

RHODODENDRON UPDATE 1 (JULY2014)

INTRODUCTION

Our Society tries its best to keep ahead of developments in the Rhododendron world. You might think that one of the most basic things we would have is a checklist of world Rhododendron species; which ones are in Australia, and where, which ones are not and which of these are on ICON as Rhododendron species whose seed may be imported without a permit. The Society could then approach the government authority, DAFF, to enquire about whether those species not in Australia nor on the present list of species whose seed is permitted to be imported into Australia without a permit¹ could be added to the list, after appropriate weediness vetting.

Unfortunately that is not the case. There is no definitive list of Rhododendron species of the world. If you ask even the simple question “how many species of Rhododendron are there?”, let alone “what are their names?”, you will get figures as low as 800 and as high as more than 1400.

There is a range of reasons for this. New species are constantly being discovered in the wild. Procedural issues of botanical nomenclature require change or modification of species names. Books and lists, unsurprisingly, occasionally make mistakes. One of the more frustrating issues is the fact that changes to taxonomy split or lump species regularly. These splits or lumps can be controversial and a “species” can flip flop backwards and forwards between being a species in its own right or merely a variety or subspecies some other species.

As, mostly amateur, enthusiasts our sources tend to be books. Volumes such as Argent (2006) for Vireyas, and Cox and Cox (1997), McQuire and Robinson (2009) and Davidian (1982, 1989, 1992 and 1995) for non Vireyas, are major sources². Many changes have taken place since these volumes were written and in this and subsequent articles we will try to bring to your attention species mostly not covered in Argent (2006) and Cox and Cox (1997).

Rhododendron and horticultural societies worldwide are useful sources of information and we have searched these extensively. However, our most important sources for tracking down species have been the many on-line databases that have recently been developed. Table 1 lists the major ones we

¹http://apps.daff.gov.au/icon32/asp/ex_casecontent.asp?intNodId=8976037&intCommodityId=25278&Types=none&WhichQuery=Go+to+full+text&intSearch=1&LogSessionID=0

² Davidian, is criticised for his arrangement of species, see e.g. Cox and Cox (1997), but he provides comprehensive individual species descriptions.

have used. The Plant List and IPNI have been our major sources. The Plant List is up to date to about 2011 and, although we found some errors, it provides a catalogue of the many names applied to *Rhododendron*. There are about 740 accepted names, 850 synonyms and 916 “unresolved”³ names (see Table 1).

METHODS

First we extracted accepted names from The Plant List (excluding those accepted to be synonyms) then determined which *Rhododendron* species listed there were not on the ICON list of those species whose seed is permitted to be imported into Australia. We then consulted Simon Begg’s list of *Rhododendron* Species known to him (mostly from Argent and Cox and Cox) that were not on the ICON permitted list. What remained are ‘new’. There are about 70 of these and we will present brief descriptions of them over a series of 6 or 7 articles, of which this is the first. We then consulted the Red List of *Rhododendrons* (Gibbs *et al.* 2011) for their conservation status and literature references to the species. We then checked other databases, *Rhododendron* society websites and primary scientific literature to discover more about each species.

We have tended to follow the lead provided by the Red List of *Rhododendrons* and acted conservatively to retain species names because changes to species status will undoubtedly continue to change particularly as genetic analysis grows. Unfortunately we have no photos of these species and many are, perhaps, not in cultivation anywhere.

SPECIES ACCOUNTS

In the following accounts the species name and author is given followed by the journal reference for the original description. Then follows a short account of the species. More detailed descriptions can be found in the references accompanying each account. Most “new” species are alpine species from China.

The species are in alphabetical order and these accounts will be continued in other updates in forthcoming newsletters.

Rhododendron asterochnoum Diels

1921. Repert. Spec. Nov. Regni Veg. 17(486-491): 196. See also Cox and Cox 49.

³ The compilers of the Plant could not determine from the data sources whether the name should be treated as accepted or not, or there were conflicting opinions that “could not be readily resolved.”

Subgenus *Hymenanthus*, Section *Ponticum*, Subsection *Fortunea*

This is a small tree with pale pink to white flowers, thick flowering shoots and stellate hairs on the lower leaf surface. It has a restricted distribution in C. & S. Sichuan at 3,000 - 3,660 m. The Red List of Rhododendrons (Gibbs *et al.* 2011) classifies it as Vulnerable and describes it as having “a restricted distribution with small populations, although thought to be safe at some sites such as Wolong”.

It was not known in cultivation by Davidian (1989) but Cox and Cox (1997) say it was introduced into cultivation 1990-1995. Web searches confirm it is now growing in Europe, USA and Canada (www.hirsutum.info) and is on Glendoick's catalogue. Glendoick considers it a very cold hardy plant that can tolerate late frosts but there is no information as to what extent it is heat tolerant – considering its natural distribution it probably isn't.

It would be interesting to find out if anyone knows if this species is in Australia. No one, so far, has come forward.

***Rhododendron bachii* H. Lév.**

1913. Repert. Spec. Nov. Regni Veg. 12(312-316): 102-103

Subgenus *Azaleastrum*, Section *Azaleastrum*

This is a shrub to small tree reaching 4 m in height occurring in open forests in China (Anhui, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Zhejiang) at 600–1600 m. It has white to purple flowers and glandular hairs fringing the calyx. It is usually lumped with *R. ovatum* which extends to Taiwan and Vietnam (Cox and Cox 1997, McQuire and Robinson 2009, Philipson and Philipson 1986) and would thus occupy the western section of this greater species range. The low altitude and broad distribution would suggest some heat tolerance although not necessarily dry tolerance.

The Flora of China keeps *R. bachii* as a separate species although notes “The characters used to separate *Rhododendron bachii* from *R. ovatum* are fairly trivial, especially those relating to the calyx indumentum. Furthermore, there is continuous variation in these characters, suggesting that *R. bachii* should be treated as a synonym of *R. ovatum*”. However, the Red List of Rhododendrons keeps it separate and classifies it as Data Deficient. It is recorded as a legitimate species name in IPNI and The Plant List. It would be interesting to see if there are any *R. ovatum* in Australia with *R. bachii* characteristic and known origins in China. Interestingly while the Flora of China describes *bachii*'s habitat as forest it describes *ovatum*'s as “thickets”.

***Rhododendron bamaense* Z.J. Zhao**

1987. Fl. Lign. Qinghaica Add. 4

Subgenus *Rhododendron*, Section *Rhododendron*, Subsection *Lapponica*

This species was described in 1987 but is covered in neither Cox and Cox 1997 nor McQuire and Robinson (2009). The species occurs in a restricted area of forest in SE Qinghai at high altitude (4300 m) and forms small, erect shrubs, ca. 0.6 m tall. The branches of the current year are densely black-scaled and the flowers are small and deep blue (Flora of China) or violet (www.hirsutum.info). It does not appear to be in cultivation anywhere. Its natural distribution would suggest it is very cold tolerant but not heat tolerant and it would need to be treated like an alpine plant.

The Red List of *Rhododendrons* classifies it as Data Deficient.

***Rhododendron bellissimum* D.F. Chamb.**

2005. Fl. China 14: 313

Subgenus *Rhododendron*, Section *Pogonanthum*

According to the Flora of China this is a small, erect shrub, ca. 1.5 m tall occurring in high meadows at forest margins in C Sichuan at ca. 3400 m. It has salver-shaped, rose flowers.

The Red List of *Rhododendrons* (2011) classifies the species as Data Deficient adding that it is only known from the type specimen and that taxonomic uncertainty exists. However, the references they give to this species do not mention any controversy. In fact, this is a replacement name (nom. nov.) for *R. bellum* H. P. Yang a species described in 1989 (Bull. Bot. Res., Harbin 9(1):18)⁴.

The Danish chapter of the ARS (<http://www.rhododendron.dk/bellissimum.html>) claim to show photographs of flowering wild specimens of either, or both, this species and *R. luhuoense* (<http://www.rhododendron.dk/bellissimum.html>). The legend roughly translates, courtesy of Google Translate, as - an evergreen dwarf shrub with small oval leaves with rounded mucronate tips. These are strongly scaly and fragrant. The vegetative bud scales fall off at an early stage. Flowers are tubular white to deep pink with inflorescences of 3-5 white flowers (*luhuense*) or 4-7 rose flowers (*bellissimum*) and 5 stamens. Requires good drainage and a bright and cold habitat. Widespread and often common in nature. Occurs at different alpine areas in SW and C Sichuan at 2800-5000 m.

Judging by the descriptions in the Flora of China the lower photo on this web page may be *R. bellissimum*. The species does not appear to be in cultivation

⁴ Not *R. bellum* W. P. Fang & G. Z. Li, Bull. Bot. Res., Harbin 4(1): 3. 1984 which is a synonym for *Rhododendron simsii* Planch. (the Plant List 2014).

and its natural distribution would suggest it is very cold tolerant but not heat tolerant and would need to be treated like an alpine plant.

***Rhododendron bivelatum* Balf. f.**

1917. Notes Roy. Bot. Gard. Edinburgh 10(47-48): 85-86

Subgenus *Rhododendron*, Section *Rhododendron*, Subsection *Triflora*

According to the Flora of China this species occurs on dry slopes at 800-900 m. in NE Yunnan, China. It is a shrub with densely scaly, pubescent young shoots and smallish blunt or rounded obovate or elliptic leaves, 3-3.8 × 1.5-2 cm, and racemes of smallish rose red flowers, ca. 2 cm wide. The capsule is not known and the species is not in cultivation. The altitude and natural distribution suggests it might be heat and dry tolerant to some extent. This species is not described in Cox and Cox (1997)

The Red List of Rhododendrons (2011) classifies the species as Data Deficient and states “Taxonomic debate exists around the status of this species, with some taxonomists considering this is a hybrid”. Checking their references, Davidian (1982) and the Flora of China describe it as a species but Cullen (1980) states that it is known only from one “poor” specimen, presumably the type, and says it may be a “chance” hybrid of *R. augustinii* subsp. *chasmanthum*. It is retained as a species in both the Plant List and IPNI. The type specimen is available for viewing on line⁵ and in the collector’s (Maire) handwritten notes the altitude of the specimen is 850 m. Davidian (loc. cit.) has this it as 854 m. As Cullen states the specimen is poor so logically conclusions as to whether it is a good species or a hybrid may have to wait for more fieldwork⁶.

***Rhododendron brevipetiolatum* M.Y. Fang**

1984. Acta Phytotax. Sin. 22(5): 420-421 pl. 1

Subgenus *Rhododendron*, Section *Rhododendron*, Subsection *Argyrophylla*

This species is not described in Cox and Cox (1997). The Flora of China describes it as a shrub up to 3 m high with smooth older branches and oblong or oblong-elliptic, leaves 8-12 × 3-5 cm with a compact, thin indumentum. The inflorescence has 5-7 deep crimson campanulate flowers 4-4.5 cm wide,

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<http://elmer.rbge.org.uk/bgbase/vherb/bgbasevherb.php?cfg=bgbase/vherb/zoom.cfg&filename=E00010028.zip&queryRow=1>

⁶ It is likely that genetic analysis will now be necessary to demonstrate whether rhododendron populations are hybrids or not. See e.g. the recent demonstration that *R. columbianum*, thought to be a hybrid, is in fact not (<http://rosebayblog.blogspot.com.au/search/label/ledum>). See also <http://rosebayblog.blogspot.com.au/2011/05/poster-of-rhododendron-ploidy-research.html>

with 5 dark purple nectar pouches at their base. The capsule is not known and it does not appear to be in cultivation.

It occurs in forests at ca. 1900 m. in C Sichuan (Yingjin) and this lower altitude suggests it may be tolerant of heat to some extent.

The Red List of Rhododendrons (2011) classifies it as Data Deficient.

***Rhododendron calvescens* Balf. f. & Forrest**

1919. Notes Roy. Bot. Gard. Edinburgh 11(52-53): 29-31

Subgenus Rhododendron, Section Rhododendron, Subsection Selensia

This species is not described in Cox and Cox (1997). The Flora of China describes it as a shrub 1-2 m high; the old branches having coarse, flaking bark. The leaves are thinly leathery, lanceolate, elliptic or oblong-elliptic, 6-13 × 1.7-4 cm. It has campanulate rose flowers with purple lines in the lower part, 3-3.5 cm wide in inflorescence of 3-8 flowers. Two subspecies are included in The Flora of China *R. c. calvescens* and *R. c. duseimatum*. It occurs in fir and spruce forests on rocky slopes at 3300-3600 m. in E Xizang and NW Yunnan, China. Considering its distribution it is unlikely to be tolerant of heat and dryness.

The Red List of Rhododendrons (2011) classifies it as Vulnerable and says some believe it to be a hybrid. However, all the literature and databases references cited by the Red List include it as a species.

***Rhododendron chilanshanense* Kurashige**

1999. Edinburgh J. Bot. 56(1): 75-77 f.1

Subgenus Tsutsui, Section Brachycalyx

Described in 1999, this deciduous species is restricted to 6 to 8 locations in mixed forest at 1600-1700 m on and around Mt Chilan in Taiwan; it is classified as vulnerable by the The Red List of Rhododendrons (2011)

It is a 1-3 m high shrub, with papery, ovate to ovate-rhomboid leaves, 3.5-4.5 × 1.5-2 cm, with undulate or minutely crenulate margins. The Inflorescence consist of 2 to 3 open-funnelform, pink flowers 2-2.5 cm wide that appear with the leaves. The capsule is not known and it does not appear to be in cultivation.

***Rhododendron chionanthum* Tagg & Forrest**

1927. Notes Roy. Bot. Gard. Edinburgh 15(75): 309

Subgenus Hymenanthus, Section Ponticum, Subsection Neriiflora

This is a species from W Yunnan and NE Myanmar growing at high altitude (3900-4400m) in alpine regions on rocky slopes and grasslands. It is

described in McQuire and Robinson (2009), Davidian (1992) and Flora of China but not in Cox and Cox (1997).

Very small shrubs with brown flaky bark. The leaves are obovate or widely oblanceolate, 4-8.5 × 1.5-3 cm with a ragged patchy indumentum. Small white campanulate flowers, 3-3.5 cm are borne on a lax 4-6-flowered inflorescence. The capsule is not known and the species appears to have been lost from cultivation (McQuire and Robinson 2009).

It is worth comparing the descriptions in Flora of China and Davidian to see how descriptions can differ between authors. The size of this species is of particular interest. Davidian describes it as 60-92 cm tall and the Flora of China as 10 cm. The latter is a more likely average size in its alpine habitat of rocky (?scree) slopes. Its natural distribution would suggest it is very cold tolerant but not heat tolerant and would need to be treated like an alpine plant.

The Red List of Rhododendrons (2011) classifies it as Vulnerable.

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Table 1

DATABASE & URL	MISSION
The Plant List http://www.theplantlist.org	This is a working list of all known plant species. It aims to be comprehensive for species of vascular plants, mosses and liverworts. It is a collaboration between the Royal Botanic Gardens, Kew and the Missouri Botanical Garden and combines multiple checklist data sets held by these institutions and other collaborators. The List provides the Accepted Latin name for most species, and Synonyms by which that species has been known. "Around 20% of names are Unresolved indicating that the data sources included provided no evidence or view as to whether the name should be treated as accepted or not, or there were conflicting opinions that could not be readily resolved."
IPNI (International Plant Names Index) http://www.ipni.org/ipni/plantnamesearchpage.do	"The International Plant Names Index (IPNI) is a database of the names and associated basic bibliographical details of seed plants, ferns and lycophytes. Its goal is to eliminate the need for repeated reference to primary sources for basic bibliographic information about plant names. The data are freely available and are gradually being standardized and checked. IPNI will be a dynamic resource, depending on direct contributions by all members of the botanical community. IPNI is the product of a collaboration between The Royal Botanic Gardens, Kew, The Harvard University Herbaria, and the Australian National Herbarium".
Tropicos (or W3TROPICOS) www.tropicos.org/	Tropicos® contains all the nomenclatural, bibliographic, and specimen data in the Missouri Botanic Garden's databases - there are over 1.2 million scientific names and 4.0 million specimen records. It has specimen data, maps and photographs and is a common source for other databases.
Flora of China http://www.efloras.org/flora_page.aspx?flora_id=2	This is a comprehensive flora of China searchable on line. Alternatively, volumes can be downloaded as pdfs by going to http://flora.huh.harvard.edu/china/mss/alphabetical_families.htm right clicking PDF after the family and clicking "Save Link As." (There are 3 PDFs for the Ericaceae). Some illustrations are available here or as links to other sites and floras. There are no photographs.
Flora of North America http://www.efloras.org/flora_page.aspx?flora_id=1 and http://floranorthamerica.org/	The flora of North America on line.
Flora of Pan-Himalayas www.FLPH.org	This site is in Chinese but provides English descriptions and distribution data. Just type in an English name in the box on the top right next to the magnifying glass.
RBGE DB http://elmer.rbge.org.uk/bgbase/vherb/bgbasevherb.php	This site provides three databases from the Royal Botanic Gardens at Edinburgh - living collections, herbarium material and library. Approximately 20% of their herbarium specimens have been databased. Photos of herbarium specimens are available here and some library resources too.
Checklist of the flowering plants of Nepal http://www.efloras.org/florataxon.aspx?flora_id=110&taxon_id=128386	Checklist, species descriptions and some photos
Biodiversity of the Hengduan Mountains http://hengduan.huh.harvard.edu/fieldnotes/	Data on plants and fungi from the Hengduan Mountains and adjacent areas of south-central China, including the Gaoligong Mountains and Tibetan Himalaya. Detailed maps available.
BONAP (Biota of North America Program) http://bonap.net	Detailed distribution maps and descriptions
GRIN (Germplasm Resources Information Network) http://www.ars-grin.gov	"In 1990, the U.S. Congress authorized establishment of a National Genetic Resources Program (NGRP). It is the NGRP's responsibility to: acquire, characterize, preserve, document, and distribute to scientists, germplasm of all life forms important for food and agricultural production. The Germplasm Resources Information Network (GRIN) web server provides germplasm information about plants, animals, microbes and invertebrates. This program is within the U.S. Department of Agriculture's Agricultural Research Service". It is being developed globally.
BGCI (Botanic Gardens Conservation International) http://www.bgci.org/	A conservation network that produced the Red List of Rhododendrons. Has a searchable database (www.bgci.org/plant_search.php) and a global survey of <i>ex situ</i> Rhododendron collections (http://www.bgci.org/files/Worldwide/Conservation/global_survey_of_ex_situ_rhododendron_collections.pdf)
Edinburgh Rhododendron Monographs http://data.rbge.org.uk/service/factsheets/Edinburgh_Rhododendron_Monographs.xhtml	A searchable database with descriptions of "almost a thousand species", that duplicates and provides on line access to the species descriptions in the printed Edinburgh Monograph Series (Notes from the Royal Botanic gardens Edinburgh 39(1), 39(2) and 44(1); Edinburgh Journal of Botany 47(2) and (50(3); and Argent (2006)).