

# Newsletter of the ARSV



## Renewal of Subscriptions for 2017/18

Renewals are now due for 2017/18. For those who only receive the newsletter by post the renewal form is included with this newsletter. If you get the email version, with or without the printed version, the renewal form has been emailed to you already.

Life members, honorary members and those paid through 2018 will not receive a renewal form but could you inform the newsletter editor if your contact details have changed.

**PLEASE RENEW NOW**

## NQ surveys update

The project to recollect *R. viriosum* and *R. lochiaie* from north Queensland peaks is progressing well. Collecting and surveying has recommenced in the 'dry season', with the Australian Tropical Herbarium team visiting the Coast Range and Mt Fisher so far this year (not visiting Rhododendron sites), with trips planned for Bartle Frere, Mount Finnigan and Thornton Peak in May to August. The 'dry season' has turned out to be 'wet' with the Australian Tropical Herbarium staff enduring very soggy conditions on the trips this year! Hopefully the dry season will arrive before Henry Hancock and I, representing the Society, participate on the trip to Mt Finnigan scheduled for 5-10 June.

Once completed, the Society will have a close to comprehensive collection of *R. viriosum* and *R. lochiaie* from known localities, and with cuttings taken from three plants per population, we will be able to compare the variation within and between population, and between the two species.

The cuttings are spread between the shade house at NRG Olinda and my glasshouse; some of the cuttings did not travel well in the mail from Queensland, so back up cuttings will be taken as soon as material is available.

Leaf samples are being sent to Sue Gardiner and her team at Plant and Food Research New Zealand, who will undertake analysis to compare the diversity within and between the populations, the two Australian species and vireya species in New Guinea. The Australian Rhododendron Society national body is providing a grant towards this work. We will also help to supply leaf samples of the New Guinea species, and where possible, provide samples from different populations of those species. This aspect may be challenging as though we hold many species, we do not hold well-provenanced specimens from 2-3 different locations for more than a handful of species. I'll prepare a list and circulate to vireya enthusiasts in the Society with the aim of expanding the number of provenance samples we can send into New Zealand.

A detailed report on this project will be published in the 2017 The Rhododendron.

Andrew Rouse

## Upcoming events

**Saturday and Sunday June 24<sup>th</sup> and 25<sup>th</sup>** Australian Plant Society Ballarat DG Winter Plant Show & Sales. Robert Clark Horticultural Centre, Ballarat Botanic Gardens, Ballarat. 10:30 am to 3:30 pm. A display of the flowers and foliage brightening Ballarat district gardens in the cold months of winter and a large range of plants for sale.  
<https://apsvic.org.au/event/aps-ballarat-dg-winter-plant-show-sales/>

**Saturday and Sunday August 19<sup>th</sup> and 20<sup>th</sup>** Camellias Vic & Waverley Garden Club will be holding their annual Camellia & Garden Show. Saturday – 1:00 pm to 5:00 pm Sunday - 10:00 am to 4.30 pm. Mount Waverley Community Centre, 47 Miller Crescent, Mount Waverley. Entry - Adults \$5.00 and children free.



Cuttings of field collected *R. viriosum* and *R. lochiaie* held at Olinda

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## Rhododendron in focus: *Rhododendron luteum*

Subsection Pentanthera

This deciduous azalea species has a wide distribution in Eastern Europe and the Caucasus mountains. It also grows well in England, and has naturalised in many areas which have a similar climate to the "Pontic Region", east of the Black Sea.

This species has bright yellow flowers with a strong sweet perfume and has been extensively used in hybridising, and I suspect that most of our yellow deciduous hybrids are derived from *luteum*. We have at least a dozen plants in the Garden, mostly in the Horseshoe bed or in the Azalea species bed towards the North end of the garden. *R. luteum* is a very popular plant in English gardens and I saw some dazzling banks of this in the Saville Gardens and also Sissinghurst (see photo).

**Alan Kepert**

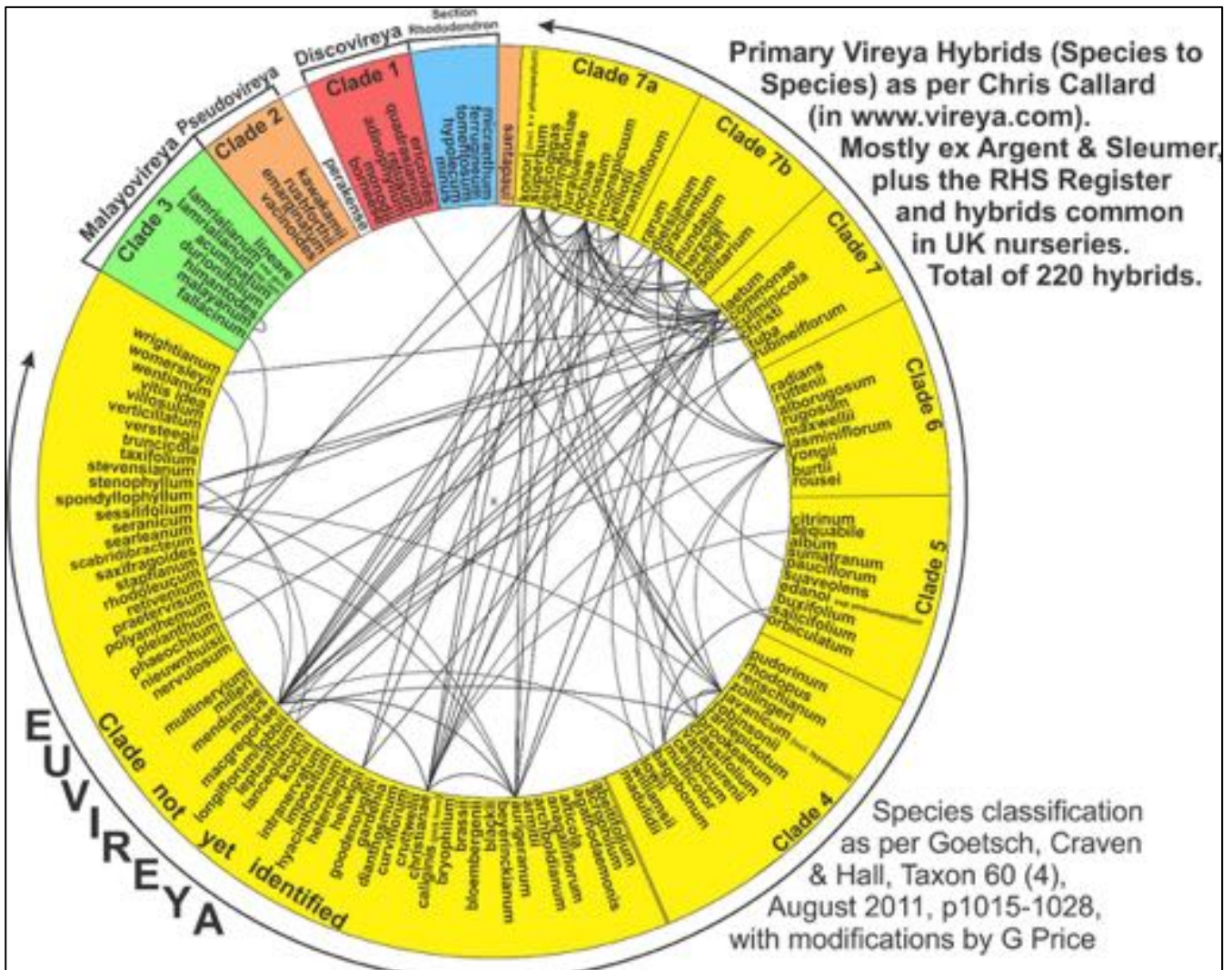


This 150 year old Rhodo in Canada is being used to promote tourism in Ladysmith Canada. Read the article at BBC News <http://www.bbc.com/news/world-us-canada-39966325>

## Vireya hybridising project report

The Hybridising Project came to an abrupt halt in September last year and since then the only advance has been in planning. The halt came about because of a need for my wife Janet and I, and our two dogs, to go travelling for 3 months while our apartment was renovated. Then in January the delay was extended because I had a shoulder operation; from which I am only just now recovering. The enforced rest has allowed me to reassess the project and develop what I think is a better and more achievable plan.

The big problem with conducting a hybridising program is to avoid the easy option of crossing whatever is flowering with whatever else is open at the same time. This opportunism strategy is what has largely been followed by many breeders for over 50 years and it has produced many of the primary hybrids we have today. It has also left many possible crosses unexplored. The following diagram is intended to show what species-to-species crosses have been achieved – as evidenced by the resulting primary hybrid reaching broad cultivation and/or registration.



Circular plot showing registered and commonly available Vireya species-to-species hybrids. Each hybrid is represented by a straight or curved line across the middle between its species parents, which are arranged around the circle within their classification groups (clades) as defined by Goetsch, Craven and Hall (2011) with minor modification by Graham Price in 2016. Quite a few of the Euvireya species have not yet been classified into their clade.

The plot of primary hybrids shown above, plus similar plots for primary hybrids produced in Australia, show that much of the attention in hybridisation programs has involved species within Euvireya, such as *R. konori*, *R. leucogigas*, *R. viriosum* and *R. loranthiflorum* in Clade 7a; *R. gracilentum* and *R. zoelleri* in Clade 7b; *R. laetum* and *R. commonae* in Clade 7; *R. jasminiflorum* in Clade 6; *R. javanicum* in Clade 4; and *R. aurigeranum*, *R. christiana* and *R. macgregoriae* also from Euvireya but not yet classified into a Clade.

It is notable that there are few primary hybrids involving species from Clade 5, only the one from Clade 6 and almost none from Clades 1, 2 and 3 – the Malayovireya, Pseudovireya and Discovireya.

With the above information in mind, the initial idea for this project was to make systematic primary crosses between all the 150 Vireya

species we have growing in the Vireya House at Olinda. It was soon realised that it is impossible to cross each of the 150 species in the glasshouse with every other species – the number of distinct crosses is 150 factorial; around  $5.7 \times 10^{+262}$ ; which is many more than the number of molecules in the universe.

Fortunately, there are two factors which limit the number of primary crosses that should be attempted. The first limitation is that the physical size of the style (the stalk supporting the stigma in the flower) can be incompatible with the length of the pollen tube – the pollen tube is too short and cannot reach the ovary or it is too long and overshoots, folding back and missing the ovary. This physical limitation means that small-flowered species (short pollen tubes) will probably not pollenate large-flowered species (long styles) and large-flowered species will not pollenate small-flowered species. The second limitation, as advised by Andrew Rouse, is that because there are so many small, single- or double-flowered species in the collection the overwhelming result would be many thousands of indistinct, small, single- or double-flowered hybrids of no particular value. This means that small-flowered species should not be crossed with other small-flowered species, particularly where the number of flowers in the umbel is low. Andrew suggested that I be more selective in choosing crossing parents and develop specific targets so that the outcomes will be plants with a higher likelihood of horticultural merit.

I have now developed what I hope is a better strategy for selecting among the available species for crossing. This strategy is based on: (1) previous crossings of each species; and (2) a rating of each species' hybrid potential (flower colour, size, shape, etc.), which I hope to extend to include each plant's growth characteristics (plant habit and size, leaf size and characteristics) and disease resistance. This issue of rating of hybrids is something I would love to discuss with collectors and other interested people.

At the same time as I have been developing strategies for selecting parents I have revised the equipment and mechanisms I use to collect, store and use pollen, particularly the issue of freezing the pollen to extend its period of viability. The equipment and mechanisms are now in place and I have convinced my wife Janet to join me on each of our pollen collecting and species crossing trips up to Olinda. Her help will overcome the physical difficulties I have in reaching flowers and placing pollen on stigmas. We are expecting to begin these weekly trips in the middle of May.

One deficiency remains in our strategy - the need for additional people to get involved, particularly for frequent monitoring of seed development and collection when ripe. If anyone would like to become involved with this project you would be most welcome – just contact me.

Dr Graham Price, Ph: 040 9639 448, E: lithic01@bigpond.net.au

## Companion animal – Mrs Gould's Sunbird

Sunbirds are small nectar and insect feeding birds found in Africa, Asia and Australasia. They have sharp, generally down-curved bills and the tongue is tubular with a fringed tip; with the grooved pallet it forms a sort of pump for sucking up nectar. Hummingbirds have similar "pumps" and this may be an adaptation for feeding on long tubular flowers. Most sunbirds species are sexually dimorphic – the males often having areas of brilliant plumage, the females not.

The beautiful long tailed Mrs Gould's Sunbird (*Aethopyga gouldii*) is one of twenty two species in this genus and occurs through the Himalayas, across much of northern Southeast Asia, most of Vietnam and deep into central China. It is known to be a pollinator of at least *Rhododendron floccigerum* in Yunnan (*Journal of Pollination Ecology*, 16(11), 2015, pp 72-81). Can anyone identify the *Rhododendron* the bird below is feeding on? The photo is from the web and was taken by Jerry Oldenettel at Doi Inthanon, Thailand's highest mountain. This peak has three *Rhododendrons* - *Rhododendron arboreum* subsp. *delavayi*, *R. lyi* and the Thai endemic *R. ludwigianum*.

There is one species of sunbird in Australia occurring in north Queensland. Maybe it pollinates our *Rhododendrons*?



"Th13\_02798a" (CC BY-NC-SA 2.0) by jerryoldenettel



"Gould's Sunbird - Bhutan 2012\_S4E0253" (CC BY-NC-SA 2.0) by frances1