p. 434-R; p. 435; p. 437-AL, BL, R; p. 438-AL; p. 443-AL, BL; p. 448-BL; p. 449; Back Cover-AL, BL, BR.

Royal Botanic Garden, Wakehurst Place:
https://www.kew.org/wakehurst
p. 52-L, AR; p. 155; p. 180-AL; p. 277; p. 289-AR; p. 325-BL; p. 327; p. 390; p. 391-BR; p. 418-BR; p. 424-L.

Royal Horticultural Society, Wisley:
https://www.rhs.org.uk/gardens/wisley
p. 150-R; p. 154-ALR, Francis Hanger.

Savill Garden, Windsor Great Park:
https://www.windsorgreatpark.co.uk/en/experiences/the-savill-garden
p. 215-BR; p. 262-BL; p. 375-L, AR, BR.

Sir Harold Hillier Gardens, Ampfield, Romsey:
https://www.hants.gov.uk/thingstodo/hilliergardens
p. 25-AL, BL, R; p. 140-R; p. 167; p. 334; p. 337-BR; p. 355-AL, AR, BL; p. 365; p. 405-AR; p. 420; p. 448-AR, BR.

Valley Gardens, Windsor Great Park:
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p. 27-AR; p. 61-AL, AR; p. 118-L; p. 120-AL, BL, AR, BR; p. 126-L, AR; p. 128-BR; p. 129-AR, BR; p. 131-BR; p. 134-BR; p. 135; p. 138-BR; p. 158-R; p. 169-AL; p. 182; p. 185-AL; p. 194-BR; p. 204-AR; p. 205-BRL; p. 207; p. 211-AR, BR; p. 213; p. 226-AR, BL, BR; p. 233-R; p. 246-AR; p. 247-AL; p. 259-AR, BR; p. 294-AR, BR; p. 295-AL, AR, BR; p. 303-AL, AR, BL; p. 335-BR; p. 345-AL; p. 357-AL, BL, R; p. 381; p. p. 389-B; p. 392-AR; p. 400-AR; p. 405-BR; p. 434-AL, BL; p. 441-BR; p. 445.

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About the author:



Julian Taylor-Whall was born in Lowestoft at the end of November, 1957. He received a grammar school education before beginning a three-decades-long career with the BBC at Television Centre in West London. During that time he worked on many of the now classic shows made in the production facilities there, the studios at Lime Grove and Elstree, and at the Television Theatre. He retired early in 2008, moving to a small village in West Cumbria, just outside the Lake District National Park.

Twenty years earlier, in late April 1988, on a day when the hills of Torridon and Applecross were hidden in cloud, a visit to the nearby Inverewe Gardens offered an alternative distraction. By chance it took place at the peak of the flowering season, during a particularly profligate year for bloom, and turned into an encounter never to be forgotten. Thus did the species and hybrids of Genus *Rhododendron* become yet another enduring passion, along with music, film, photography, and concocting the occasional science fiction novel.

- above -
Observed in the woodland at Muncaster,
any resemblance to the author is unreservedly denied.

- back cover -

R. fauriei	*R. occidentale*
R. subansiriense (C&H 418)	*R. yakushimanum*







