Yellow *Sarcanthinae* Breeding – An Update

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After many years of careful hybridising, *Sarcochilus* colours have reached an exciting milestone, with the development of show-quality flowers in eye-catching yellows and autumn shades. To date the yellow colours have resulted from two very disparate approaches to achieving the same goal. One has been by breeding from *S. hartmannii* 'Red Snow' to produce albinistic offspring, and the other by breeding from *S. hirticalcar* and *S. dilatatus*, which have the ability to pass on yellow colours. Hybridisers are now crossing flowers from these two breeding lines together, with the progeny showing a lot of promise and a whole new avenue for development.

Background

Yellow breeding from *S. hartmannii* 'Red Snow' resulted from the early discovery that its hybrids are occasionally albinistic in nature, and this trait continues when used in further hybridising. The early albinistic hybrids were white with yellow centres, but keen breeders, particularly Neville Roper, persevered and have achieved great results. These 'poached eggs' were further developed by crossing with each other to finally give the well coloured flowers so much admired today.

Yellow breeding from the diminutive *S. hirticalcar* and *S. dilatatus* has required several generations to reach the stage where flowers are of good size, filled-in and strongly yellow. This is the work I have been doing, and the first step saw *S. dilatatus* crossed with *S. hartmannii*. The resulting *S.* Aussie Dawn was crossed with *S.* Riverdene to produce *S.* Misty. These are effectively *S.* First Light with a touch of *S. hirticalcar*, the combination of the two twig epiphytes enhancing the potential for success in breeding yellows. The next step created *S.* Galaxy by crossing *S.* Misty with *S. hartmannii*. The better coloured *S.* Galaxy seedlings were then used in the further breeding of yellows, and also in crossing reds and yellows for striking bi-colours.

I began breeding the two streams together ten years ago when neither type displayed the large colourful flowers we see today. At that time the best I could use for parents were the albinistic *S.* Snowhart 'Yellow 2001', *S. hartmannii* 'Yellow Spot', and my best coloured flower *S.* Misty 'Spangles'. The progeny from the early combined crosses were good, but full yellows rare, a situation which improved greatly when better, more colourful parents became available.

Observations of the two types – Pros and Cons

Yellow flowering hybrids developed from *S. hirticalcar/dilatatus*:

- Have clear yellow flowers with a degree of red in the centre. They cannot be mistaken for the albinistic type.
- Have large labellums which give balance to the increased size of modern hybrid flowers.
- Flowering times often occur throughout the year.
- Plants often grow monopodially rather than producing side growths, reflecting their twig epiphytic origins.
- Have shown a tendency to act only as the pod parent making it difficult to cross my yellows among themselves.
- Flowering can be a bit sequential with only a few flowers open at once, but this tendency lessens with each generation.

Yellow flowering hybrids derived from albinistic breeding:

- The plants produce plenty of side growths and clump up quickly.
- For me they hybridise readily as the pollen parent and less so as the pod parent but other hybridisers may not have this problem.
- The flowers are usually not a clear yellow colour but appear white closely overlaid with bars of colour and noticeably lack any red.

S. hartmannii 'Gold Spot'

S. Snowhart 'Yellow 2001'

S. Misty 'Spangles'

S. Galaxy

S. Amber Star

S. Cosmic Snow 'Yellow 2013'

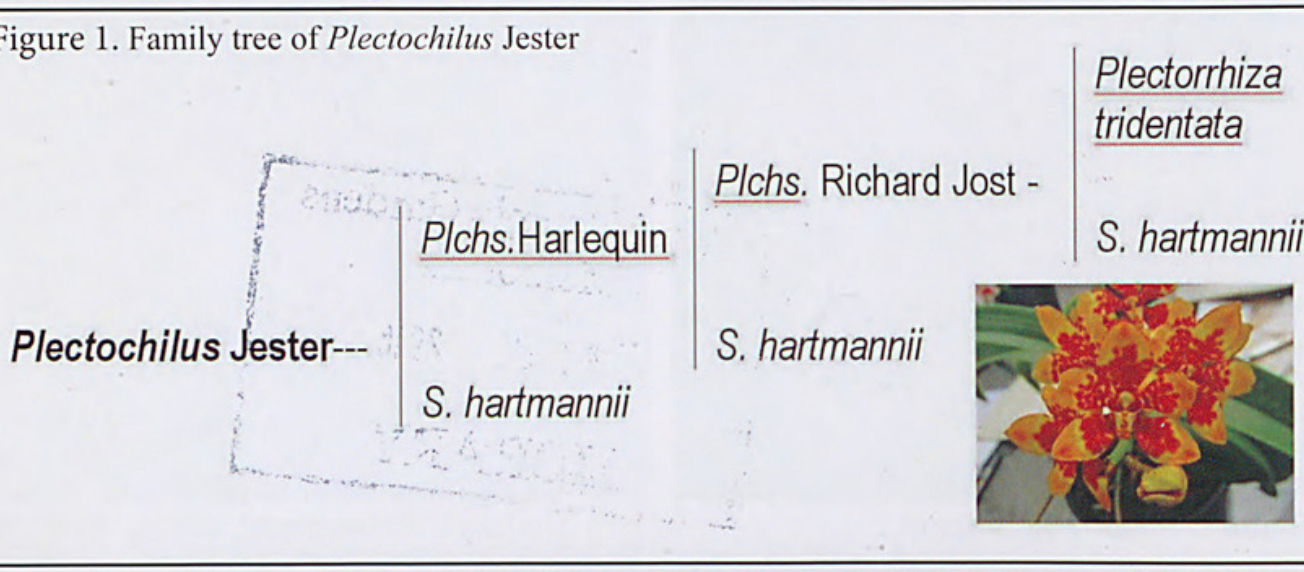
S. Parma 'Sweet'

S. Sundaani's Galaxy

Plectochilus (*Plchs.*) Charisma 'Golden Tan'

S. Amber Dawn 'Gold 2015'

Figure 1. Family tree of *Plectochilus* Jester



- They are predominantly spring flowering.
- Racemes may be a bit weak.

Hybrids which I have flowered

The earlier crosses have flowered and each spring is exciting as seedlings of the later ones mature. Those of mine which have flowered are:

Plectochilus Charisma (*Plchs.* Harlequin x *S.* Heidi)

Plchs. Jester (*Plchs.* Harlequin x *S. hartmannii*) (see Fig.1 for breeding line)

S. Amber Dawn (*S.* Velvet Dawn x *S.* Amber)

S. Amber Star (*S.* Galaxy x *S.* Amber)

S. Cosmic Snow (*S.* Galaxy x *S.* Snowhart)

S. Snow Mist (*S.* Misty x *S.* Snowhart)

S. Space Girl (*S.* Galaxy x *S.* Heidi)

S. Space Race (*S.* Galaxy x *S. hartmannii*) (see Fig. 2 for breeding line)

S. Sundaani's Galaxy (*S.* Galaxy x *S.* Parma)

Family Trees

When drawing up family trees it soon became apparent that a major role is played by *S. hartmannii*, a parent noted for washing out colours rather than enhancing them. This tendency is partly overcome by using the yellow-centred forms of the species, such as *S. hartmannii* 'Yellow Spot' ('Vacy' x 'Red Snow') or *S. hartmannii* 'Ginger Snow' ('Red Snow' x 'Yellow Snow'), two examples often used by me and prominent in the trees shown here. In hybridising based on *S. hirti-calcar* and other diminutive coloured *Sarcochilus* the use of *S. hartmannii* also improves flower size and shape, as well as other qualities outlined above.

Progress to date and in the future

My experience has shown that a lot is to be gained by bringing the two breeding lines together as the deficiencies of each seem to be helped by strengths in the other. The resultant hybrids have displayed a good percentage of clear yellow, red-centred flowers of pleasing shape, which are carried on firm racemes. The plants grow strongly and clump up quickly, so although it is early days, the future looks bright.

Further reading about hybridising for yellow may be found in *The Orchadian*, September 2008 and March 2015.

David Butler of Green Vista Orchids has been an Australian orchid commercial breeder and grower for many years.

Figure 2. Family tree of *Sarcochilus* Space Race