

International Rock Gardener

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---International Rock Gardener---

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Again we present our monthly pot pourri of plant interest, which we hope will entertain you. We also take this chance to repeat that this magazine can only exist with your contributions. Whether you are an expert in your field or a keen amateur growing something in your tiny garden, please put some thoughts on paper, take a few pictures and submit them to [the Editor](#) to see your plant passion featured in these pages. Also, if you've just discovered this free resource from the SRGC, please consider [joining the Club](#) to support our efforts.

Cover picture: *Armeria maritima* beside Nigg Bay, Aberdeen, photo J. Ian Young

--- "Floral Segments" ---



Nhu Nguyen is a dedicated plantsman who is the president of the [Pacific Bulb Society](#). In "Floral Segments" he shares some snippets of information, as a taster to encourage us to study more closely the plants we are growing and better understand their diversity.

Today, let's talk Evolution - or a rather smaller aspect of floral evolution called the pollination syndrome. That is, plants evolved to match their pollinators' needs, and sometimes this led to convergence in morphology as seen here with these three plants from South America.

The first is *Alstroemeria isabellana*, the second, *Phaedranassa dubia*, and the third, *Fuchsia splendens*. The first two are monocots and the third is a dicot - we can see they are very different from each other.

Alstroemeria isabellana (right) has a distribution from eastern/southern Brazil to north-eastern Argentina and looks very different to most other [Alstroemeria](#) species.



A more familiar type of *Alstroemeria*, a red variety growing in the New Zealand garden of Lesley Cox.



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Left above: [*Phaedranassa dubia*](#) is native from southern Colombia to Ecuador. Right above: [*Fuchsia splendens*](#) comes from Central America and southern Mexico.



You will notice that there is a theme of convergence in these three species, and that theme is reddish floral tubes, with green tips. A pollinator, most likely a **hummingbird**, is the culprit for selecting flowers of this morphology.

Female Ruby-throated hummingbird in flight - ["Hummingbird Aerodynamics of flight"](#) by Dan Pancamo [CC BY-SA 2.0](#) via Wikimedia Commons.

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My next theme comes from one of my most favourite genera, [Oxalis](#). Of the approximately thousand species, only a portion of species are in cultivation. Most cultivated plants are the bulbous South African species with spectacularly showy flowers. But I'm a fan of the genus not because of their flowers, but because of their incredible vegetative morphologies as exemplified in these three pictures of the plants.

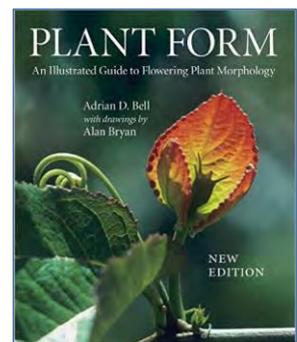


Oxalis palmifrons

Oxalis palmifrons from South Africa produces a whorl of leaves from a single bulb, each leaf with the appearance of a palm leaf. ***Oxalis gigantea*** from Chile makes woody stems and is shrub-like, dropping all of its leaves in the summer heat of the Atacama and returning to growth with winter rain. And finally ***Oxalis rusciformis*** from the rainforest of Brazil makes phyllodes, an interesting adaptation of the petiole for photosynthesis. Who knows why this was preferred over actual leaves, but this morphology had evolved independently many times in the Plant Kingdom.

[Suggested reading from Emilie Pulver – [PBS book review](#) :

[Plant Form: An Illustrated Guide to Flowering Plant Morphology](#)
by Adrian D. Bell and Alan Bryan
[ISBN-10: 088192850X](#) [ISBN-13: 978-0881928501](#)]



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Left: *Oxalis gigantea* – as the name suggests, this shrubby species can reach around 2.5m in height and is another plant which is pollinated by Hummingbirds.



Above: *Oxalis rusciformis*

Nhu's photo of *Oxalis fabaefolia* shows a form with quite narrow twin leaflets. The leaflets of *O. fabaefolia* can be rather broad and have "wings" of three leaflets.

Right: *Oxalis fabaefolia*

Looking for more information?

The [SRGC Forum](http://www.srgc.net) is a great source for information on many plant types – there are a large number of threads for geophytes which are deservedly popular - but a very wide range of plants are discussed in the forum – from trees to the smallest alpiners - whatever is of interest to our members - all pages are searchable to make the forum a lasting, open resource to all, in keeping with the SRGC ethos of sharing information and spreading interest in these plants as widely as possible.



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--- Gardens by the Sea ---

Seaside plants; On the rocks: text and photos J. Ian Young

So often our shared interest in rock garden plants leads us towards the mountains where these compact hardy plants have evolved over time, adapting their growth to cope with the rocky, exposed harsh environments found there. In the mountains we can see these plants forming attractive natural rock gardens, on the cliffs, in among the rocks, screes and out into the rough grassy meadows.



Seaside rock garden



The seaside is another place where we will find rocky exposed environments and a number of plants that are found on our mountains are also found here.

The different habitats found on sea cliffs, rocky shores, sandy beaches and adjacent areas around our shores all support a wonderful flora where many of nature's attractive rock gardens can be found.

Although some of the coastal plants are very specialist in nature, only growing in one narrow habitat type, the majority of the plants I show will grow across a range of habitats; their size varying according to the size of the root run.

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Armeria maritima

Perhaps the plant most commonly associated with our seaside is ***Armeria maritima*** – as is suggested by the specific name – where it can be seen growing in sand, pebbles but most spectacularly in cracks on rocks.

This plant is also found in the



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mountains and the combination of its resistance to salt and its adaption to harsh environments means we also see this plant colonising the gravel zones around many of our roadways. As with most of the plants I will show the size of the plant depends on where it is growing so those in the richer ground with a good root run will grow bigger than those that are rooted into the crevices.



Armeria is regularly seen growing along with the bright yellow flowered *Lotus corniculatus*, below, which is also commonly seen along roadsides and into the mountains.



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When growing in rock crevices *Lotus corniculatus* remains compact but will spread out forming large colourful mats when growing in the sand or soils further up the beach.



Although now classified as *Silene uniflora* I knew this plant as *Silene maritima*, which seems appropriate as it is so often found growing on rocks by the sea.

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Silene uniflora

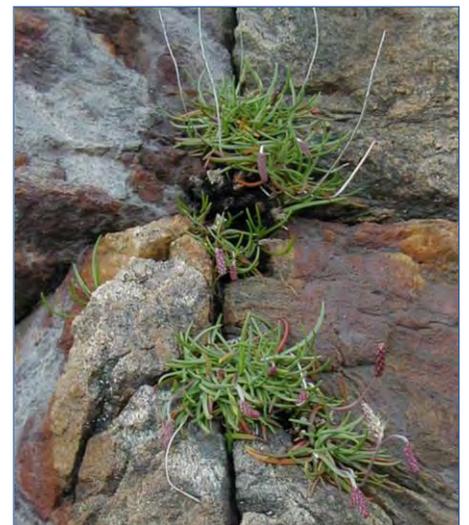
Ligusticum scoticum



Ligusticum scoticum is a lovely herbaceous member of the carrot family which can get a hold in the smallest cracks in the rocks where the restricted root run keeps its growth compact while those that have seeded into the sand or pebbles at the edge of the beach grow larger.



Plantago maritima has less showy flowers but is still worthy of our attention with attractive clumps of narrow leaves topped of in summer with a dense spike of small white flowers. Again the growth and ultimate size of these plants is regulated by their habitat so those in crevices will grow in tight rosettes while those in soils will spread out more.



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Plantago maritima

***Cochlearia
officinalis***



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Cochlearia officinalis

Cochlearia danica (right) mostly grows on the rocks and cliffs while the larger ***Cochlearia officinalis*** can be found among the grass. Because of its salt tolerance *Cochlearia danica* is another seaside plant that has colonised the gravel areas along our roadways where we can enjoy the haze of white or pink tinged flowers in the spring.



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Sand zone: There are plenty of plants growing above the tide line on the sandy beaches although they will be submerged in exceptionally high and storm tides.



Honckenya peploides, in an area where the sea has worn down discarded granite cobbles over many years.

Below:
Honckenya peploides, close-up



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The plant nearest the water line is always *Honckenya peploides*, a fascinating perennial succulent with small white flowers that runs through the sand often forming dense clumps. It grows up to the water-rounded rocky shore where here in Nigg Bay by Aberdeen I also find *Mertensia maritima*.



Honckenya peploides,
in fruit.

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Sadly *Mertensia maritima* is declining this far south and I find fewer plants every year.



Mertensia maritima

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Mertensia maritima with its glaucous leaves and blue flowers.



The annual ***Cakile maritima*** grows in the sand and rocky areas where we can enjoy its fleshy leaves topped by clusters of attractive pink flowers.

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Further up from the tide line we find substantial areas of golden ***Anthyllis vulneraria*** forming beautiful gardens with pink ***Trifolium pratense*** and more large mats of ***Lotus corniculatus***.



Anthyllis vulneraria, *Trifolium pratense* and *Lotus corniculatus*

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Runners of *Potentilla anserina* with silver green leaves and yellow flowers run through the soft sand sometimes with *Honkenya* and various *Plantago* species.



Potentilla anserina L. (synonym *Argentina anserina* (L.) Rydb.)

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Another common succulent, ***Sedum acre***, is also found in this area.

Cymbalaria muralis



Cymbalaria muralis, which as the specific name suggests is more often seen growing on walls in our towns, forms attractive mats among the cobbles in the sandy gravel area higher up the beach showing it has potential as a rock garden plant if it can be kept in bounds.

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Matricaria chamomilla with its white daisy like flowers over finely divided leaves is found growing in the sand, and more lushly among the rocks and up the grassy slopes. Again its growth and size is regulated by the conditions in which it is growing.



One plant of *Matricaria chamomilla* found growing on an old quay at the mouth of Aberdeen harbour was so tight and covered in flowers it might have won a prize on any show bench.



Matricaria chamomilla

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Above left: Clay Koplín, from Alaska, photographing roses on a visit earlier this summer. While there are some areas with the native *Rosa spinosissima* at the coast, that has been out-competed for the most part by ***Rosa rugosa*** which has proved invasive in many countries. The rose grows well down towards the high tide line; only the *Honkenya* can be seen growing beyond.



There are large areas of the *Rosa rugosa* in both white and pink, which run through the sand above the upper tide line, quite undaunted by the salt spray.

The squat orange-red fruits of the *Rosa rugosa* are eye-catching among the autumn tints of the foliage and are a source of food for the many birds in the area.





Rosa rugosa – a beautiful invader

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A fine natural rock garden has formed at the transition zone between the rocky shore and the grassy slope.



In the wetter areas at the base of this slope we find the hardy orchid *Dactylorhiza purpurella* growing among the shorter grasses.

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When it comes to **where** they will grow, the plants make no distinction between the natural and the man-made, anywhere they find suitable conditions they can get a hold as you see with the wonderful array of plants that are growing in the cracks of the sea wall.



The yellow flowers of *Anthyllis vulneraria* along with the pink ones of *Armeria maritima* are particularly showy.

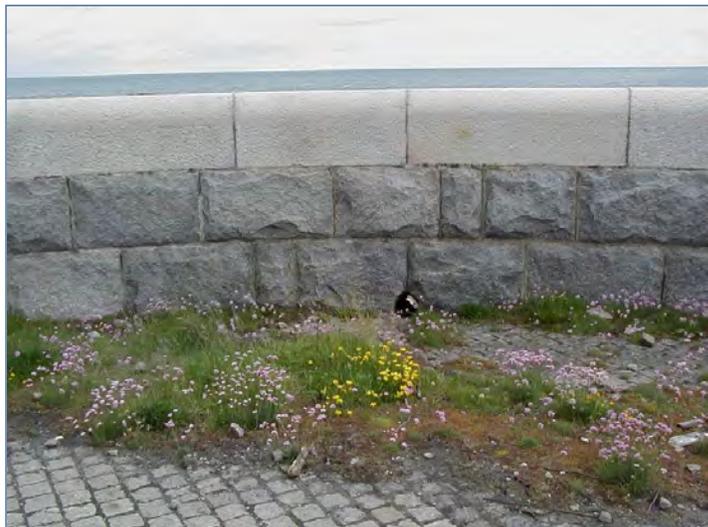
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These plants can even grow and survive along the edges of the sea wall that have been sealed with tar. **Armeria**, **Sagina**, **Plantago**, **Bellis** and grasses slowly spread out gaining territory after the first pioneers grew in the crack.



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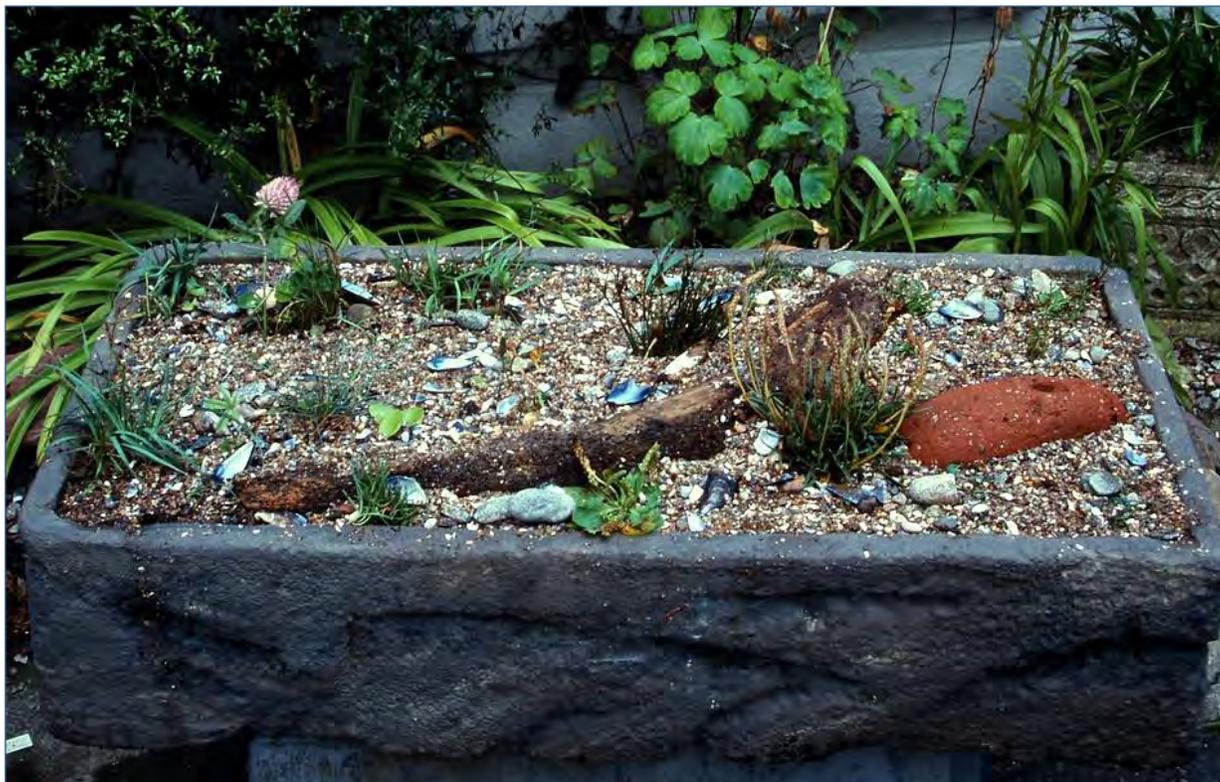
A natural rock garden has also established on this cobbled surface in the lee of the wall where there is some shelter from the sun and winds allowing sand and dirt as well as moisture to gather. Once a few plants have got a hold they help the soil building process by trapping more dirt - in addition their decaying leaves add humus.



Nigg Bay, Aberdeen, looking towards Girdleness Lighthouse.

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I originally developed the [lightweight polystyrene \(Styrofoam\) troughs](#) (made from fish boxes) so that I could put on a display of habitat troughs featuring Scottish native plants at a local plant show: this scanned slide shows a seaside planting made around 1985. Newer versions of trough making are in [this Bulb Log](#).



It shows what good rock garden plants the likes of *Cochlearia danica* can be.

All these plants and many more were photographed at Nigg Bay and Girdleness which is within three miles of our house and less than a mile from Aberdeen City centre. I have been visiting this area to enjoy the flora and fauna since I was a boy but now it is under threat as there are plans lodged to extend Aberdeen Harbour into this bay which will destroy this entire habitat. It is easy to understand that such a development could benefit the area financially but at what cost to the environment?



If you would like to see more Scottish wildflowers and seaside plants from Golspie, in Northern Scotland, check out [this Bulb Log 2615](#).

These are also links to videos showing some of the Scottish plants, both at the shore and elsewhere in the Golspie area, starting [here in the SRGC forum](#).

The wildflowers of the Golspie area of Sutherland have also featured in the journal of the SRGC – [The Rock Garden 131](#) and in this previous [issue of IRG](#).

J.I.Y.

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--- Plant Portrait ---



Mimulus guttatus

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***Mimulus guttatus* – notes from Clay Koplín in Cordova, Alaska.**

Mimulus guttatus is commonly called yellow monkey flower, due to its resemblance of its shape to the monkey's face, or wild snapdragon. A hardy perennial in its Southeast Alaska rain-forest distribution, it grows freely in damp locations. It particularly prefers seeps along road side edges in loose soil or gravel, gravel fans at the margins of woodland waterfall pools, and similar damp, gravelly locations. Its habit in and around Cordova is primarily recumbent, a low-growing creeper that develops roots at leaf nodes. A less common habit is that pictured here, growing along sand bars of the Eyak River near sea level, where it will be submerged in as much as a metre of water for periods of days in late fall rain storms. It flowers midsummer, from late June through late July, and distributes dust like seed by wind or moving water.



Yellow monkeyflower is a frequent volunteer in local gardens and driveways in shaded or damp locations where it can remain damp. Its creeping habit can become a bit of a nuisance, one which I tolerate due to the bright splash of colour, of fine red dots splattered on a bright yellow canvas, which it contributes between the bloom of spring bulbs and late summer perennials.

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Close-up showing the dainty red markings in the lip of *Mimulus guttatus*.



Propagation is simple by cuttings which root freely when a portion of the cutting is submerged in wet soil, or by fall-sown seed.

Watch out for wild collected seed this season in the SRGC seed exchange.

Alaska is 1/5 of the US landmass, 2/3 of US coastline, has most of North America's largest mountains, and climates ranging from coastal rainforest (where I live) to taiga, to arctic desert - so there are many climates. It can get very hot in the interior (Fairbanks) and dry (30cm moisture per annum) so the more widespread plants need to be adaptable.

C.K.