

North of North

Dr Joanne Porter and Bob Anderson take the reins from Calum Duncan in this edition of **SCOTTISH DIVER** and report on an exciting Seasearch expedition to a remote group of islands at the very north of Scotland ...

RECENT ISSUES of **SCOTTISH DIVER** (Jan/Feb 2013, March/April 2013 and Jan/Feb 2014) highlighted the excellent collaborative work on Seasearch being organised by Dr Joanne Porter (of Heriot-Watt University and author of the Seasearch Guide to Bryozoans and Hydroids) with Bob Anderson (skipper of *MV Halton*) and others. Stromness has therefore become a real hub of activity for Seasearch diving in Orkney, Shetland and beyond. In this edition, Joanne and Bob report on an exciting Seasearch expedition to outlying skerries and islands to the far west of Orkney. Thanks to Penny Martin, Rachel Shucksmith and, with an impressive 10 survey forms submitted, particularly Joanne for the records from the trip.

And so that's it from me for this edition, over to you Joanne and Bob ...

Calum Duncan
MCS Scotland Programme Manager

IT WAS late July, 2013, when a small group of divers climbed aboard the dive-boat *MV Halton* hoping for the calm seas needed to reach a remote group of islands collectively known as the Outliers.

When you stand with your back to the cliffs at the top of Scotland and look out to sea, there is something comforting in the unexpected light that flashes back at you from the night time horizon. Just below that twinkle is a lighthouse perched on a rock, a rock that guards the end of the mainland like a full stop guards the end of a sentence. Somehow these few islands seem to be there for completeness, to mark the end before the big continents rise up again on the other side of the Atlantic.

None of the islands are large. Sule Stack, the smallest, could punch up through a football field without touch-

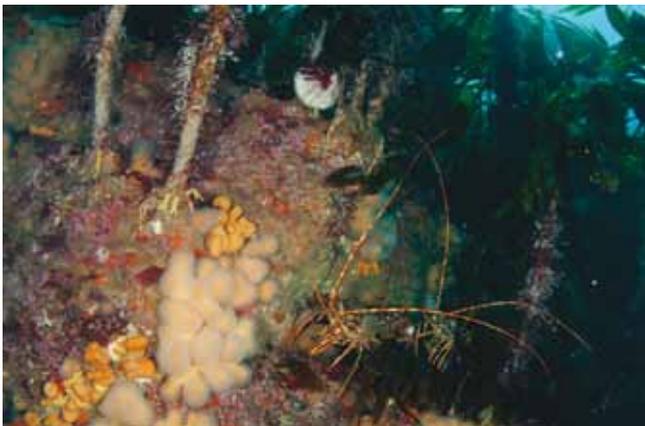
ing the sides. North Rona is the largest, roughly triangular in shape with the apex north and can be circumnavigated on foot in an hour or two. For us, these are exposed and inhospitable places but our absence (and the absence of other predators) makes these rocks a welcome retreat to many breeding seabirds that can form large colonies in the relatively benevolent summer weather.

Yet it is the harsher conditions of winter that provide the energy and sustenance for the vast richness of life that lives below the waves. All the rock surfaces are covered in small critters, each one clinging on in the ever present surge. Those that can survive burst out and thrive in these conditions and there are a whole list of extreme exposure species that can be seen and recorded in the calm spells between the storms.

Off toward the horizon

With these high hopes, we set off to record this life on a Seasearch Expedition, leaving the shelter and calm of Stromness behind. First stop was Nipple Rock, a small pinnacle just below the giant cliffs at the Kame of Hoy and within sight of the Old Man himself. The habitat here consists of a couple of submerged rocky reef pinnacles with a saddle in between giving way to ledges and boulders on the south side in around 30m depth.

The expedition log started well with sightings of the scarcely seen Crawfish, *Palinurus elephas*, which is now designated as a Priority Marine Feature (PMF). The southern face of one of the pinnacles hosted a large patch of another PMF, the delicate white cluster anemone *Parazoanthus anguicomis* located, as usual, under a section of overhanging rock.



Crawfish (Palinurus elephas) at Nipple Rock.
Image Rachel Shucksmith



White cluster anemones (Parazoanthus anguicomus) on south face of Nipple Rock.
Image Joanne Porter



Diver exploring the spectacular swim throughs and blue water at Sula Sgeir. Image Bob Anderson

We continued westwards on our journey and after several hours a dark lump of rock could be seen in the distance. This was Sule Stack, situated 66km to the west of Orkney. As we got closer the pungent smell of guano got stronger and there was an impressive sight of gannets, lines of them flying in towards the rock from different directions. Thousands of others were making best use of all available surfaces of the rock for nurturing their chicks.

Below the frenzied activity of the gannets we submerged ourselves to explore the steep rock walls of a narrow gully, covered in a patchwork of colourful anemones. Elegant anemones (*Sagartia elegans*) here seem larger than usual, and some of the specimens have their mouths wide open, waiting for suitable prey to be brought to them on the currents.

The gully opens out into a gently sloping sand and cobble area, and protruding rock buttresses. Here lies a trail of pieces of wreckage from the *Manina*, a cargo vessel lost on 8 April 1968 during bad weather with the loss of nine crew. The surfaces of the rock buttresses are fissured and provide refuge for a variety of mobile creatures, including the well camouflaged thin legged *Macropodia rostrata* crab, covered in a decorative array of red algae pieces.

North Rona

Five hours west of Sule Stack lay the island of North Rona with the small satellite skerry Gealldruid Mhor to the south. The dive on Gealldruid Mhor revealed dense and luxuriant turf communities coating the walls of a spectacular rock gully. Curious seals came to see what

we were doing and showed the way to a large chockstone with a swim through underneath.

The spectacular scenery could be better appreciated because of the amazing clarity of the water. Well camouflaged groups of the warted corklet (*Phellia gausapata*) were spotted here, the columns coated with a camouflage fur of bryozoan tufts, providing a protective layer. These anemones are rarely recorded, but are specialists of very exposed, surge dominated environments. As we hovered on our safety stops we were surrounded by an amazing soup of plankton, including pelagic salps, comb jellies and jellyfish.

On the North side of North Rona, a diagonal cut in the rock revealed an extensive cave, luckily conditions were calm enough to allow swimming right into the

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Warted corklet anemones (*Phellia gausapata*) at North Rona, camouflaged with bryozoans on their bases. Image Joanne Porter



Close-up of a bryozoan feeding. Image Rachel Shucksmith



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end of it. This cave was dominated by large patches of colourful sponges, bryozoan patches and the colonial seasquirt *Polyclinum aurantium*, distinctive for its dirty yellow colour and accumulation of detritus on the surface. Also present here were patches of a distinctive purple encrusting seasquirt, as yet unidentified.

On the seabed of the cave were rounded boulders and cobbles coated with thin colonies of encrusting bryozoans, colonies of different shapes including orange circular patches of *Oshurkovia littoralis* and the distinctive star burst colonies of *Electra pilosa*. Crevices in the cave wall provided refuge for mobile species such as edible crabs and scorpion fishes.

Sula Sgeir

As the weather remained calm we journeyed onwards towards our westernmost destination, Sula Sgeir, famed for the annual harvesting of Gugas by the men of Noss. Vertical cliffs here provided a spectacular view and this impressive scenery continued underwater. In

the middle of Sula Sgeir is a dive which cuts through the island itself. Walls of this cave had dense and luxuriant short animal turf, dominated by bryozoans and hydroids. Not surprisingly the turf was home to many nudibranch sea slugs, grazing their way through the abundant turf and laying eggs.

On a day of amazing diving, our second site was a submerged underwater archway called Thamna Sgeir. At the top of the archway a seal came around to swim through with us and on one side of the arch a vertical rock wall extended out and downwards to 30m and beyond.

An hour on this wall went by quickly as we photographed and recorded a wide variety of animals. Distinctive constituents of the turf community here were the bottlebrush hydroids (*Thiuria thuja*) and the current loving *Rhizocaulus verticillata*. Cowries browsed on the seasquirt crusts and in overhanging areas dense patches of white cluster anemone (*P.anguicomis*) dominated. As we completed our safety stops, we hovered among a dense forest

of *Alaria* kelp, swaying among the fronds with the seal as our companion.

As if the day could not get any better we managed to fit in a third dive, at a site called Stron na Lice on the southern tip of the island below the lighthouse. There were a series of wide open gullies with steep rock walls and boulder/pebble dominated seabed at 20m. Without any bare patches of space on the vertical walls, the turf was dominated by a brightly coloured patchwork of sponge, sea squirt and bryozoan crusts. Large boulders on the seabed were coated with clumps of the squirrel tail hydroid (*Sertularia argentea*) and smaller more mobile pebbles and cobbles were covered in colourful splashes of bryozoan crusts. Crevices and fissures were lined with aggregations of large *Dahlia* anemones, with different colour morphs.

The tide turns

That evening the forecast told of a change in the weather so overnight we made a dash for the shelter of Loch Eri-



An unknown purple encrusting seasquirt at North Rona. Image Joanne Porter



A wall covered in dense growth of crust and turf-forming sponges, bryozoans and seasquirts at Sula Sgeir. Image Joanne Porter



Typical baked bean seasquirt (*Dendrodoa grossularia*) and white lace sponge (*Clathrina coriacea*) community at Freisgill Head. Image Joanne Porter



Albino elephant hide sponge (*Pachymatisma johnstonia*), normally dark grey, at Fresigill Head, Loch Eriboll. Image Joanne Porter

boll. The following day we were able to dive at a different type of site on the north coast of the Scottish mainland. At Freisgill Head we explored a cave system in the headland. The community here was dominated by the baked bean squirt *Dendrodoa grossularia* and interspersed with contrasting patches of the white sponge *Clathrina coriacea*. Small crabs and fish sought refuge among the turf. The elephants hide sponge, usually dark grey, was present here in the darker recesses in its albino form.

The second dive of the day found us exploring Farr Point, where the bedrock reef was coated with a meadow of the hornwrack, *Flustra foliacea*, interspersed with clumps of the antenna hydroid, *Nemertesia antennina*. This mixed turf provided refuge for a wide range of other animals, including numerous Palaemon prawns, grazing nudibranchs such as *Eubranchus tricolor* and colourful cuckoo wrasses patrolled the turf guarding their territories.

Homeward bound

Having sheltered in Scrabster overnight, we headed back to Orkney and called in at the island of Switha for a shallow dive with seals in the bay. At 6m, the dominant cover type was mixed algae and its associated life. Thick felty crusts of the purple spiny bryozoan *Flustrellidra hispida* were seen feeding with their distinctive bell shaped lophophores. Grazers such as limpets and top shells rasped away at the surfaces of the bedrock, leaving bare patches here and there, ready for new colonisers to arrive.

Our final dive of the trip was the block-ship *Tabarka*, in Burra Sound. This was a stark contrast to the shallow shelter of Switha; the strong tidal flow being a major influence on the fauna and flora here. Dominant species included Tubularia hydroids, clumps of the current loving bryozoan *Eucratea loricata* and the bright red serrated algae Northern Toothweed.

Inside the wreck a very large lobster was guarding its territory and very large barnacles *Balanus crenatus* were growing on internal structures of the boat. All the

surfaces were coated with thousands and thousands of tiny skeleton shrimps *Caprellula lineata*, hanging onto the surfaces with their hooked hind legs, and reaching out into the current to gather food particles.

Refections on the week

The secret to exploring these Outliers is all in the timing. Most of the year they are pummeled by conditions that we could never hope to survive. However, come the summer, there is a spell of calm that lets us through the gate and into the garden. Many of our familiar underwater faces live here, such as the large kelps and their associated fauna, but with the extremes come a new family of critters to explore. Animals that thrive in the harsh conditions are abundant yet unfamiliar, as we are used to more benign habitats.

The expedition was blessed with a good start and we had a good spell amongst the islands in the fine weather. And although we only had the briefest of glimpses, there is never long before the energy returns and the animals duck their heads to cling onto the rocks again.

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Edible crab (Cancer pagurus) shelters among the turf at Freisgill Head, outer Loch Eriboll. Image Joanne Porter



Small lumpsucker (Cyclopterus lumpus) at North Rona. Image Joanne Porter



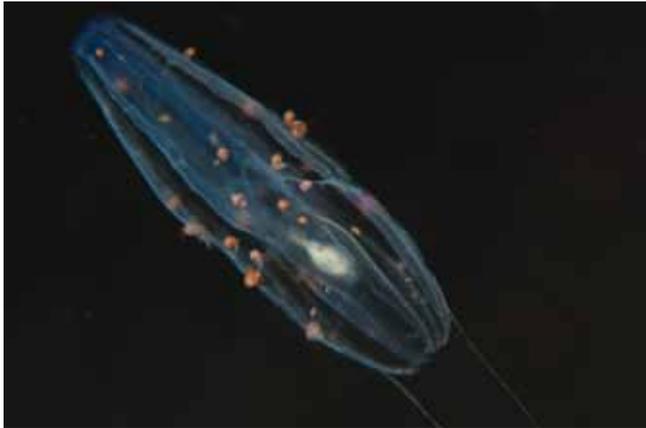
Bottlebrush hydroid (Thuiaria thuja) at Sula Sgeir. Image Joanne Porter



A Coryphella and two Polycera quadrilineata nudibranchs at Sula Sgeir. Image Rachel Shucksmith



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Spectacular plankton at North Rona: sea gooseberries with amphipod passengers. Image Rachel Shucksmith



A Siphonophore soup above the kelp. Image Rachel Shucksmith

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