

THE ROCK GARDEN

Number

111

July 2003

Michael Almond on GEORGIA
James Cobb on MECONOPSIS
Bojtech Holubec on the TIEN SHAN
Also RICHEAS - CAPE BULBS - SAXIFRAGA OPPOSITIFOLIA

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The ROCK GARDEN

The Journal of the
Scottish Rock Garden Club

July 2003

Number 111

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Malcolm McGregor
16 Mill Street
Hutton
near Drifffield
East Yorkshire, UK
YO25 9PU
tel. 01377 270717
email: mcgregor@cix.co.uk

The Editor welcomes articles, photographs and illustrations on any aspects of alpine and rock garden plants and their cultivation. Articles, if submitted in manuscript, should be double spaced but it is hoped that authors will submit material on disk, either in Microsoft Word or some compatible software.

The deadlines for contributions are 1 November for the January issue and 1 April for the June issue.

These dates also apply for material for the Yearbook & Show Schedules.

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Carol Shaw
Delft Cottage
Dyke
Forres IV36 0TF
Tel. 01309 641405
email: cshaw@findhorn.org

Enquiries about **illustrations** to:
John Howes
42 Louis Street
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Hull HU3 1LZ
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From the Editor

AS ALWAYS IN THE JOURNAL there is a great variety of pieces: the Tien Shan, *Saxifraga oppositifolia* and its cousins in Austria, Georgian plants, an extended review of *Cape Bulbs*, a spectacular look at *Meconopsis*, and an article on a genus of primarily Tasmanian plants, *Richea*, which are truly out of the ordinary, and of which some of the smaller members look like true rock garden specimens. Along with show reports, short pieces and book reviews it feels like a true rock gardener's journal. But one thing every member should take the time to read is the piece by our new Seed Exchange Manager, Professor Stewart Pawley.

We are tremendously fortunate to have got such a wonderfully capable individual to take over from Jean Wyllie who had been in charge for so long. For many members the seed exchange, like that of NARGS or the AGS, is a major reason why people take out membership. Seed exchanges are a wonderful source of plants which we may never have seen, and probably never have been able to buy, and the pleasure of successfully growing something from seed is so much greater than that of struggling to keep alive a plant bought from a nursery. It can also mean that you have a group of plants which have the subtle variety of a typical wild population which can be so much more attractive than a large planting of absolutely identical plants. For overseas members the value is potentially even greater, with the seed exchange providing a source of plants which could not be obtained in any other way.

Having just come back from eastern North America, I'm very aware of just how different the style of gardening is there compared with Britain, but also with further west in the USA, and how much sources of seed matter to them. To start with differences: a whole range of native North American plants are readily available to them which we rarely if ever see – an incredible variety of trilliums for example, a wide range of violets, wild anemoneellas and hepaticas, woodland phloxes and silenes. And then there are the wild dogwoods, rhododendrons and kalmias, which are in turn backed up by the range of large woodland trees which can be quite dazzling in their variety.

So there are a tremendous range of plants which we do not really know in any great detail. They are quite different from those further west on the other side of the Appalachians. Travelling west of the Appalachians the Great Plains

eventually give way to the Rockies and then to the high plateaus and on to the Cascades and finally across to the west coast, but east of the Appalachians the flora is pre-eminently a woodland one. The world that met the early European settlers was a rich sylvan one: woodland with a dramatically larger number of tree species than they had ever seen in the old world, many oaks and hickories, maples and horse sugar, liquidambar, magnolias and liriodendrum.

If there are a lot of plants available that we do not have, there are also difficulties. One of the most obvious is that there are very many fewer nurseries selling rock garden plants and the ones there are (they could almost certainly be counted on the fingers of two hands) inevitably do a lot of their business through mail order. We can contemplate driving to nurseries across the country, and we know that the nursery owner will likely be at one of the Club shows. Just read the show reports and you realise that they are a wonderful source of plants from our specialist nurserymen and women. In North America that just is not possible. So many more Americans depend on seed as a major source of plants. And many of our North American club members were only just receiving their seed from the seed exchange at the end of April despite having applied as early as ever. The culprit is of course the strengthened regime of the American customs system which is requiring very detailed phyto-sanitary certification of seed that is going to American members. At least next year the process should be much smoother having had the benefit of this year at least. A knock-on effect is that Europeans donating seed to the NARGS seed exchange are going to have to do that by an earlier deadline to take account of the problem. In an era when GM crops are likely to be increasingly introduced on both sides of the Atlantic it seems ironic that the seed donated by a few plant hobbyists can be seen as a potential threat.

But just to show that the circle of coincidence is pretty small I have to mention just one of the wonderful gardens I had the chance to visit: Jim McClements' garden in Dover, Delaware – woodland plants, including some stunning trilliums, in a truly woodland setting. The coincidence is that before I went to America I had just finished the review of the new book *The Genus Epimedium*. This also includes a detailed study of podophyllums one of the species of which is the wild North American Mayapple, *Podophyllum peltatum*, which can be a weed in many areas – it's not just alien species, or exotics depending on your point of view, which can be a menace. Jim had many epimediums in his garden, they are perhaps even more popular there than here, but beyond that he had some spectacular podophyllums, and Jim had supplied a number of photographs of these rarer species for the reviewed book. I photographed a couple of them and one, of the remarkable *Porodophyllum delavayi*, appears with the review. Enjoy.

Highland Discussion Weekend Elgin 2003



Friday 3rd October to Sunday 5th October 2003
Eight Acres Hotel, Elgin, Moray

THE MORAY AND INVERNESS GROUPS bring the 2003 Highland Discussion Weekend to Elgin, the capital of Moray, and give members the opportunity to experience a new northern venue. The City and Royal Burgh of Elgin is on the main A96 road, 67 miles west of Aberdeen and 37 miles east of Inverness. From the south, it is accessed from the A9 via Aviemore and Strathspey. There are rail links from Aberdeen and Inverness. The nearest airports are Inverness and Aberdeen.

Elgin has historic links with the past with the Cathedral and Bishops Palace, and Ladyhill Spynie Palace. Elgin is at the entrance to Speyside's whisky industry and has two distilleries (as you can see from the programme, a visit has been arranged). There is good High Street shopping and a Saturday farmers' market as well as a 24-hour Asda supermarket (one of the top ten in Britain). Of garden interest are the Cooper Park, the unique Biblical Garden and nearby (about 5 miles) Blackhills Rhododendron Garden.

The Eight Acres Hotel is set in 8 acres of manicured grounds on the western approaches (A96) to Elgin. Facilities include a pool, spa-bath, sauna, solarium, gymnasium and squash courts, all to be found in the leisure club.

Elgin 2003 Programme



FRIDAY 3RD OCTOBER

- 16:00 Registration
19:45 President's Welcome Address
20:00 **The Bulb Group Lecture**
Erich Pasche
21:30 Small Bulb Exchange

SATURDAY 4TH OCTOBER

- 08:00 Registration
08:00 – 09:30 Setting up plants for show
09:00 Optional activities - distillery tour, visit to a young garden, or tour of historic Elgin with Stewart MacKenzie (Nephew of 'Clemantis' Bill Mackenzie)
11:15 ***Ericaceous Shrubs Easy or Difficult***
Graeme Butler
12:30 Show Opens
14:00 The Harold Esslemont Lecture
Searching for Alpines in The Pontic Mountains
Erich Pasche
15:30 ***Twenty-four Years on – Older and Wiser in New Zealand***
John Richards
19:15 Dinner
22:00 Plant Auction and Raffle

SUNDAY 5TH OCTOBER

- 08:00 Registration
09:30 The William Buchanan Lecture
And Recover the Rest ... exotic Asiatic Primulas
John Richards
11:00 ***Himalayan Androsace and Saxifrages***
Tim Roberts
14:00 **The John Duff Scottish Lecture**
Jim Sutherland

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Highland Discussion Weekend Elgin 2003

Accommodation is in double, twin and single rooms. There is no single room supplement. It would be appreciated if single members who wish to share a room could arrange this between themselves. Please remember to give details of dietary or any other special requirements.

Star attractions will be the PLANT AUCTION, RAFFLE and 50-50 PLANT SALE. Contributions for these would be most welcome. No Discussion Weekend would be complete without the PLANT SHOW, so come on, show us what you can do and support the Plant Show and HOLIDAY PHOTOGRAPHIC COMPETITION. Details are in the Year Book. If you have lost your copy ask for a show schedule when you book.

Members should have their bookings made before 22nd September 2003. Applications for bookings together with the appropriate remittance should be sent to

**The Registration Secretary, Mrs. Lorna Milnes, Dunbarney,
Myrtlefield Lane, Westhill, Inverness IV2 5BP (Tel. 01463 791605)**

Members wanting further information should write to
Davie Sharp, Kincaig, 4 Walker's Crescent, Lhanbryde, Elgin,
Moray IV30 8PB. (Tel. 01343 843111)

RESIDENT	PRICE
Friday Dinner - Sunday Afternoon Tea	£165
Saturday Lunch - Sunday Afternoon Tea	£110

NON - RESIDENT	PRICE
Saturday (morning coffee, lunch, afternoon tea)	£30
Saturday evening Dinner	£21
Saturday (morning coffee, lunch, afternoon tea, evening dinner)	£51
Sunday (morning coffee, lunch, afternoon tea)	£30

Please use the booking form enclosed with the Secretary's Page.



The Celestial Mountains

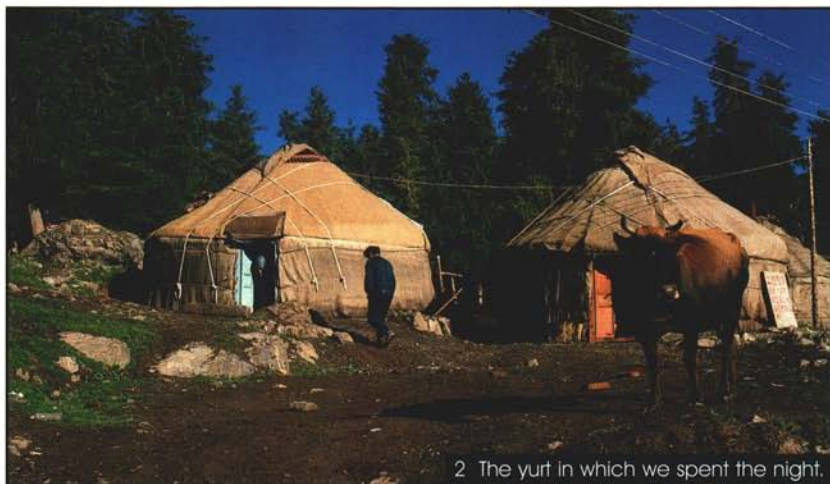
Vojtech Holubec

RIGHT IN THE MIDDLE OF ASIA, surrounded by deserts, rising to altitudes over 7000 m on the snowy peaks – it is the Tien Shan, a paradise for rock-gardeners and bulb-lovers.

THE TIEN SHAN lies roughly on the 43rd parallel running 2800 km from west to east and being nearly 600 km wide. It has many parallel ridges, some of them well known to alpinists. The highest mountain, Pik Pobedy, Peak of Victory, 7439 m is the most northern mountain above 7000 m. The geological history is very old and dynamic. Former marine sediments were folded during Caledonian, later by Hercynian and Alpine orogenies, and were changed by high pressures and temperatures to various metamorphic bedrocks. The presence of limestone is relatively rare except for the most western part in Talas Ala Tau. The whole ridge was glaciated in the ice age and many spectacular valley glaciers remain today. The climate is severely continental, the mean January temperature is often below -20°C , the mean July temperature is often also 20°C but at the opposite side of the scale. Snow cover is low due to a low precipitation except for the higher altitudes in the mountains.

During two trips we made short visits to several ridges all over the Tien Shan in Kyrgyzstan, Kazakhstan and China. In the west it was a place where Chatkal merges with Talass Ala Tau, the Kyrgyz Ala Tau; in the central part around the Issyk Kul Lake it was Terskij, and Zalilijskij Ala Tau; and in the east we saw the spectacular Borohoro and Bogda Shan. In the Chinese part we communicated a bit in Russian and English, but people mostly knew only: "Ride a horse?" or "Dollars". It was always possible to rent a vehicle with a driver and after a horrible explanation of where we'd like to go we were able to go roughly in that direction. We tried to visit botanically rich localities, including limestone areas, and especially those which were accessible by any kind of road.

We started in the east in the Bogda Shan ridge. A minibus took us at night during a rainy storm to Tianchi (Heavenly) Lake. After a night in an odoriferous yurt (2), a sunny morning opened a spectacular view to the



2 The yurt in which we spent the night.

blue lake and snowy peaks behind. We set up a camp at about 2050 m on a mountain river bank under scattered trees of the beautiful slim spruce *Picea schrenkiana*. Southern slopes hosted a high mountain steppe with an interesting Tien Shan speciality *Iris loczyi* with narrow leaves and large blue flowers. The seed capsules were half underground. The iris was accompanied by a beautiful yellow *Eremurus tianshanicus* with emerged stamens. Somewhat higher on the ridge, there were mats of showy creamy *Scutellaria comosa* and *Dracocephalum komarovii*. The latest flowers of violet *Pulsatilla campanella* survived only in northern depressions while seeds were on grassy slopes everywhere.

In order to get higher, to the ridges, we accepted an offer to rent horses. In fact, we had to climb more than a third of the way ourselves, because the path was too steep for horses. We set up a camp at 3020 m with only a few necessary things for one and a half days. It was an amazing place on a rivulet island among alpins. The valley was closed with a great wall of white snowy peaks up to 5400 m (1 - title page). Glaciers and moraines were feeding the bluish rivulet which was passing by us. We raised our tents on patches of *Viola tianshanica*, which made our beds softer, together with dwarf carexes and festucas. The viola was interesting for its dwarf growth, small entire leather-like leaves and blue flowers with dark veins.

The grass pastures around were decorated with numerous flowers of blue *Aster alpinus*, large pink *Eriogonum multiradiatum*, 5 cm-wide red daisies of *Pyrethrum richterioides* and several dwarf species of *Astragalus*. Northern and wet meadows were full of stems of a dwarf plant similar to *Trollius pumilus* with a separate generic name: *Hegemone lilacina*. It has unusual rich bluish-white flowers. Large rough scree cones everywhere in the Tien Shan were settled by dark blue *Dracocephalum imberbe*, sky blue *Geranium saxatile* and yellow-orange *Papaver croceum*. Simply a beautiful colour palette. Recent snow fields with wet clay soil were inhabited by *Callianthemum alataicum* (3) and *Lagotis* aff. *integrifolia*, a member of the Scrophulariaceae, the former with juicy leaves and large white-pinkish buttercups and the latter a tiny stoloniferous plant with racemes of white flowers up to 12 cm, growing up to the highest altitudes.

China is a country of saussureas. Their flowers are tiny like in other Asteraceae, but they form large, beautiful or interesting inflorescences. And if the inflorescences are not beautiful they form very distinctive bracts: coloured, white, membranaceous, or sometime very hairy. These plants mostly grow in extreme conditions in scree at the highest altitudes on the mountains. One of the most striking species is *Saussurea involucreta*. Its rich inflorescence is covered with white bracts and it looks like a huge white iceberg lettuce (4). And it is also offered by local people for salads. We tried it and it tastes like a mixture of soap and petrol ... another country, another habit. It is possible to find this beautiful plant in huge rock walls and among boulders above 3000 m. Two other saussureas of the Tien Shan are very tiny.



3 *Callianthemum alatavicum*, Bogda Shan



4 *Saussurea involuocrata*, Bogda Shan



5 *Saussurea glacialis*, Bogda Shan



6 *Saussurea gnaphalodes*, Terskij Ala Tau

Saussurea glacialis is stoloniferous and grows in scree. Its small rosettes of dentate leaves are covered by an inflorescence like a small tennis ball, it is covered with white hairy bracts and when the buds open, the white balls turn lilac (5). A similar species, *Saussurea gnaphalodes* (6) is caespitose to prostrate, with white hairy leaves. The buds are white, tomentose with black longer hairs and resemble a huge *Leontopodium*. Flowers are similar to the previous species. The latter seems to be a bit better for growing.

Apart from these saussureas the screes of the highest altitudes host a tiny member of the Brassicaceae – *Chorispora bungeana* (7). Its 4 cm-long, linear pinnatisect leaves are nearly invisible on scree; however, the large rose flowers completely covering plants show up in the distance. It is a typical plant of active screes. There are also a few leontopodiums in the Tien Shan. Larger plants from mountain pastures belong usually to *Leontopodium fedtschenkoi* which has long involucral bracts. The other species is *Leontopodium ochroleucum* which prefers high alpine meadows and screes. It is smaller, having a compact inflorescence which becomes yellowish when it dries.



7. *Chorispora bungeana*, Terskij Ala Tau

The north-eastern range of the Chinese Tien Shan is called the Borohoro Shan. We made short visits to three places where the flora was similar. A brief look at steppes at about 1800 m revealed a mass distribution of *Androsace sericea* from the *Androsace villosa* group. It is a low, mat-forming species. On northern slopes the timberline is only at about 2500 m. There are many nice species at this altitude. First of all there are many ligularias in the grass. We determined a large *Ligularia heterophylla* with long floriferous racemes and, much smaller, *Ligularia narynensis* with 2 to 4 large flowers. Northern crevices and cold rock walls were occupied with masses of

something like white *Omphalodes luciliae*. Later we determined it as *Tianshaniella*. I very much enjoyed this find. Cold shady rocks were suitable places for *Paropyrum anemonoides*. This fragile tiny “anemone” bears flat white flowers on stems coming from juicy green leaves. A related gem, *Paraquilegia grandiflora*,



mostly grew on open rocks from 2600 to 3000 m only in tight crevices. When in full sun the leaves form tight cushions with a woody base. It is exciting to see older cushions flowering. The colour of the Tien Shan populations is white (8), often with a bluish hue at the peduncle insertion.

A very interesting Boraginaceae grew occasionally on fine scree on the roadside bank where there was no competition from other plants. It looked like *Anchusa caespitosa* with smaller flowers. I was not successful in determining it according to floras of Kazakhstan and Kyrgyzia but finally, I got closer to a name – *Tretocaria* aff. *pratensis* according to a flora of Mongolia.

Rock crevices at higher altitudes up to 3600 m were fully occupied with the woody mat-forming *Potentilla biflora* (9). The higher it was the better, with more compact mats and large yellow



showy flowers! Another related mat-forming species here was *Dryadante* (*Sibbaldia*) *tetrandra*. Its flowers are small but its hairy green mats are superb. Special attention needs to be given to *Thylacospermum caespitosum*. Imagine a green *Minuartia* the size of a sheep on a rough scree at 3600 m and that's it.

The genus *Rhodiola* is represented by just one species in Europe, but in Asia there are many of them. *Rhodiola quadrifida*, *Rhodiola coccinea* and *Rhodiola gelida* belong among the smallest. The first two are very similar with juicy small cylindrical leaves, red flowers and a woody base.

The last has flat leaves and yellow flowers. They decorate screes up to the glaciers. I have to mention also my favourite plant from Mongolia, *Lagopsis marubiastrum*. It is a white-woolly Lamiaceae with brown or yellowish apparent flowers protruding from splendid white conical inflorescences. They love active screes in the highest altitudes.

We moved to the central Tien Shan, to Kazakhstan. Mountain pastures were not so heavily or not at all grazed as they had been in China. We got up to the glaciers again at 4000 m. The flora was similar, however we found some additional species. A mountain stream was decorated with an unusual *Rhodiola semenovii* bearing long racemes of yellow flowers. *Primula turkestanica* from the *Primula nivalis* group (*P. nivalis* var. *colorata* according to Richards) accompanied the rhodiola. I found it flowering (dark violet noble flowers) in one cold northern spot. Grassy slopes hosted two gentians growing together. Creamy white *Gentiana algida* (related to *Gentiana frigida*, and *Gentiana froelichii*) is circumpolar in the northern hemisphere. The other was *Gentiana kaufmanniana*, small, with one to three large blue flowers: an excellent alpine. These plants were accompanied by beautiful *Oxytropis chionobia*. It formed rounded white hairy cushions. Stems bear large 2 to 4 violet flowers and later, large pods.

Small stream deposits and high alpine scree tundra near glaciers were decorated by late flowering *Waldheimia tridactylites*. Its soft dark green mats were completely covered with red or rose sessile daisies with yellow centres. Interesting Anthemis-like plants *Cancrinia tianshanica* shared this tundra with the waldheimias. Yellow centres without ligulate flowers were sitting up on short stems like golf balls.

Eritrichum was not missing in these mountains. We found prostrate hairy cushions of *Eritrichium tianshanicum* (*Eritrichium villosum* group) in grass and fine scree with quite large flowers were on 5 to 10 cm stems. It is a species which is easier to grow than *Eritrichium nanum*. A top plant for rock gardens will surely be *Erigeron aurantiacus*. Huge orange inflorescences were solitary on plants in grass, but higher on screes the plants were marvellous: very dark orange and low growing, up to 10 cm. They were accompanied by a fantastic *Viola altaica* with huge blue or light yellow flowers.

The visit to the western Tien Shan was aimed at inspecting the limestone area of the western Talass Ala Tau to look for the local endemic species *Saxifraga alberti*. In order to stay within Kyrgyzstan a study of geological maps brought my attention to the place where the Chatkal Ala Tau merges into the Talasskij Ala Tau: the Kara Bura valley. Two poor jeeps driven by optimistic Kyrgyz took us from Talass up to the mountains at 3000 m. We went through mountain dry steppes and screes, in spring full of bulbs like *Tulipa kaufmanniana*, *Tulipa greigii*, *Juno* (*Iris*) *orchioides*, but at present burned, hot and brown. It was hard to see empty seed capsules rolling in the wind.

Higher up, the mountains were green and full of life. We admired *Eremostachys speciosa* a robust odoriferous Lamiaceae, beautiful *Scutellaria popovii* with yellow flowers marked with violet (10). Scattered papery capsules marked the probable presence of a tulip – *Tulipa tianshanica*. On the southern slopes mountain steppes have developed on stony ground and stabilized clay-rich screes at altitudes from about 2500 to 2800 m. Miniature *Ephedra fedtschenkoi* displayed its bright red fruits in masses among flat cushions of *Acantholimon fetissovii*. One of the most striking plants here was a dwarf *Hedysarum fedtschenkoanum*. Grey rounded entire leaves in tiny rosettes were as if they would not belong to the Fabaceae family. Sweet pink flowers in sessile conical inflorescences decorated the plant. 2-3-parted “chain” pods betrayed they belonged to *Hedysarum*. All screes above 2800 m were yellow with abundant showy *Corydalis gortschakovii*. A related species – *Corydalis (Cysticorydalis) fedtschenkoana* (11) astonished us with its unusual beauty on colder screes above 3000 m. White, dark-dotted, long flowers were concentrated in quantities in heavy racemes.

Dracocephalums in Kyrgyzstan need a separate paragraph. *Dracocephalum imberbe* was generally everywhere – blue and rarely white. *D. nodulosum*, and *D. diversifolium* were low species in dry places. *Dracocephalum oblongifolium* is a gem of cold screes which differs from *D. imberbe* by its glandular sessile leaves and long gentian-blue flowers. However, the best one was *Dracocephalum origanifolium*, only 2 cm high, forming hairy mats.

The predicted limestones were really there, under the ridge, waiting for us. A quick inspection of the standing flat layers revealed a good flora. *Saxifraga alberti* formed hard, compact cushions in crevices. What a surprise, it should be white according to all the literature and we saw pink and nearly red individuals (12). Good new forms for introduction! Hard green cushions appeared to be another gem – *Parrya pulvinaris*. Big rose flowers were sitting solitarily or on two or three branches just 1 cm above the cushions. In addition, the hot crevices were decorated with *Primula minkwitziae* (13) with small thick and crispy geranium-like leaves.

The screes on ridges hosted two dwarf tulips: yellow/white *Tulipa dasystemon* and *Tulipa heterophylla* which is yellow/reddish. Among the louseworts *Pedicularis dolichorhiza* was the most common. Red ball umbels of *Allium oreophilum* were also only 8 cm tall. An endemic plant, aristocratic *Scutellaria talassica*, made prostrate mats with huge orange flowers among the bulbs, and a small wild chickpea (*Cicer* sp.) with blue flowers could feed us in periods of hunger.



10 *Scutellaria popovii*, Kyrgyskij Ala Tau

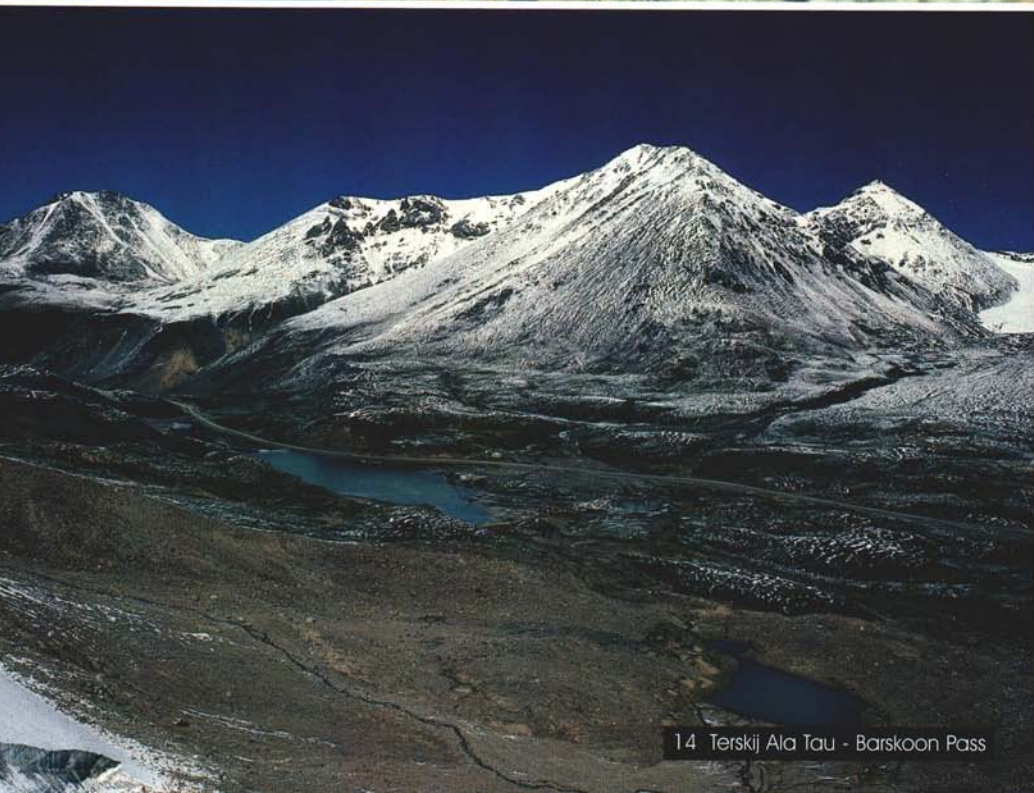


11 *Corydalis fedtschenkoana*, Talasskij Ala Tau





13 *Primula minkwitziae*, Talasskij Ala Tau



14 Terskij Ala Tau - Barskoon Pass



15 *Astragalus beketovii*, Terskij Ala Tau



16 *Leontopodium nanum*

After three days the jeeps returned for us at night in a heavy thunderstorm and skated with us down a muddy road. We spent the rest hours of the night bivouacking in a roadside gully. The next day we got a minibus and very slowly crossed two nice passes over Kyrgyz Ala Tau repairing nearly all parts of the car by the way. We spent a refreshing night in the capital Bishkek and went on along the hot arid Chuia valley (well known as “Bulb Heaven”) to the east to the Issyk Kul Lake. It is a spectacular blue salty lake in a rain shadow surrounded by deserts and semideserts. Thousands of *Ephedra glauca* shrubs offered tasty cinnamon berries. We had a nice swim in the lake admiring halophytic flora and refreshed by the whole bucket of honey apricots bought from locals. Wild apricots of all sizes, colours and taste grew around.

We turned to Terskij Ala Tau – a mountain chain running along the southern coast of the lake. A wide dirt road brought us under the Barskoon Pass. Because of the bad weather we appreciated staying in a road keepers’ house. We inspected meadows and pastures around the forest line at about 2800 m. Big thorny bushes of *Caragana jubata* showed a few late pink flowers. Meadows were full of tiny *Viola tianshanica* and *Gentiana kaufmanniana*.

The next day we went up to the pass a bit over 4000 m (14). Light cover of snow, glaciated peaks around and sunny morning made the country like a fairy tale of an ice kingdom (17). Most of the plants were in bloom



pushing flowers through the soft furry snow. *Pedicularis rhinanthoides* together with *Saxifraga hirculus* coloured the boggy meadow in red-yellow mosaic. White *Eritrichium tianshanicum* competed with sky blue *Lomatogonium* for a place in the sun. *Hegemone lilacina* was already in seed. *Astaragalus beketovii* showed its spectacular inflated pods (15). *Gentiana algida* and *Gentiana kaufmanniana* formed floriferous low patches. *Leontopodium nanum* (16) was stemless here forming 20 cm prostrate mats. Rough screes towards the peaks were apparently sterile, but a few nice gems were there to discover. Small

patches of *Saussurea gnaphalodes* were still blooming. A small Brassicaceae, *Christolea (Oreoblastus) flabellata* with blue-violet flowers was sunk among the boulders. Further on the ridges about 4800 m high, we saw only several dwarf rhodiolas and *Waldheimia tridactylites*.

The last three days we devoted to the Kyrgyz Ala Tau, the region of Ala Archa National Park situated south of Bishkek. We had to camp in civilisation on the only possible place – a gritty football ground only about 2200 m high. The local shop offered beer, port wine and undrinkable sweet soda, but the beer was acceptable. We walked daily a long way up to about 4300 m. A good alpine flora started at about 3000 m. The region is botanically very rich. The valleys are cooled by surrounding glaciers. There were plenty of *Potentilla biflora* cushions appressed to cold northern walls. Drier crevices were filled with *Paraquilegia grandiflora*. Huge stony fields, probable remnants of old moraines and river terraces, had a very rich flora: *Dracocephalum imberbe*, *Oxytropis chionobia*, *Smelowskia calycina*, *Waldheimia tridactylites*, *Waldheimia tomentosa*, *Pyrethrum karelinii* and many others. Cold moraines above 4000 m were occupied only with a few species. Big green cushions of *Thylacospermum caespitosum* were often protruded with tiny rosettes of *Androsace akbaitalensis*. We found only a few patches of a vigorous *Saxifraga oppositifolia*. The most common species was *Waldheimia tridactylites* which goes up to the vegetation limit. White daisies of the endemic *Pyrethrum leontopodium* (18) were definitely the top plants of that region – only 8-12 cm high, densely white woolly with huge flowers – simply a superb alpine.

Wild peaks with many rugged towers jutting out of magnificent glaciers – it was a great panorama of that formidable valley (19). A hanging forgotten latrine on the steep slope brought evidence of probable presence of human beings around reminded us to return from this natural cathedral back to the human anthills.

References:

Flora Kirgizii. Frunze.

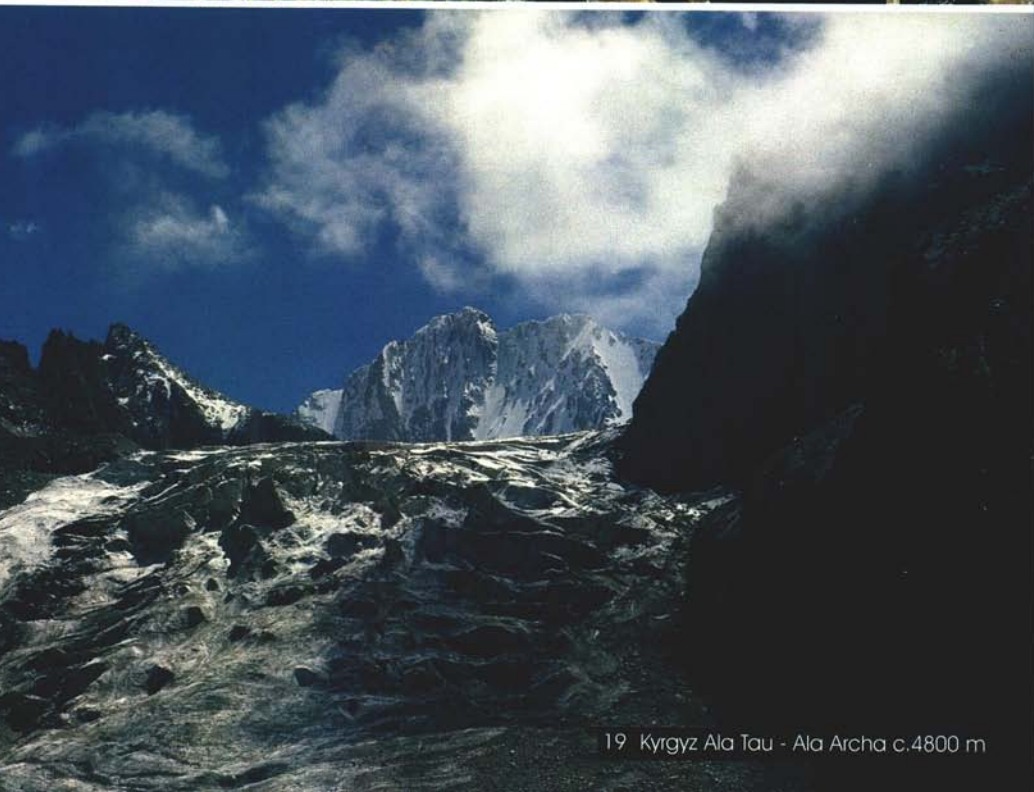
Pavlov, N.V., *Flora Kazachstana*. Almaty.

Grubov, V.I. *Opredelitel sosudistych rast/Enij Mongolii*. Leningrad 1982.

Flora of China



18 *Pyrethrum leontopodium*, Kyrgyz Ala Tau



19 Kyrgyz Ala Tau - Ala Archa c.4800 m



Cape Bulbs

David Victor

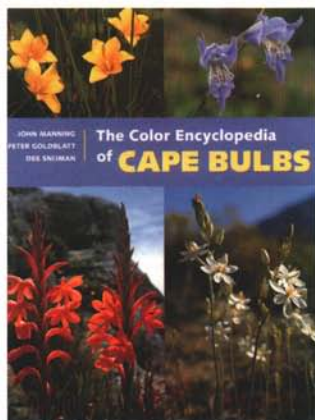
THE FIRST BULBS FROM THE CAPE, of *Haemanthus coccineus*, were brought to Europe in the early years of the 17th century. Whilst at first there was only a trickle of species, with the establishment of an East India Company base at Cape Town in the 1650's exploration started, and the trickle soon turned into a flood. Today, Cape bulbs form a well-established part of our environment in the northern hemisphere, being found in all kinds of locations, from shopping centres through sitting rooms to gardens.

However, for those of us that are interested in growing these plants, rather than just looking at them, useful information is not easy to come by. A good deal of revision work has been done on particular genera over recent years, but much of this is published in journals that are not always easy to access. Even after that work, it is still only a minority of genera that have been revised recently. When articles are published in gardening journals, they barely scrape the surface of the group being discussed.

In recent years, probably the most useful book was published by Richard Douth, a Californian grower. It described all of the major genera and contained many colour photographs. However, it was limited in scope when compared to the totality of species growing in the Cape.

Against this background, this new book, *The Colour Encyclopedia of Cape Bulbs*, covering the major part of the genera native to the Cape, by three acknowledged experts, is to be welcomed by growers. It is a large, hardback book, running to nearly 500 pages, printed on glossy paper, with a wealth of colour photographs.

The authors are John Manning, a research scientist at Kirstenbosch, Peter Goldblatt, curator of African botany at Missouri Botanical Garden, St. Louis and Dee Snijman, another research scientist at Kirstenbosch. However, these descriptions fail to do the individuals justice. Goldblatt has been writing about and revising southern African bulbs, particularly the Iridaceae, for over twenty years and has been working in close partnership with John Manning



on publications for over ten years. Dee Snijman has been writing on the Amaryllidaceae for over a decade and has published two monographs. Between them they are truly experts on their subject.

Background

The book is formally based on the Cape Floral Region and starts by describing the major factors affecting it, including geography, climate and geology.

The Region is, by far, the smallest of the six Floral Regions into which the world is divided, forming less than 0.04% of the total. It is located in the far south-west of Africa. From Cape Town, it stretches northwards some 400 km to the Oliphants River and some 800 km eastwards to Port Elizabeth. Inland it is limited by mountains, typically 3000 to 5000 feet in height, which run roughly north-west to south-east, and include the Roggeveld Escarpment, the Witteberg and Swartebergs. Altogether the Region comprises 90 000 km².

Climatically, the Region is divided into two, roughly along a north-south line drawn a little east of Cape Town. To the west, lies an area of Mediterranean climate. Here rain falls in the South African winter (April to September) and is followed by a summer drought. Rainfall decreases the further one travels north or inland from Cape Town. To the east, rain also falls in the summer months, with increasing frequency as one travels eastwards. As a result, there is a distinct flora here in the late summer.

Typically, towards the coasts, winters are mild and frost is very infrequent. However, as one proceeds inland (and upwards) temperatures are lower, with frost common, but snow only occasional and short-lasting.

The Region has a very complicated geology that has evolved over a very long period of time, with most rock types being present. Weathering has led to an extremely complex range of habitats and soil types.

The changing climate patterns, particularly rainfall, added to the complex geology has led to the great diversity that is found in the Region. The Region is divided into a number of local areas, known as Centres, each of which has its local flora. Probably of most interest to alpine enthusiasts is the Roggeveld Centre, based inland in the north of the Region. This is a largely arid, winter rainfall area, with the high, cold, Roggeveld Escarpment running along its north-eastern border. From here come many interesting bulbs, mainly Iridaceae, including several species of *Romulea*. Many of these bulbs can be grown in Europe with little, if any, protection, whereas most others will need a cold greenhouse or bulb frame.



- 21 *Moraea villosa*
22 *Lachenalia bulbifera*
23 *Sparaxis tricolor*
and *S. elegans*
24 *Gladiolus carinatus*
25 *Ixia maculata*

The Flora

Small though the Region may be, it is one of the richest areas for plant life on the planet. It is rich in the sheer number of species: roughly 9000. It is rich in terms of the number of endemics: around 6000. It is rich in the number of geophytes: in the order of 1500.

In approaching the book, the authors needed to consider which of these many geophytes (plants that survive the winter underground) should be included. Their approach has been to concentrate on the genera formed of true bulbs (Amaryllidaceae, Alliaceae, Liliaceae s.l. and Hyacinthaceae) or those that form corms (Iridaceae and Colchicaceae). By restricting their scope in this way, they have restricted their task to some 1183 species, of which the greater majority fall within Iridaceae (60%), Hyacinthaceae (20%) and Amaryllidaceae (10%). Another 10 families make up the remainder.

This restrictive approach, whilst eminently practical, can lead to problems and irritations to growers. For example, one genus that particularly interests me is *Oxalis*, many very attractive species of which grow within the Cape Floral Region. I find the exclusion of the genus *Oxalis* hard to understand, as this is a primarily bulbous genus. This is a annoying omission as the last authoritative revision of this genus dates back half a century

Also, whilst some genera are mainly non-geophytic, they may include a significant complement of geophytic species. Another of my particular interests is Section *Hoarea* of the genus *Pelargonium*. Unlike the plants which most people will know as *Pelargonium*, these species are all tuberous and there are around 80 species currently accepted. Whilst a full revision by Elizabeth Marais was recently published, it would have been helpful for them to be included here, particularly as the revision does not contain colour photographs

Cultivation

The book also contains a major section covering various aspects of cultivation, with the pieces on pot cultivation and germination being of most use to us in the northern hemisphere.

The piece on germination I found particularly interesting. Firstly, they make various points about the general short viability of seed. This is particularly true of the fleshy seeds that are generated by some of the more common amaryllids, such as *Brunsvigia* and *Haemanthus*, which sometime germinate whilst still in the seed heads. However, in my experience, it is also true of many other genera, where good rates of germination will only be obtained if seed is relatively fresh. Incidentally, they also make the point that smoke treatment or fire, so useful in germinating many Cape plants, does not seem to help much in most bulbous species.

There is little information about keeping these bulbs whilst they are in growth through the winter, prior to spring flowering, something that we have to deal with in the northern hemisphere. Maurice Boussard, the well-known French grower, grows his in the garden in cold frames. I find that most of mine are easily grown in a plunge in a cold greenhouse without problems. I have a hundred or so species growing in this way and, if we do have a particularly cold spell, I find that spreading a fleece cover out overnight normally solves the problem.

Keys

When there are many species, keys are needed to identify them. In the Cape, there are so many families (13), genera (80) and species (1183) that keys are vital. So, the authors have provided keys to the families, the sub-families, the genera and to the species, where required.

Whilst I have looked through these keys, I find it almost impossible to judge their value in the absence of real problems that need solving. They certainly look to be comprehensive, very well organised and helpful subject to the normal problems of understanding the terminology.

The Plant List

The main body of the book is the plant list, structured by genus and printed two columns to a page. Each genus is described and supported by descriptions of each species occurring in the Region and a number of pictures of those species. These descriptions are so essential to the value of the book that it's worth looking, in detail, at one of these sections.

So, let's look at what they have to say about the genus *Romulea*. At the head of the section there is the scientific name, common name, family and a full analysis of the genus, including chromosome count, range and numbers of species, both world wide and in the Region. This is followed by a wider description of the genus in habitat, telling its life cycle, pollination vectors, variability and garden use. A list of further reading is given. There are then species descriptions: 64 in the case of *Romulea*. Each gives the scientific name and authority, a description of the plant, flowering times, habitat and the locations where it is found. Thirty-nine coloured, close-up, photographs, each a quarter page support the descriptions.

This is the heart of the book and a very valuable heart it is. The data is extremely valuable and the photographs are stunning: the photograph on p.26 of *Brunsvigia bosmaniae* near Vanrhynsdorp flowering across the whole of the near landscape, is a wonderful picture of which any photographer would be proud. If I have a grumble, it is only that I wish that it could include those species which are from South Africa, but from outside the Cape Floral Region. However, one just cannot have everything!

Summary

I found this a truly wonderful book, valuable at every level. The data it contains is extremely valuable and accessible. The general descriptive information is very helpful. The photographs are wonderful with many species being illustrated here for the first time. From the moment you open this book at the half-title page it is entrancing, with a picture of *Watsonia tabularis* with a pair of orange-breasted sunbirds perching in the flower stems. Whilst I have complained about some shortcomings, these are trivial compared to the value that it offers. Anyone who is interested in growing Cape Bulbs should buy this book. Everyone else should seriously consider it for their coffee table.

IBSA (The Indigenous Bulb Association of South Africa) exists for those who are interested in this subject. You can contact them for membership details at: PO Box 12265, N1 City 7463, Cape Town, South Africa

Further Reading

Doutt, Richard L, *Cape Bulbs*, 1994, B. T. Batsford Ltd., London.

Marais, Elizabeth M., "Taxonomic Studies in Pelargonium – Section Hoarea (Geraniaceae)", 1994, reprinted by Geraniaceae Group BPGS, 2000.

Salter, T M, "The Genus *Oxalis* in South Africa – a Taxonomic Revision", 1944, *Journal of South African Botany*, Cape Town.

THE COLOUR ENCYCLOPAEDIA OF CAPE BULBS

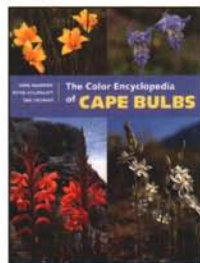
John Manning, Peter Goldblatt
& Dee Snijman.

ISBN 0-88192-547-0

Timber Press

486 pp, 611 colour plates

£45.00



Photographs in this review are by David Victor of bulbs from the Cape in his collection.





27 Habitat of *Saxifraga* ssp. *blepharophylla* and *S. oppositifolia* spp. *rudolphiana* near Hannoverhaus, Ankogel Gruppe

Saxifraga oppositifolia and its cousins

A survey of *Oppositifoliae* saxifrages in the Hohe Tauern

Kees Jan van Zwielen

AUSTRIA'S HOHE TAUERN is home to several interesting saxifrages. Together with the Niedere Tauern, these mountains are part of a geomorphological area known as the Tauern Window. Several plants, among them two of the saxifrages discussed below, are largely confined to mica schist areas in the Tauern Window. The Hohe Tauern is particularly rich in saxifrages of Subsection *Oppositifoliae*, the best known species in this Subsection being *Saxifraga oppositifolia*.

I visited the Hohe Tauern in late July and early August 2001. Due to the high altitude of these mountains, the season is late compared with many other parts of the Alps. The timing turned out to be excellent as the saxifrages and many other alpine plants happened to be in full flower.

The mountain village Mallnitz, at 1191 m, is an excellent base for explorations. From here you can explore several side valleys or take the cable-car which enables easy access to a 2600 m mountain ridge with a very choice selection of the indigenous alpine flora. Although there are many other good places to visit in the Hohe Tauern, all saxifrages discussed below can be found in the mountains around Mallnitz.

SAXIFRAGA BIFLORA

The few plants of *Saxifraga biflora* that I found grew in loose gravel on a schistose ridge near the Hagener Hütte (2448 m). The dull red flowers were small and not all that showy. Much to my surprise I found that the hybrid *Saxifraga* × *kochii* seems to have replaced *S. biflora* at several locations.

Identification

The leaves are rounded at the apex, soft and fleshy, and calcareous encrustation is rare. There are glandular hairs on the margins of the petiole

and on the margins of the leaf. Shoots are upright rather than spreading. The flowering shoots have up to 8 flowers, the petals are narrow (2.5 mm or less in diameter), red to violet-brown, and there is a distinct yellowish area around the nectary (28).

Hybrids with *Saxifraga oppositifolia* are common. These hybrids have a reduced fertility, but can cross back with *S. biflora* and *S. oppositifolia*. Some of the hybrids are very similar to *S. biflora*. Consequently it can be difficult to identify individual plants in mixed populations.

Habitat

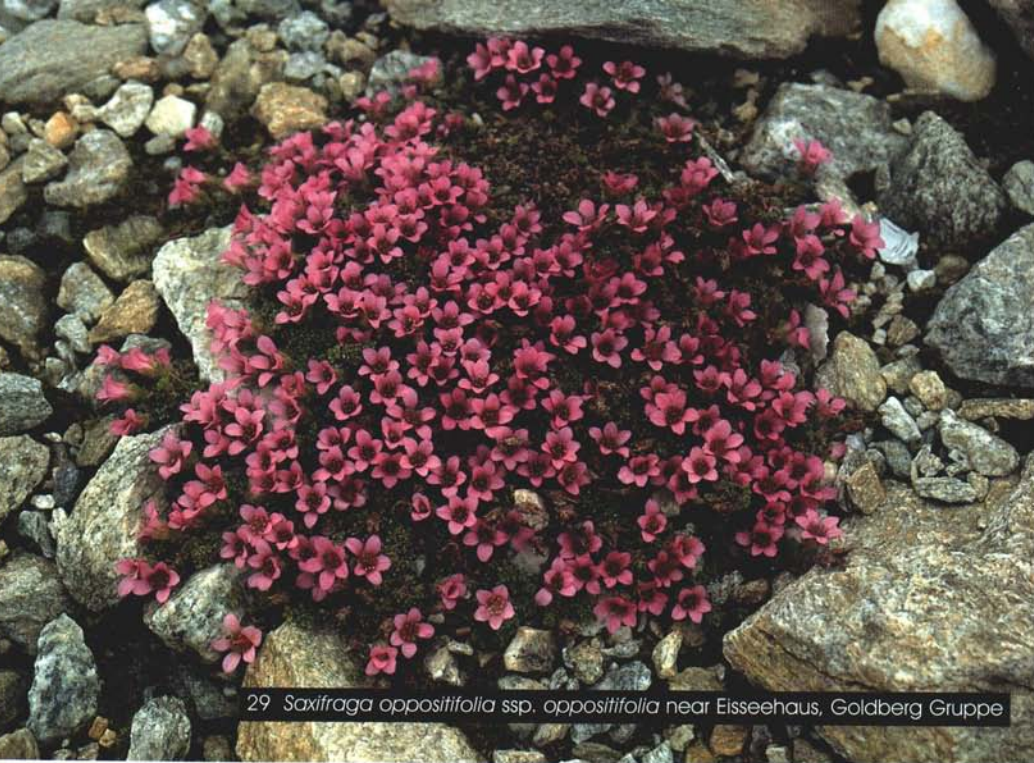
Saxifraga biflora is an ecological specialist adapted to places where there is a very short growing season due to late snow melt. It requires damp scree or moraine conditions, nearly always on schist. It very rarely grows isolated from *S. oppositifolia*. Altitudinal range is usually between 2200 and 3000 m.

Distribution

Saxifraga biflora has a wide but scattered distribution in the Alps. It is confined to schistose mountains at high altitude. I can only suppose that *Saxifraga biflora* ssp. *epirotica*, described from the Vikos Gorge in Northern Greece, is erroneous. The description, habitat and isolated occurrence seem to indicate *S. oppositifolia* ssp. *oppositifolia*.



28 *Saxifraga biflora*, Furka Pass, Switzerland



29 *Saxifraga oppositifolia* ssp. *oppositifolia* near Eisseehaus, Goldberg Gruppe



30 *Saxifraga oppositifolia* ssp. *oppositifolia*, Weißsee

SAXIFRAGA OPPOSITIFOLIA ssp. OPPOSITIFOLIA

This is the most common *S. oppositifolia* subspecies in cultivation and a Scottish native.

Identification

Mats and cushions loose to quite hard. Leaves opposite, often lime encrusted, 2–5 mm long by 0.8–2 mm wide, hairs on the leaf margins are bristle like. Petal width at least 3 mm, usually wider, colour pink to deep purple (29).

Habitat

Ecologically it is really a generalist. On mica schist in the Hohe Tauern it is usually replaced by *Saxifraga oppositifolia* ssp. *blepharophylla* and *S. oppositifolia* ssp. *rudolphiana*. Away from the mica schist, at almost 2800 m near the Eisseehaus in the Goldberg Gruppe, *S. oppositifolia* ssp. *oppositifolia* grows in isolation from these taxons. Not far from this location, near the Weißsee (2365 m) it can be found alongside *S. oppositifolia* ssp. *rudolphiana* and *S. × kochii* in loose gravel. Particularly interesting at this location are plants that seem to be ordinary *S. oppositifolia* ssp. *oppositifolia* but which have pink buds that open a clear white (30). *Saxifraga oppositifolia* ssp. *oppositifolia* is also joined by *S. oppositifolia* ssp. *rudolphiana* and *S. × kochii* in the terminal moraine of the Pasterze Glacier (Glockner Gruppe). In this moraine some schist is present.

Distribution

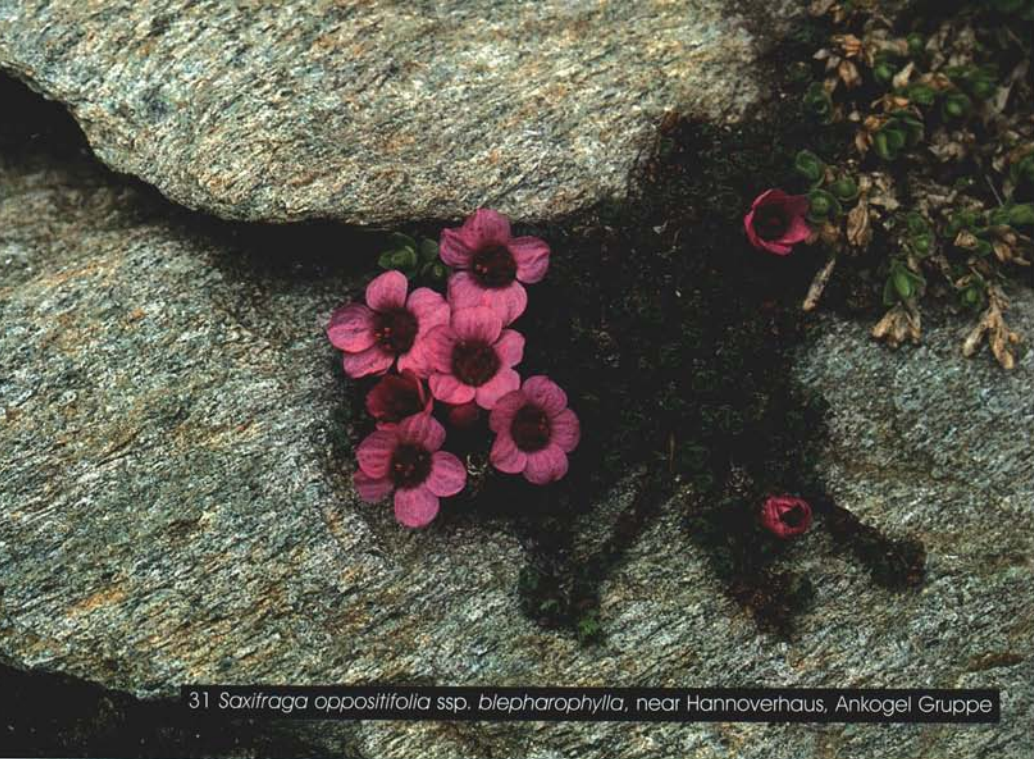
Occurs from the Arctic southwards to mountains throughout Europe, and in North America and Asia. Although it is in some areas replaced by other subspecies this is by no means always the case, as is made clear above.

SAXIFRAGA OPPOSITIFOLIA ssp. BLEPHAROPHYLLA

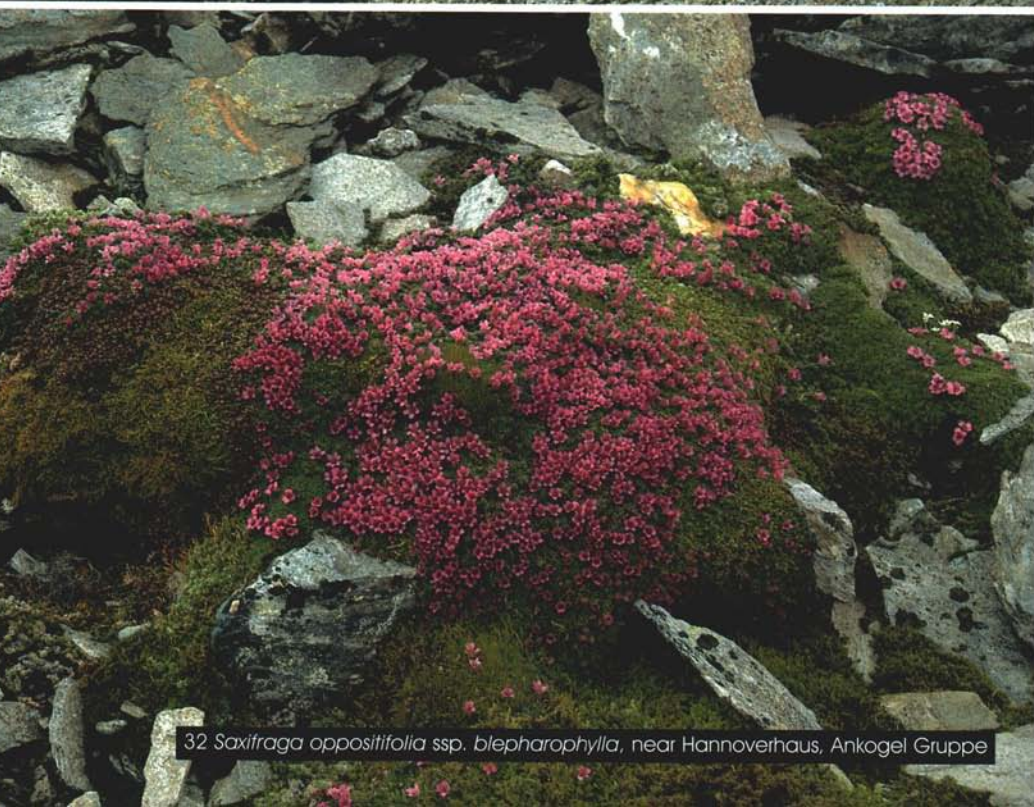
I have only seen this subspecies in the Ankogel Gruppe where it made a spectacular show.

Identification

In this subspecies the hairs on the leaf margin continue all the way to the rounded apex. In fact the longest hairs are found on the apex, a feature unique to this subspecies. The cushions or mats can be very large and spectacular (31, 32). Flowers can be very variable. As in *Saxifraga oppositifolia* ssp. *oppositifolia* petals can sometimes be disappointing in size and colour, but occasionally they are very wide (overlapping) and of really good colour. In this subspecies and in *S. oppositifolia* ssp. *rudolphiana* you can occasionally find forms with very narrow petals. It is questionable whether these are extreme forms or if they show *S. biflora* influence.



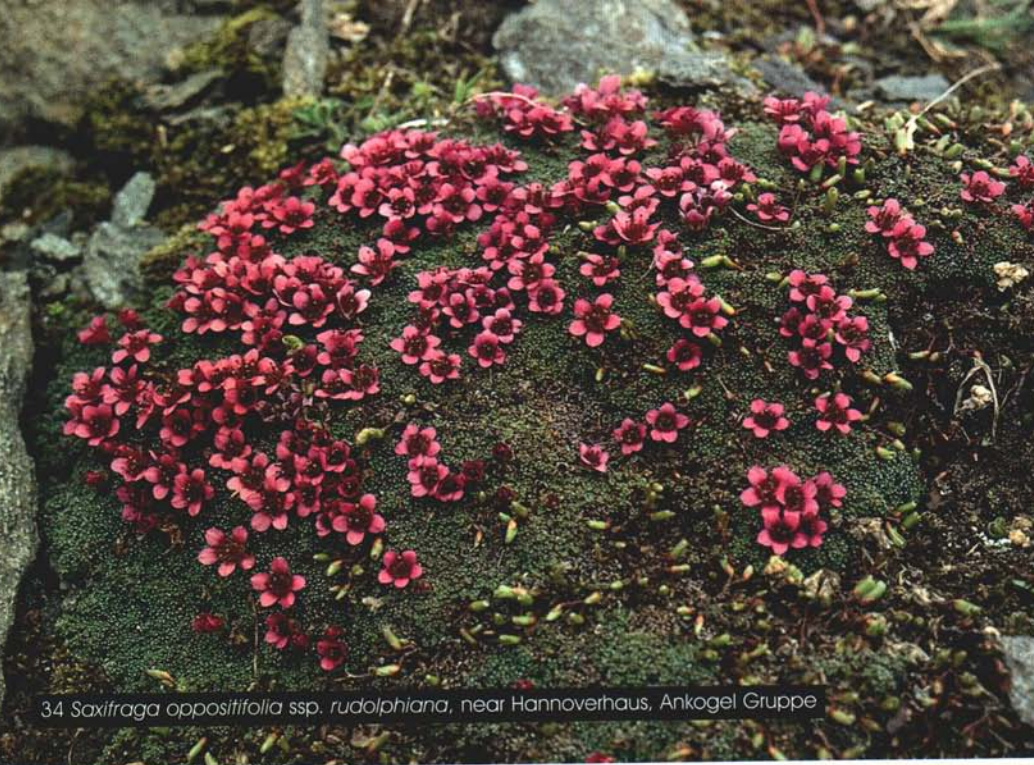
31 *Saxifraga oppositifolia* ssp. *blepharophylla*, near Hannoverhaus, Ankogel Gruppe



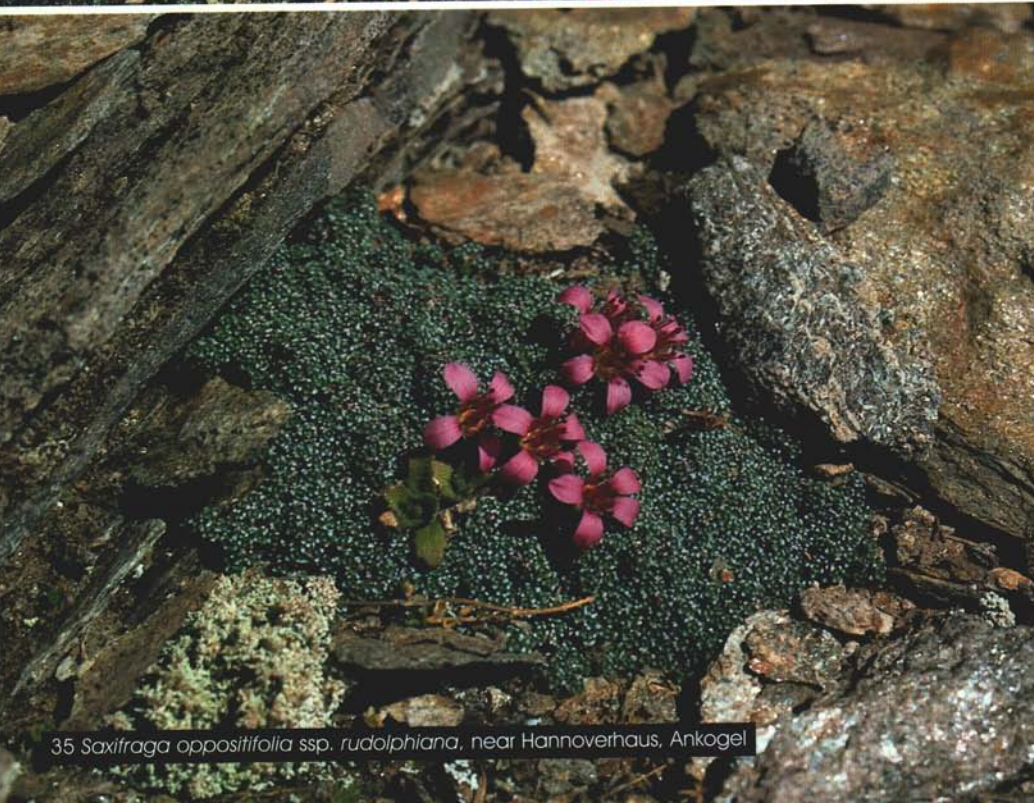
32 *Saxifraga oppositifolia* ssp. *blepharophylla*, near Hannoverhaus, Ankogel Gruppe







34 *Saxifraga oppositifolia* ssp. *rudolphiana*, near Hannoverhaus, Ankogel Gruppe



35 *Saxifraga oppositifolia* ssp. *rudolphiana*, near Hannoverhaus, Ankogel

Habitat

Like *S. oppositifolia* ssp. *rudolphiana*, this subspecies is an ecological specialist. It is primarily a crevice plant, confined to schist, sometimes also growing in loose gravel. The great majority of the plants I have seen grew in north facing conditions. Altitudinal range is from 2500 m upwards.

Distribution

Hohe and Niedere Tauern, Seetaler Alps (Zirbitzkogel) and the Norischen Alps.

SAXIFRAGA OPPOSITIFOLIA ssp. RUDOLPHIANA

Perhaps the most extreme in *Saxifraga oppositifolia* evolution, *S. oppositifolia* ssp. *rudolphiana* ranks high among Europe's choicest alpinists. It is in fact much more common and numerous in its native haunts than I expected it to be.

Identification

A very distinct *Saxifraga oppositifolia* subspecies, once seen easily recognised by the tiny leaves and the very hard cushions or mats which may occasionally be quite large, up to about 30 cm across (34, 35). Leaves are 1.5–2 mm long by 0.5–1 mm wide, usually lime encrusted. The flowers are quite uniform in their purple colour, darker than in many *S. oppositifolia* ssp. *blepharophylla* and *S. oppositifolia* ssp. *oppositifolia*.

Habitat

Specialised to inhabit schist outcrops and loose gravel above 2500 m, this spectacular subspecies can often be found alongside *Saxifraga oppositifolia* ssp. *blepharophylla* in the Ankogel Gruppe (27). The spectacular scree of a great many large specimens of these two subspecies, on the precipitous north facing cliffs just north of Hannoverhaus, has to be seen to be believed. At somewhat lower altitude, for instance near the Weißsee and in the moraine area of the Pasterze glacier *S. oppositifolia* ssp. *rudolphiana* is often joined by *S. oppositifolia* ssp. *oppositifolia*. One would expect the two subspecies to hybridise in such situations, but hybrids of *S. oppositifolia* ssp. *rudolphiana* seem to be rare or absent. They have never been properly described or proven, although mention of intermediate forms is made by Webb and Gornall and others.

Distribution

From the Zillertaler Alpen eastwards through the Hohe and Niedere Tauern. Webb and Gornall mention it from the greater part of the Austrian Alps with two stations in Italy.

SAXIFRAGA × KOCHII Hornung (syn. *S. macropetala* Kerner ex Engler, *S. biflora* ssp. *macropetala* (Kerner ex Engler) Rouy & Camus)

For a long time this hybrid has confused botanists, as can be seen from the two most common synonymous names mentioned above. A most interesting paper by Horändl and Gutermann has put things in perspective.

Identification

Although this hybrid is intermediate between *S. biflora* and *S. oppositifolia* its characters are by no means stable, some plants are similar to *S. biflora* and others resemble *S. oppositifolia*. Shoots can be upright, as in *S. biflora*, but I have also seen mat-forming plants 20–30 cm across. Usually the plants can be distinguished from *S. oppositifolia* by the widely separated petals and a yellow-greenish eye around the nectary (36). Useful differences with *S. biflora* are the wider petals, usually not of the *S. biflora* colour.

The *S. × kochii* stations I have seen in the Hohe Tauern often had plants with rather pale pink or whitish flowers with subtle colour variations (37). Some had only one flower to a stem, others had several. I only found a few plants in the Hohe Tauern that resembled the deep red *S. × kochii* clone that is occasionally seen in cultivation.

It is interesting that diversity among *S. × kochii* can vary greatly from station to station, a phenomenon that is explained in the Horändl and Gutermann paper.

Habitat

I have seen this natural hybrid of *Saxifraga biflora* and *Saxifraga oppositifolia* in several places in the Hohe Tauern. A population of *S. × kochii* near Hannoverhaus inhabited an extremely loose and unstable north facing schist scree. I did not find any plants that looked like *S. biflora*, all *S. biflora* seemed to have been replaced by this hybrid.

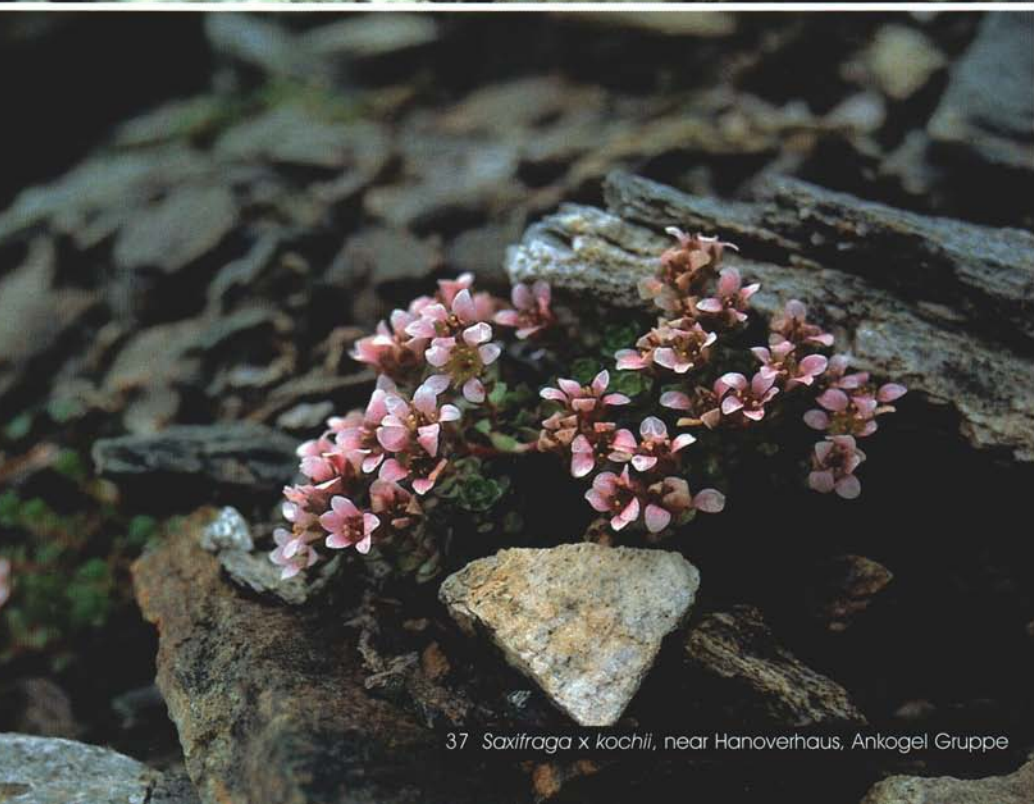
It is interesting to note that I only found this population in early August. Two weeks earlier I visited the same place and found no sign of it, I suppose this small population was confined to a few late melting snow patches.

It would be interesting to know which of the three *S. oppositifolia* subspecies has been the other parent of this hybrid population. *S. oppositifolia* ssp. *oppositifolia* seems to be an unlikely candidate for this, as it seemed to be confined to the south-facing slope of the ridge and was far less numerous anyway than *S. oppositifolia* ssp. *rudolphiana* and *S. oppositifolia* ssp. *blepharophylla* on the north-facing side.

Another most interesting station is found around the Weißsee at 2365 m



36 *Saxifraga x kochii*, Weißsee, Goldberg Gruppe



37 *Saxifraga x kochii*, near Hanoverhaus, Ankogel Gruppe

in the Goldberg Gruppe. At this locality there is much diversity. *Saxifraga* × *kochii* grows here in wonderful and unusual forms alongside *S. oppositifolia* ssp. *oppositifolia* and small numbers of *S. oppositifolia* ssp. *rudolphiana*. *S. biflora* seems to be absent here.

Distribution

This hybrid occurs throughout the range of *S. biflora*, thus it is confined to high schistose mountains in the Alps.

CONCLUSIONS

Saxifraga oppositifolia ssp. *blepharophylla* and *Saxifraga oppositifolia* ssp. *rudolphiana* are really distinct and easy to recognise. In fact both are often regarded as true species; not surprising as they often occur sympatrically without merging in a hybrid swarm. As saxifrages tend to hybridise readily, it is quite amazing that while these subspecies only rarely grow in isolation and flower usually at the same time, hybrids are uncommon or absent.

Saxifraga × *kochii* may well have more horticultural potential to alpine gardeners than is generally believed. The range of colour variations, number of flowers and petal shapes in the wild is enormous, in contrast to cultivated plants. Perhaps a few good selections of this hybrid can make a worthwhile addition to our saxifrage collections. Apart from a deep red clone that is occasionally grown, the new cultivar 'Firebrand' has recently been given a Preliminary Commendation by the RHS Joint Rock Garden Plant Committee. This cultivar is described and illustrated in the December 2002 issue of the 'Alpine Gardener'.

Finally it is interesting to note that the third European species in this Series, *Saxifraga retusa*, is known from a few places in Austria as well. It has one or more stations in the Niedere Tauern and is also reported from the Zirbitzkogel in the Seetaler Alps.

References and further reading:

Horändl, Elvira and Gutermann, Walter, "Populationsstudien an Sippen von *Saxifraga* sect. *Porphyrium* (*Saxifragaceae*) in den Alpen: I. Hybriden von *S. biflora* und *S. oppositifolia*", *Phyton* (Horn, Austria) Vol. 34, 1994.

'Alpine Gardener', Bulletin of the Alpine Garden Society, Vol. 70 no.4, p.464, 465, December 2002.

Gugerli, Felix, "Hybridisation of *Saxifraga oppositifolia* and *S. biflora* (*Saxifragaceae*) in a mixed alpine population", *Plant Systematics and Evolution*, Springer Verlag 1997.

Hadacek, Franz, "Plant Gems of the Austrian National Park", *Journal of the American Rock Garden Society*, Volume 51 Number 3, Summer 1993.

Hartl, Helmut and Peer, Thomas, *Die Pflanzenwelt der Hohen Tauern*, Universitätsverlag Carinthia, 1987.

Webb, D.A, & Gornall, R.J., *Saxifrages of Europe*, Bromley, Kent 1989.

Richea

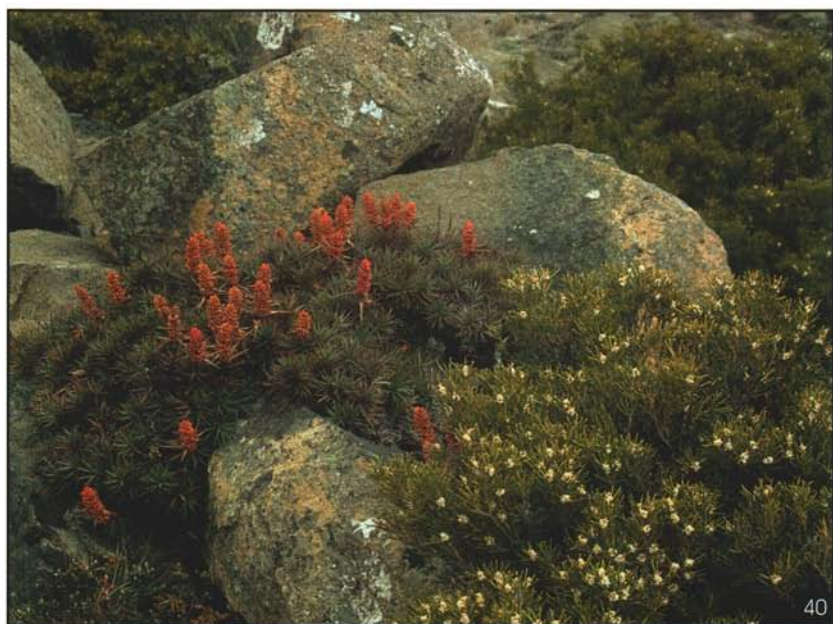
Jeff Irons

IN HIS BOOK *The Peat Garden and its Plants*, Alf Evans wrote that the RBG Edinburgh had specimens of *Richea scoparia* more than 40 years old. Visitors to the garden can still see them, now over 70 years old. Thirty years before Evans, Harold Comber had written about richeas in the accounts of his seed collecting trip that were published in 'The New Flora and Silva'. Additionally, in his Field Notes he wrote "*Richea scoparia* Hook. fil. A very variable species of a most interesting order. It forms a rounded or erect shrub 2–15 ft. Leaves 2–3 ins long with a leaf arrangement similar to that of the Monkey Puzzle. Flower spikes terminal erect, 3–6 ins long. Very freely produced. Flowers white, pink, deep pink, red, or maroon. Seed collected at 4000 ft. Should include all colours. Common over 2000 ft on fully exposed mountain tops and upland forests. Good. Hardy. Try in well drained peaty soil." He was similarly enthusiastic about *R. pandanifolia*, but dismissed *R. milliganii* as having little garden value.

With one exception richeas are shrubs. Their parallel veined sheathing leaves are evergreen and curve outward. They give the plant a texture and an architectural quality. Close inspection shows that the flowers too are interesting. Each individual flower is shaped like an inverted cone or cup. It does not open in the usual way. Instead it splits close to the base, all the way round, so that the top falls off, leaving just a small cup at the base. Because of this, plants are at their showiest *before* the blooms open. Sometimes the flowers are solitary in the leaf axils, and sometimes in showy spike-like panicles. All except two of the species are suitable for the alpine garden.

The genus is named after the Frenchman Claude Riche. Because of that the name should be pronounced reesh-EE-a, but is usually anglicised to rish-EE-a. Historically the genus has been in the *Epacridaceae*. Present day botanical opinion would favour the view that this family is a primarily Australasian, and early, part of the heath and rhododendron family, the *Ericaceae*, to which, when complete, a current botanical revision will transfer the whole family. There it will comprise a sub-family, and within that *Richea* will be in the tribe *Richeae*. Of the eleven *Richea* species nine are Tasmanian endemics. The other two are found on mainland Australia. In Tasmania there is also a natural hybrid.

Unfortunately the most readily available species, *Richea dracophylla*, is the least cold tolerant. Usually much less, this shrub of wet evergreen forests can be as much as 5 m high. The leaves are about 30 cm or more long. Panicles of



38 *Richea dracophylla*, Mt Mangana, Bruny Is. (Ron Crowden)

39 *Richea dracophylla* (Ron Crowden)

40 Habitat of *Richea scoparia*, Mt Field (Ron Crowden)



41 *Richea scoparia* (Brian Halliwell)

white flowers appear at branch ends in summer. Even in the shelter of an evergreen forest this species cannot be recommended for districts away from the west and south coasts. Where it can be grown the species makes an impact quite quickly. A 3-year-old plant will probably be over 80 cm high, and shows up well in the garden. It needs moist acid soil, and can be grown in the ground or in a container. In the latter it is ideal for a shady, sheltered corner. It can be seen, just a short bus ride from Hobart, close to the lower tracks on Mount Wellington.

Richea scoparia is just as tough as *R. dracophylla* is tender. After 20 years in a garden this species can reach 70 cm in height and width. Very old wild specimens can be as much as 1m high. Their dense thickets make an uncomfortable barrier to progress, for the pointed stiff leaves, up to 6 cm long, tear against trouser legs as one tries to walk through. The very tall specimens mentioned by Comber are found in sheltered gullies, not in the open. As Comber noticed, the flower heads can be pink, red, orange, or creamy white. Visitors to Tasmania may find it useful to know that there is some geographic variation to the flower colour. Around Cradle Mountain and other northern parts of Tasmania orange is the most common colour. In southern Tasmania red, pink and white are more common. Typical locations easily accessible to visitors are Mount Wellington summit plateau, the Hartz Scenic Reserve and Adamson's Peak. There are also good specimens, with



42 *Richea pandanifolia* (Ron Crowden)

many flower colours, at the Walls of Jerusalem. In the garden, seedlings bloom after about 20 years. The species is relatively uncommon in British gardens, and most of the plants seen have been propagated vegetatively from a white-flowered plant at Edinburgh. About 20 years ago Highfields Nursery sold seed-raised plants. They should now be of flowering age. *Richea angustifolia* which is listed in the AGS *Encyclopedia of Alpines*, has been absorbed into this species.

Being difficult to obtain, the other species are confined to the gardens of a few specialist growers. Only one is likely to be wanted by more general gardeners. Being the giant of the genus, the tree-like *Richea pandanifolia* is a very desirable



43 *Richea pandanifolia* ssp. *ramosa*,
Gordon River (Ron Crowden)



44



46



47



45



48

44 *Richea acerosa* (Ron Crowden)
45 & 46 *Richea alpina* (Ron Crowden)
47 *Richea gunnii* (Ron Crowden)
48 *Richea gunnii* (Ron Crowden)



architectural plant. It is huge. In dense forests, plants as high as 15 m can sometimes be seen. More often it is less than half that height. Large outward curving leaves, often 1 to 1.5 m long, form a dense crown at the top of the trunk. Usually this is unbranched. The flowers can be white or red, but since they are high up, are hidden from view by the leaves. Old leaves form a skirt around the trunk, protecting it from the cold. Good specimens can be seen at the base of Adamson's Peak. An uncommon subspecies, *R. pandanifolia* ssp. *ramosa*, has a slender branched trunk. It rarely exceeds 4 m in height. This is a sub-alpine subspecies, usually found on forest margins and in clearings. It could form a dramatic backdrop to an alpine garden.

The other species are all smaller. *Richea acerosa* is an erect shrub, with small leaves (8–15 mm) at the ends of its stems. White or cream terminal solitary flowers appear in summer. They are in short heads, and there is a pinkish variant. The height is usually less than 1 m. Fast growing, it will reach 30 cm in 3 or 4 years. A good location to find this species is Liawanee Moor, overlooking Great Lake.

Since 2000, the shrub known as *Richea* sp. nov. has been called *Richea alpina*. A low growing sparsely branched shrub, confined to south-western Tasmania, it has red flowers in summer. Few tourists are likely to venture to its habitat. It is not known in British cultivation.

Richea gunnii occurs in the wetter parts of Tasmanian mountain heaths.

The leaves, 3–6 cm long and sharply pointed, are arranged attractively on the stems. Mature plants have white flowers, usually tinged pink, in summer. Quite slow growing, it will eventually reach 1 m. An easily accessible location is Lake Dobson, in Mount Field National Park. This is also a good area for seeing cushion plants.

Richea milliganii is another Tasmanian endemic, from the south-west of the state, where it grows in wet open heath or in peaty soils among boulders, near mountain summits. An open shrub, up to 2 m in height, its leaves have a softer appearance than those of the other Tasmanian species. They are about 2–4 cm long. Drooping heads of white flowers are seen in winter and early spring. In recent years a British nursery has offered it for sale.

Richea procera is another open Tasmanian shrub. It can be as much as 3 m high, and has leaves that at 8–25 mm long are quite small for the size of the plant. The yellow anther filaments make the flowers appear to be yellow. In the wild it is found in sub-alpine scrub and forest.

Superficially similar to *Richea procera*, *Richea sprengelioides* has smaller leaves, 8–12 mm, and is usually less than 1 m high. Unlike those of *R. procera* its stamens are not hairy. The cream inflorescence is borne in late spring and summer. A dweller of alpine areas, it grows on heaths, and is frequently found in cushion plants. A rapid grower, in cultivation it can attain a height of 25 cm and spread of 40 cm in as little as 5 years. A good northern location to see it is among, and in, the cushion plants at the top of the road to Lake McKenzie (near Mole Creek). Visitors with more time will find the 60-mile trip from Hobart to the Hartz National Park rewarding. The one to two hour walk from the car park to Lake Esperance will bring many delights, including *R. sprengelioides*. If visiting this park you should also walk to Lake Hartz.

The fertile hybrid *Richea x curtisiae* has *R. pandanifolia* as its pollen parent and *R. scoparia* as its seed parent. Physically it has characteristics intermediate between them. It is usually found as single specimens in areas where the two parents occur. This too can be seen near Lake Esperance.

Only one of the two species of the Australian mainland is known to be in British cultivation. *Richea continentis* forms extensive dense thickets in alpine areas. Usually less than 1 m high, the plants have long spikes of creamy white flowers in summer. The preferred habitat is sphagnum mounds. Eventually the area becomes too dry, and it is replaced by other species. Other thickets grow in snow melt areas. In cultivation, young plants can put on as much as 10 cm of growth a year. Summer visitors to Mount Kosciusko will find it close to the upper terminal of the ski-lift from Thredbo. It can also be seen on Mount Franklin, in the Australian Capital Territory, a little enclave around the capital Canberra.

Richea victoriana is confined to a small area of the sub-alpine Baw Baw



50 *Richea procera* (Ron Crowden)
51 *Richea procera*, Surprise Valley (Ron Crowden)
52 *Richea procera* (Ron Crowden)



53



54



55

53 *Richea sprengelioides*, near Lake Esperance, Hartz Range (Ron Crowden)

54 *Richea x curtisiae*, near Lake Esperance, Hartz Range (Ron Crowden)

55 *Richea continentis*, Mt Mangana, Bruny Is. (Ron Crowden)

Plateau. Resembling a larger version of *R. gunnii*, it can easily be differentiated from *R. continentis* by the prominent leaf scars on its stems. White flowers are seen in summer. Few British visitors go the Baw Baws, even though they are easily accessible from Melbourne. As well as the Baw Baw berry, *Wittsteina vacciineacea*, they have many other plants familiar to British rock gardeners. Mount Erica is a good location on which *R. victoriana* can be seen.

Like Britain, Tasmania has an oceanic climate. In the higher parts snow rarely lies for very long and winter cold spells are broken by warmer interludes. The climate of the Australian Alps is more akin to that of continental Europe. There are heavy snowfalls that bury plants for several months. Being native to the cooler parts of Tasmania and mainland Australia, *richeas* would seem to be ideally suited to the climate of northern Britain. They offer plenty of scope to gardeners looking for new challenges.

Cultivation

The cultivation of *richeas* is still understood poorly. At least one 'authoritative' encyclopaedia states that they are half-hardy to frost tender, and recommends planting them at the foot of a sunny wall. Since they are, with the one exception of *Richea dracophylla*, found in alpine, sub-alpine and montane areas, such advice is a recipe for failure. What they need is moisture, both at their roots, and in the air round about them. Comber knew more than these modern writers. In 'The New Flora and Silva' he wrote "Difficulties in soil or lack of moisture may kill these alpine shrubs, but frost never!" The forest dwelling *R. dracophylla* has been grown successfully in a large tub, placed in a sheltered shady corner. The others fare best in full exposure, or in the case of *R. pandanifolia*, in a situation analogous to a forest margin.

Good seed germinates easily. The fine seeds need the same treatment as those of other *Ericaceae*. Sometimes they come up immediately, but usually one or two winters are required before germination occurs. In one instance, *Richea pandanifolia*, there is both immediate germination, and germination after stratification. Seedlings can be transplanted as soon as they can be handled. It may be found easiest to transplant a group of them. A mixture of between 3 and 1 parts of fine acidic grit and 1 to 3 parts of organic matter will be found suitable for plants grown in pots. The composition does not appear to be critical, and the one chosen will depend on the watering regime. Plants can stay in the same pot for at least 10 years. A diet of wind blown dust and rainwater has proved adequate for pots kept outdoors. Indoors a little fertilizer could be given after several years. Plants in the ground need no attention at all. They do not appear to suffer from any pests or diseases. Cuttings taken in late summer or autumn may take up to a year to root when placed in a propagator.

The Seed Exchange

Stuart Pawley

AFTER MANY YEARS OF SERVICE, Jean Wyllie has handed over to me the challenging job of Seed Reception Manager. In this capacity I need all the help from members that I can get! After a career in which I have written many scientific computer programs, I am loath to put myself now in the position where I am not in control of the software, so I have decided to use Red Hat Linux to make the seed list. I have constructed a data-file from the most recent lists, and as there will surely be some errors in this I hope members will put me right; e-mail is a good medium for this, to *gsp.srgc@tesco.net*, but without attachments as I don't want viruses! I hope all donors will include a list of what they are sending, and notes about any of the species new to the exchange. The deadline for the list will be 1st November, so if you know that seed sent will be late, just e-mail me with a list of your contribution and I will be able to include it.

I have decided on a different layout for the seed list, with the genus appearing just once in capitals. Since deciding on this format, I have noticed that some other clubs' lists are similar, but I won't use invisibly small print! The list will appear on our web-site, all being well, so if you lose your list you can resort to the web, rather than using last year's list – which has been done I hear!

The centre pull-out page of the list will contain the order form, as usual, but the instructions for filling it in this year might be different. It's musical chairs in the Seed Exchange, and so Morris Wilson has retired from doing the order reception and distribution; this is being taken over by the Edinburgh Group, Rob Graham being the new Seed Distribution Manager. He tells me he is not as multi-faceted as Morris, and has spread some of Morris's activities around, volunteering Alan Hayes to do the reception of requests; all will be made clear when the Seed List comes out. The number of packets you can receive will be as ever, and the cost will remain ever-so-low. You may well be asked to give a listing in the order of your preference, and we will try to judge whether it is sensible to ask for as many numbers as in the past. On the order form, and again on the form for surplus seed, you need to write your name and address, including country, clearly enough for the postal services to understand, as these are simply stuck to your envelope of seed packets for dispatch.

We will run an Easy Ten as usual, though I have had very few comments regarding this following my request in the Yearbook. Please e-mail me with comments about this service. This will cost one pound, requests please to Alan (Dr. Alan Hayes, 31 Liberton Brae, Edinburgh EH16 6AG). This will of course be free for overseas members wishing only to use this service.

The team is not all changing this year. Happily Henry and Margaret Taylor will organise the packeting, which needs skills a novice like me does not have. They guesstimate how many packets of each offering need to be prepared, so they have to have a shrewd idea what all the latinised words mean, and which of the beauties are most in demand. You can see Henry and Margaret at work in last summer's journal, where there is a guide to the joys of the exchange; a brief summary now might be useful.

SENDING IN SEED

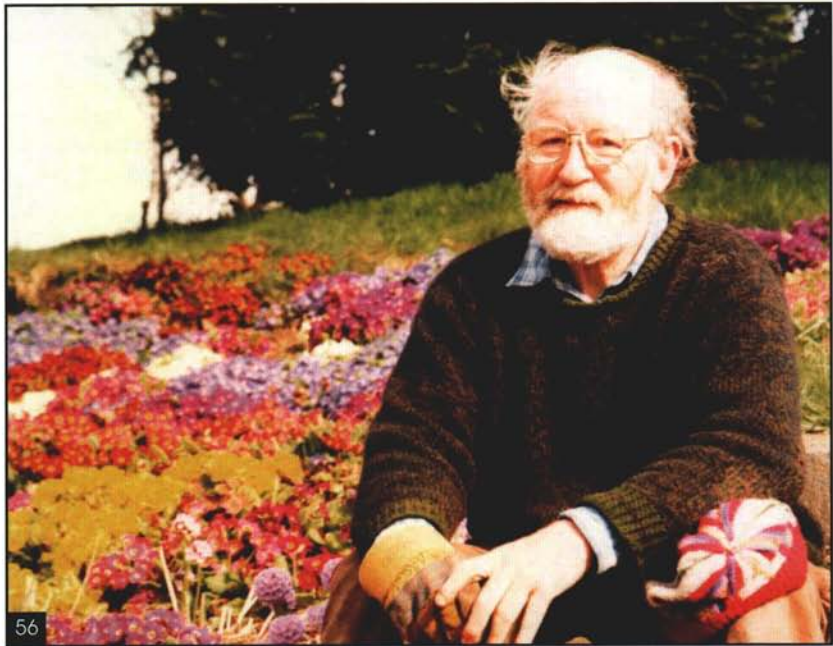
This comes to me before November 1st,

Prof. G. Stuart Pawley,
Acres of Keillour,
Methven,
Perth, PH1 3RA,

with the list of contents please. Donors will then automatically get a list posted before the end of the month, as will all overseas members. If you have not got your list by mid-December, just send me an e-mail or drop me a line. Non-donors should request me for a list, either by sending me an A5 stamped addressed envelope, or just by e-mailing me with your address.

ORDERING SEED

For this you fill in the form in the middle of the list, and send it to Alan Hayes; the address will be given on the front of the list. Don't delay if you choose things in demand, but it is well known that good donors get all the luck! Only forms received before the middle of January will be dealt with, giving you plenty of time to get your seeds sown and allowing the distributors to get back to their gardens. The cost of seed is included in the subscription for overseas members, but all home members should include £2.50 made payable to "SRGC Seed Exchange". There will be an additional charge for 'surplus seed', and this will be detailed in the seed list. The seed packets arrive in the New Year identified only by the numbers in the list, so don't lose your list or you'll be surfing.



I don't know why I was congratulated for bravery in taking on this task; I'll know soon enough. To put a face to a name, here's me in front of a patch of polyanthus, the first thing that went into our garden here at Keillour when it was just a farmhand's tip about ten years ago. Since then I have had to dig up all manner of rubbish, including a tractor cab that went over a metre down into the ground. You will have guessed therefore that we are not the proud owners of Keillour Castle, made famous by the expert Knox Finlays (see pages 55 & 56 of the centenary celebratory book). We have found the Castle gardens over the road very interesting, as a number of fine plants have survived the years. One of these is now in our garden, a sterile meconopsis that we have named *Meconopsis* 'Keillour', thanks very much to the interest that Evelyn Stevens has taken in it. Many members bought a plant at last year's Perth Show, and they should take good care of it, as the persistent rain late last summer rotted off 97% of my stock. This plant is not Betty Sherriff's "Dream Poppy", but I'm glad to say that we think we have found some *Meconopsis* ?*finlayorum*, a cross between *M. integrifolia* and *M. quintuplinervia*, a cross which the Stones subsequently repeated.



I am a genetically modified botanist, as my mother taught the subject, but I chose physics as a career. I got to trying my hand growing seeds not long ago when I discovered Magnar Aspaker on the web, and it is his generosity and the fertility of the seeds he sent me that got me captivated, so our overseas members have a vital role to play. There's a link to Magnar's web site from ours. I was hoping to spend many hours revisiting many of our glorious Munros in my retirement, but as I'm not so nimble now I have had to find something else to pass the time. I still dream of Mam Sodhail which I climbed in the summer many years ago, and was captivated by the vast quantity of *Silene acaulis*, my favourite in the mountain, flowering profusely. I was travelling light, doing five Munros that day, so had no camera more's the pity. So here's a competition for members – send me some photos of Mam Sodhail or Carn Eighe in full flower, and surely I'll be able to persuade our Editor to publish the winner! The view from the seed store across Strath Earn is of the Ochils (57), not quite as high as our marvellous Munros.

Here's wishing you all the great pleasure of success with our Seed Exchange.

Meconopsis revisited

James Cobb







59 *Meconopsis punicea*

I CONFESS I HAVE NEVER REALLY UNDERSTOOD the fascination with taxonomy, though reluctantly I would accept it is necessary. I guess I am just too untidy to appreciate it. It did seem to me that the DNA work carried out in Germany had made it clear that *Meconopsis cambrica* and the Himalayan poppies were not really closely related enough to be put in the same genus and the Welsh poppy would have precedence for the generic name. However it has not happened – for which many thanks.

I grow more meconopsis than in the past, but now almost exclusively from seed. I have even made just a little progress. *Meconopsis punicea* (59) continues to appeal and although extremely easy to grow (60) does need understanding. Since it was re-introduced by Peter Cox and others I have been told by a number of serious growers that it is perennial. Now many



60 *Meconopsis punicea* in the garden

species of meconopsis thought to be exclusively monocarpic occasionally produce a perennial plant. Some of these are likely to be hybrids since for some reason hybrid vigour does induce polycarpism in progeny of monocarpic parents. All my plants of *Meconopsis latifolia* were derived from a perennial plant that appeared true but I never saw another perennial plant in many generations. The trouble is that *Meconopsis punicea* does appear to be perennial. After flowering, a large proportion of plants have numbers of unflowered shoots. If you take these plants to pieces, these shoots are all entirely attached to the main tap root. They will, with reluctance, strike as cuttings but these will then flower on the single shoot, usually the same autumn. Plants left intact also try to flower on side shoots the same autumn and all fade away over the winter. If this were all it might not matter, but the idea that they may be perennial may breed complacency and they have other "little ways".

There is a very little variation in flower though a much greater variation in the shape and compactness of the wintering rosettes. There are, however, three colours of pollen - dark purple, red/brown and cream. There is also variation as to how much pollen is produced and more importantly how freely it is shed. I have rarely seen anything pollinating *Meconopsis punicea* and they only briefly flare open enough to allow easy access. I have always supposed that the strange but beautiful shape of the flower is adapted to shed incessant rain and that there may be in the wild a specialized insect. It would be interesting to know what goes on out there.

Hand pollinating is therefore advised and sometimes essential to obtain well stuffed capsules. Within weeks of being shed, the seed goes into a complex dormancy. The easy way round this it is sow it immediately – up here in Fife as early as the last week in June. I have experimented with this and sown right through until the middle of September and there is a straight line fall off to almost zero by the end of the period. However, when sown, the seed does not germinate until the next year. This poses another problem, since however well prepared and sterile the compost on sowing, it is potentially full of pathogens by spring. Further, I am always anxious that the tray will either dry out or become soggy during the long wait for the new year. I currently sow thinly on a large seed tray with a purchased peat-based seed compost. This is then covered with 3 or 4 mm of small grit. A piece of coarse netting (5 or 6 mm mesh) is then laid over the top and deeply covered with very coarse grit and the tray put somewhere cool and dryish. In late November the coarse grit is lifted off with the net and germination awaited with the compost kept damp. If January is mild, the seed will germinate by mid-month at ambient temperature in a cold greenhouse or frame and in a cold winter somewhat later. It grows on well in the cold and appears quite frost hardy. There is always a very high percentage of germination. The one problem is if a fungal pathogen has invaded the compost (at least I assume it is a fungus) and the seeds germinate but the seed caps will not come off and casualties with this can be 100%. I now always sow at least two quite separate pans, usually with different batches of seed and often in succession. So far, one pan has always grown on.

Like all meconopsis they should be pricked on – say early March – into a light and airy peat-based (or the equivalent) compost and I always add extra leafmould and a little extra of something like Vitax Q4. Growth continues rapidly and easily and they are then potted on singly into a rich, airy compost. As soon as they fill the pots they must either be potted on again or planted, for growth must not be checked to produce really big plants for flowering the next year and these large plants are much more likely to produce abundant seed. Having noted all this it must be said that seed will germinate if sown much later. It is the one meconopsis that it pays to keep a seed pan for a second year since germination with seed sown in say November or later may be zero in the first spring. Seed should be stored dry over silica gel in a fridge. I lost *Meconopsis punicea* almost as soon as it was re-introduced but was rescued by Peter Cox giving seed from his cold stored reserves after more than a year. This germinated perfectly well. The risk is that while waiting for





the pan to germinate a year later, the airy, peaty compost is overwhelmed by liverworts and the like, or a fungal pathogen gets in. I always store seed in the fridge as a reserve from at least the last two years. I regularly sow this seed, but quantitatively it germinates much less well.

I am ashamed to say that I have really struggled with the various purple flowered species, particularly *Meconopsis delavayi* (61), which in theory is growable and is managed well currently by a number of people. My problem has always been that about mid-summer, when the little carrot-like roots are 2 or 3 mm in diameter, the petioles (stems) of the leaves become blackened near the plant. The leaf thus becomes useless and gradually the black spreads back to the tap root and all is lost. There are a number of fungal infections that have been identified in meconopsis (see Cobb 1989) but I have no idea which one this is. The Norwegians and in particular Finn Haugli have succeeded admirably in growing *Meconopsis delavayi* and they have been the source of generous amounts of seed. Two summers ago Finn visited after the ten-year joint conference and I took him to visit Ian Christie at Kirriemuir and was bemoaning my lack of success to him. Ian gave me some fungicide called Octave and also the advice that the seedlings should be grown cold and out of any sunlight. The fungicide I used very dilutely since up to that point I have been very wary of any chemical treatment with meconopsis and indeed advocated not using them. Not only did this stop the fungus from spreading further but the plants rapidly replaced the dying leaves and lo and behold I flowered *Meconopsis delavayi*.

Now anyone who knows me will understand, I just cannot leave well alone. I also applied on some plants very dilute Maneb (professionally used for potato blight) and very dilute Benlate. All these are applied by making up a very weak solution and using a child's large soft paint brush to run the fungicide into the crown of the plant. I do this every two or three days until new growth is well in evidence and now use it regularly on large seedlings as a matter of course. It may well be that using a variety of fungicides is valuable since it will help to maintain susceptibility of the fungus to chemicals. It is, I know, increasingly difficult for amateurs to obtain any fungicide – and Octave is not available to non-professional growers – and it has tended to be the case that the ones that work are only available to professionals anyway. Ian Christie has recommended to me a Green Cross foliar feed as being effective; this is available and I intend to try it. In retrospect, I suspect this fungus is the same one that in a dry summers has lost me most of my collection of cultivars of the big blue poppies. All my seedlings of *Meconopsis sherriffii* succumbed to a



63 *Meconopsis horridula*

fungus of *identical* behavior at the late summer stage as have so many of the delicious Chinese species like *Meconopsis speciosa* (62) and *M. pseudovenusta* brought back after such effort by the likes of David Rankin. I much regret that large batches of both these species were attacked by the same fungus but they were so precious that I did not dare use the fungicide and in consequence I lost them all. In future should the chance come again I will do differently!

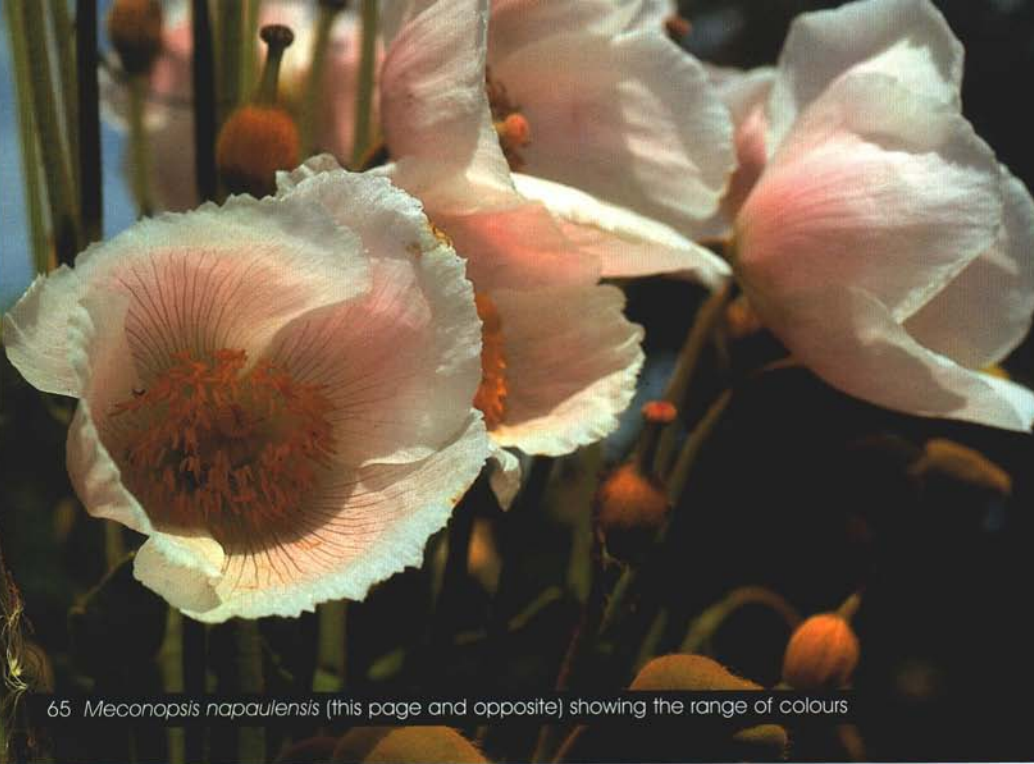
What comes next is an old chestnut revisited. Last autumn I caught a very strange small bird after a spell of easterly weather (I spend more time on my bird studies than gardening). It was in all probability a desert lesser whitethroat *Sylvia curruca minula* and should have been somewhere like Afghanistan. There are few other records and it may turn out to have been one of the first ever recorded in Britain. Now even the most dedicated rock gardener must have heard of twitchers. They tick lists of birds BUT usually only if they are full species. The presence of this small bird for four days was met by a wall of indifference. Given specific rank and there would have been 1000 people there. Many of these twitchers, when not waiting for their pager to go off, dream of armchair ticks when some “learned” committee decides to split another species. As a by-the-way did you know that since September 2002 there are two species of carrion crow in Scotland. So the taxonomists are in splitting mode again and it also applies to meconopsis.

Sir George Taylor, who wrote the definitive account in 1935, was at



64 *Meconopsis wallichii* - an excellent purple form

heart a lumper. He decided, using herbarium specimens and some field experience, that the prickly blue poppies variously called *Meconopsis horridula* (63), *M. rudis*, *M. racemosa* and *M. pratti* among others, were all the same species since they overlapped both geographically and in character and he lumped them all in *Meconopsis horridula*. For example, *Meconopsis rudis* is a very distinctive plant with, at its best, an almost blue-steel foliage with large clear purple spots and it is a stunningly attractive spring rosette for the few weeks before it flowers. The flower is usually a poor purple-blue in cultivation. The ACE expedition brought seed of a number of forms of *Meconopsis horridula* and the old names like *M. pratti* were resurrected. I really do have sympathy with people who go to great lengths and expense to collect plants and seed from remote and sometimes uncomfortable places. I can too understand how frustrating to find an exquisite plant with sky blue flowers, yellow anthers and basal scapes instead of a flowering spike and have to give the blanket name of *Meconopsis horridula*. These high altitude forms are so utterly exquisite that I would do anything to grow them. There is indeed a real problem here since, if they are to be cherished as the collector would desire, the best that can be hoped for is that the collector's number will indicate their desirability from the field notes. The problem starts when they come into cultivation since they all hybridize unless they are completely segregated. I know from experience that this just does not happen in almost all cases. If you grow *Meconopsis pratti* from wild collected seed then in the end they will hybridize with *M. horridula*



65 *Meconopsis napaulensis* (this page and opposite) showing the range of colours



of gardens just like *M. rudis* does. But what do you call the offspring, because they are not *Meconopsis horridula*, they are a hybrid between two species. I do try to grow really beautiful forms of what would have been *Meconopsis rudis* separate but if this is put into the seed exchange it will no doubt come back as *M. rudis* still but meantime it will have hybridized. For the gardener these new mixes are often not very attractive compared to established 'strains'.

Underlying this dilemma is the whole problem of what defines a species. This is clearly an artificial characterization by man and since the advent of DNA studies it becomes ever more muddled. For the professional taxonomist it is interesting, to the gardener it is at best frustrating and at worst a nightmare. The group putting so much effort into sorting out the big blue poppies is constantly up against this problem. You cannot use the term 'hybrid' or 'strain' in your title. There is a parallel in another group of meconopsis. *Meconopsis napaulensis* (of gardens) – and I am excluding *Meconopsis wallichii* (64) which is another controversial topic – can be purest white, every shade of gorgeous pink to nearly black red as well as all shapes sizes and shades of yellow (58, 65-70). The foliage can be finely divided or plain and sometimes covered with stunning coloured hairs. These truly wonderful plants are not however *Meconopsis napaulensis* and indeed Taylor does not even mention pink as a colour. He in fact lumped *Meconopsis wallichii* in with *M. napaulensis* which I think is unwise since the cross is sterile but when I had the temerity to suggest this to him he refused to discuss it! What we grow in our gardens as *Meconopsis napaulensis* at a minimum has *M. regia*, *M. napaulensis*, *M. paniculata*, *M. taylorii* and probably *M. robusta* all mixed in. We are content to





71 *Meconopsis horridula* x *Meconopsis paniculata*

call them *Meconopsis napaulensis* but they clearly are not. You cannot call them *Meconopsis napaulensis* hybrids or *M. napaulensis* 'pink strain'. As far as I can see a plant species that is regularly seed propagated and hybridizes in a complex way as well as being inconsistent in form is unnamable! If you take the time and trouble to select a form that is desirable, but not fixed if planted where it may further hybridizes, then all one can really do is add a cumbersome description to a name that is actually not valid e.g. "*M. napaulensis* (large pink flowers with ginger foliage)". That is of course what we currently do but this

plant is not *Meconopsis napaulensis* but a hybrid probably at least with the pink *M. taylorii* blood in it. It is high time that taxonomists who have any interest in gardens or the conservation of plants in cultivation realize there is a very significant problem here. One way out of it is just to accept two DIFFERENT species concepts: *Meconopsis horridula* for taxonomists and “*M. horridula*” for gardens' effectively accepting “*M. horridula* (Hort)” as valid. I do accept that splitting visibly different plants into new species or even subspecies has value to the field worker and the taxonomist. We gardeners do, however, need the relevant authorities to provide a workable solution to the following problem. If you split *Meconopsis horridula* into say four: *M. prattii*, *M. racemosa*, *M. rudis* and *M. horridula*, then as long as each species is maintained in isolation all is well, but if grown together then the progeny are not. *M. horridula* but unnamed (and frankly unnamable) hybrids.

It is extraordinary the range of meconopsis that do hybridise – almost anything with anything; I currently have a fertile cross of *Meconopsis horridula* with *M. paniculata* (71). This hybridising of meconopsis has a more sinister side too since some crosses are sterile. One example of this is *Meconopsis dhwojii* crossed with *M. napaulensis* – an all too likely cross in many gardens. The cross is called *M. x ramsdeniorum* and is pretty insignificant. *Meconopsis dhwojii* is rapidly becoming a rare plant and will soon be lost if some altruistic souls do not grow it on in isolation from the other similar winter rosette monocarpic species. Now this is something a meconopsis group really should be doing. *Meconopsis latifolia* is a similar case. I guess this comes from the area disputed by India and Kashmir and is probably unlikely to be recollected. It is of exceptional beauty. After many years in cultivation it suddenly seemed to hybridize with *Meconopsis napaulensis* (which seems unlikely but is so) and it did it in most gardens simultaneously. It appeared lost but many years ago I sent seed to Norway and they still have it. I currently have two plants and if I can flower them this year then we shall, I hope, be back in business. The one plant that flowered this year set just one seed. This confirms meconopsis are not self fertile except for *Meconopsis superba* and I suspect that this is the reason why this rather difficult plant still exists with good growers.

Reference

Cobb J L S, *Meconopsis*, 1989, Timber Press



Ian and Carole Bainbridge busy at the Perth Show

Show Reports 2003

Dunblane Early Bulb Display - 15 February

- wonderful start to the season

Considering the bulb display in Dunblane is held in the middle of February, we have always been lucky with the weather. This year's sunshine was preceded by a bitterly cold night when the temperature plunged to minus six degrees Celsius. We broke with tradition this time and instead of having one speaker deliver two hour-long lectures we had four speakers who each gave a short lecture of half an hour. Margaret and Henry Taylor took us to Spain to see lots of Spanish bulbs, especially Narcissus. David King followed on with American fritillaries in the wild. In the afternoon, Michael Almond took us further east with Crocus in Greece and Turkey. SRGC President Ian Young brought the day to a crescendo by talking enthusiastically about his favourite bulb, Erythronium. The presentations were excellent and the photographs breathtaking. Members present now have lots of ideas for spring breaks and are on the lookout for several plants new to them.

The hall was busy from early morning and there were five nurseries:

Christie's Alpines, Ardfearn Nursery, MAC Plants, Kevock Plants and Jacques Amand Bulbs; the SRGC plants stall and SRGC publications were in the hall to tempt us to part with our money. Graham Nicholl's book, *Alpine Plants of North America*, was a popular buy and was quickly sold out.

Galanthus dominated the display in the small hall. Snowdrops are dependable in their flowering time and are in good condition for a very long time, especially in very cold weather. To some people they are "all the same" but to others it is the small differences between flowers, which is their attraction. There were lots of clones and species-variants for galanthophiles to probe, poke and discuss. Widely regarded in Scotland as one of the finest snowdrops is *Galanthus elwesii* 'Fred's Giant', named by Noel Pritchard, who was at the show, for Fred Sutherland of the Cruikshank Botanic Garden in Aberdeen.



Ian Christie showed a fine collection of variants, all from one location where he is studying their differences. The plants seem to be hybrids of *Galanthus nivalis* and *G. elwesii*. Some are as distinct and beautiful as any recognised clones. Ian also brought a fine collection of *Hepatica nobilis* plants, which

were just coming into flower. Kirriemuir is becoming the Hokkaido of Scotland with all these Japanese plants. They have a long flowering season and will still be looking good in 6 weeks time.

Another beautiful non-bulb was *Adonis amurensis* (73) shown by Graham Butler. Like *Hepatica* it is a member of the Ranunculaceae. Without doubt, Ranunculaceae is one of the most important families in gardening. Can you imagine your garden without it? No anemones, no hepaticas, no hellebores!

Crocuses always look fabulous when they are brought inside. Their flowers open fully, with their petals fully reflexed, trying to look like sunbathers on the day before they leave the Costa del Sol to return to Scotland after two weeks of brilliant summer sunshine. They seem to be daring the heat and sun, saying "Come on sun, we can take it."

Crocus chrysanthus "Cream Beauty" like all its sisters and cousins in the *C. chrysanthus* family is a reliable plant and is well named. Cheap to buy and easy to grow, *C. chrysanthus* corms are available in all garden centres. New additions are made to the range at regular intervals. I hope someone builds up a big collection and brings them all along for us to admire. As the National Lottery said, "It might be YOU!" Jean Wyllie and Ian Young showed us why the bulb display is an important forum for the exchange of ideas and information by each bringing a dozen pots of different crocuses. Members spent a long time

admiring the different forms and species.

Irises were also well represented. The dark purple *Iris reticulata* 'J. S. Dijt' is a fine regal purple colour and *Iris* 'Sheila Anne Germaney' made an appearance alongside *Iris* 'Katherine Hodgkin', demonstrating what a pure clear shade it is.

Roma Fiddes' pans of seedlings showed the variability of flower colour and leaf marking in *Cyclamen coum*. The pewter/silver leaves are increasingly popular. The bold marking on the plant with white flowers is quite stunning.

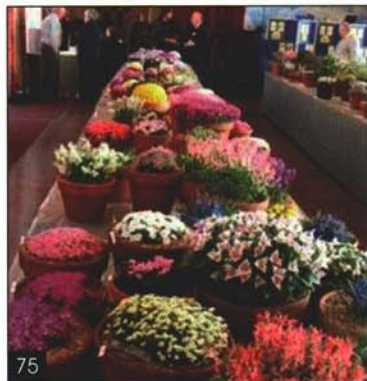
Barry and Cathy Caudwell brought the exquisite white *Sternbergia candida* with its beautiful crystalline petals. It is a member of the Amaryllidaceae and comes from western Turkey. It is difficult to flower in Scotland but seems to get the sunshine it is reputed to need at its home in Abernethy which is obviously Scotland's sunshine capital, nestling in the Sidlaw hills.



No apologies for returning to crocus. They are the stars of spring. It was suggested that parks departments

plant millions of them to save on eight weeks of difficult mowing of public grassy areas. Such cynicis! Glassford Sprunt has raised a hybrid of *Crocus sieberi* (its mummy) and *C. cvijicii* or possibly *C. chrysanthus* (daddy). The result is quite beautiful (74). Interestingly, Lyn Bezzant has raised a similar seedling. Michael Almond during his crocus talks talked of the frequency of wild hybrids where two species cross in nature.

Thanks to Hazel, Jean, Ian, Helen and Sam for the rare job they do on the plant sales table and thanks to all who donate plants to raise the money needed to run the display. *Sandy Leven*



Blackpool Show - 15 March

- Mike and Christine Brown
win Forrest Medal

The Blackpool Show this year was preceded by a dry spell of weather, often with cold nights. This tended to delay the development of some species but

meant that others were in their prime. Overall the entries were slightly down on the previous year but the show was still very colourful with pink being the dominant colour. *Cyclamen*, *Corydalis*, *Primula*, *Saxifraga* and *Dionysia* were some of the main genera present.

The Forrest Medal plant was *Cyclamen parviflorum* shown by Mike and Christine Brown. Solid with flowers, held just above the compact dark foliage, it made a wonderful display and fully justified the award.

The Duncan Lowe Award for the best plant in a 19 cm pot was won by Don peace with *Townsendia hookeri*. This had twenty daisy-like white flowers which were shown off very effectively by the background of silver-grey foliage. This species from the USA can occasionally be pink and is difficult to grow to any size.



The Kirby Cup for the best foliage plant was won by John Saxton with *Anisotome imbricata* ssp. *imbricata* (76). This species from New Zealand's South Island at 1500 – 2500 m, is very slow growing and difficult from cuttings, so the 25 cm diameter plant in peak condition was a real achievement!

Another very impressive plant was *Synthryis pinnatifida* var. *lanuginosa* (77) shown by Brian and Sheila Smethurst. This had over thirty heads of dark blue flowers held stiffly above grey foliage. Grown in J.I.2 plus grit (50:50) it had taken five years from a small plant. It had been kept in the alpine house throughout.



Some new saxifrage hybrids caught the eye. *Saxifraga* 'Coolock Kate', raised by Jim Almond and shown by Eric Rainford, is an unusual and striking shade of vibrant pink. Very distinctive, it received much attention. *Saxifraga poluniniana* x *quadrifaria* (TJR 342/99) is a newly found natural hybrid collected and shown by Tim Roberts. The foliage is very close to *Saxifraga quadrifaria* whereas the flowers are much closer to *S. poluniniana*. More compact than *S. poluniniana* it should make a good new show plant!. John Mullaney showed several young plants of the cross (in cultivation) between *S. cinerea* and *S. dinnikii*. In varying shades of pink they were attractive. In appearance they were closer to *S. cinerea*.

The show was a great success and thanks should go to Lionel Clarkson and his helpers for making it so. *Brian Burrow*.

Edinburgh Show - 23 March

- fritillaries are great but Pulsatilla and Epigaea stand out

The day dawned bright and sunny with blue skies but spirits were soon dashed by headlines of "Shock & Awe hits Baghdad" so it was with heavy hearts that we entered the show hall. Spirits were immediately raised by the display and brightness of Narcissus and Corydalis.

The Forrest Medal awarded to the most meritorious plant went to *Pulsatilla vernalis* shown by Cyril Lafong – a magnificent 12" pan in superb condition with over 50 flowers and that flowers more prolifically as the years pass. A previous winner of this award, Cyril also won the Elsie Harvey Memorial Trophy for 3 pans new, rare or difficult with *Fritillaria davidii*, *F. crassifolia* ssp. *poluninii* from the 1958 expedition to Iraq (very topical!), and a dark form of *Saxifraga dinnikii*. *Androsace muscoidea* Dome Group was a worthy winner for Cyril of the Alpines 2001 Trophy for the best cushion plant in flower.

The Henry Archibald Rose Bowl for 3 pans different genera was awarded to Fred Hunt, a close friend and rival, with *Fritillaria aurea*, a white *Primula pubescens*, *Tecophilaea cyanocrocus* (awarded a Certificate of Merit). All three plants, previous top award winners, were grown and presented to perfection – a lesson to us all. The Henry Tod Carnethy Quaich – best bulb in section I – was also gained by Fred Hunt. Many of his award plants that attracted attention were his perfect cushion of the compact form of *Gypsophila aretioides*, *Primula marginata* 'Napoleon', *Fritillaria pudica* 'Richard Britten', *Pulsatilla halleri* 'Budapest' – the true form raised from a cutting of the original 'Budapest' with large lavender-blue flowers with golden hairs – a stunning sight.

The Alfred Evans Quaich, given in memory of our late Honorary President for the best pan of Ericaceae excluding *Rhododendron*, was awarded, as last year, to *Epigaea gaultherioides* (78) shown by Bob Meaden who was also awarded the A O Carle Memorial Trophy for three pans grown from seed and the Reid Rose Bowl for the most points in Section I. One of his plants, *Massonia*



pustulata, a South African bulb of the Lily family, with two leaves per bulb, pressed flat on the soil with lines of pustules along the leaf ribs. It is named after the plant hunter Frank Masson, but as it flowers in November, it does not have time to set seed in this country.

Primulas are always eye-catchers at our spring shows and this year was no exception. The K C Corsar Challenge Trophy for the best European or American primula was awarded to *Primula* 'Clarence Elliott' shown by David Millward, the Edinburgh convener, and it was also awarded a Certificate of Merit. *Primula aureata* 'Netta Dennis' was the best Asiatic primula and gained the R E Cooper Bhutan Drinking Cup for Edith Armistead, while *Primula sessilis* from Nepal, and *P. elatior* ssp. *meyeri* from the Sierra Nevada in Spain, were worthy winners for Margaret and Henry Taylor. A lovely white dome of *Primula* 'Aire Mist' was a winner for Ian MacNaughton who was also the recipient of the Boonslie Cup for a miniature garden, and what a joy to behold – a stone trough, artistically planted.

Corydalis were popular and *Corydalis aitchisonii*, *C. vittae*, and *C. solida* 'George Baker' were part of the entry for Cathy and Barry Caudwell in the six pan class, and three pans of *C. solida* Penza strain, from Penza in Russia, in white, light purple and dark purple were winners for Sandy Leven in the native to one country class and there was an interesting hybrid, deliberately made, of *Corydalis schanginii* from Carole and Ian Bainbridge.

Among other genera that featured well at the show were of course Narcissus with great exhibits from, among others, Jean Wyllie, Maggie & Ian Young, Margaret & Henry Taylor, and, in section II, Sue & Hector Riddell who won the Midlothian Bowl for best plant in section II and also a Bronze Medal for most points in section II.

Ron Stewart won the prize for first time exhibitor with *Sempervivum* 'Engle's Rubrum', and the prize for best entry in the Junior Section went to Mark Tosh.

There are so many other great plants that could be mentioned. Wonderful Fritillaria from Maggie & Ian Young (who also got a Gold Medal for a display of bulbs which included numerous Narcissus, Tecophilaea and many Corydalis), Jean Wyllie and Stella & David Rankin. An excellent display of Chionodoxa by Alan Dickinson, holder of the national collection. The Royal Botanic Garden, Edinburgh were also recipients of a Gold Medal for a display of bulbs and rock garden plants. As always weather plays an important part in gardening and with the wonderful early spring this was an excellent show and our thanks go to Carole and Ian Bainbridge, our Show Secretaries, the judges, exhibitors, the Edinburgh Group helpers, and all those who



Harley Milne compiling his show report

helped with catering and manning the door, and helped to raise our spirits at this time of gloom and doom. *Harley Milne.*

Inverness Show - 12 April

- great "unofficial" show in the far north

The Inverness Show is not one of the mainline Club Shows but showing good plants is nothing new to the Inverness Group. Captions on the trophies start in 1980 but it is known that there had been shows long before this. The show, so far as I am aware, has never been under SRGC Rules but has provided interest for its enthusiastic members. For a number of years prior to 2002 the show was held in a medium-sized room in a local college. Whilst space was tight the very acceptable rent and generosity of members in providing plants for the sales table gave a feeling of comfort and security that denied any suggestion of improvement.

In the late spring of 2002 expected re-organisation occurred within the college and we were out on the street. This was the kick in the pants that the Inverness Group needed and we agreed to look for a new location in the town centre. Easier said than done, but eventually we secured a booking in a very nice church hall just within the main shopping area.

Members' interest was kept up throughout the winter lecture season, culminating with a "staging for showing" demonstration and discussion two weeks before the show. We hoped to have a larger entry than at the college and the show secretaries set up approximately 50% more bench space than had been available on previous years. The entries just poured in! Within half an hour of the start of staging it was necessary to commandeer tables from the plant sales. Remember that this show was not advertised and entries were limited to local group members.

Particularly impressive was the increase in entries for Section II, the "so called" novice section. If this section attracts ten entries it is unusual; sometimes there will only be one plant entered in the section and we have had a zero return. This year, presumably helped by the recent talk, there were 41 plants staged in Section II, and that with only one three pan class. The average entry to Section I in recent years has been of less than 30 pans and more than doubled to 73. How many other show secretaries have had a similar problem this year?

The quality of plants on the bench was excellent and most would have graced their respective sections at any of the larger shows. In the primula class Olive Bryers won with *Primula allionii* 'Elliot', a good example of its kind which also took the trophy for best primula in show. Olive is a regular at Inverness and in the class for a plant lifted from the open ground she displayed a nice big pan of *Sanguinaria canadensis* f. *multiplex*. How do you lift something as delicate and short lived as this from the garden and have it

looking so perfect on show day. Another Bryers plant was a super *Pulsatilla vulgaris* which could only manage second to what was to be the best plant in the show. These plants, along with others, enabled Olive to collect the trophy for most points in Section I.

In the bulb class the best entry was easily Davie Sharp's *Fritillaria affinis* var. *tristulis* and he had an equal to it with a plant of the same variety in the class for plants grown from seed by the exhibitor. Another plant from Davie with great potential was his *Daphne grandiflorum* which did not even get a third at this high quality Inverness show, primarily because it wasn't properly in flower. One week later, at Perth, this same plant came second only to another *Daphne grandiflorum* presented by Cyril Lafong.

The best plant in the show was an absolutely superb *Ranunculus crithmifolius* (81) shown by Bob Mackie. Carole Bainbridge said it was the best specimen she had ever seen. In the three pan class Bob also had a superb plant of *Tropaeolum tricolorum* but the class was won by Carol and David Shaw showing a good plant, well displayed, of *Clematis cartmanii* 'Joe', a *Lewisia tweedyi* and a *Saxifraga grisebachii* (now renamed *Saxifraga federici-augusti*). It was interesting to note two or three 'Joes' at Inverness and several at other shows. Is this the plant of the year?



This was an excellent small show from a far flung group with eleven different names appearing on the record sheet. Our judges, Bob Maxwell and Carole Bainbridge, were very impressed and found the hour allocated for judging to be very tight indeed - next year we promise the judges longer. In 2004 our show will be held on April 24th. Why not take a run up to the Highlands to visit us either as a visitor or as an exhibitor. We guarantee to find the extra tables from somewhere.

Thanks to Carole Bainbridge for the photographs. My camera spent a very useful day sitting on the kitchen table! *Carol Shaw.*

Perth Show - 19 April

- beautiful Penstemon from Cyril Lafong

Section I

The George Forrest Memorial Medal was awarded to Cyril Lafong for a tremendous plant of *Daphne petraea grandiflora*. It was a large flowered form with foliage almost totally covered with flower. It proved to be the best of four magnificent *Daphne petraea* in its class. Cyril grafted this particular specimen which is around 12 years old.

The Major-General Murray-Lyon Trophy for the best plant exhibited by a member resident in Tayside region, as well as the bulb trophy were awarded to Fred Hunt for *Fritillaria liliacea*. This plant, which had upwards of 100 flowers, is probably about 12 years old. Fred says that it's fairly easy to grow in a gritty bulb mix. The Alexander Caird Trophy was also awarded to Fred Hunt for the six-pan, made up of *Pleione* 'Shantung', *Trillium decumbens*, *Lewisia* 'Ashwood Strain', *Fritillaria pallidiflora*, *Fritillaria liliacea* and *Thalictrum orientale*. Overall, Fred also had the most points in Section I and received the L.C. Middleton Challenge Trophy.

Apart from these show-stoppers, some unusual alpine plants were exhibited amongst the plants grown from seed. Two such plants brought along by Cyril Lafong, were *Penstemon uintahensis* (82) and *Viola delphinantha*. The penstemon, which is the attractive luminous blue violet colour found in some species of penstemons, was collected in the Central Uinta Mountains of Western North America at 10,650 ft. *Viola delphinantha*, which occurs in Greece and Bulgaria amongst limestone rocks, was found to need careful watering in the dormant season. Another of Cyril's plants, exhibited and judged first in the new rare and difficult class, was a specimen of *Benthamiella patagonica* from Flores and Watson seed. This unusual cushion plant, belongs to the Solanaceae and occurs in Patagonian steppe habitat. Cyril grows it in JI 3 : coarse grit (40:60) with full exposure in the alpine house and keeps it dryish in winter. It can be propagated from fresh-ish seed or summer cuttings (according to Czech Rock Garden Plant Database; <http://web.kadel.cz/flora/>).



The E. H. M. Cox Trophy for the best dwarf Rhododendron was won by Viv and Anne Chambers while the R.S. Masterton Memorial Trophy for the best Asiatic Primula was awarded to Stella and David Rankin for *Primula sonchifolia*.

Section II

In Section II, congratulations go to David and Carol Shaw, who were awarded both the Perth Salver and Bronze medal; also to Rae Paul who gained most points in show by a member of the Perthshire Group. The Georgina Blackwood Memorial Trophy, in the junior section, was won by Mark Tosh for a neat and floriferous specimen of *Primula allionii* 'Aire Mist'. Cathy Caudwell

Glasgow Show - 3 May

- Bob Meaden is star of the show

What a gloriously warm spring we had this year! - but what an unfortunate effect it had on the Glasgow Show. Although the earlier shows benefited from the excessively dry, sunny conditions, Glasgow did not. Like athletes, many of our plants had “peaked” too soon; entries were noticeable reduced, especially in the challenging multi-pan and bulb classes. But it wasn’t all doom and gloom, there were some superb plants on display.

Carol and Ian Bainbridge and Margaret and Henry Taylor contested Class A, the 6 small pan class, with the Bainbridges taking the Jubilee Award. One of their pans was a superb little plant of *Daphne petraea* ‘Grandiflora’, the Taylors had the delightful *Calceolaria* ‘Walter Shrimpton’. The contest for best primula (the Joan Stead Prize) was between two Taylor plants - their recent introduction, *Primula albenensis* and a hybrid seedling with enormous pink flowers, parentage *P. irregularis* x *P. sessilis*, which gained the vote. Fred Hunt won class 2 with an entry that included a superb pan of *Pleione aurita*. It took the trophy for the best plant in Orchidaceae and was given the top award by the RHS Joint Rock Garden Plant Committee, a First Class Certificate. For the record, this very attractive species underwent a name change for a short time from *Pleione aurita* to *P. chunii* but has now reverted to *P. aurita*. Stella and David Rankin won class 3 as well as the Don Stead Prize for most points in the bulb classes.

Last year Bob Meaden’s magnificent *Glaucidium palmatum* ‘Album’ (83) got a Certificate of Merit but this year was judged to be the best plant in the show and gained him his first Forrest Medal, but his stunning *Iris reichenbachii* (84) ran it close and was given a Certificate of Merit. So too was his *Ledum groenlandicum compactum* (85) – this neat form that



smothers itself in flower is definitely a plant to look out for.

Perhaps because of the unusually hot weather, we were able to enjoy a few species seldom seen at Glasgow. The Rankins showed a lovely *Meconopsis integrifolia* with some buds unfolding their crumpled petals. In the class for Scottish native plants there was a floriferous little roseroot, *Rhodiola rosea*,



and a pan of the spring squill, *Scilla verna*, that won the Ian Donald Memorial Trophy for Kath Rimmer. Another Scottish native that attracted attention was Brian Davidson's *Dryas octopetala* but a scheduling anomaly precluded its consideration for the trophy.

Other plants of interest (to some, including myself!) – *Arisaema* entries continue to increase with pots of *A. auriculatum*, *A. griffithii*, *A. nepenthoides*, *A. ringens* and *A. sikokianum* on the benches. Which classes should contain them? - a problem to resolve.

We had a good display in Section VI for cut *Rhododendron* with an excellent number of entries from Glenarn, Rhu and the Linn Garden, Cove. Jamie Taggart of the Linn Garden took the trophies. Club members and the public alike enjoy this opportunity of seeing these colourful exhibits of species and hybrids.

Once again, Section II had less entries than one would wish; Martyn Lamb gained the James A. Wilson trophy with several good pans of saxifrages and lewisias. *Anne Chambers*

It is hope to include reports on Stirling and Northumberland in the next issue.

Photographs by Sandy Leven, Ian Young, and Carole Bainbridge.



After the event -
Fred Hunt packs a car full of treasures (and prizes) after the Perth Show

Christmas Cardiocrinums

**Brian & Maureen
Wilson**

Of the two *Cardiocrinum* species commonly in cultivation, namely *Cardiocrinum giganteum* and *C. yunnanense*, any botanical references we have consulted or talks that we have been to that have mentioned the genus would have you believe that *C. giganteum* is the taller of the two. 1.8 – 3.04 m (6' – 10') is the suggested height range for the latter, whilst *C. yunnanense* is reckoned to measure in at 1.2 – 1.8 m (4' – 6').

Notwithstanding that James Cobb once grew a 4.26 m (14') specimen of *C. giganteum* on the East coast of Fife, we have found in our own garden that the achievement of each species is reversed and that *C. yunnanense* is the taller, and no, we have not confused the two species! Admittedly, they have been grown in different parts of the garden, but to our knowledge there is no significant difference in the soil type or any other factor which might otherwise affect performance such as shelter etc. When growing both species a good dollop of cow manure was used as a convenient substitute for yak dung.

In 2002 we had 5 flowering spikes of *C. yunnanense* (87), the tallest of which measured 3.04 m (10') by the time the seed heads were mature. These bulbs arose from a single bulb which had flowered two years previously. What does one do with 5 stems of giant proportions? For a start, you take a saw and “fell” them, the “trunks” being far too thick for secateurs to cope with. You then take them into a shed to let them dry before shaking them upside down

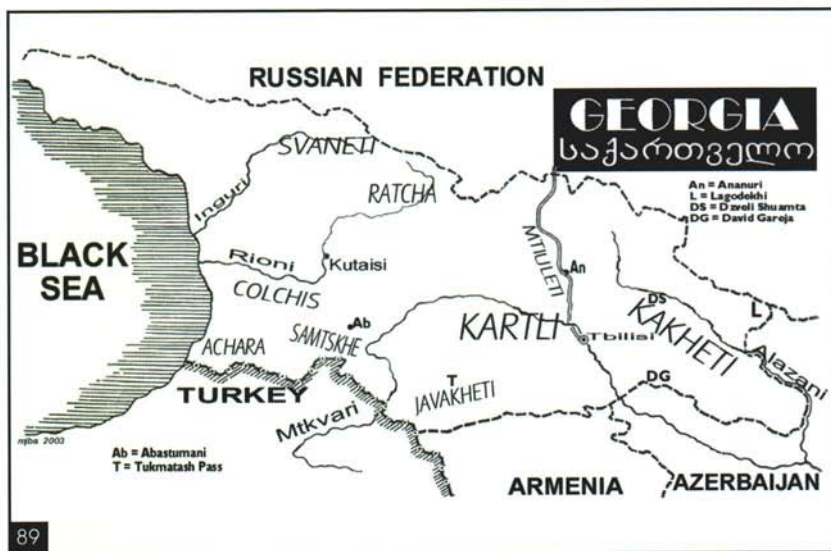


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into a bucket which with the attractive, featherweight seeds. (There was enough to supply umpteen seed exchanges with sufficient seed for many years to come.) Next you shorten the stems into variable lengths, and arrange them in a container filled with damp sand. Being hollow, the stems push in very easily. Finally, top dress the container with handfuls of the seed to hide the sand, drape over some decorations, and hey presto, you have an unusual Christmas decoration. It may not be traditional, but it beats a carpetful of dropped pine needles any day!



Below the Caucasus: looking for flowers in Georgia

Michael J Almond

I HAVE ALREADY WRITTEN about some of the high valleys of Georgia, in the main Caucasus range (*The Rock Garden* 107, June 2001, pp174-182). This article is about the flowers I have found in other parts of Georgia during my visits to that fascinating country. Most of them were found in the month of June and, because of the lack of a usable flora, many of the identifications are necessarily tentative.

1 KAKHETI

Kakheti is the easternmost province of Georgia (with Azerbaijan to its east) and is divided into Inner and Outer Kakheti by the Gombori range of hills. Inner Kakheti consists of the fertile valley of the Alazani river, bounded on the north by the Caucasus and on the south by the Gombori range, and Outer Kakheti consists of the southern slopes of the Gombori range and the Iori plateau, where a dry steppe climate predominates.

1a Inner Kakheti

Lagodekhi is a nature reserve in north-eastern Kakheti, next to the Azeri border. It consists mainly of a steep valley up into the eastern Caucasus (90), densely wooded on its lower slopes, and is famous as the habitat of *Paeonia mlokosevitschii* and *Primula juliae*, as well as a number of *Galanthus* species. I paid my visit



in May 2001, however, when both the paeony and the primula had finished flowering. The valley disgorges into the broad Alazani valley at about 400 m. There was virtually nothing in flower in the dense woodland at lower levels, although there were a large number of ferns including the hart's tongue fern. As we climbed higher, and more light penetrated the canopy, I saw a number of plants in bud: *Orobanche*, *Cephalanthera* and *Platanthera*, some species of orchid (either *Orchis* or *Dactylorhiza*), *Primula* leaves (said by my companions to be *Primula woronowii*, a synonym of *P. vulgaris* ssp. *sibthorpii*), *Neottia nidus-avis* and *Omphalodes lojkae*. Near the upper margins of the woodland, at about 1650 m, there were leaves of a *Colchicum* (*vernale/speciosum*?) and of *Lilium monadelphum*, with *Primula macrocalyx* (91) and a *Heracleum* in flower. Above the tree-line, on the open hillside, at about 1900 m, there was more of interest: *Ornithogalum*, the large, yellow-flowered *Fritillaria collina* (92), *Trollius patulus* (93), *Scilla sibirica*, a white *Corydalis* (possibly *Corydalis angustifolia*) and *Anemone caucasica* (a smaller, high-altitude relative of *Anemone blanda*) – and, frustratingly, masses of *Galanthus* leaves but not a single plant still in flower.

Elsewhere in May 2001, in woods on the edge of the Alazani valley, at about 400 m, I found *Dictamnus albus* near the church of Ozaani, and below the monastery of Nekresi an attractive *Campanula* with large, dark-blue bells, scrambling over the ruins of the monastic buildings, another which was taller but with smaller light-blue bells, a yellow *Verbascum*, a rose, and a sweet pea which might have been *Lathyrus grandiflorus*.

On our way up from the Alazani valley to the Abanos pass (2926 m) in June 1998, en route for Tusheti we had noticed another attractive blue *Campanula* cascading down the cliffs above the road, a *Silene* with a multiple



91 *Primula macrocalyx*

92 *Fritillaria collina*

93 *Trollius patulus*

head which was probably *Silene compacta*, *Campanula* aff. *aucheri*, *Primula auriculata*, *Lilium monadelphum* and *Rhododendron caucasicum*.

On the northern slopes of the Gombori range in woods and on woodland margins, at the monastery of Dzveli Shuamta, there were *Helleborus orientalis* and *Cephalanthera* in bud in May 2001; and in June 1998, in the same place, we had found a tall *Campanula* (probably *C. latifolia*) growing in the long grass, *Cephalanthera rubra*, *Platanthera longifolia*, *Dactylorhiza* ?*fuchsii* and *Neottia nidus-avis*. At the monastery of Kvetera in May 2001 I found a big and impressive-looking *Bellis* ?*sylvestris*, *Ajuga*, *Helleborus orientalis*, *Orchis caucasica*, *Cephalanthera damasonium*, *Primula* leaves (probably *Primula vulgaris* ssp. *sibthorpii*) and a honeysuckle, and near the church of Vazisubani there was an impressive display of the red *Echium russicum*.

1b Outer Kakheti

In June 2002, I walked in the extensive oak woodland of Giorgitsminda, on the southern slopes of the Gombori range, near Sagaredzho. Flowers were few and far between on the woodland floor, but there was an interesting range of orchids to be found: *Ophrys scolopax* ssp. *cornuta*, a *Dactylorhiza* (finished flowering, but probably pink, about 25 cm in height), a dark pink *Orchis* (possibly *O. majalis*: finished flowering about 40 cm in height), *Platanthera chlorantha*, *Cephalanthera damasonium*, *Limodorum abortivum* and *Neottia nidus-avis*. There was also a very attractive rust-red *Orobanche* and a small *Polygonatum*.

The cave monasteries of David Gareja lie on the steppe land of the Iori plateau, right on the Azeri border, looking south towards Nagorno Karabagh. There is a rich flora here, if you are lucky with the season, and, although none of these plants are alpine and many of them are quite unfamiliar to me, I shall do my



best to describe what I have seen. I have never seen in flower the irises which grow here (including the *Oncocyclus Iris iberica*, whose flowering period is said to last for only four days), as I have always been too late in the season. There was very little to see when I visited in June 2000, whereas at exactly the same time in June 1999 there were flowers in profusion – even more so than when I visited in May 2001.

On Udabno Mountain in May 2001, on the way to the cave monastery of Sabereebi, I saw quite a lot of a small (about 40 cm) purple *Verbascum*, some *Euphorbia* and lots of a blue *Linum*. At Sabereebi itself, several spikes of *Eremostachys laciniata* were in flower, and on the same day, at the monastery of Dodos Rka, there were *Veronica*, *Salvia*, *Morina persica*, *Berberis chinensis* (or possibly *Berberis iberica*) and the hawthorn *Crataegus pentagyna*.

Alongside the road to the Lavra monastery and along the ridge above that monastery, between the monasteries of Chichkhituri and Udabno, we saw a wealth of flowers. In May 2001 there were *Eremostachys laciniata* (94), poppies, *Scutellaria ?orientalis*, a pale yellow *Onosma*, one or more *Iris* which were over, blue and yellow *Linum*, at least two pink or purple species of vetch, yellow toadflax, a pink *Silene*, a yellow *Verbascum*, *Euphorbia*, *Dictamnus albus* and a prostrate *Prunus*. In June in 1999 and 2000, in the same area we saw a yellow *Achillea*, *?Ajuga*, *?Althaea* (the same as at Ateni Sioni: §3a), a tall *Allium*, *Artemisia fragrans* and at least one other *Artemisia* one of which had a white dodder growing on it, a spiny *Astragalus*, *Centaurea solstitialis* ssp. *solstitialis*, a pink *Compositae*; a handsome, dark purple *Consolida*; a pink *Convolvulus* (probably *C. lineatus*), *Cotoneaster* which might have been *C. racemiflora*; three *Dianthus* one white, one small and pink, one with fringed pink petals; *Echinops*, an *Ephedra* (*Ephedra procera* and *E. distachya* are both



94 *Eremostachys laciniata*

recorded as growing here), at least two species of *Euphorbia*, *Ferula*, *Galium ?verum*, a *Glaucium* with small (1 cm or less) orange flowers and very long (c.10 cm) seed capsules – quite clearly a *Glaucium* but quite unlike any described in any flora I have seen; a yellow *Helianthemum*, *Helichrysum* (probably two different species), *Hypericum*, *Iris* (leaves only), a tall yellow *Linaria*, a blue (tending to pink) *Linum*; a very erect, branched *Myosotis*; two species of *Nigella*, one white and one light blue; *Onobrychis radiata*, *Onopordum myriacanthum* (95), a white *Onosma*, two *Orobanche* one pink and one purple; *Paliurus spina-christi*, *Phlomis tuberosa* and *Phlomis pungens*, *Pyrus salicifolia*, at least two *Salvia* species one of which was very aromatic; a ?*Scabiosa* in seed; a cream/brown ?*Silene* with glaucous paired leaves; *Tamarix smyrnensis*, a rosemary-like *Teucrium*, *Thalictrum flavum*; a *Verbascum* with attractive, large, yellow flowers with a dark “eye”; two yellow knapweeds (one spiny, one not). One of the *Salvia* was probably the endemic Gareja sage (*Salvia gareджи*); its flowers are said to be a riot of colour in May (but not in 2001!) but it is prevalent only in the neighbourhood of David Gareja’s Lavra. It is related to the sage of central Asia and is sufficiently different from other Caucasian sages to be given a separate name. It may be a “refugee” cultivar - a cultivated plant which, during a long period of time, has gone wild and has become established as a local variety. On the cliff face, in front of the cave churches of Udabno and beneath the nests of the Egyptian vultures there were also some impressive clumps of *Onopordum myriacanthum*.



95 *Onopordum myriacanthum*

2 MTIULETI

Mtiuleti consists essentially of the valley of the Aragvi river, the route of the Georgian Military Highway, north of Tbilisi, from Ananuri to Pasanuri and on to the ski resort of Gudauri, with the Pass of the Cross above it.



At the castle of Ananuri, next to the Georgian Military Highway, I have seen an attractive *Campanula*, with long narrow blue bells, growing by the main south door of the Church of the Virgin. The main floral interest in this area, in June at least, however, lies in the alpine meadows high on the hillsides above Ananuri, in particular those on the way up to the little hill-top church of the Trinity, which I visited in June 2002. On the way up, through open woodland and on the woodland margins, there were a good range of flowers: a large pink *Convolvulus*, *Ajuga chamaepitys*, *Echium russicum* (98), a very impressive drift of *Dactylorhiza urvilleana* (96), *Platanthera bifolia*, *Cephalanthera damasonium*, *Geranium*, *Rhinanthus*, *Potentilla*, *Tanacetum coccineum* (99), ivory-coloured *Centaurea*, and a tall yellow *Pedicularis*. In the deep gloom of dense woods I found nothing in flower except the occasional *Arum orientale* (97), very similar to our own cuckoo pint. The meadows on the sides of the hills beyond the woods were carpeted blue with *Myosotis*, dotted with ivory-white *Centaurea* (100). On the steep slopes above the woods and below the church were masses of *Lilium monadelphum* (nearly all still in bud unfortunately), *Anemone fasciculata*, *Gymnadenia conopsea* in bud, *Linum hypericifolium*, *Rhododendron luteum*, *Polygonum bistorta*, *Veronica* and *Heracleum* (giant hogweed).

Further north, above the little church of Korogho, in May 2001, I found *Daphne glomerata*, *Androsace villosa* and *Gentiana verna*, and just over the ridge, above the ski resort of Gudauri, *Anemone caucasica*, *Potentilla ruprechtii* as well as another *Potentilla* species, *Primula algida*, *Ajuga*, *Caltha palustris* and more *Daphne glomerata*. In the same area, in June of several years, there was *Rhododendron caucasicum* just coming into flower, masses of *Rhododendron luteum* and carpets of *Dactylorhiza euxina*. South of the Pass of the Cross there was *Alchemilla*, *Ajuga pyramidalis*, *Caltha palustris*; *Dactylorhiza euxina* and

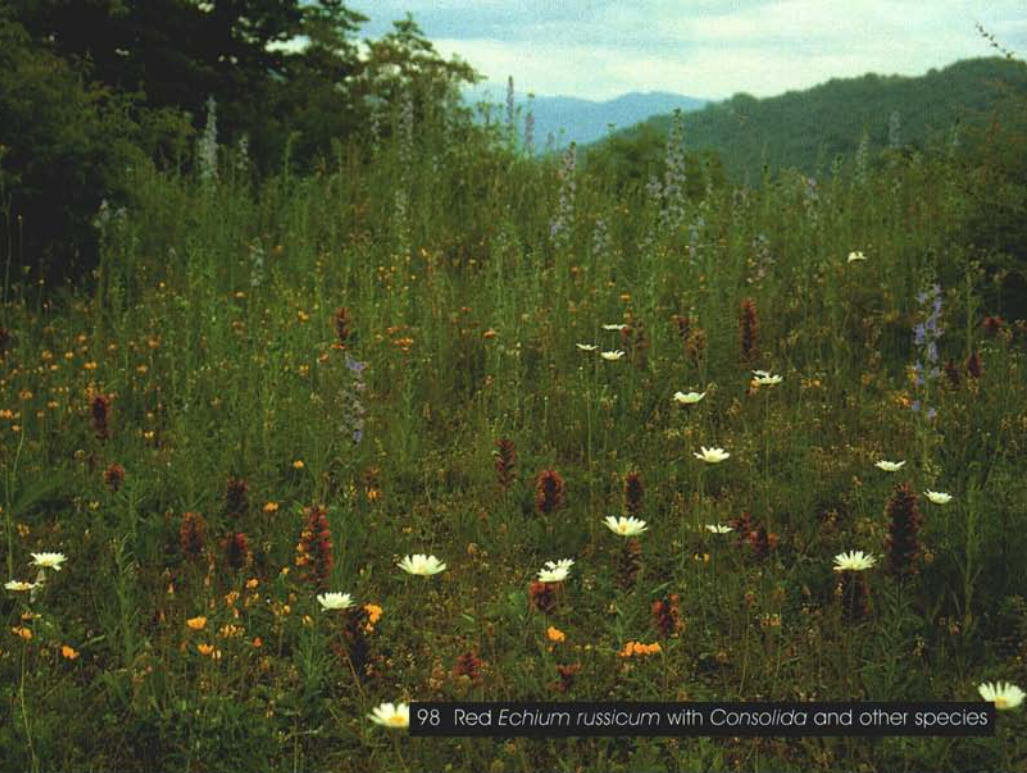


96



97

96 *Dactylorhiza urvilleana*
97 *Arum orientale*



98 Red *Echium russicum* with *Consolida* and other species



99 *Tanacetum coccineum*



100 Meadow with *Myosotis* and *Centaurea*



101 *Daphne glomerata*

possibly another, different, smaller *Dactylorhiza*; *Daphne glomerata* (101), *Fritillaria collina* and *F. latifolia*; *Gentiana angulosa*, *Polygala*, *Primula algida* and *P. macrocalyx*; *Rhododendron luteum*, a *Saxifraga*, *Thymus*, *Trifolium trichocephalum*, *Trollius patulus*, *Veratrum album*, and two species of *Veronica*. Also here, as well as at the Pass of the Cross itself, there was *Gentiana angulosa*, *Primula algida* and *Trollius patulus*, and in addition sheets of tall, pink *Primula auriculata*.

In June 2002 I finally succeeded in seeing some snowdrops there; it was a late season and there were drifts of *Galanthus platyphyllus* by the melting snow just below the pass, on the south side, right beside the road.

3 KARTLI

The province of Kartli is the heartland of Georgia, the ancient kingdom of Iberia, with the medieval capital Mtskheta and the modern capital Tbilisi at its centre. It is divided into Inner Kartli and Lower Kartli.

3a Inner Kartli

The church of Jvari stands on its hill overlooking the confluence of the Aragvi and Mtkvari (Kura) rivers where Mtskheta, the medieval capital of Georgia, stands. The scrub below the church contains a lot of *Paliurus spinachristi*. On the sun-baked rocks near the church itself, in June 1999 and 2000 there were two species of *Achillea* one white and one yellow; what might have been an *Agrimonia* species, *Gypsophila*, *Galium verum*, *Malva*, *Consolida*, *Convolvulus* aff. *althaeoides*, *Dianthus fimbriata*, *Rhamnus* and a blue *Salvia*.

In the hills above Mtskheta, on the opposite side of the Aragvi valley from Jvari, nestles the ancient monastery complex of Shio Mghvime. In May 2001, the surrounding hillsides were bright with poppies and the road was lined with *Dictamnus albus* (102). Over the hill to the north, looking across the broad plain



102 *Dictamnus albus*



of Mukhrani to the distant snow-covered peaks of the Caucasus, stands the little basilica of Tserovani. In the beech woods above it, in June 2002, I found abundant *Helleborus orientalis* and *Cephalanthera damasonium*. Further on, the meadows around the church of Skhaltba are bright in early June with purple *Consolida* and scarlet poppies, and some of the fields in the plain below are stained bright magenta with a *Salvia*.

In the hills west of Tbilisi, south of the Mtkvari river, lie a number of fascinating monasteries, many remote from human habitation, as they always have been. I am still not certain when the best time of year to visit this area would be if one wanted to see the flora of the area to its best advantage. In May 2001 the fields near the little church of Chacubeti were bright red with countless blooms of *Papaver orientale* (103), but little else was in evidence. In July 1998, there were stately yellow *Verbascum* beside Maghalaant Eklesia and *Gentiana cruciata* and a *Salvia* on the edges of the clearings in the woods below the monastery of Rkoni, with its fine medieval stone bridge. But in May 2001, there were no flowers to be seen at either of these last two places although a little further up the Mtkvari, however, at the ancient site of Uplistsikhe, there was a pale yellow *Onosma* and a purple *Verbascum*.

South of the Mtkvari, in a side valley near the town of Gori (birthplace of Georgia's most famous son, Joseph Stalin), around the 7th century church of Ateni Sioni, there were a number of interesting flowers and plants in June 1999: a deep yellow *Achillea*, a lemon-yellow ?*Althaea*, *Campanula latifolia*, a blue *Echium*, a pale yellow *Onosma*, *Paliurus spinachristi*, *Salvia turkestanica*, *Scabiosa*, a small *Verbascum* and a big, deep and pale pink *Vicia*.









Turkish frontier, I saw *Hyocyamus niger* at the fortress of Khertvisi in May 2001, *Muscari comosum*, *Potentilla*, *Campanula*, and *Saxifraga* ssp. *cartilaginea*; in June 2002 *Sedum pilosum* at the fortress of Tmogvi, and at the church of Tsunda, I noted a blue *Echium* and an impressive thistle, probably *Onopordum turcicum*. *Echium russicum* was growing on the slopes opposite Vardzia. In May 2001 the slopes below the cave monastery of Vanisqvabebi were red with poppies.



5 Foothills of RATCHA and SVANETI

Under this heading I include the foothills of the central Caucasus from the border of South Ossetia in the east to the border of Abkhazia in the west.

Around the base of the rocky pillar at Katskhi (on the top of which is a hermit's chapel), in June 2002 I found an interesting *Campanula*, like a smaller, blue *Campanula troegerae*, with reflexed petals (107). Further west, at the 1217 m Nakeralos pass, above the coal-mining town of Tqibuli, in June 2000 I saw *Lilium monadelphum* (108), *Anacamptis pyramidalis*, *Gymnadenia conopsea* and *Dactylorhiza urvilleana*, and in June 2002 I added *Rhododendron luteum* and *Rhododendron ponticum*, *Paeonia wittmaniana* and *Polygonatum odoratum*. A little further north, at the church of Nikortsminda, I saw a solitary (but impressively large) *Cephalanthera damasonium*. In the Rioni valley, just below the little town of Oni, a tall *Campanula* with fairly narrow, pale blue bells, could be found scrambling around at the roadside in June 2002.

En route to Svaneti in June 1999 and 2000, after passing through the groves of *Camellia sinensis* (now infested with bracken) near Zugdidi, by a waterfall in the lower Inguri valley we saw *Fragraria vesca*, *Geranium robertianum*, *Hypericum*, the yellow *Saxifraga cymbalaria*, a pale pink *Sedum*, *Stachys sylvatica* and a white *Valerianus*. Further up the valley we saw



107



108

107 *Campanula* aff. *troegerae*
108 *Lilium monadelphum*

Campanula, *Erysimum*, more than one species of *Heracleum*, *Helleborus orientalis*, *Euphorbia*, the pink multi-headed *Silene compacta*, *Salvia*, *Stachys*, *Vincetoxicum nigrum* (109) and *Cyclamen* leaves (presumably *C. coum*).

6 SAMTSKHE

Samtskhe consists of the mountain range sometimes (and misleadingly) called the “Little Caucasus”, south of the lowlands of Colchis, in the south-west of Georgia.

The fields around Akhaltsikhe were bright with poppies and *Consolida* (106), in both May and June. In June 2000, east of Akhaltsikhe, we also saw among other things, *Orchis pseudolaxiflora* and *Coronilla varia*, with its multiple flowerheads of pale pink “pea” flowers.

At the astronomical observatory of Abastumani, high (about 1650 m) in the hills north-west of Akhaltsikhe – and even more so on the mountain above the observatory – there was much of interest to see in June, although a visit in May 2001 proved unrewarding. In the woods around the observatory itself, in June of the preceding year, there were *Orchis elegans*, *Platanthera chlorantha*, *Dactylorhiza urvilleana*, *Cephalanthera longifolia*, a large yellow *Pedicularis*, *Polygala*, a pink *Centaurea*, *Rhinanthus major*, a yellow *Verbascum*, *Lilium monadelphum* in bud and more besides.

In June 2002 I climbed up on to the mountain above Abastumani. In the woods immediately above the observatory there was wild pear in blossom, *Rhododendron luteum*, masses of *Lilium monadelphum* in bud on the steep wooded slopes, *Orchis pseudolaxiflora* (110), *Platanthera* in bud, *Berberis chinensis*, *Polygonatum orientale*, *Arnebia echioides*, a pale yellow *Onosma*, the yellow *Pedicularis*, *Cerinthe*, *Euphorbia myrsinites*, pink and ivory species of *Centaurea* and *Primula macrocalyx*. In the alpine pastures above (at about 2200 m), in addition to bear



109 *Vincetoxicum nigrum*
110 *Orchis pseudolaxiflora*



prints, I found *Anemone impexa*, *Dactylorhiza flavescens* (in both yellow and red forms), *Fritillaria latifolia* (111), *Primula pseudoelator*, *Corydalis alexeenkoana* (112), *Arnebia echioides*, *Veronica*, *Trollius patulus*, *Daphne glomerata* (front cover), *Potentilla* and *Muscari* – and the tops of the ridge were fringed with the dark green foliage and ivory coloured flowers of *Rhododendron caucasicum*.

7 ACHARA

Achara is west of Samtskhe and consists of the valley of the Achara river and the lowland area on the coast around Batumi, bordering on Turkey.

At the 2025 m Godordzi pass, at the head of the Acharatsqali valley, there were fewer flowers and less of interest by the melting snow in June 2002 than I had hoped: *Primula pseudoelator*, *Ajuga*, *Viola*, *Caltha palustris*, *Gagea*, *Myosotis* and a bit of *Primula auriculata*. *Rhododendron luteum* was in flower below the pass, to the west. Lower down the valley I noted *Helleborus orientalis* and a *Convolvulus* which was, possibly, *Convolvulus althaeoides*.

Near the coast, around Batumi, there were large (easily 20 m high, and probably more) magnolia trees by the roadside, which had unfortunately finished flowering by June. This area (and also the area round Poti and the lowlands of Colchis) is almost sub-tropical in climate. One would need to visit it in March or April (like the coastal strip of north-east Turkey) to find wild flowers of interest to rock gardeners.



111 *Fritillaria latifolia*
112 *Corydalis alexeenkoana*





114 *Podophyllum delavayi* in Jim McClements' garden, one of the species which Jim photographed for *The Genus Epimedium* (Malcolm McGregor)

Book Reviews

THE GENUS EPIMEDIUM

AND OTHER HERBACEOUS BERBERIDACEAE

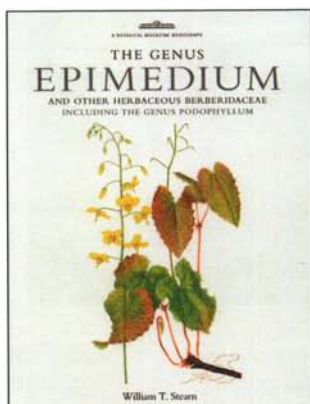
William T Stearn

ISBN 1 84246 039 0

RBG Kew

342pp, 112 colour photographs and line drawings, 27 plates of colour paintings

£35.00

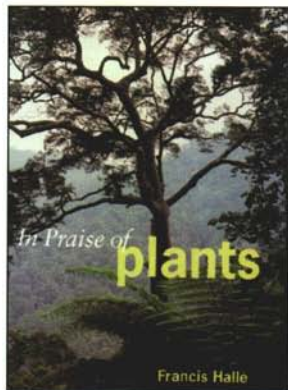


William Stearn was one of the great botanical figures of the 20th century. Born in 1911, his work ranges from his work on the Botanical Code, his immensely valuable *Botanical Latin*, co-authorship of later editions of *The Art of Botanical Illustration*, through to studies of individual groups of plants including lilies and paeonies, and of botanical figures such as Thunberg and Siebold. His list of publications runs to well over 400 items. This current volume, which Stearn completed shortly before his death in 2001, is a revision of his 1938 monograph. It is hard to think of many figures in any field who have managed a full revision and expansion of one of their works published well over sixty years earlier, and this is a superb production with which any author would be delighted. All the illustrations are superbly reproduced with a wonderful array of line drawings, colour photographs and botanical paintings.

The heart of the book is the full taxonomic treatment of the species and the illustration of all of these except for a handful of Chinese species only described in 1996 for which no material was available, and for which only descriptions are included.

Chapters on historical background, morphology, classification, geography and cultivation precede a full taxonomic treatment of the 54 species of *Epimedium* (as well as the 3 species of *Vancouveria*) as well as of 21 hybrids, and a listing of *Epimedium* cultivars. Indispensable for anyone with an interest in these delicately structured plants.

Stearn goes on to review other herbaceous members of the berberis family: *Achlys*, *Caulophyllum*, *Diphylleia*, *Ranzania*, *Jeffersonia*, *Bongardia*, *Gymnospermium* and *Leontice*, and there is also a full treatment of the genus *Podophyllum* by Julian M H Shaw. All round this is a beautiful book, superbly produced.



IN PRAISE OF PLANTS

Francis Hallé (translated by David Lee)

ISBN 0 88192 550 0

Timber Press

334 pp, 99 b&w figures

£17.99

At the heart of this book is the thesis that biology fails plants. It is, according to Hallé, a science which is based around an understanding of the animal kingdom. As members of that kingdom, it is understandable that we extrapolate from this point, not anthropomorphism but zoocentrism, but it leads us to look at animals as the norm. Topics such as architecture and function, passivity as opposed to activity, and sedentary lifestyle rather than a mobile one, are linked to discussions on the integrity of the genome, the nature of individuality, and the idea of biological immortality. These are just some of the ideas which Hallé tackles, all founded in our understated and often unrecognised prejudice as members of the animal kingdom. His discussion of the alternation of generations, and his interlinking of this with the need and tolerance of plants for greater genetic diversity is typical of his methods. Hallé puts plants at the centre, looking at them as fundamentally different to animals. And of course one says, "So what, it's obvious that plants are different" but Hallé makes the differences ones that hang together, putting the case very forcibly that plants are biologically superior. They may be at the bottom of the food chain but that is because it is they, rather than animals, that can "make" food, and it is us rather than them that look at food chains that way up. To quote, "*This somewhat triumphal ascendance masks the autonomy at the base and the dependency at the summit. . . . As a chauvinistic animal, we see a sort of implicit victory*" And as he points out it is parasites that are the top of the food chain.

This is a compelling book which makes plants fundamentally more approachable. The world is presented, if you like, from a plant's point of view. I can do little to praise this book more than to say that I've been looking at plants in a new way since I read it. And that is his aim, to rewrite our view of plants. This is a grand synthesis of modern thinking about plants.

Hallé, like his very able translator David Lee, are primarily tropical botanists and this shows in the examples that are used, and Lee is able to add his own when he feels necessary. This is not then a book for the rock gardener, it is by and for someone who is besotted by plants. Some of the book is decidedly technical, but if you've ever studied botany then this is a book you should read. If like me that formal study is well over thirty years ago, then this book will be a revelation, with so many of his sources, and they are wonderfully diverse, from the last thirty years. Throughout the book is illustrated by line drawings which often make the points of the text with delightful humour. Hallé

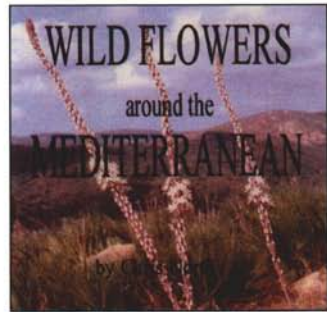
is never afraid of the big questions, even such fundamental ones as those relating to the evolutionary mechanisms in plants as opposed to those on animals. One word of warning - your next holiday might be to tropical jungle. Wonderful.

WILD FLOWERS AROUND THE MEDITERRANEAN (CD)

Chris North

£10.00 (15 euros) post free

Newmill of Knapp, Inchture, Perthshire
PH14 9SW (01828 686 226)



This is an update on disc of Chris North's *A Botanical Tour round the Mediterranean* which was published by New Millennium, now unfortunately defunct. What Chris has done is to have all the text and line drawings of some 500 species from that volume (which ran to 502 pages) put onto CD with over 1000 colour photographs of the plants. The chapters are on the CD as separate files so that any particular chapter can be accessed (and printed if so desired) without having to deal with the whole book. There are 22 geographical chapters starting with one on Southern Portugal, three chapters on Spain, one each on Minorca and Majorca, five on France, Italy, Corsica, Sicily and Malta; nine chapters on Albania, Greece, the islands (including one each on Crete, Rhodes and Cyprus), and Southern Turkey. The twenty-first chapter is on Israel, and the final geographical chapter is on Tunisia.

To take one chapter at random, that on the South of France (10pp), the text covers an introduction, the terrain, relevant botanical literature then sections on Les Corbieres, Montagne Noire Causse de Larzac, Causse de Larzac, La Camargue, Mont Ventoux, the Plateau de Vaucluse and Montagne du Luberon, Massif de la Sainte Baume, Massif des Maures, the area around Draguignan, and that north of Nice and Cannes, all with information on routes and plants as well as some useful information on flowering times.

This is a valuable resource. It would make a lot of sense to print out the text and line drawings before making any trip to the region covered but it would be a foolhardy undertaking for most people to settle down to print off 500 pages of colour illustrations this way. The natural thing would obviously be to take a laptop with the pictures accessible off the CD or off the hard drive. It is a shame that although all this has been put onto disc the author balked at having it set up as web pages with the photographs linked so that clicking on a reference would bring up the picture. Nevertheless the whole is to be commended - it is the sort of guide which most of us find invaluable when we visit a new area for the first time. It is planned that the CD will at some point be offered commercially but interested readers can get copies directly from Chris North.



115 *Podophyllum versipelle*, another of Jim McClements' plants (Malcolm McGregor)



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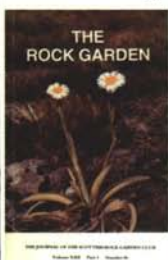
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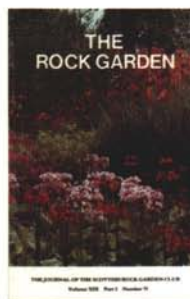
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