

Rhododendron Update - 2

INTRODUCTION

This is the second part of our Rhododendron species update and contains 14 species. Our methods are described in the previous newsletter but basically we had a six-step process.

1. We extracted all “accepted” names of Rhododendron that were not synonyms from “The Plant List”, an online working list of all known plant species, produced by the Royal Botanic Gardens, Kew and the Missouri Botanical Garden.¹
2. We then removed species that were on the ICON² list of Rhododendrons whose seed can be legally imported into Australia.
3. We then removed species that Simon Begg had already determined were not on the ICON list and that await submissions to be prepared for their inclusion on the ICON list. These species are mostly from Argent (2006) and Cox and Cox (1997).
4. This left approximately 70 ‘missed’ Rhododendrons i.e. species not yet permitted for import and not on Simon’s list of species awaiting submissions to ICON, mostly species described since 1997.
5. These missed species were then cross-checked in two other on-line databases – The International Plant Names Index (IPNI)³ and Tropicos⁴.
6. We then consulted The Red List of Rhododendrons (Gibbs et al. 2011) for their conservation status and checked other databases, Rhododendron society websites and primary scientific literature to discover more about each species.

¹ <http://www.theplantlist.org>. The List combines multiple checklist data sets held by these institutions and others and 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."

² ICON is the Commonwealth Department of Agriculture’s import conditions database

³ IPNI is a database of the names and associated basic bibliographical details of plants developed by the Royal Botanic Gardens Kew, the Harvard University Herbaria, and THE Australian National Herbarium.

⁴ 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 is a common source for other databases.

A NOTE ON PLANT NAMES

Some of the following species accounts recount arguments amongst taxonomic botanists as to what names should apply to the plants. Although the reader can consult most modern garden books about plant nomenclature (naming) a few basic points are worth noting.

Taxonomy concerns itself with determining the *relationships* amongst plants and the **appropriate names** to apply to them. Determining relationship is perhaps the core of taxonomy and it addresses the following types of questions: is this plant a new species? or is it the same as some other species? or is it a subspecies? or a hybrid? or in the same family? Once a botanist makes these relationship decisions then a set of agreed rules of botanical nomenclature (ICBN - “the code”)⁵ are brought into play to correctly name the plant. This latter is a fairly mechanical process with hard and fast rules (e.g. if a name already exists for the plant then you must use it, no numerals can be used in names, etc.). The rules themselves do not assist in any way with the relationship questions. The rules will not decide whether or not plant A is a new species or the same as some other one, only what is the appropriate name to apply once the decision has been made by the botanist.

This does not mean that taxonomists do not argue about what name to apply once the decision about relationship has been made. There is plenty of scope to argue about names.

There is sometimes misunderstanding that “the code” stands in judgement on taxonomic decisions and /or maintains a definitive list of the names of all plants. This is not the case. The determination of plant relationships and names is an on-going process carried out in the scientific literature, books, journals, on line etc. When somebody publishes a new species or relegates a species to a subspecies of some other plant, they do so under their own aegis and it is their considered scientific opinion. They do not propose it to any external body for judgement. The acceptability or otherwise of the authors views is the subject of peer acceptance which is not always uniform.

The only time an external body is consulted is on naming issues and then only when there is severe disagreement or confusion on a complex naming issue, or when taxonomists want those parts of “the code” activated that will overrule the normal operation of “the code”. Cases can be referred to the relevant standing committees of the International Association for Plant Taxonomy (IAPT) for a ruling. An example is *Acacia*. It has been shown that the 1000 or so Australian species are generically distinct from the other 120 or so species in Africa and

⁵ *International Code of Nomenclature for algae, fungi, and plants* produced by the International Association for Plant Taxonomy http://www.iapt-taxon.org/index_layer.php

South America. According to “the code” *Acacia* should be used for these 120 odd non-Australian species and a new genus name used for the Australian ones. A successful application was made to alter this so as to keep *Acacia* for the Australian ones and generate a new genus name for the others⁶.

There is no globally accepted list of plant names that everyone “must” use. There is no law of the land forcing you or me to use any particular plant name⁷. We use what is appropriate for the time. If you want to buy a plant and the trade name differs from the botanical name it would be sensible to hunt using the trade name. However, most of us try to follow the botanical lead and our society tries hard to be up to date with *Rhododendron* taxonomy.

In light of the above we decided to use The Plant List as our major source because it is the product of botanical institutions with stellar reputations whose core business is taxonomy. When The Plant List says a name is “accepted” we interpret this to mean that the name is one that most taxonomists would agree with. Note that even here, however, The Plant List provides a measure of its confidence in a name being “accepted” – disturbingly, it can vary from high to low.

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 small account of the species. More detailed descriptions can be found in the references with each account.

Rhododendron columbianum (Piper) Harmaja

1990. Ann. Bot. Fenn. 27(2): 203.

Subgenus *Rhododendron*, Section *Rhododendron*, Subsection *Ledum*.

Ledum was a genus of about 8-10 species of *Rhododendron*-like plants from the temperate and subarctic regions of Eurasia and were lumped into *Rhododendron* Subsection *Ledum* in the early 1990s (Harmaja 1990, 1991). One, *R. columbianum*, was considered to be a hybrid between *R. neoglandulosum* and *R. groenlandicum* and is listed as such in Cox and Cox (1997).

⁶ <http://www.cpbr.gov.au/cpbr/taxonomy/acacia-conserved-2004.html>. Because the IAPT is a not a government organisation it has no legislative powers. Nobody can force African botanists to stop using the name *Acacia*, they do so only by professional agreement.

⁷ An exception is where national or state legislation actually lists species names e.g. the Victorian Flora and Fauna Guarantee Act 1988 (FFG Act) has a threatened species list. Applications under the Act need to use those names. If you want a permit then best use the name on the list.

This supposed hybrid has been shown, however, to be a distinct species based on chromosomal analysis⁸. Its common name in the USA is Western Labrador Tea.

Based on descriptions in the Flora of North America⁹ it is a shrub or small tree up to 2 m high distributed from Western Canada to California. It is a lepidote species with persistent fragrant leaves, 2-8 × 1.5-3 cm in size and with entire margins. It bears small rotate symmetrical white flowers on long pedicels with stamens extending beyond the corolla (Figure 1). Its natural habitat is bogs and swamps but it also occurs on better drained sites. It has a broad altitudinal range of 3500 m.

This species is not listed in The Red List as it was considered a hybrid at the time of the list's compilation.

***Rhododendron crassimedium* P.C. Tam**

1982. Bull. Bot. Res. Harbin 2(1): 96-97.

Subgenus Tsutsusi, Section Tsutsusi.

Davidian (1995) describes this species but it is not included in either Cox and Cox (1997) or McQuire and Robinson (2009). Spady (1998) considered it a synonym of *R. polyraphidoideum* var. *polyraphidoideum* but The Plant List treats *R. crassimedium* as accepted but, in turn, treats *R. polyraphidoideum* var. *polyraphidoideum* as a synonym of *R. polyraphidoideum*. Liu (2007), in his revision of subgenus Tsutsusi, lumps *R. crassimedium* with *R. hypoblematosum* Tam. The situation is somewhat confusing as the plant is little known, is not in cultivation and even the flower colour is not described.

The Flora of China¹⁰ describes the species as a shrub, 0.5-1 m tall with different summer and winter leaves but in describing the leaf it does not say whether summer or winter leaves are being described, presumably summer. The leaves are small (1.3-1.5 × 0.7-0.8 cm) ovate with a cuneate base and acuminate apex. The undersides are densely tomentose, and the upper sides dark green, densely covered with fine warts. Flowers are funnelform, ca. 1.2 × 1.5 cm with a cylindrical tube ca. 7 × 3.5 mm born in 3-6 flowered inflorescences.

The species was originally found in open thickets at 1000-1600 m on Suichuan Xian, a mountain in Jiangxi province approximately 80 km NW of the city of Ganzhou, China (Figure 2).

⁸ http://www.rhodogarden.com/cross/ledum_taxonomy.html and <http://rosebayblog.blogspot.com.au/2011/05/poster-of-rhododendron-ploidy-research.html>

⁹ http://www.efloras.org/flora_page.aspx?flora_id=1 and <http://floranorthamerica.org/>

¹⁰ Flora of China http://www.efloras.org/flora_page.aspx?flora_id=2

The Red List classifies it as Data Deficient.

***Rhododendron dachengense* G.Z. Li**

2001. Acta Bot. Yunnan. 23(3): 287-288 f. 1 40359.

Subgenus Hymenanthus, Section Ponticum, Subsection Taliensia.

This species was not described until 2001 so does not appear in standard texts. It is a shrub 2-3 m tall with blackish gray branchlets and persistent bud scales. The leaf is leathery, elliptic-oblong to obovate, 3.5-7 × 1.5-2.5 cm in size with a cuneate to rounded base and an acute or mucronate apex. The lower surface has a thick felted indumentum and the upper surface is smooth. Flowers are campanulate, white to pink with the upper lobes sometimes having red spots, 2.5-3 cm in size. It occurs at lower elevations (800-1700 m) in east central Guangxi, China (Figure 2).

According to the Flora of China, the species may be more appropriately placed in subsection Neriiflora and appears allied to, and is possibly conspecific with, *R. roxieoides*.

The Red List classifies it as Data Deficient and notes that “Two recent expeditions failed to find this species on the mountain where it is thought to exist. Needs further urgent research to establish the conservation status”. It is not in cultivation but Steve Hootman of the Rhododendron Species Foundation collected seed from the DayaoShan in his 2012 China expedition¹¹.

***Rhododendron dayaoshanense* L.M. Gao & D.Z. Li**

2003 Novon 13(2): 189-192 f. 1.

Subgenus Azaleastrum, Section Choniastrum.

This species may be only known from the type collection which was 8 km east of Dayaoshan Mountain, Jinxiu county, Guangxi Province, about 78 km SSE of Liuzhou city (Figure 2). The habitat was the margin of mixed forest at ca. 1180 m altitude.

The original description classes it as a small tree, 3–4 m high with slender glandular and hairy, squarish young branches and smooth mature branches. The long (8-13 cm) narrowish (1.8-2.5 cm) leaves are clustered at the ends of branches, and are smooth above and with short hairs below. The pale rose, narrowly funnelform flowers have a yellow blotch inside and are largish (5–5.5 cm) and born laterally, not terminally, in 4- to 5-flowered umbels. The ovary is covered in a dense yellowish blanket of hairs.

¹¹ <http://rhodygarden.org/cms/hootmanadendron-final-posting-for-2012-China-expedition/>
http://www.rhodoniagara.org/2012_10_15_October_Newsletter.pdf

The species may be a hybrid between *R. cavaleriei* and *R. championiae* according to the Flora of China.

The Red List classifies it as Data Deficient.

***Rhododendron dayiense* M.Y. He**

1997. Acta Phytotax. Sin. 35(1): 63-66 pl. 1.

Subgenus Hymenanthes, Section Ponticum, Subsection Taliensia.

This comes from the mountains of Sichuan just to the west of the city of Chengdu at an elevation of 2600 m (Figure 2), grows to a small tree (7 m) and bears red flowers with purple red spots inside in heads of 6 to 8.

Although described in 1997 the Flora of China does not include this as a species with its own heading. Instead it appears as a paragraph after the account of *R. wiltonii* as follows “*Rhododendron dayiense* ... needs to be considered. It is said to be closely allied to *R. wiltonii*, but differs in the longer pedicel, 2.8-3.2 cm, in the larger calyx, 4-5 mm, in the red corolla, and in the densely reddish brown hispid ovary, with red-brown hairs at the base of the style.”

The Red List classifies it as Data Deficient and goes on to say that “Taxonomic debate exists around the status of this species”. It is intriguing to try to find out exactly what this debate is. The Red List gives five references (numbers refer to reference numbers in The Red List).

(6) Chamberlain D.F. (1982) *A Revision of Rhododendron II. Subgenus Hymenanthes. Notes from The Royal Botanic Garden Edinburgh* 39(2): 209–486. This was published before the species was described and it is hard to see how it is relevant other than as a description of *R. wiltonii*.

(50) *Royal Botanic Garden Edinburgh (2008) RBGE BGBASE Database. Unpublished. Royal Botanic Garden Edinburgh.* THE RBGE herbarium and living collections are searchable on line and neither includes *R. dayiense* although there are two herbarium occurrences of *R. wiltonii*.

(57) IPNI and (58) The Plant List include both species as accepted names with no comments on synonymy.

Finally there is a personal communications (62) with Yuying Geng.

It is possible that this last communication and the cryptic reference to the species in the Flora of China may be the “debate” but it would appear to be a very private one.

***Rhododendron duclouxii* H. Lév.**

1903. Bull. Soc. Agric. Sarthe 39: 46.

Subgenus *Rhododendron*, Section *Rhododendron*, Subsection *Scabrifolia*.

Although listed in The Plant List, IPNI and TROPICOS as a species, the Flora of China and Cox and Cox (1997) regard this rather attractive shrub from Yunnan as a hybrid between *R. spiciferum* and *R. spinuliferum*. Recent molecular studies at the Kunming Institute of Botany have confirmed this (Yan et al. 2013).

It occurs as a shrub, 0.3-1 m tall with peach or rosy red flowers with white bases. It occurs in Yunnan in valley forests and coniferous forest margins at 2200 m.

***Rhododendron erythrocalyx* Balf. f. & Forrest**

1920. Notes Roy. Bot. Gard. Edinburgh 12(57-58): 110-112.

Subgenus *Hymenantes*, Section *Ponticum*, Subsection *Silensia*.

This is regarded as a hybrid between *R. selense* and *R. wardii* but, unlike *R. duclouxii* or *R. columbianum*, this has not been confirmed or denied by molecular or genetic studies. The Plant List, IPNI and TROPICOS list it as a species.

It is a shrub to small tree with creamy flowers and is illustrated in Cox and Cox (1997). It naturally occurs in coniferous forests and thickets at 3000-3900 m. in E Xizang and NW Yunnan, China (Figure 2).

***Rhododendron fauriei* Franch.**

1886. Bull. Annuel Soc. Philom. Paris sér. 7, 10: 143. (as "Fauriae").

Subgenus *Hymenantes*, Section *Ponticum*, Subsection *Pontica*.

This is normally relegated to a subspecies of *R. brachycarpum* and is illustrated as such in Cox and Cox (1997). Chamberlain (1982) elaborates on this arrangement but in The Plant List, IPNI and TROPICOS, *R. brachycarpum* itself is classed as a synonym of *R. faurei* and TROPICOS provides a Russian reference we have not been able to consult.

Either way, this is one of the native rhododendrons of Japan and Korea occurring on rocky slopes above the tree line at 1670-2200 m. It is a shrub with pink to white flowers with greenish flecks. It is classed by The Red List as of least concern.

***Rhododendron fuyuanense* Zeng H. Yang**

1997. Acta Phytotax. Sin. 35(2): 189 pl. 2.

Subgenus *Rhododendron*, Section *Rhododendron*, Subsection *Scabrifolia*.

A shrub up to 2.5 m tall from east central Yunnan at 2000-2400 m (Figure 2), characterised by the young branches having scattered black glandular scales. The flowers are funnel form, purplish red in terminal or axillary inflorescences of 3-5 flowers. The flowers and ovary are scaly.

The Red List classifies it as Data Deficient and indicates it is only known from the type. However the American Rhododendron Society listed seed from this species in their Seed Exchange Lots for 2013¹² but describes the flowers as white to pink/purple.

***Rhododendron gannanense* Z.C. Feng & X.G. Sun**

1992. Bull. Bot. Res. Harbin 12(2): 145-146 f. 1-4.

Subgenus *Hymenanthus*, Section *Ponticum*, Subsection *Campanulatum*.

The Flora of China describes this as a shrub or tree, 3-5 m tall growing in fir forests at 2800-3000 m. in mountains near Zhouqu Xian, southern Gansu, China, approximately 320 km north of the city of Chengdu (Figure 2). The flowers are broadly campanulate, pink, with purple flecks within, 2-3 cm long in a 6-10 flowered inflorescence.

It is not described in Cox and Cox (1997) and the Flora of China says it is close to *R. wallichii* but goes on to say “The present authors have seen no material and are therefore uncertain of its true affinities, although from the protologue (description) it appears perfectly distinct from *R. wallichii*.”

The Red List classifies it as Data Deficient.

***Rhododendron gologense* C.J. Xu & Z. J. Zhao**

1987. Fl. Lign. Qinghaica Add. 2.

Subgenus *Rhododendron*, Section *Rhododendron*, Subsection *Laponica*.

According to the Flora of China this is a small, erect shrub to 1 m tall with the current year's branches densely covered in brown scales. The leaf is small, 1.5-2 x 0.4-0.8 cm, elliptic or oblong, with rounded base and apex; both surfaces are scaly. The small (1-1.2 cm long) funnel-form, purple flowers are born singly or in pairs and have pubescent throats. It occurs in forests in SE Qinghai at ca. 3800 m (Figure 2). The Red List classifies it as Data Deficient.

¹² http://www.rhododendron.org/seed_exchange_list2013.htm.

***Rhododendron guihainianum* G. Z. Li**

1995. *Guihaia* 15(4): 299-300 f. 3.

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

This species is a medium sized tree to 8m tall, with leathery oblong-elliptic to oblanceolate-elliptic leaves 8-12 x 3-4.5 cm, with mucronate apices. Both leaf surfaces are smooth. The flowers, borne in inflorescences of 5 to 8, are broadly campanulate, white to rose, with purple flecks and a blotch at the base, 3-4.5 cm in size, the inner surface being downy towards the base. It is found in forests in Guangxi at 1100-1400 m. Kadoorie Farm and Botanic Garden (2002) recorded it together with 16 other species of *Rhododendron*¹³ in Dayaoshan National Nature Reserve.

The species has now been introduced into cultivation at the *Rhododendron* Species Botanical Garden in Seattle¹⁴.

The Red List classifies it as Data Deficient.

***Rhododendron guizhongense* G.Z. Li**

1995. *Guihaia* 15(3): 198.

Subgenus *Tsutsui*, Section *Tsutsui*

The Flora of China describes this as a shrub 1-2 m tall with dark brown hairy young shoots and different summer and winter leaves. The leaf blade is papery, narrowly elliptic or elliptic-oblong, 2-3.5 x 1-1.4 cm with a cuneate base, a curled back slightly toothed margin, a pointed tip and prominent lateral veins. The flowers are funnelform, red or purple-red, ca. 1.2 x 1 cm; with a cylindrical tube ca. 6 x 4 mm in 3-5-flowered inflorescences. The outer surface is glandular-hairy and the inner pubescent. The style is 1.2-1.5 cm long, shorter than some of the stamens. It occurs in mountain forests at 1200-1700 m in eastern Guangxi (Figure 2).

Li (1995) originally applied the new name *R. guizhongense* to *R. glandulostylum*, which he considered distinct from *R. subnerve*, a species with which *R. glandulostylum* had been lumped. The Flora of China maintains that *R. guizhongense* may be synonymous with *R. subnerve* but The Plant List treats the latter as a synonym of *R. guizhongense*. Xiao-Feng *et al.* (2007) reduced *R. guizhongense*, along with six other species and subspecies to synonymy with *R.*

¹³ *R. cavaleriei*, *R. faithiae*, *R. farrerae*, *R. hainanense*, *R. kwangsiense*, *R. kwangtungense*, *R. latoucheae*, *R. levinei*, *R. liliiflorum*, *R. mariae ssp.kwangsiense*, *R. minutiflorum*, *R. mitriflorum*, *R. moulmainense*, *R. orbiculare ssp.cardiobasis*, *R. rivulare* and *R. simiarum*.

¹⁴ <http://rhodygarden.org/cms/hootmanadendron-final-posting-for-2012-China-expedition/>

fuschifolium. Their analysis was based on leaf measurements and non-quantitative comparison of other traits. Their table 1 lists characters for the various species but the entries for *R. guizhongense* differ somewhat from the description in Flora of China.

The Red List classifies it as Data Deficient.

***Rhododendron heizhugouense* M.Y. He & L.C. Hu**

1996. Acta Bot. Yunnan. 18(3): 295-296 f. 1

Subgenus Hymenanthus, Section Ponticum, Subsection Taliensia

This species forms a shrub 3-5 m tall with smooth branchlets. The leaf has a densely woolly petiole and thick leathery, broadly elliptic to oblong-elliptic leaves 10.5-18 × 5.5-8 cm, with ear- or heart-shaped bases and sharply pointed tips. The underside is yellow-green to brownish with a thin indumentum; the upperside deep green and smooth. The campanulate flowers are pale yellow, purple-flecked on one lobe at the base, 4.4-5.2 × ca. 4 cm borne in 15-23 flowered inflorescences. There are 10 unequal stamens and a densely woolly white conical ovary. It occurs in mountain fir forests at ca. 3300 m in west Sichuan (Figure 2).

The Red List classifies it as Data Deficient.

References

- Argent, G. 2006. Rhododendrons of subgenus Vireya. Royal Horticultural Society in association with the Royal Botanic Gardens, Edinburgh.
- Chamberlain D.F. 1982. A Revision of Rhododendron II. Subgenus Hymenanthes. *Notes from The Royal Botanic Garden Edinburgh* 39(2): 209–486.
- Cox, P. A. and Cox, K. N. E. 1997. *The Encyclopedia of Rhododendron species*. Glendoik Publishing, Perth, Scotland.
- Davidian, H.H. 1995. *The Rhododendron Species. Volume IV. Azaleas*. Timber Press, Oregon.
- Gibbs, D., Chamberlain, D. and Argent, G. 2011. The Red List of Rhododendrons. BGCI, FFI, GTC, IUCN, SSC, RBGE.
- Harmaja, H. 1990. New names and nomenclatural combinations in Rhododendron (Ericaceae) *Ann. Bot. Fennici* 27:203-204
- Harmaja, H. 1991. Taxonomic notes on Rhododendron subsection Ledum (Ledum, Ericaceae), with a key to its species. *Ann. Bot. Fennici* 28: 171-173.
- Jingyun Fang, Zhiheng Wang, Zhiyao Tang. 2011. Atlas of Woody Plants in China: Distribution and Climate, Volume 1. Higher Education Press, Beijing.
- Kadoorie Farm and Botanic Garden, 2002. *Report of Rapid Biodiversity Assessments at Dayaoshan National Nature Reserve, East Guangxi, China, 1998 and 2001*. South China Forest Biodiversity Survey Report Series (Online http://www.kfbg.org.hk/content/33/13/2/E18_Dayaoshan_report_w.pdf)
- Li-Jun Yan, Lian-Ming Gao and De-Zhu Li. 2013. Molecular evidence for natural hybridization between Rhododendron spiciferum and R. spinuliferum (Ericaceae). *Journal of Systematics and Evolution* 51: 426-434.
- Liu, R. L. 2008. *Study On The Systematic Classification Of Subgenus Tsutsusi (Sweet) Pojarkova of Rhododendron In China*. Ph. D. Thesis. Jiangxi Agricultural University.
- McQuire, J. F. J. and Robinson, M. L. A. 2009. Pocket guide to Rhododendron Species. Kew Publishing, Royal Botanic Gardens, Kew, U.K.
- Spady, H. a. 1998. Rhododendron Species Dictionary (<http://www.mossin.dk/gert/rhododict.html>).
- Xiao-Feng Jin, Bing-Yang Ding, Shui-Hu Jin, Yue-Jiao Zhang and Cheng-Xin Fu. 2007. Revision of some problematic taxa of Rhododendron sect. Tsutsusi (Ericaceae) from China. 2007. *Ann. Bot. Fennici* 44: 18–24

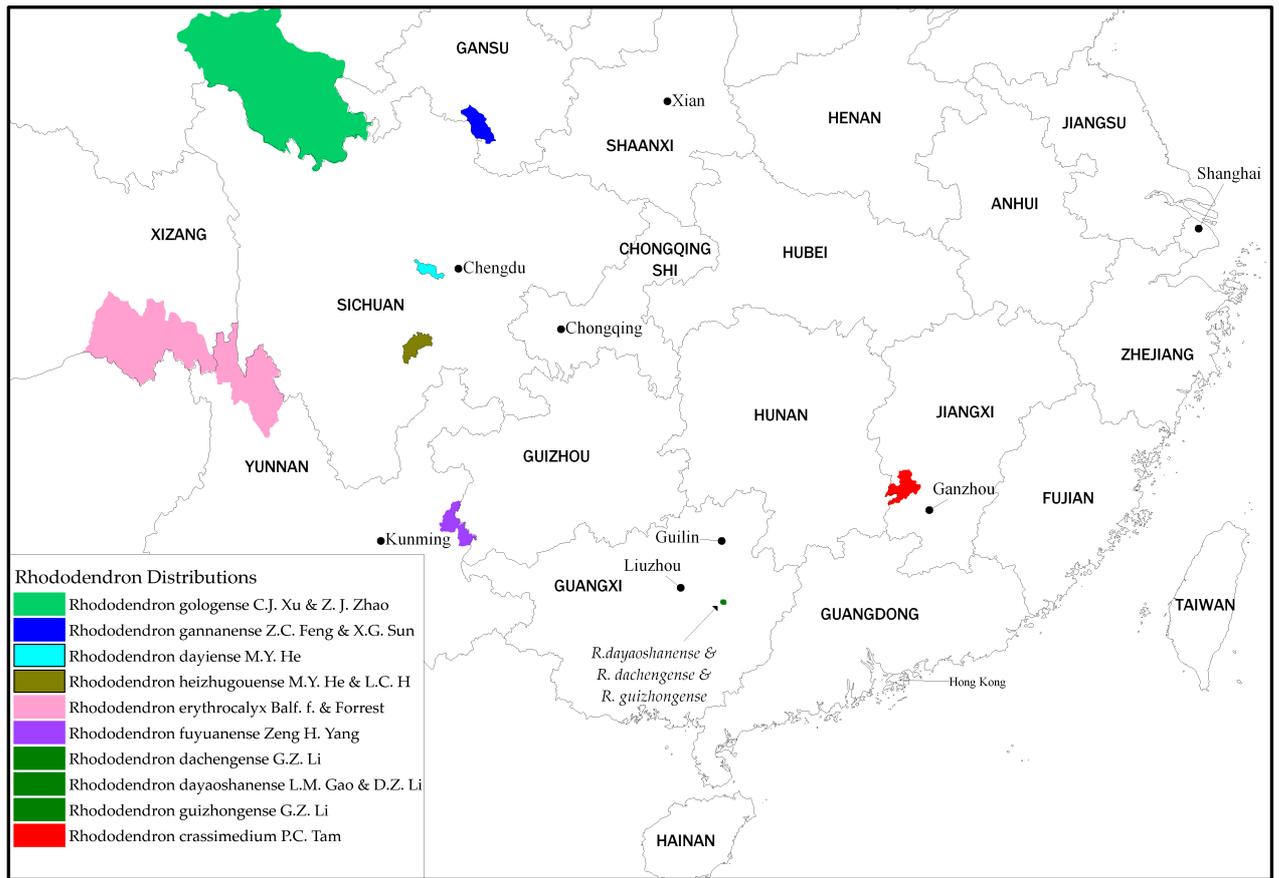


Figure 2 Distribution of Chinese species (from Fang et al. 2011). The distributions are mapped as counties within which the species occurs, the actual distribution is likely to be smaller, particularly in the west where counties are large.