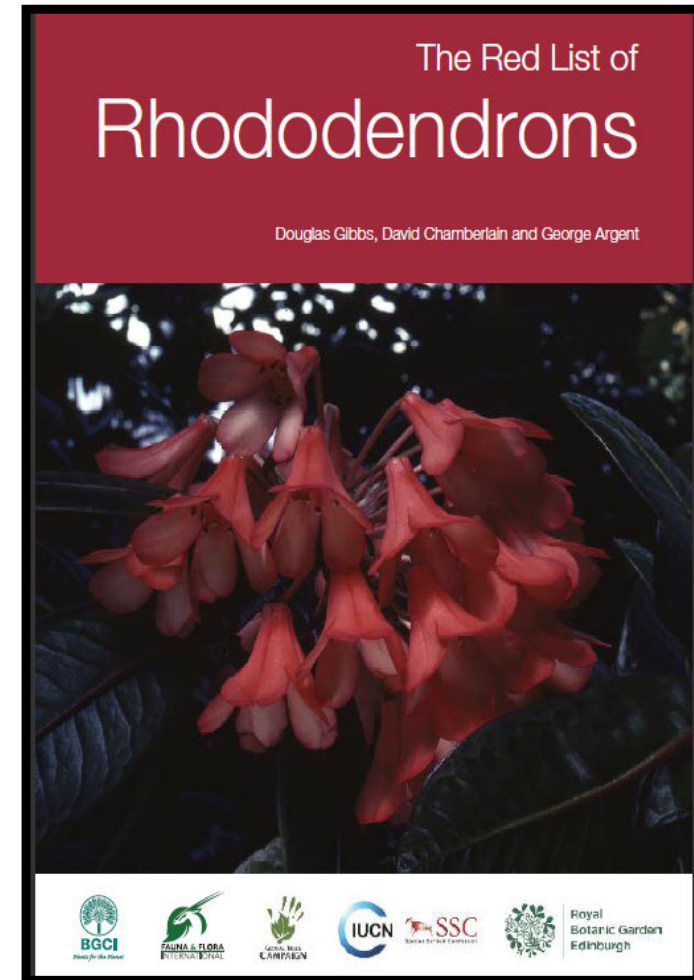


Ex Situ Conservation of Rhododendrons & Azaleas

A British Perspective

Kenneth & Peter Cox

Glendoick
gardens ltd



R. calendulaceum

R. arborescens

R. prinophyllum

R. viscosum

R. maximum

R. catawbiense

R. caucasicum

R. ponticum

R. arboreum



18th Century introductions to Europe



J.D. Hooker 1850s



R. niveum, Helligan, Cornwall

Golden Age U.K. Woodland Gardens 1900-1939

Crarae

Dawyck

Inverewe

Mount Stewart

Rowallane

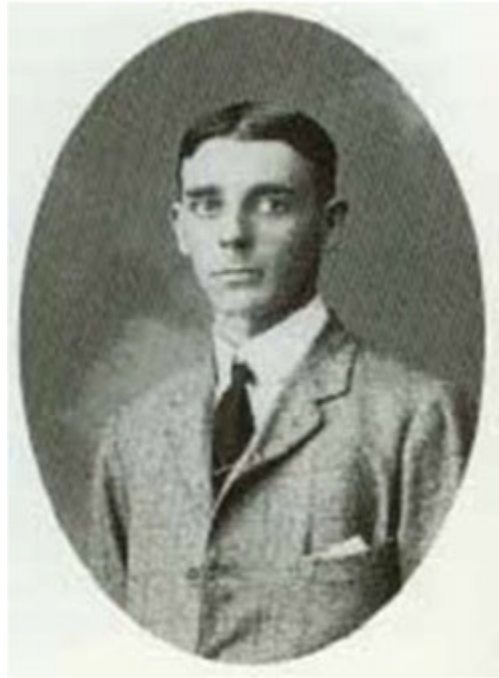
Bodnant

Caerhays

Exbury

Leonardslee





Forrest, Kingdon Ward, Farrer et al



RBG, Edinburgh

Dawyck Wilson, Sichuan



Significant UK collections

- Royal Botanic Garden, Edinburgh
- National Trust & National Trust for Scotland
- Private Gardens
- National Collections (Plant Heritage)

- Vireyas: RBG Edinburgh, Glasnevin, Ireland.



Windsor Tower Court, Wilson 50 Kurume



National Trust and National Trust for Scotland

Crarae



Active management v. Passive Stonefield Castle, Argyll

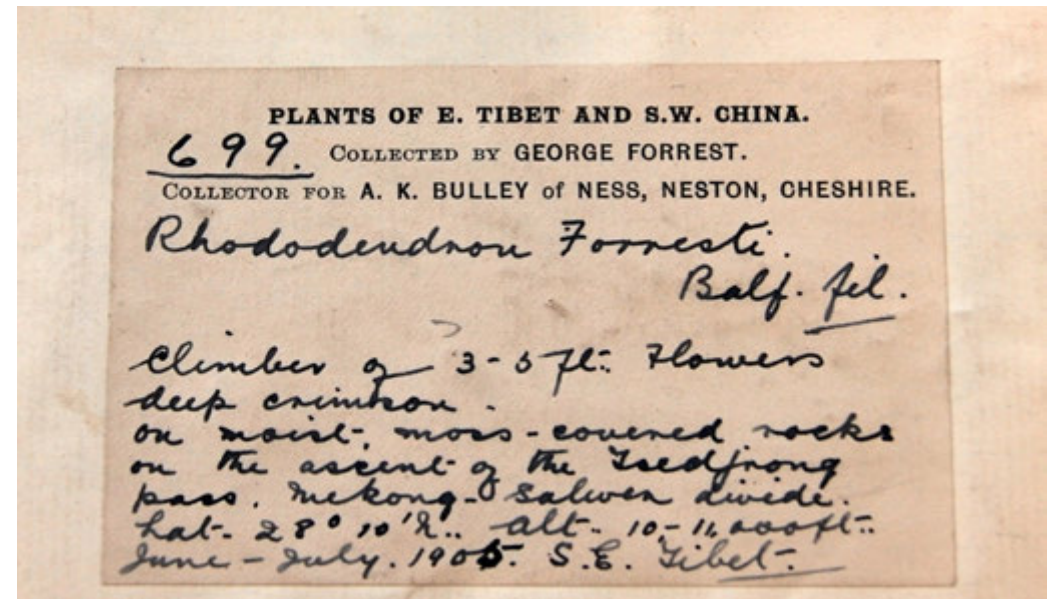
U.K. Rhododendron Knowledge: Taxonomy, Education, Literature, Living Collections



Records: Collector's Numbers



R. forrestii F. 699

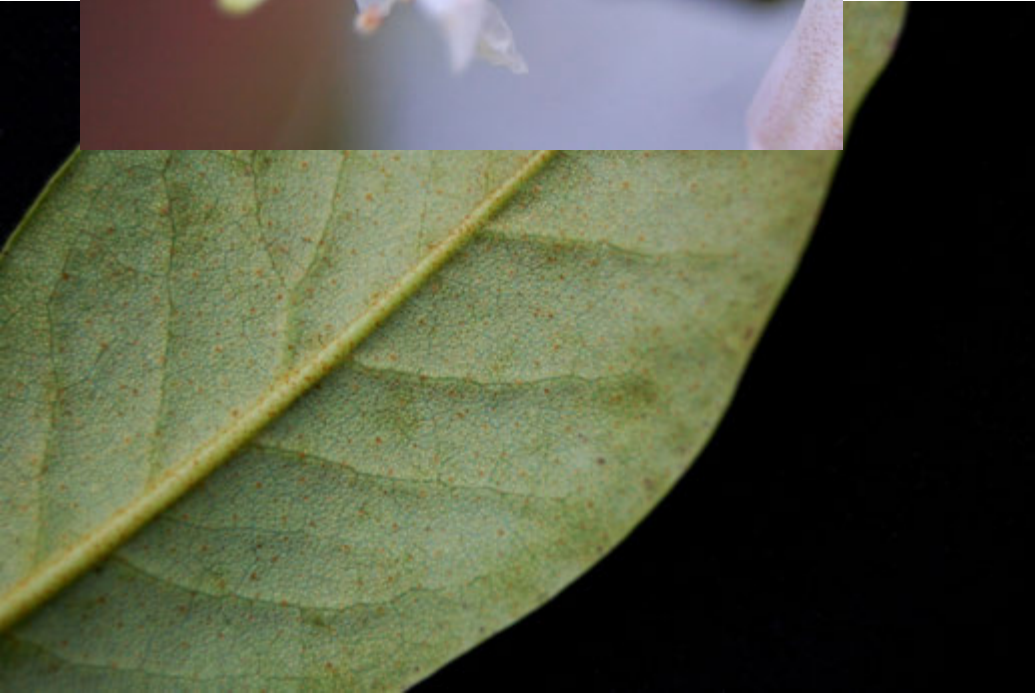


Records



Records & Labels





Identification/ field work

CONSERVATION = Choices

Make Best Use of Limited
Resources

- Land
- Labour
- Capital
- Need to make Well Informed
Priority Decisions



Rhododendron Species

Conservation

Greatest Threat

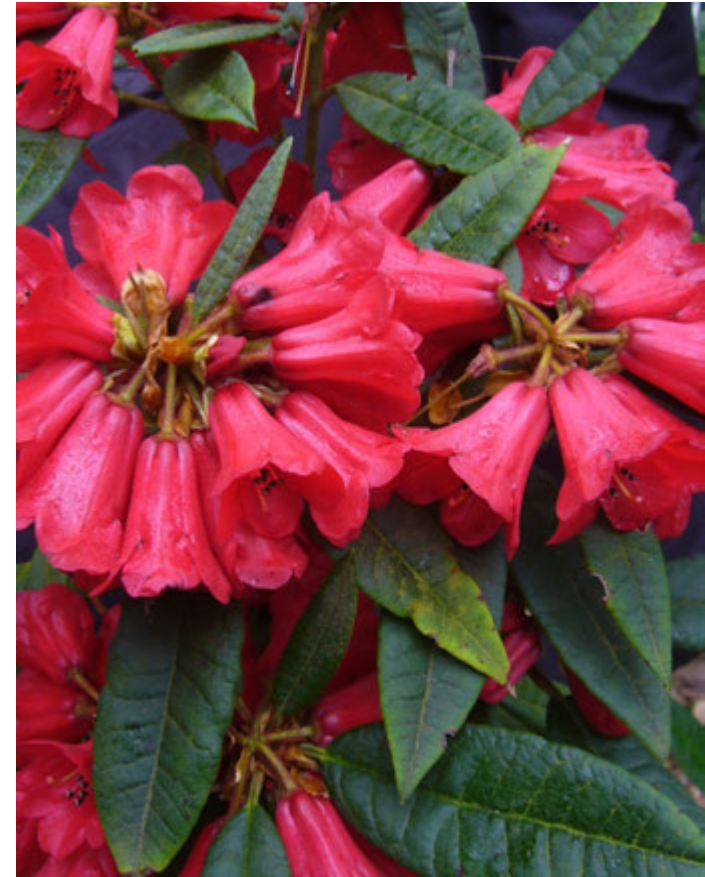
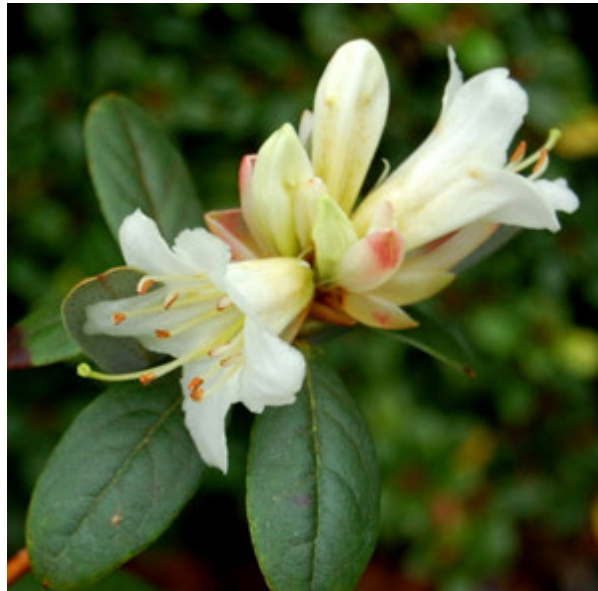
- Species with a very narrow/local distribution.
- Low altitude species in areas with high population pressure
- Species Threatened by Climate Change

R. platypodum Jinfo Shan



Rh. miniatum *Tsari valley, Tibet*





Sp. Nov Vietnam
Sp Nov Monantha SS
R. Venator aff, AP, India

Urgent Need to Describe Taxa. (Herbarium Specimens)

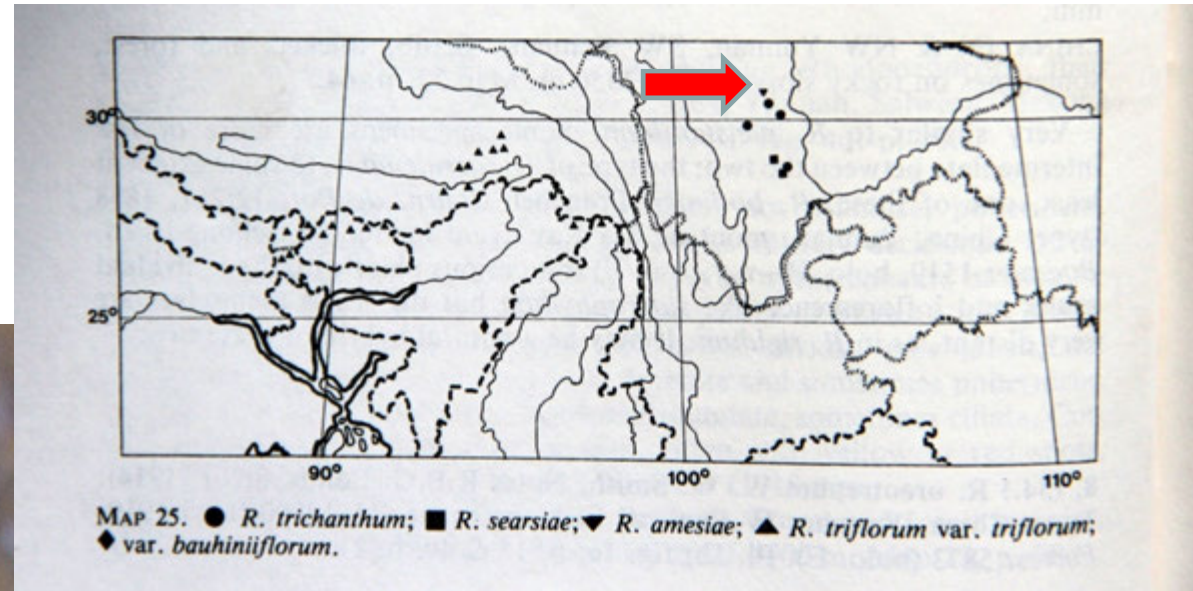
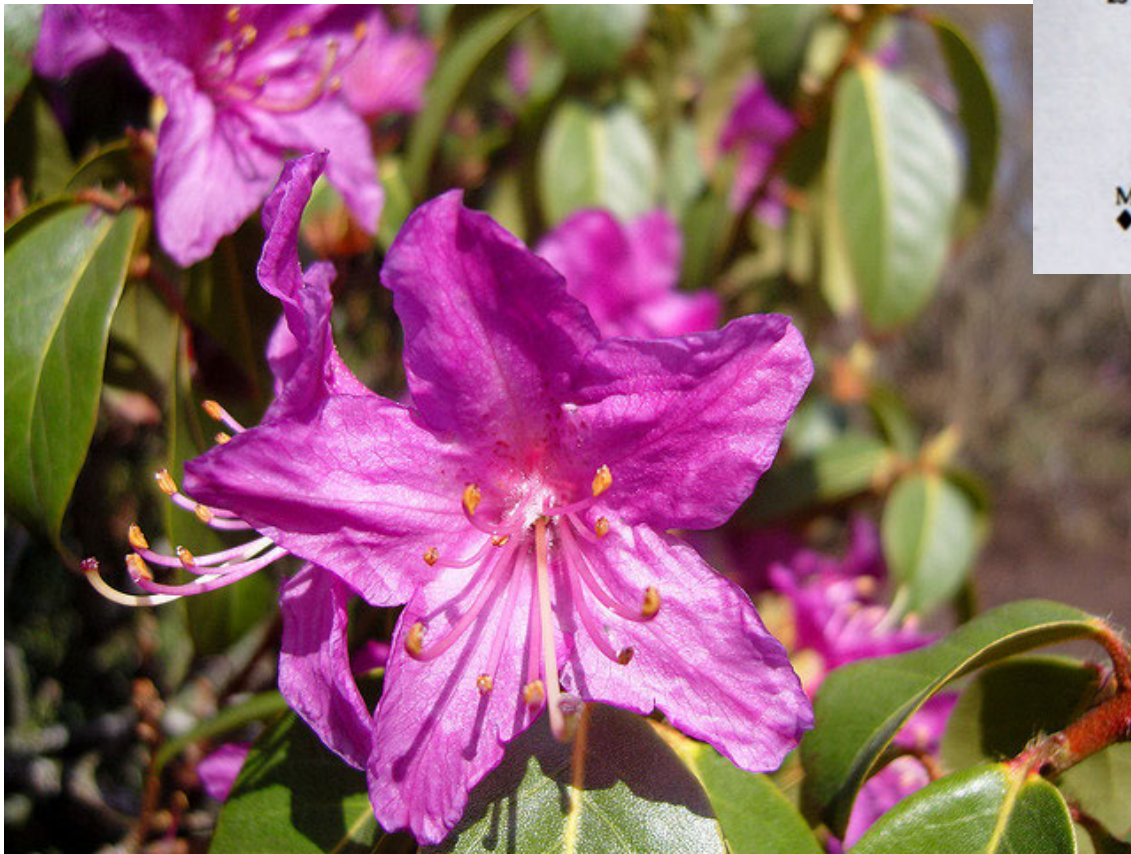
If we don't, we'll lose species before we get round to naming them.

R. titapuriense

AA Mao, K.N.E. Cox, D.F. Chamb 2013



Many so-called 'rare'
species are not



R. amesiae

*only known from type
collection*

= R. concinnum



Natural
hybrids

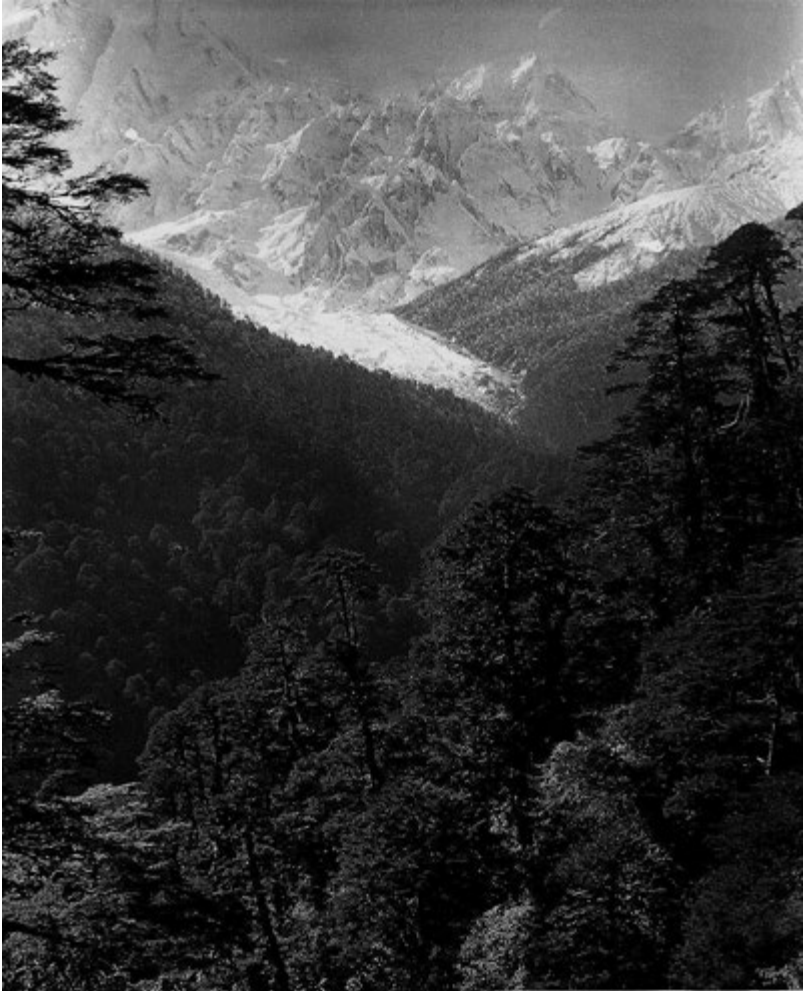
R. X inopinum

*R. wasoni x R.
pachytrichum*

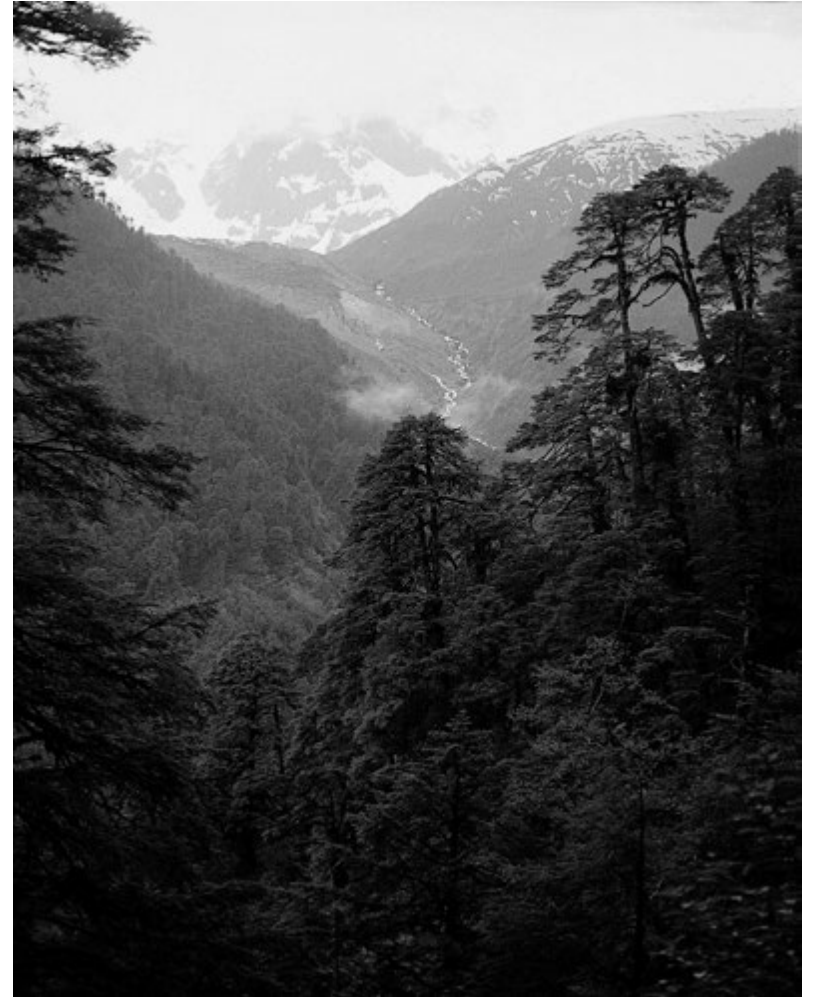


Sect Chionastrum
Data deficient Poorly
represented in cultivation

Climate Change Tsangpo Gorges



1924 Kingdon Ward



1996

Which are **really** endangered species?

- Red List 35 hardy (non-vireya) species EN or CR
- 30 of these are either data deficient, natural hybrids or insignificant regional variations.
- Probably only 6 of the 35 on list are truly endangered taxa:
- *R. adenosum*
- *R. austrinum* (USA)
- *R. chapmanii* (USA)
- *R. fletcherianum*
- *R. platypodum*
- *R. viscidifolium*

Alternative List of Endangered Species

- *R. niveum*
- *R. fansipanensis*
- *R. suoilenhensis*
- *R. scopulorum*
- *R. balangense*
- *R. arboreum ssp. albtomentosum*
- *R. lowndesii*
- *R. insigne*



R. arboreum
low altitude
species

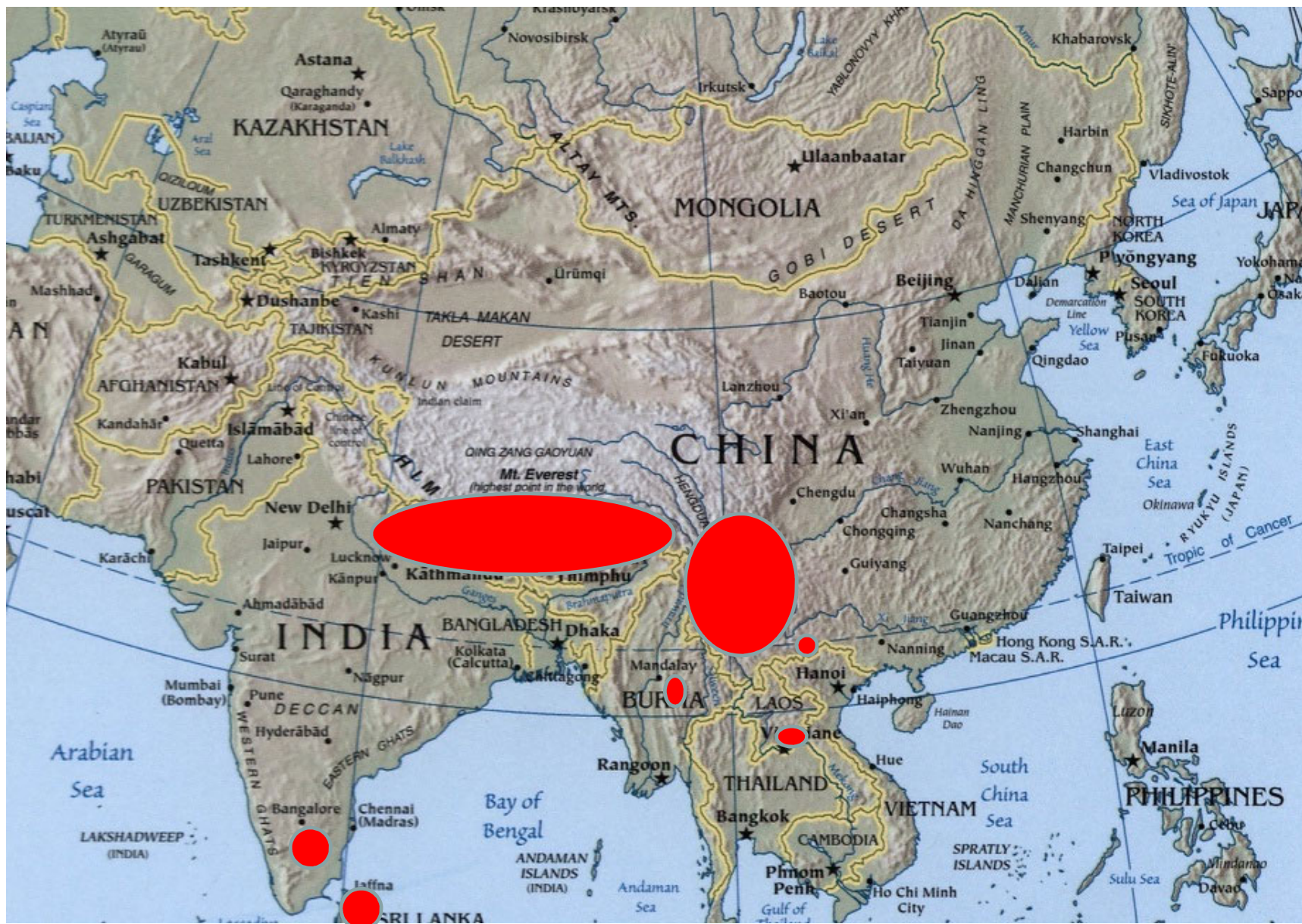
R. arboreum distribution



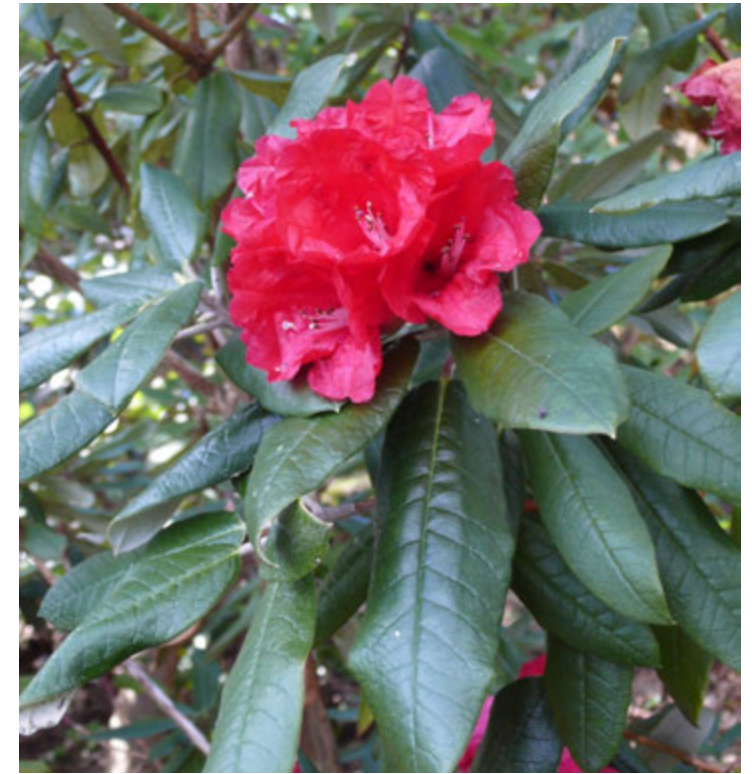
R. arboreum ssp. cinnamomeum



R. arboreum ssp. delavayi



R. arboreum
distribution



R. arboreum ssp. *delavayi* Mt
Victoria KW



R. arboreum ssp. *delavayi* Doi Inthanon, Thailand



R. arboreum ssp.
nilagiricum
Tamil Nadu, S India
Shola forest



R. arboreum regeneration



R. arboreum

National
Collections
representing
populations



Yunnan

R. wardii



S.E. Tibet

R. astrocalyx Balf.f & Forrest, *R. croeceum* Balf.f. & W.W. Sm., *R. gloeblastum* Balf.f. & Forrest, *R. litiense* Balf.f. & Forrest, *R. oresterum* Balf.f. & Forrest, *R. prasinocalyx* Balf.f. & Forrest





Variation *R. cinnabarinum*



Beauty Contest

Which are you going to grow?



Value
Judgements

R. pachytrichum

Cultivars

Little –loved species

Conservation
Value Judgements

R. vacciniodes



Selected forms?
R. boothii 'Tagin
Gold'

Clones have little
conservation value.





Subsection Lapponica

Are these
really
'species'?

Who cares?



Evolution plants die out....

R. niveum was it ever
plentiful?





Conservation of Ecosystems/habitats Luo Ji Shan, Sichuan

How can ex situ conservation help?



Seeds of Cultivated Rhododendrons

Some Species
Never
hybridize



R. albrechtii



R. camtschaticum



R. semibarbatum



Controlled or Hand Pollination



Plant *en masse* R. augustinii RBGE



Mount Stewart, Co Down, Northern
Ireland *R. magnificum*

CBD Nagoya Protocol



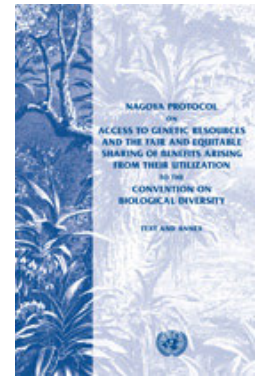
Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization and Related Developments

2015 Protocol in Force

Pre 1981 Material supposed to be free of restriction

Post 1981 Distribution restricted.

AICHI biodiversity targets are being hampered by the Nagoya Protocol



Is the CBD the greatest hindrance to *ex situ* conservation?

Legal Collecting Becoming Impossible Even for Botanical Institutes

- *India & Sikkim*
- *Yunnan, China*
- *Bhutan*
- *Nepal*
- *Turkey*
- *Korea*
- *Chile*
- Dr David Rae, Director of Horticulture RBGE



A Strategy for Ex Situ Conservation

1. Plant endangered species en masse in gardens.
2. Grow them in the best climate/garden locations for them.
3. Keep excellent records, long lasting labels & GPS maps
4. Spread plant material about as much as possible.
5. Co-ordinate UK collecting polices: RBGE, Windsor, National Collections, NT, NTS etc and **SHARE** material
6. Reform implementation of CBD so that collecting seeds of threatened plants can take precedence over other rules.
7. Update the Red List, ongoing, continually, web-based.

And finally.....

One staggering successful ex situ
Rhododendron conservation story...

R. baeticum
(*R. ponticum* ssp. *baeticum*)
Endangered in the wild in
Spain, Portugal.

In UK Its future is assured!

