

PART II

ORNITHOLOGY

SOUTH RONA 1973

The first views of the island gave the impression of a flat rocky slab relieved by areas of heather and bracken, but closer inspection revealed numerous small glens lined with thick vegetation. This varied from the Scots pine and spruce of the woods in Big Harbour to the much smaller copses of mountain ash found all around the island. This variation in vegetation along with the frequently changing nature of the coastline provided numerous types of habitat and explains the wide variety of species found in our list for this year. None of the birds seen were rare by Hebridean standards, but there were some notable omissions from the list; one thinks of divers, for example.

There were, however, some interesting sightings amongst the woods at Big Harbour. Amongst the trees were the remains of six heron's nests, and another containing three young birds which were constantly supplied with food by the parents. In addition, there were numerous herons to be seen around the island, amongst the rocks and seaweed, particularly in the more sheltered bays.

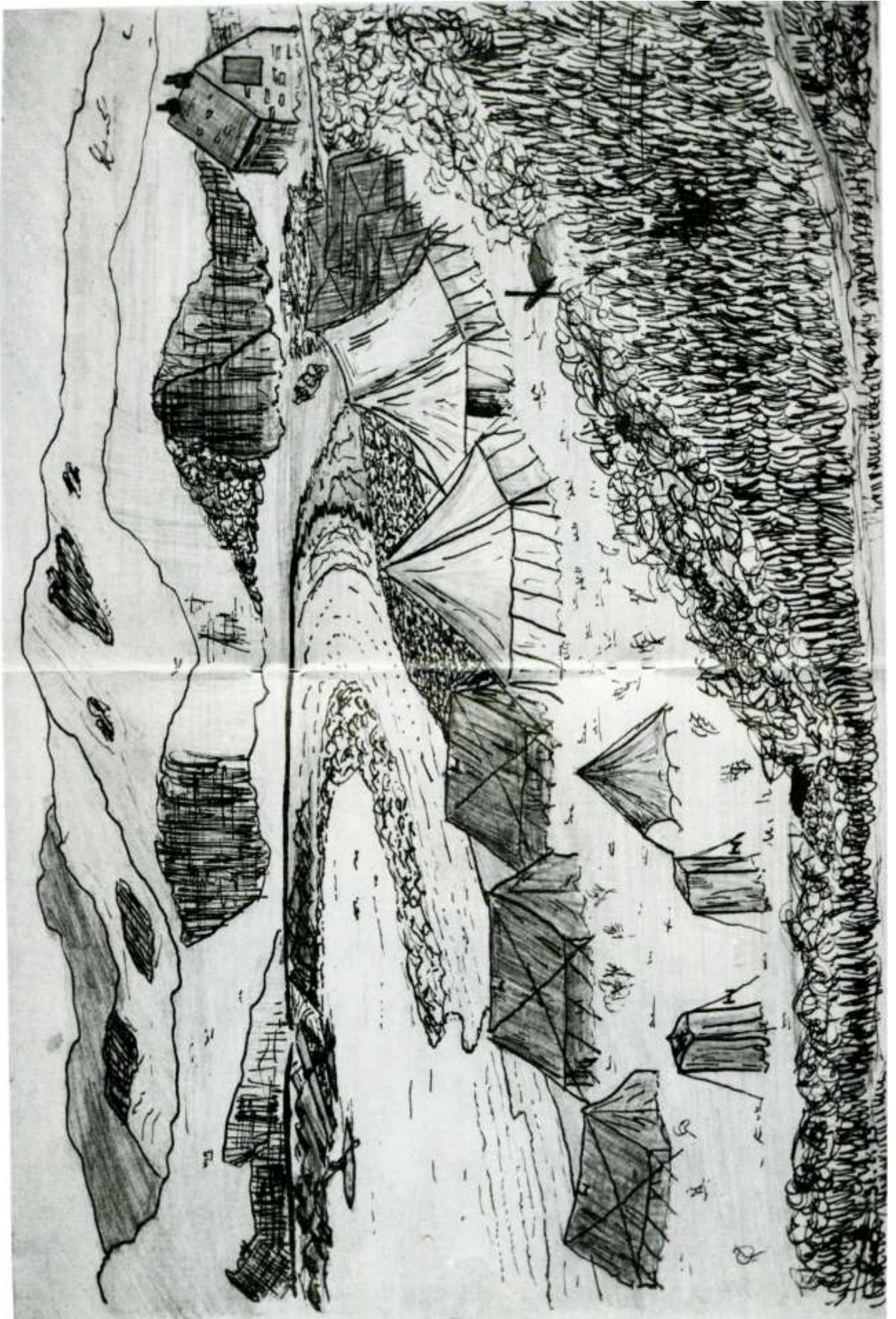
Buzzards became a fairly common sighting to parties exploring the island, as did the meadow pipit and wren,

During a savage storm one evening a large number of fulmers and a Manx shearwater were blown into the bay at Dry Harbour where they remained for several hours.

The ruined crofts, and the human-induced vegetation surrounding them, were found to be the homes of several different varieties of finch, as well as the common domestic birds.

Towards the south of the island a small colony of nesting cormorants was observed, and, to the east, three shags' nests contained fairly advanced fledgelings which we watched and photographed.

The successes of the bird photography should be known by now, but my equipment which included a Pentax camera and a 400 mm lens, should produce some of the first respectable bird photographs to come back from an SHS expedition. Amongst the species photographed were the terns circling and diving in Big Harbour;



[Not sure but I think this is the campsite at Jura and don't know if I have wrongly placed it in the report?] Nick Smith

a meadow pipit at its nest; the pair of oyster-catchers often to be seen around Dry Harbour; and, of course, the shags at their nests. It has been noticeable that very few birds have occurred in large numbers, particularly such usually common species as the herring gull.

HARRIS ORNITHOLOGICAL REPORT

This year's expedition to Rhenigadale offered a considerable variety of habitats for study, including sea, moorland and sand-flats. There was thus a correspondingly varied species list with a total of some 55 species.

The majority of the sea-watching was done from Ard Gaol, a headland which afforded a comprehensive view over the Minch, Rhenigadale Island, and the ends of Lochs Seaforth and Trollamarig. These areas were fairly rich in bird life, observations including not only an abundance of the commoner sea birds but also a number of the less common species. Large numbers of auks, terns and shags could be seen fishing offshore, and gannets and red-throated divers were regularly observed passing up the coast, presumably to other fishing grounds. Due to the relatively sheltered position of Rhenigadale certain species, such as scoter, eider, shearwaters and fulmars were only sighted during particularly windy weather.

The second type of habitat present in the area was that of moorland and inland lochs. On the slopes of Toddum and the surrounding hills many species of moorland birds such as red grouse, golden plover, whinchat and stonechat were frequently observed. But by far the commonest species in this area were wheatear, twite, wren and meadow pipit. The occasional buzzard and merlin was also sighted patrolling the area for prey and dipper and common sandpiper were seen regularly on Lochs Beag and Morò

Finally, the bivouac to Luskentyre provided a third major habitat - sand-flats. Here, there were considerable numbers of waders, including numerous oystercatchers, green plovers, redshank, knot and curlew. Less abundant, but also present, were greenshank, snipe and ringed plover..

- DAVE MARTIN

RHUM BIRD REPORT, 1973

Ornithological studies on Rhum got off to a great start when an outing to Kinloch produced 54 species on the first day.

In the woods beside the track we were lucky to spot a flock of tits and goldcrests, amongst which were four long-tailed tits, a species normally rarely seen on Rhum. Blue, great and coal tits were also numerous, as were chaffinches and willow warblers, and a single siskin was glimpsed in the tree-tops. Heard, but not seen, was a wood warbler, and a rare visitor seen feeding in the bushes was a chiffchaff.

By the Post Office, we looked at the birds on the shore; here oyster-catchers and curlews were commonest, followed by common, herring and lesser black-backed gulls. A single ringed plover was foraging among the rocks, and nearby several eiders bobbed just offshore. A young merganser dived constantly for fish close inshore. Returning to camp we saw stonechat, snipe and wheatear, rounding off the day nicely.

The next few days were very eventful. The story of our Manx shearwater biwi is written up in a separate report, but while we were camping on Hallival we saw the first golden eagle of the camp as it soared near Askival. Two ravens performed some lovely aerobatics not far from us as we climbed Hallival. On the slog up to the biwi site, a golden plover piped mournfully.

One party saw a peregrine hunting in Glen Dibidil; one of three sightings of these lovely falcons during camp – the other two were over camp, and we think that we may well have found a peregrine pellet. Most parties out of camp saw grouse and dipper, yet other birds proved elusive – especially the merlin. Only one was noted during our stay. This was seen by Peter Cowley as it flew up the stream cutting towards Long Loch.

Other birds of prey included two buzzards – seen by Barrel, not far from the camp. This was quite an unusual sighting; but kestrels certainly were not, and they proved to be quite common.

While helping to weed out small trees at Guirdil we could see a wide variety of sea birds as they flew past the bay. These included arctic terns, gannets, shags, and the occasional cormorant; tysties also bobbed about in the bay. Two groups who were out that day saw golden eagles – one on Bloodstone Hill, and the other on Hallival, where the bird flew low over their heads.

Harris was another favourite place for visits, and usually twite and starling were seen around the cliffs, as well as fulmar and kittiwake.

During our second bivvi, later in the stay, we got great views of 5 or 6 young ring ouzels, all 'ticking' excitedly. On the infamous 'Goat Count', Roger and Calum were amazed to see an eagle flap out from behind a hillock, not 20 feet away. By its size they had no doubt that it was a female golden eagle; and they had the thrill of hearing the wing-beats clearly. A male joined the female, and these two continued to circle round, seemingly oblivious of any human presence.

Other birds included a juvenile shelduck, off the highest cliffs on the island, as well as cormorants, eider and gannets, which were plentiful around the coast from Welshman's Rock to Papadil.

On our return we heard from Peter Cowley who had been covering the area from Kilmory to Guirdil on the 'goat count'. He reported having seen ringed plover, several dunlin and some redshanks. Four sanderling were also feeding on the beach at Kilmory.

While helping Phil Masters retrieve his light meter at Kilmory, we saw redshank, ringed plover and mallard, as well as several herons. On the way there we had seen spotted fly-catcher in the Kilmory Plantation, and whinchat,

Surely the most unusual sighting during our stay was the party of linnets, seen on the summit of Orval, by Roger and Mark. This bird had never previously been reported on the island. Another great sighting was that of a tree-creeper on the morning of 27th August in Kinloch Woods.. This was the first record for 1973, as was the spotted flycatcher sighting

The Kinloch Woods, with their marvellous birds, helped build up a grand total of 79 species - an expedition record!

We all greatly enjoyed this expedition and hope future parties will be able to follow up and improve on our work.

- CALUM MACKENZIE and BRUIN THOMPSON

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THE MANX SHEARWATERS OF RHUM

The Nature Conservancy gave us permission to make a two-day visit to the Manx Shearwater colonies on the slopes of Hallival, so Roger Weatherly and the authors set off with heavy packs up the mountain.

These colonies amount to about 75,000 pairs of birds, and on Rhum they nest on the mountain-tops – elsewhere shearwaters nest on grassy slopes or on the turf above sea-cliffs. In this respect, the Rhum colony is unique as some pairs nest as high as 2,600 ft.

The Manx Shearwater is 14 inches long, has white underparts, a greyish-black mantle, and a heavy fish-eater's bill. They nest in the burrows of previous pairs, or excavate new ones. Their single eggs take four months of constant care to grow into a fully-developed young bird.

Nothing can compare with the fascinating experience of being amongst these shearwaters. The loud, weird wailing; the whistling wing-beats of the adult, and the peep of the chick in the burrow are unforgettable.

Around 10.30 pm. we left our biwi site and headed up the slope to a place where we had earlier observed that the concentration of 3 - 4 inch wide burrows was particularly thick. Almost immediately we heard the wailing shearwaters as they circled around us. Our Tilley lamp helped to highlight their white undersides, and a powerful torch was used to spotlight them when they landed.

Several adults landed in burrows near us; probably they could not see us. One bird flew into Bruin, and fell down his clothes onto the ground, where it sat by his boot, which was covering its burrow. Its whole body was oscillating in and out like a watch spring, due to its heavy breathing.

Some of the calls were particularly eerie – the main adult call sounds like a baying version of half the crow of a farm rooster. In the burrows, adults used rough grunts, to which the chick replied with a high-pitched peep. Once we heard a call like the twang of a rubber band, followed by a sharp click. Altogether we heard seven different calls, but there may be many more.

We noticed that the shearwaters liked dark, misty nights, with no moon. On the second bivvi, we noticed that if a cloud of mist came down the mountainside, no matter how small, it always held scores of shearwaters, which would fly out and dive

towards their burrows. Once on the ground they can only waddle, but they head for their burrow as quickly as possible.

At this time, many of the chicks were leaving their burrows, having been deserted by their parents (in an effort to make them learn to fly), so we were able to walk right up to them. Handling the chicks is difficult as they bite viciously in self-defence. These young birds are attracted by light, as we found out at camp where we had left a Tilley on, About twenty were gathered near the light, and several adults were trying vainly to lure them away, suspecting danger. One adult did a magnificent distraction display, by running along, dragging one wing on the ground, right in front of us. To our knowledge this behaviour has not been noted before.

Shearwaters have a fantastic homing instinct – how do the adults find their burrows in the dark? They must know the calls of their mates and chicks, as well as recognising shapes of rocks and other landmarks. There must be something else, though; an inbuilt homing instinct far superior to that of the racing pigeon of today.

Manxies can also find their way back from great distances. R.M, Lockley told how a shearwater, captured on Skokholm in Wales, was released in Boston, USA, and took just twelve days to return! In a similar experiment, a bird flew from Rio de Janeiro back to Skokholm in much the same time – a truly remarkable feat! Some people say that the shearwaters have in-built magnets to guide them, others that they steer by the sun. We certainly did not solve the problem, but how marvellous it would be to take the story further.

The shearwaters are now far away. High up on the mountain we were sometimes cold and wet. However, we shall never forget seeing these remarkable birds, and listening to their blood-curdling screeches, the sweetest music to ornithologists,

- CALUM MACKENZIE and BRUIN THOMPSON

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JURA BIRD REPORT

Although the sheltered east coast of Jura probably has more to offer the ornithologist in its greater diversity of habitat and species, we managed a fairly comprehensive study of our sea loch on the western side. Towards the head of the loch there were usually plenty of waters to be seen on the mudflats, and black guillemots and ducks on the water; we made a single sighting of a whimbrel (identified in both features

and voice) in this area, which was an exciting change from the ever-present curlews.

We made a visit one afternoon to Eillean Ard, a small island opposite the campsite, and got some very close views of the young herring gulls and lesser black-backed gulls in the gull colony there; a rough count showed that there were approximately 130 juveniles and adults. Our bivvy to the seaward end of the loch yielded few notable results, although an arctic skua was sighted this side of the camp.

There was only one sighting of a golden eagle, on the slopes of Ben Cruib, but perhaps the finest view of a bird of prey was when a male hen harrier soared above the camp. The majority of land birds were seen on the eastern side of the island and any bivvies made to that side were usually very rewarding. Unfortunately, we can't claim that we saw a chough although we received countless reports of 'large black birds', but there was plenty to keep us occupied; the graceful herons flying above the loch is a sight few of us will forget.

- MARK POTTER and PATRICK THOMPSON

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PELLETS AND COLONIES - COLONSAY 1973

Out of the possible 150 species of birds resident on the island at one time or another during the year, we saw 75 species during our two-week stay. The two main ornithological finds were the colonies of fulmar and the eagles and their pellets.

The two fulmar colonies we saw on the island were both on the West coast of Colonsay. One was on the North side of Kiloran Bay, and the other was just South of Port Ban. In the colony at Kiloran Bay I counted fifteen nests in use and eighteen which were out of use. Mike Sharp took a bivouac of seven boys to the caves. As the caves were close to the inland cliff where Martin, Gary Dunlop, Patrick Biddulph and I had previously seen the golden eagles Martin and I decided to go there. That evening, when we got to the top of the inland cliff we could not see the eagles but noticed a continuation of the cliff with an outcrop of rocks on its summit. This, we realised, would be a good vantage point as it was possible to see most of the north of the island from it. When we got to it Martin noticed a feather which he recognised to be a golden eagle's. I then saw a pellet. After this we found eight more pellets and some more feathers. We took them all back to camp.

The pellets were mainly *fairly* old – over a week at least, but one was still soft and wet. Most were either cigar-shaped or roundish. Their circumference was about 3" - 4" and the longest exceeded 5" in length. At the camp we dissected three pellets of different sizes, but our results were disappointing. Except for a complete rabbit's hind leg, some other rabbit bones and a few bird bones, there was nothing but feathers and fur. This was because golden eagles have a good digestive system and can digest most bones. At home, I had more success for I dissected two more pellets and this time I found many bones of an animal smaller than a rabbit and the lower jaws of three skulls which I decided must be those of rats. Also amongst these bones were some quite large bird bones.

- MARTIN and SIMON FREW

BIRDS SIGHTED ON 1973 EXPEDITIONS

	SOUTH RONA	RHUM	JURA	COLONSAY
Black-throated Diver			x	x
Red-throated Diver		x	x	
Great Northern Diver				x
Petrel	x			
Manx Shearwater	x	x		
Fulmar	x	x		
Gannet	x	x	x	
Cormorant	x	x	x	
Shag	x	x	x	
Heron	x	x	x	
Mallard		x	x	x
Teal			x	
Common Scoter			x	x
Velvet Scoter				x
Eider	x	x	x	x
Red-breasted Merganser	x	x	x	
Shelduck		x	x	
Canada Goose				x
Mute Swan			x	x
Golden Eagle	x	x	x	x
Buzzard	x	x	x	x
Sparrowhawk				
Hen Harrier			x	x
Peregrine		x	x	
Merlin		x		
Kestrel		x	x	x

BIRDS SIGHTED ON 1973 EXPEDITIONS (Contd.)

	SOUTH RONA	RHUM	JURA	COLONSAY
Red Grouse	x	x	x	
Pheasant			x	
Corncrake				x
Oystercatcher	x	x	x	
Lapwing		x	x	x
Ringed Plover		x	x	x
Golden Plover		x		
Snipe	x	x	x	
Woodcock			x	
Curlew	x	x	x	
Whimbrel		x	x	
Common Sandpiper	x	x	x	
Redshank	x	x	x	
Dunlin			x	
Arctic Skua			x	
Greater Black-backed Gull	x	x	x	
Lesser Black-backed Gull	x	x	x	
Herring Gull	x	x	x	
Common Gull	x	x	x	
Black-headed Gull	x	x	x	
Kittiwake		x		
Common Tern	x	x	x	
Arctic Tern	x	x	x	
Razorbill		x	x	
Guillemot		x	x	
Black Guillemot	x	x	x	
Stock Dove		x		
Rock Dove		x	x	
Wood Pigeon		x	x	x
Collared Dove				x
Tawny Owl			x	
Short-eared Owl			x	
Swift				x
Woodlark				x
Skylark		x	x	x
Swallow		x	x	x
House Martin		x	x	
Sand Martin			x	
Raven	x	x		
Hooded Crow	x	x	x	x
Rook		x		x
Jackdaw		x	x	x
Great Tit		x		
Blue Tit	x	x	x	

BIRDS SIGHTED ON 1973 EXPEDITIONS (Contd.)

	SOUTH	RONA	RHUM	JURA	COLONSAY
Coal Tit	x		x	x	
Long-tailed Tit	x		x		x
Treecreeper			x		
Wren	x		x	x	x
Dipper			x		
Mistle Thrush			x	x	
Song Thrush	x		x	x	x
Ring Ouzel			x		
Blackbird			x	x	x
Wheatear	x		x	x	x
Stonechat			x	x	x
Whinchat			x		x
Black Redstart					x
Robin	x		x	x	x
Blackcap					x
Willow Warbler	x		x		x
Wood Warbler			x		
Goldcrest	x		x		x
Spotted Flycatcher			x	x	
Dunnock			x	x	
Meadow Pipit			x	x	x
Rock Pipit	x		x	x	x
Pied Wagtail	x		x	x	x
Yellow Wagtail					x
White Wagtail					x
Starling			x	x	x
Greenfinch			x		x
Siskin			x		
Linnet					x
Twite			x		
Bullfinch	x				
Chaffinch	x		x	x	x
Yellowhammer				x	x
Corn Bunting					x
Reed Bunting					x
House Sparrow			x	x	
Tree Sparrow					x
Hedge Sparrow	x				
Grey Wagtail			x	x	
Feral Pigeon			x		
Sanderling			x		
TOTAL	41	79	70	49	

BOATS

HARRIS SAILING REPORT

After the enormous difficulties encountered in transporting our Mirror dinghy from Bristol to Rhenigidale on the top of Phil's car, it was fortunate that we had some very good sailing in strong and reliable winds. Almost every member of the expedition who had not sailed before had the opportunity of a good day's sailing. Some immediately took to it and enjoyed it very much; others were less convinced, claiming to be upset by the domineering attitude of their helmsman. All in all, however, sailing was much enjoyed by all.

- WILLIAN WARIN

RHUM BOAT REPORT

Long Loch is not an ideal place for canoeing, since the banks are either nearly vertical or covered with thick mud. The weeds which covered two-thirds of the loch's surface made it difficult to use the outboard motor. The loch is, however, a safe place for boating activities because its maximum width is only about 200 yards.

In spite of the apparent problems, many of the members went canoeing, some for the first time. Since Long Loch was only half a mile from the campsite, the activity was well suited to the Duty section, especially since even the most ardent rarely lasted out for more than two hours. The loch was also visited by many intrepid swimmers, led by Launcelot.

In conclusion, it must be said that although the site was not ideal, aquatic sports proved to be a great success.

- PETER TATHAM

JURA SAILING REPORT

All the ingredients for some wonderful sailing in the Western Isles: a nice new boat, lots of keen boys but what? no sails? It was soon discovered that the sails had been left in the ferry-master's kitchen at Tarbert. Boating was confined to the rubber dinghy until they arrived.

At last, the sailing officer's moment of glory arrived. There he was, sitting in the middle of the loch, tiller in hand, with no wind in the sails and a gentle rain washing his suntan away.

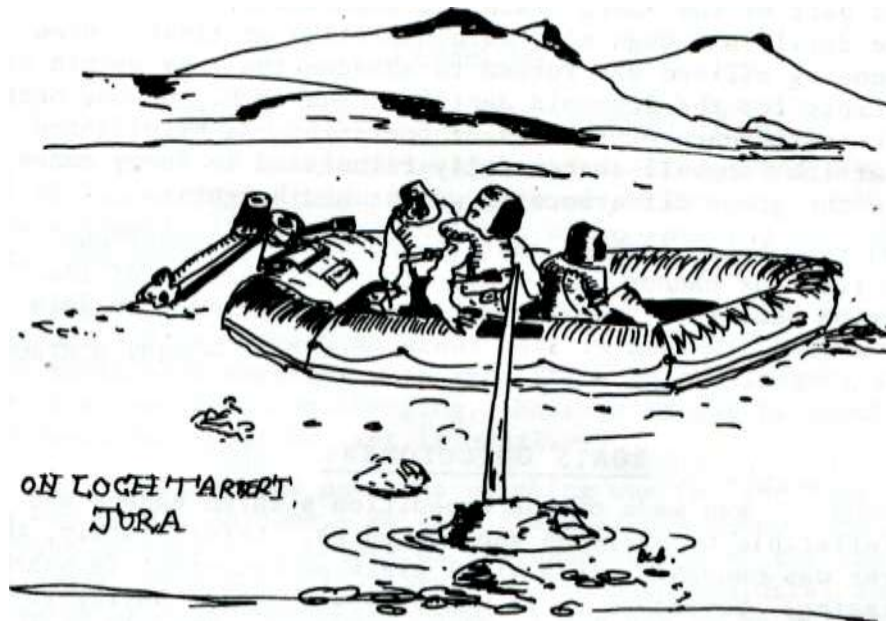
During the next few days instruction was carried out and everyone agreed that it was an excellent boat to sail in (different opinions were voiced when the boat had to be carried on land!).

A two-night bivvy was arranged for the Jura Regatta - the first night being spent in the luxury of a cow byre. At 10.30 the next morning everything was set for the big race. It can only be said that we won fairly easily and that an excellent celebratory lunch of spam, spam and spam was eaten afterwards in the cow byre.

Two days later we decided to take a bivvy to Colonsay, and Andy Rostron, Hans Dobson, Chris Price and I set out on what was to be a fabulous trip. The wind soon rose as we entered the first squall and beating against it through the narrows was a thing we enjoyed in retrospect rather than at the time. Sometimes it was possible to see Jura and Colonsay perfectly, then Colonsay would disappear, the wind would rise and the sky would darken and we would be left with little to do until the sky brightened again. We would then look back to where the Paps should have been and think of the people climbing them. It took nearly four hours of tiring sailing to reach Scalasaig* The return journey, the following day, was comparatively calm.

We had a tremendous time using the HARVEY WALLBANGER (Wayfarer), and I think that we demonstrated its value both as a work-boat and a pleasure-boat.

- SIMON STOYE



CANOEING ON JURA

Due to the loss of the Wayfarer's sail, there was great enthusiasm for canoeing during the first week of the expedition. This gave me ample opportunity to assess the ability of those who had previous experience, and to 'blood' those who had never before used canoes. The site was ideal for canoeing since it commanded a panoramic view of the whole of middle loch, allowing the more experienced canoeists scope for exploration without venturing out of sight of camp, whilst also being safe for learners.



As part of the basic training, all canoeists mastered the capsizing drill, although some were unwilling at first. Even the canoeing officer was forced to abandon the cosy warmth of his cockpit for the icy-cold depths of the loch. On one occasion the efficiency of the rescue operation was highlighted when Patrick Campbell successfully reinstated me in my canoe, despite the great difference in weight and height.

On the whole, I think that the maximum enjoyment was gained from our canoes, and I hope that all members of the expedition benefited from their canoeing experience on Jura.

- ANDY ROSTRON

BOATS ON COLONSAY

Good use was made of the expedition's three canoes and Avon inflatable by everyone who wanted to. Unfortunately, the Wayfarer was unusable, as a vital piece of equipment (a shackle) was missing. Nevertheless it was very worthwhile having it on the expedition as it provided hours of fun for the officers who pulled it, by hand, the six miles from pier to campsite and back again to the stirring strains of 'Hearts of Oak' and to the speechless incredulity of an American magazine photographer. The hotel certainly profited from our thirsty work.

Canoeing was necessarily confined to Machrins Bay except for one day when the Atlantic was calm enough to allow the safety boat out, (It was the safety boat that limited canoeing because the otherwise very reliable outboard could not operate in heavy seas.) On this calm day, the expedition's chauffeur (and part-time red-coat) Ed, took three canoeists and two dinghy passengers (including Alan who slept sweetly throughout the return journey - a credit to the helmsman's driving) to Port na Luinge, Oronsay. It was a glorious day'. The canoeists and engine performed remarkably well on the ten-mile journey, although one canoe began shipping water and had to be towed home, and another lost its repair tape on landing back at Machrins (both remained out of service as a result of a lost tube of hardener). That same day, an attempt was made to canoe to Kiloran Bay. In an awesome sea of magnificent, mountainous Atlantic breakers, we had to turn back after an hour when the engine spluttered ominously and there was no sign of anywhere to beach - there being only miles of sheer cliffs. As it turned out this was just as well since our lone canoeist, Ian, was feeling seasick.

ANONYMOUS

CLIMBING

SOUTH RONA CLIMBING REPORT 1973

Two ropes of pensionable age, a few slings, and a fine set of helmets; no guide book, lots of unclimbable rock; some decrepit climbing instructors, often infected with apathy; but, some good climbing, even so.

The rock is gneiss and schist, sometimes loose, often lichened and heathered, so great care is needed. Many crags have short slab sections with vegetation on the ledges; some are steep and a few overhanging. Maximum height is about 150 feet, but about 60 feet is usual.

In the first few days the climbing was in 'The Pass' on the way to Big Harbour. We soon discovered a common and important problem - the lack of adequate belays at the top. The crags slope off into heather and rounded boulders, and in spite of much 'gardening' some climbs had to be abandoned when a belay could not be found. Pegs would often be useful, and stakes banged in with a sledge-hammer would make better belays than clumps of thistle.

The cave region (GR 625562) was popular, especially when rain seemed likely and a dry lunch and festering place were desirable. Numerous people followed Robin through 'Flat Man's Folly', a dark and wet excursion in a narrow chimney, Jon Rake struggled through with many oaths, then went round to try again. At the south end of the cave cliff a face and crack gave a good route of about severe standard. The first ascensionist, the climbing doctor, was glad of a top rope while pulling off loose holds and heather, and on the last strenuous pull up with 100 feet of exposure. Phil and Pete followed in fine style, but some others made the rope a bit longer.

Near the lighthouse Jon Rake put up 'Central Gully' (GR 633609), a 100 feet V.Diff, just avoiding a 30 feet fall into a floating bog. Smaller crags were useful for instruction in rope-work and belaying.

On several of the epic excursions made to the numerous small crags in the north of the island, under the intrepid, fearless and audacious (etc, etc, etc...) leadership of Dave and Jon, many people on their first-ever climbing sorties performed with great adeptness. Notable displays came from, amongst others, Mick Forrest who, having been stormed off his

first-ever route while on the crux move, by a short but incredibly violent squall, returned with great panache three days later to do two excellent climbs in the sparkling company of Geoff Morton and 'Horncastle Pete'. The crags on which these latter routes were put up (Gr 634606 - subject to suspect map reading!!) provide ample scope for beginners and 'experienced' alike; and there are several other very climbable crags and boulders in the vicinity. There was superb friction on all the crags, though often much gardening was needed and the size of the crags was far from disappointing as many of the climbers were weaned on relatively small gristone edges and outcrops. The inexhaustible number of short face and boulder problems provided great sport without the necessary encumbrance of ropes and belays.

- DAVE JACKSON and ROBIN ILLINGWORTH

RHUM CLIMBING REPORT '73

After six or seven hours of rather leisurely climbing, one by one, we made the summit of Barkeval. From the summit we could see the broken dam at the campsite, Salisbury Dam, where what climbing we did on the expedition started. It provided a fine abseil face and lots of easy climbs for warming up. Several tent pegs in the centre of the dam wall served as a firm belay. Further over to the north-west we could see Black Hill on which are scattered several crags, none of which are more than a pitch long but again they provide a fair amount of problems and easy climbs only twenty minutes from the camp.

From Barkeval, the top of Orval was clearly visible and below this on the west face we were later to discover a rather fine pinnacle. It would have provided about two or three pitches of good climbing, but for the fact that when we went to climb it with every bit of climbing equipment we could lay our hands on, the whole area was shrouded in dense cloud and although we searched high up on the screes below the face for about an hour and a half we were unable to locate it. At the time the rock was very wet and covered in lichen and moss. Some dry weather would certainly make the rocks in the area less slippery, but the lichen and moss would still prove a problem. We discovered later, that although the pinnacle of Orval has never been climbed, many have admired it. The problem is one of extremely large chunks of loose rock, making its ascent a very dangerous venture. I feel that a two- or three-day bivvy would be worth while in this area as there are obviously a large number of good climbs of various standards to be found there.

Back at Barkeval we had done one of the many possible routes to the summit from Glen Harris. There is an ideal campsite directly below the middle buttress. We climbed about eight pitches up the middle buttress, most pitches being of difficult/very difficult standard, with good belays and the odd grass stretch between pitches. The effect of arriving out of a slightly exposed open chimney within yards of the summit is quite exhilarating.

Askival and Hallival both have extensive rock faces which are worth climbing from suitable bivvies in the area. The main point about climbing on Rhum with a base camp at Salisbury Dam is that it is essential to spend a number of nights away from main camp in order to be in striking distance of the best climbing.

- DICK LIGHT *

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JURA, AS SEEN FROM THE END OF A ROPE

The basic requirement for rock-climbing is some nice vertical mountainside. As anyone who has tried orienteering on Jura will know there is plenty of this on the island. Unfortunately, the nearest cliffs of any reasonable height were some seven miles away from the campsite, at Rubha an't Salein. For the first day's climbing a small party set out there. We climbed a few rock faces and dykes along the way, but found that by the time we had arrived it was almost time to return, because of the slow going over the difficult terrain. We obviously needed transport help from the SHS fleet ... Thus the next few days were spent making it seaworthy and coaxing life into VENUS's engine (VENUS being, of course, our rubber dinghy). This soon proved itself worthy of the nickname 'Blessed little Wanderer'.

A number of days were spent training people in the basics of climbing technique on the cliffs of the middle loch, Skipper Simon ferrying us out there in HARVEY WALLBANGER. One advantage of these cliffs was that, being fairly low, we could always use a safety rope from above. Consequently, we were able to attempt some rather testing routes which, on a number of occasions, resulted in the free-air climbing technique. Abseiling proved very popular with the adventure-seekers amongst us.

No mountaineer can visit an area without attempting to scale its highest peak. Some eight of us, feeling this way about the Paps, went out on a biwi and climbed Beinn an Oir and Beinn Shiantaidh. I might add that the bivvi illustrated how changing weather conditions can make a fairly easy walk arduous.

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Bad weather towards the end of camp restricted climbing somewhat, but we continued with lectures inside the marquee.

A number of promising climbers emerged on Jura, and they were able to learn some fundamentals: I hope that they are keen to try tougher stuff next year.

- HARRY 'THE ROPES' HEPBURN

ENTOMOLOGY

BUTTERFLIES - (SOUTH RONA)

SOUTH RONA presents a typical Scottish landscape to the entomologist, and it is interesting to compare the types of lepidoptera found here with those found on the mainland. In the short survey which I carried out only the common varieties were caught and identified, and only a small section of the island was studied; those butterflies which were found were identical to those recorded on Colonsay in 1971, and thus Rona cannot be said to have a distinct population of butterflies, despite it being uninhabited and unfarmed, except for grazing.

Along the sea-shore by Dry Harbour, many common blues were recorded, while on the east graylings, small tortoise-shells and meadow browns were found. Along the valley which runs through the Dry Harbour settlement many green-veined whites were recorded. These formed the nucleus of the South Rona butterfly population; though at Doire na Guaile (in the south) a colony of dark green fritillary was discovered.

A moth survey hardly materialised, due to wet nights experienced on the island and the lack of skill of the moth trap operator. The wood tiger, garden tiger and large emerald species were recorded throughout the island.

- DAVE WARREN

* * *

BUTTERFLIES AND MOTHS ON JURA

Considering the wildness of most of Jura, it is hardly surprising that only eight species of butterfly were seen this year. There were only three species seen on the moors - the Meadow Brown, the Ringlet and a few Small Heath, north of Cruib Lodge. The Ringlet appeared to be the most common species on the island.

Two other species were seen near to camp and both around the King's Cave area. A Dark Green Fritillary was seen over bracken (one was also seen near the woods at Jura House), and a pair of Common Blue butterflies were seen feeding on vetch in a small gorge.

On the journey from Feolin to Craighouse at the beginning of the expedition three species were seen: a Wall Brown on a cliff near Feolin, a Small White near Jura House, and its relative, the Large White at Craighouse.

No moths of any interest were seen; unidentifiable white ones. However, several caterpillars were found, including the fox moth, the oak eggar, the emerald white, and the emperor moth whose camouflage in the heather must be one of the best in the insect world.

- ROGER BUTLER

POLLUTION

POLLUTION STUDIES ON COLONSAY

We decided to examine two bays in the north of the island for our pollution survey. We chose Balnahard Bay on the sheltered eastern side and Poll Ban on the exposed Atlantic side.

In the eastern bay we found a colony of about 300 seagulls. The bay was mainly sandy with scattered rocky outcrops. There were cliffs on the southern side which extended and gradually descended to the sea level at Rubh a' Geadha, the most easterly point on the island. The rocks were white with seagull droppings and feathers.

The western bay was flanked on both sides by high cliffs. Its floor was covered with flat rocks which made rock pools and channels, through which the sea raced when the tide turned,

'Finds' ranged from a rusty ship's funnel and an unploded mine through to a multitude of small items such as glass bottles and fishermans' floats. At least three times as much rubbish was found in the exposed western bay as in the eastern bay.

- RICHARD EVANS

GEOLOGY

SOUTH RONA GEOLOGY REPORT

South Rona is geologically very interesting, as my comrades and I discovered to the loss of much shoe-leather. It is made up largely of Lewisian Gneiss (composed mainly of Hornblende Granulite) and is much foliated and banded. The latter is due to the metamorphism of sedimentary rocks and subsequent contortion due to tectonic movements. Gneiss is relatively rich in feldspar and usually contains mica or one of the other dark, rock-forming minerals, eg. Hornblende.

Intruded deeply into the gneiss are sheets of epidiorite and hornblende schist. Running from south-east to north-west, these rocks are the most important intrusion on the island. Hornblende schist is dark in colour, being rich in hornblende and quartz, and is important as a widely used building stone in the settlements on the island. Again, schist is a highly metamorphosized rock. South Rona also abounds with pegmatites, which are intrusive igneous rocks. In this case the main pegmatite is a coarse-grained dyke rock, containing large quantities of quartz and feldspar as well as a little mica. The feldspar within this rock gives it a characteristic pinkish colour. In conjunction with the hornblende schist and pegmatites is found green garnet, which is better known as a gemstone, but is in this case a rock-forming mineral. Quartz is by far the most common mineral on the island, either as a rock-forming mineral or in intrusive veins, many of which criss-cross the base of the island.

There are many noticeable intrusions of rocks from the Gabbro group. They intrude as dykes, running in the southeast - north-west line, and are outstanding as marked valleys traversing the otherwise rugged, hilly landscape. These valleys have been cut into the island due to differential erosion between the hard gneiss and schists and the soft, more easily eroded members of the Gabbro group. One of these dykes runs right through the campsite at Dry Harbour and makes for the low valley leading to Big Harbour. It is formed largely of dolerite, a fine-grained Gabbro, and grades of basalt at the edges, where it cooled more rapidly during the intrusion. One other interesting invasion into the Lewisian Gneiss is a remarkable boss of feschelite, a semi-columnar formation of Gabbro to the south of the island, probably intruded during the Eocene period and has distorted and pushed aside the strata that was above it.

Finally, the island was certainly covered by ice at one time or another. This has noticeably rounded and eroded the rocks and no real jagged peaks or edges are present. The ice also carved out the dykes of Gabbro and the few minor faults which traverse the island, forming them into valleys. Since the ice melted, peat has been formed so that it now covers the whole island and is, in places, several feet thick.

- RAY SNOOK
- MARTIN TURFF
- RICHARD WILLIAMS

ECOLOGY

ZONATION ON DRY HARBOUR SHORE

Dry Harbour must be one of the best areas of the island to observe zonation of the shore. At low tide a very large natural harbour is uncovered and is easily explored.

Large rocks form the surface and act as an anchorage for the seaweed that encrusts the area. Below the rocks are various gravels and sands, and these have a thick layer of sludge in the upper shore region. On the rocks bordering the harbour is channel wrack, which is common all over the island on the borders of the splash zone and the upper shore. The rest of the rocks are covered in lichens and mosses.

It is not until you get down to, and below, the low water mark that you find an increase in the amount and variety of seaweeds. On the rocks in this area it is easy to see the anemones which thrive on rock faces. The beadlet anemone is the most common, although in the more exposed areas larger anemones are found, such as the Dahlia anemone and some of the more communal species. Anemones are probably the most interesting things encountered whilst diving. The flowing rhythm of their tentacles is misleading as they hide a terrible sting. Also, they have a restricted habitat; some, such as the snakelocks anemone, are only found on weed, and some like the dahlia anemone, are found only in crevices which are almost impossible to explore. Starfish were very scarce all over the island, but some starfish were found just inside the strait into Dry Harbour.

Beyond this point, it is difficult to examine the coast without aqualung equipment. As it was, we had only snorkel equipment which determined the extent of our activities. The equipment was brought by Tony and was invaluable to my survey.

GENERAL SEASHORE LIST

SEAWEEDS Green: Claplaphora rapestris
 Brown; Leathesia difformis or
 Corallina officinalis
 Desmarstia digitata Laurencia digitata

 Red: Plumaria elegans
 Dilsea carnesa
 Cigartina stallata

•

ANEMONES Snakelocks anemone - anemonia sulcata
 Beadlet anemone - actinia equina
 Dahlia anemone - tealia felina
 Sagartia elegans var. venusta

 Sagartia elegans var. minata

OTHERS Breadcrumb Sponge - halichandria panicea
 Common Starfish - astarias rubens Black
 Lichen - verrucaria maura Branded
 Lichen - lichina pygraea Flat
 Periwinkles - littorina littoralis

 Orange Sponge- hymeriacidan
 Spirorbis borealis or fucus serratas
 Flustra secarilians or laminaria
 Calcarias white/pink crust - lithophyllum

- BOB HEMMINGS

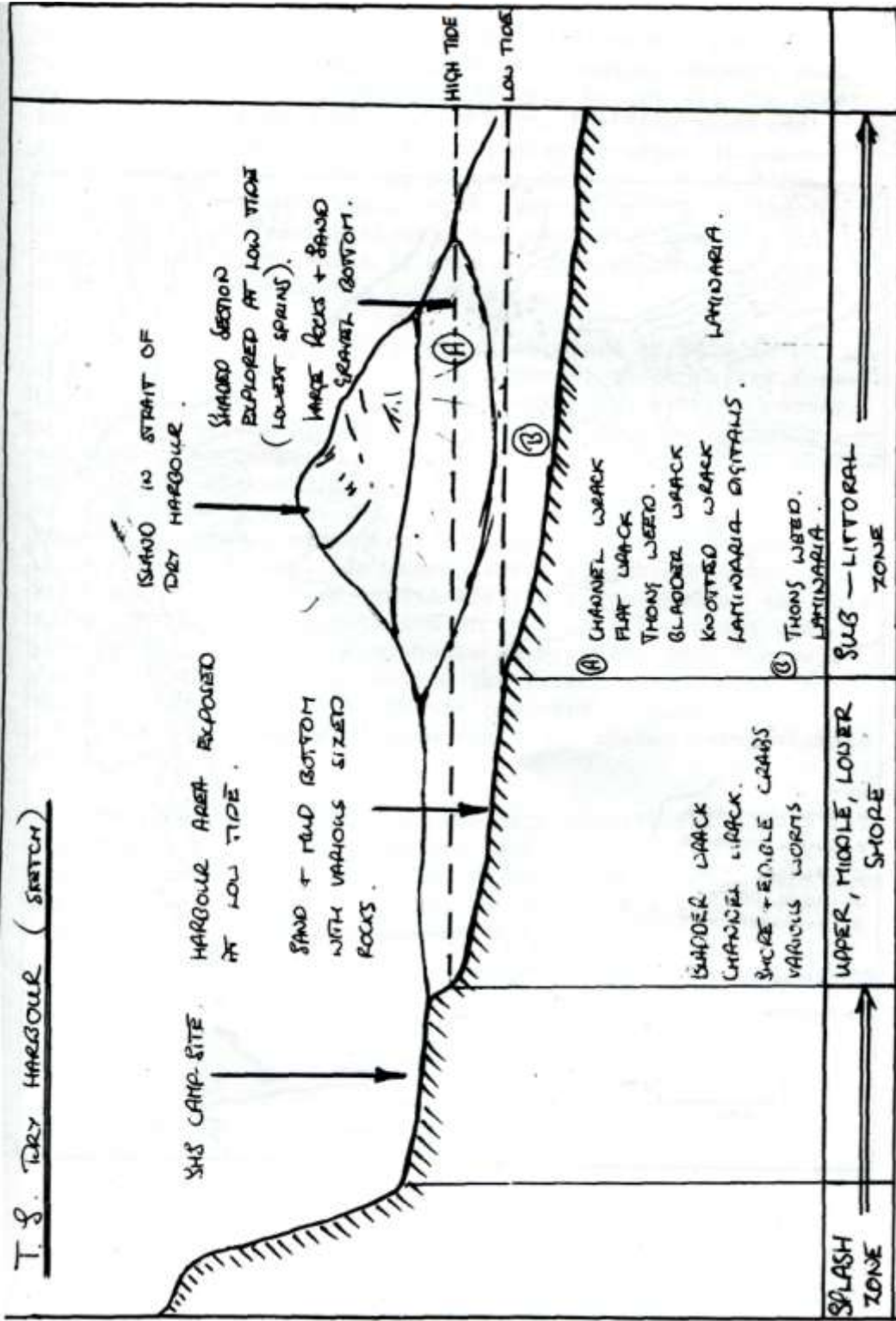
ARCHAEOLOGY

THE SETTLEMENT AT POIRE NA GUAILE

In appearance this settlement is much the same as the Dry Harbour settlement except that it is considerably smaller. The buildings here are similar to those at Dry Harbour, the greater number of these being enclosures or black houses, in which both humans and livestock lived.

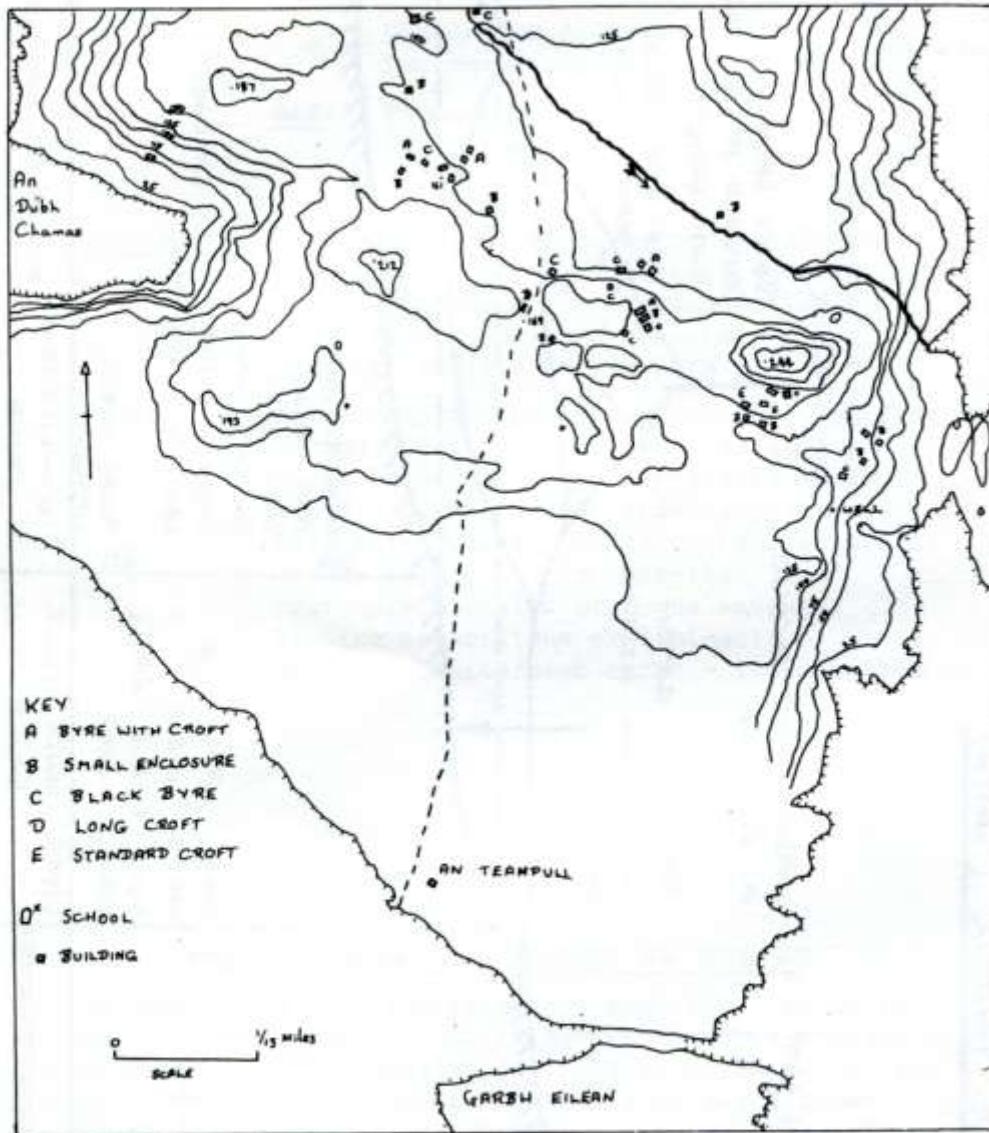
Altogether there are nine small enclosures all of which are very small; some are near crofts, while others are more isolated, perhaps being used by shepherds during the lambing season; those crofts may have served as storehouses or pens in which livestock could be kept. Nine of the black byres

T. S. DRY HARBOUR (SKETCH)



600 METERS

THE SETTLEMENT AT DOIRE NA GUAILE



were found scattered throughout the settlement; they had thick walls, many of which are still standing, showing that although they may have been constructed before all the other buildings they were still in use up to the time that the settlement was abandoned. They display no signs of human habitation, and it would appear that they must have served as cattlesheds, a theory which is reinforced by the discovery of an open wall running through the centre of one of them, and of holes in the walls of many of them which allowed the slurry to escape from the building.

There remain ten buildings which could be said to be crofts. There are two 'standard'¹ crofts, about thirty feet in length. These buildings were constructed without mortar and did not have imported stone parts. Four buildings appeared to be composed of a cattle shed attached to a small croft, while the remaining four were of the 'long' croft variety (obviously built to last); they had walls of stone bound with mortar, mantels of Torridonian sandstone and wooden window-frames. In these crofts the chimneys were still standing. One of these crofts was the school-house, and this shows how small the population of this settlement was compared with the large school-house at Dry Harbour. One well was discovered which was beyond the furthest house, and the inlet called 'An Dubh Chanas' appears to have served as a harbour, the remains of iron rings and chains being visible there.

These are the results of the very superficial survey that I carried out. It was conducted much too quickly, and attention to detail was minimal; it was unfortunate that more time could not be spent at the site, but no doubt a later expedition can study the site in greater detail.

- DAVE WARREN

SETTLEMENT AT RUANTALLAIN (JURA)

The population of Jura has been in decline for over one hundred years, and many of the remoter crofting settlements of the west coast were the first to disappear. One such place is RUANTALLAIN, at the western tip of Loch Tarbert, where a group of us surveyed the site.

There are two buildings still standing: one a long croft house, the other a kind of barn. The house is still used occasionally as a hunting lodge. Originally, it would have housed up to three crofting families. The style of the house is typical of the Hebrides, long and low, and with a tin roof to replace the original thatch. Its rough stone-and-mortar walls are thick, and its windows few and small to withstand strong winds. In the 'barn' we found traps upon the walls, large hooks hanging from the ceiling, and a hefty spring weighing machine. All were rusty however, suggesting that they were used more frequently in the past. Other tools were the remains of an old plough (?) and a peat spade.

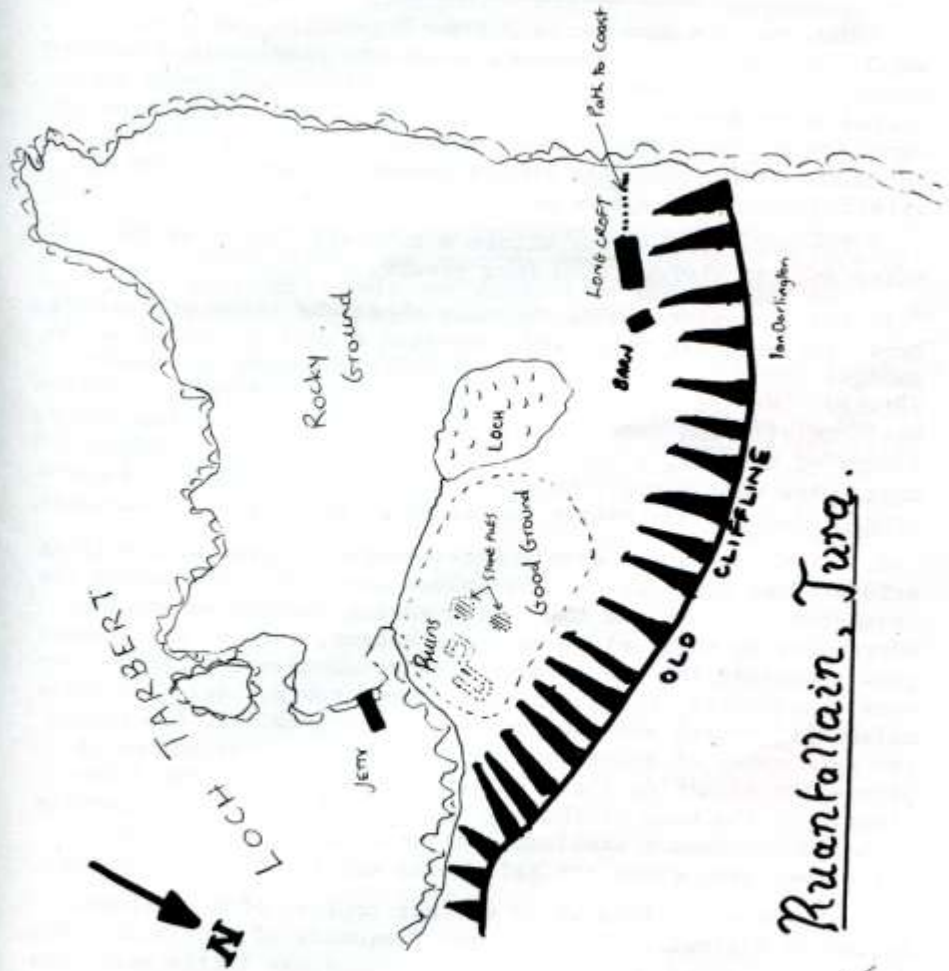
A large enclosed area of good flat land was found to the east of these buildings, and it was here that we made our main 'finds'. Firstly, we puzzled at several large rock-piles. Were these ruins of old buildings, or an ancient burial place? A much more realistic answer is that they simply were piles of stones removed from within the enclosed area. From this we decided that rather than simply being grazing land of good quality, this area was once cultivated.

Secondly, we were able to distinguish the forms of low walls on one side of the enclosure. Cutting away some bracken we revealed the recognisable foundations of up to three more crofts.

The other constructions at Ruantallain are a stone jetty and a large enclosure on the hill above the croft-house. The latter is divided into several parts and was once used for livestock management, although only deer and goats are found there today. I

We concluded that Ruantallain was once a crofting community of up to six families, raising cattle or sheep, or both, and enough crops in the enclosure for their subsistence.

- IAN DARLINGTON, JOHN COURTMAN
- PHILIP PARSONS, GRAHAM REEDER



Ruantollain, Tura.

BOTANY

DRY HARBOUR BOTANY REPORT

The campsite for the 1973 Rona Expedition was in the usual location - Dry Harbour, which was previously a settlement but which is now derelict. The influence of human habitation is reflected in its present vegetation and, because of this, Dry Harbour offered excellent opportunities for the botanist, having the best concentration of plants on the island.

The area studied was within a 200-yard radius of the Manse and was divided into four groups:

1. The land surrounding the site where the tents were pitched. Here, the peat was moist and supported a good growth of willow amongst which a dense tangle of bracken, bramble and nettle existed. Within the more open grassy areas bedstraw, self-heal, thistle and ragwort grew. In contrast, below the green canopy of bracken, growing within a lush carpet of sphagnum moss, grew wood sorrel, primrose and various violets and twinning; amongst the nettle and bramble, goose grass flourished.

2. Neighbouring the camp's water supply, a typical low-lying acid bog existed. Unlike the upland moor, this bog lacked the cross-leaved heath and the insect-eating sundews and butterworts, but in their place numerous sedges, rushes, and grasses grew. Amongst the basic layer grew an abundance of forget-me-nots, spearworts, buttercups and ragged robin. Here and there marsh willow-herb and the odd sneezewort grew. If one parted the rank cover of sedges one would notice the various marsh pennyworts entwining their circular leaves around the lower stems. On the edge of the bog amongst the cracks and crevices of boulders, common skullcap and curled dock thrift grew. Silverweed grew where the salt water met the edge of the bog.

3. A feature of Rona which was not typical of a Hebridean island of a similar size, was the frequency of woodlands. Dry Harbour contained a wood which, admittedly, was little more than overgrown scrub and consequently contained a ground cover similar to section 1. The trees involved were the usual birch and willow, with small belts of rowan and aspen. Below this leafy canopy, the sphagnum flourished; wood sorrel and a rich variety of ferns grew. The drier, rockier parts played host to primrose and common cowheat, ling and bracken.

At Big Harbour, a short distance from Dry Harbour, was a surprisingly large and mature wood containing oak, beech, ash, pine, larch and sycamore.

4. The fourth type of vegetation was by far the dominant habitat on Rona - the moorland. This is also the most specialised habitat depending for its existence on the saturated layer of peat. Cross-leaved heath was joined by ling and bell heather on slightly drier spots where heath luckwort, tormentil and eyebright were abundant; sundew, common butterwort and bog asphodel grew alongside the cross-leaved heath in the bogs. Amongst the boulders, an occasional elegant St. John's wort thrived, as did the stonecrops in the nooks and crannies. Two unusual plants were common centuary and pale butterwort. Another uncommon plant, the spotted orchid was seen singly in only two situations; this was unusual as the islands are often well endowed with this beautiful plant.

This survey, as an initial study, was, I think, a great success. Hopefully it will benefit future expeditions, providing a starting point for a more detailed study of the Dry Harbour area, and for a more extensive survey of the large area of Rona which remains to be examined.

- RICHARD HELLIER

HARRIS TRANSECT WORK

INTRODUCTION

Objectives; Whilst none of us had any clear idea of how to carry out a transect, and indeed, we had little experience of any of the subjects which we eventually studied, we decided that this was an excellent way to introduce a little bit of science into our project work. No doubt an experienced ecologist will not think much of our methods, but it is worth pointing out that we never really expected to be able to draw any conclusion.

Method; We took a straight line from the summit of Toddum (528m) on a bearing of 89° Grid to a point on the shores of Loch Seaforth (sea-level), a horizontal distance of 1,840 metres. On this line we then marked out three separate sections, each of 100m length, these to be our areas of study. The Upper transect began at the triangulation point on Toddum and went down the steep slope for 100m. The Middle transect was for 50m either side of the stream 75m from the summit. The Lower transect was from a point 1,740m from the summit to the high-water mark.

Each transect line was marked out with pegs at 10m intervals. The different people involved used these lines and markers in a variety of ways, as explained in their individual reports.

Descriptions: The Upper transect line from the summit was down a steep and very broken scree slope intermixed with outcrops of rock; the Middle transect was in a relatively sheltered spot in the bottom of a small valley with a stream as the central point, adjoined by rough heathland and bog. The Lower transect was on a very steep slope consisting of peaty soil and overgrown with thick heather.

Conclusions; Unfortunately it is quite impossible to draw any overall conclusions because of the rather haphazard way in which the work was carried out. Wherever possible each member has tried to draw his own very tentative conclusions.

- PHIL RENOLD

TRANSECT - BOTANY

Method: We searched an area one metre wide along the length of the three separate transect lines and the species found in each were recorded, for each ten metre section.

Results: The following Plants were found:

LMU	Common Tormentil	Potentilla Erecta
LM	White Ling Heather	Calluna Vulgaris
LM	Bell Heather	Erica Cinerea
LM	Cross-leaved Heather	Erica Tetralix
L	Beautiful St. John's Wort	Hypericum Pulchrum
LMU	Heath Milkwort	Polygala Serpyllifolia
L	Spotted Orchid	Orchis Maculata
LM	Bog Asphodel	Narthecium Ossifragum
M	Common Butterwort	Pinguicula Vulgaris
M	Common Eyebright	Euphrasia Nemerosa
M	Lesser Spearwort	Ranunculus Flammula
M	Lousewort	Pedicularis Sylvatica
U	Heath Bedstraw	Galium Saxatile
U	Starry Saxifrage	Saxifrage Stellaris

L = Lower M = Middle U = Upper

Conclusions: These observations are at best specious and at worst spurious. Sadly, we are no pundits in botanical matters. We both enjoyed compiling the lists and looking at the flowers - however, we also both doubt their value as anything other than an inexpert attempt to record what two laymen saw and admired.

Potentilla Erecta appears as a common factor in all three transects.

Galium Saxatile and Saxifrage Stellaris was only found on the Upper transect, whilst in contrasts to its comparative abundance we found no heather (Calluna Vulgaris, Erica Cinerea, Erica Textralis) nor any specimens of Orchis Maculata or Narthecium Ossifragum at this level.

The Upper transect was also the only one to have a luxuriant growth of grass.

On the Middle transect we found both purple and white ling (Calluna Vulgaris), whilst at the Lower transect purple ling was a rarity.

Narthecium Ossifragum and Orchis Maculata flourished at none of our chosen study areas, unlike the grassy valley just behind the cottage at Rhenigidale; this we attribute to the

exposed situation of all the transect lines.

The richest ten metres was undoubtedly that to the south of the stream on the Middle transect. Here, we found the only examples of *Pinquicula Vulgaris* afforded by the transect though the plant appeared perversely common elsewhere. So too did *Drosera Rotundifolia*, *Drosera Anglica* and *Drosera Intermedia* (Sundew, Great Sundew and Long-haired Sundew respectively) We tenuously adduce that this might be explained by the absence of damp, rather than saturated, bog along the transect line.

- ANDY POPE and NIGEL DE BERKER

TRANSECT - SEDGES and RUSHES

Method: The following sedges and rushes were identified in the surrounding area of study. No attempt was made to stick rigidly to the transect lines because of the infrequent appearance of these plants.

SEDGES

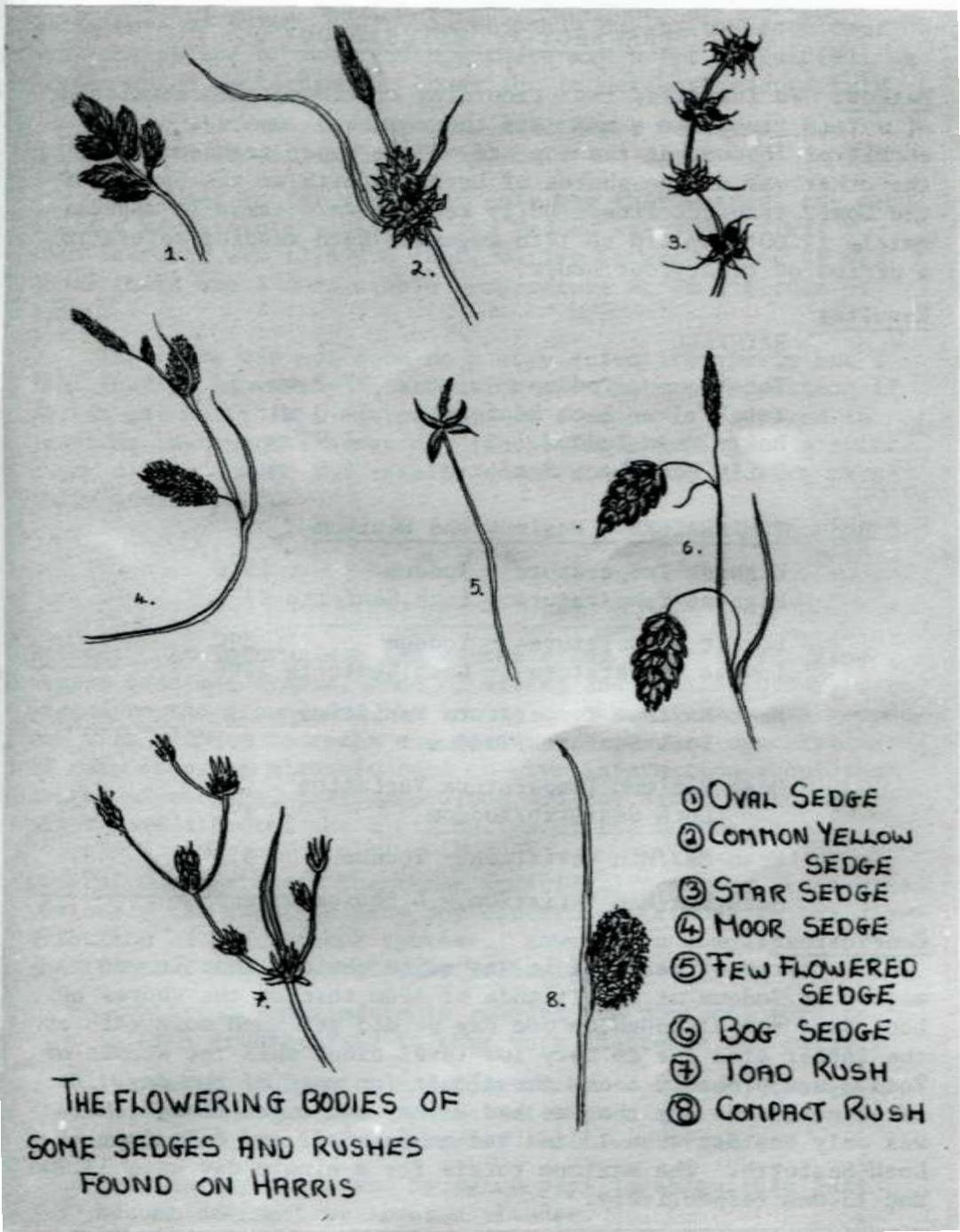
Moor Sedge	Carex Binervis
Common Yellow Sedge	Carex Flava
Russet Sedge	Carex Saxatilis
Pill Sedge	Carex Pilulifera
Common Sedge	Carex Nigra
Star Sedge	Carex Echinata
Oval Sedge	Carex Ovalis
Few Flowered Sedge	Carex Pauciflora

Many samples of a sedge resembling the Star Sedge in every detail save height were found. They were in sufficient numbers to suggest a new sub-species. Height varied from ten to sixteen inches.

RUSHES

Needle Spike	Rush	Scirpus Acicularis
Heath Rush		Juncus Soarrosus
Toad Rush		Juncus Bufonius
Hard Rush		Juncus Inflexus
Soft Rush		Juncus Effusus
Compact Rush		Juncus Conglomeratus
Jointed Rush		Juncus Articulatus

- PAUL CAFFERY



THE FLOWERING BODIES OF
SOME SEDGES AND RUSHES
FOUND ON HARRIS

- ① OVAL SEDGE
- ② COMMON YELLOW SEDGE
- ③ STAR SEDGE
- ④ MOOR SEDGE
- ⑤ FEW FLOWERED SEDGE
- ⑥ BOG SEDGE
- ⑦ TOAD RUSH
- ⑧ COMPACT RUSH

TRANSECT — METEOROLOGY

Method: We installed two recording stations, each consisting of a rain gauge and a max - min thermometer. One was on the summit of Toddum, at the top end of the Upper transect line; the other was on the shores of Loch Seaforth at the bottom of the Lower transect line. Daily readings were taken at approximately 12.00 from 4th to 14th August. Each reading refers to a period of twentyfour hours.

Results:

~	<u>RAINFALL</u>	
Total - Toddum	87.7	mm
Total - Loch Seaforth	54.0	mm
Daily Mean Toddum	7.97	mm
Daily Mean Loch Seaforth	4.9	mm
Highest Temperature - Toddum	15	C
Highest Temperature - Loch Seaforth	27	C
Lowest Temperature - Toddum	5	°C
Lowest Temperature - Loch Seaforth	7	°C
Mean Maximum Temperature Variation Loch Seaforth/Toddum	8.1	°C
Mean Minimum Temperature Variation Loch Seaforth/Toddum	1	°C
Mean Max/Min Variation - Toddum	5.3	°C
Mean Max/Min Variation - L.Seaforth	12.5	°C

Conclusions:

In terms of rainfall it was quite obvious that it was wetter on Toddum at an altitude of 528m than on the shores of Loch Seaforth although, on one day we did get much more rain at the latter site due to very low-level cloud when the summit of Toddum was probably above the clouds for most of the day. It is also true to say that we had a very wet expedition; there was only one day when Toddum had no rainfall and only four at Loch Seaforth. The maximum totals for a single day were 33.0mm and 13.0mm respectively.

In terms of temperature it was clear that during the day there was a very marked difference between the temperature at Toddum and at Loch Seaforth. Mean difference 8.1°C, more than

the usual figure of 1°C per 100 metres which would give a mean difference of 5.5°C. This was probably due to the fact that over the period of the readings there was a lot of rainfall on Toddum which would tend to lower the temperature accordingly.

At night, however, the mean difference was less than 1°C, a fact which is difficult to explain.

One other factor worthy of note was that whereas the mean max/min temperature variation for Toddum was 5.3°C, that for Loch Seaforth was 12.5°C. Thus, whilst it was warmer at sea level there was a more stable temperature at an altitude of 528m.

This work was not done on a very scientific basis but I feel that it is worthy of attention on a future expedition if we can get sufficient equipment, if someone is prepared to read the instruments every day (involving climbing to a summit every day), and if the results so obtained can be more carefully studied.

- PHIL RENOLD

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TRANSECT - MOSSES

Method; At intervals of ten metres along the transect line square quadrant frames, made of string and of side 0.5m, were pegged to the ground and the inside of these frames was mapped out with respect to rocks and mosses. A general description of each site was also recorded to give information about the degree of shelter, drainage, slope and any other factor which might have affected the distribution of the mosses.

General Conclusions: The three individual transect lines were obviously too short to show any discernible trends in the distribution of the various species. However, a comparison of the transect lines reveals the following:

Racomitrium lanuginosum is amongst the dominant species in each transect and is thus very adaptable and hardy.

Polytrichum juniperium and Polytrichum formesum, though amongst the dominant species at higher altitudes, were not found at all in either of the Lower transects.

Breutelia chysocoena and Sphagnum papillosum/pulcham only become dominant at lower altitudes.

Bryum argenteum only becomes dominant at the lowest altitudes.

Tortella tortuosa and T.tomariscum only flourish at lower altitudes, but never occur extensively.

All the above can only be held to be true of the particular line studies, and cannot necessarily be held to be true in general. However, it is probable that some of the trends are indicative or general trends in the distribution of species of mosses down the transect line.

- WILLIAM WARIN and IAN GOUGH

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TRANSECT - SOIL COMPOSITION ANALYSIS

Method: Soil samples were taken at the top and bottom ends of each of the three transect lines. The sample was mixed with water, placed in a measuring cylinder, shaken up and then allowed to settle over 24 hours. When settlement occurred, the heavier components of the soil sank to the bottom, whilst the lighter components remained at the top, thus allowing the composition to be recorded.

LOWER TRANSECT - There was little difference between the samples taken at each end of the line. The soil was thin owing to the steep gradient and peaty. The sub-soil was either a thin layer of grit or the soil gave way to bedrock (Lewisian Gneiss).

MIDDLE TRANSECT - This was dominated by the burn and for 10m to the east of it the soil was underlaid by sediment. The area was boggy around the first, second and eleventh markers and in the latter case the peat was 0.5m thick. The grit content of the soil appeared to increase towards the burn.

UPPER TRANSECT - Two main types of soil were found here. The shallow peat of the top plateau with fine sand, and the sandy thin soil of the slopes, underlain with scree,

- STEVE KANE

TRANSECT - PEAT SOILS

In most natural vegetation the production of plant material is counter-balanced by its decomposition by bacteria and fungi, But in peat bogs two factors - acidity and anaerobic conditions - slow down or completely prevent decomposition. Growth and formation of new plant material then tends to be in excess of its breakdown, and the resulting accumulation is peat.

Bog peat may have an ash content as low as 2% of the dry weight. The acid conditions reduce both production of organic matter and its decomposition.

The effect of better aeration on bog peat is complex: as the peat dries, the peat acids become more concentrated, and other acids are also formed by oxidation, so that the amount of aerobic decomposition possible is limited by extreme acidity. Under these conditions heather or cotton-grass may increase at the expense of bog moss.

Sphagnum has the property of ion exchange, a property which seems to reside in the cell walls, and to be retained even when the plant is dead. If sphagnum is put in a dilute solution of common salt, the neutral salt solution soon becomes distinctly acidic. The sphagnum has adsorbed sodium ions from the solution, liberating 'in exchange'¹ hydrogen ions making the solution more acid. By creating acid conditions unfavourable to fungi and bacteria, sphagnum reduces its liability to decay, and the dead remains of sphagnum contribute greatly to peat formation.

The properties of sphagnum are important in the formation of acid peat. Its water holding capacity contributes greatly to the water reservoir or raised bogs. The formation of blanket bog is probably initiated by a carpet of sphagnum covering the ground. Such a carpet may cover tree roots, creating waterlogged conditions which often cause the death of adult trees and prevent tree regeneration by inhibiting the growth of seedlings.

- MIKE HAYWARD

BOOK REVIEW

'THE ISLANDS OF WESTERN SCOTLAND' by W.H. Murray
published by Eyre Methuen, London, 1973 Price:
£2.25 (paperback)

W.H.Murray has written a wide range of books, from cheap thrillers to expedition reports, and including 'MOUNTAINEERING IN SCOTLAND', a classic of mountaineering literature, His newest book, in the 'Regions of Britain' series, is yet another extension of his talents, Throughout, he conveys the fascination of the Hebrides, both for serious students and interested travellers. At the same time, the book contains a vast store of facts, ranging from details of archaeological finds to the price of whisky (only 20p a gallon in 1725). Through this, he shows the contrast between severe practicalities and the many exciting compensations which must be felt by everyone who has stayed in the Western Isles,

In many ways, the book follows the pattern of any regional geography textbook, starting with a description of the physical background and leading, by way of the history of the area, to a study of the modern economy. The book list is large, including readable general books, academic references, and many old and interesting documents. In addition, there are twenty-two clear and informative maps,

However, Murray is not a geographer or a historian, and he approaches problems in a more general way; he avoids dry academic arguments, using mainly common-sense. Because of this, even the incredibly complex geological history becomes almost comprehensible. Moreover, he shows a remarkable range of interest, including details of cultural, religious and political history as well as the more mundane facts of economic life, and he demonstrates the strong links which have developed between the islanders and their exceptional physical environment.

The photographs exemplify the breadth of his work. They range from impressive shots of mist drifting through Cuillin corries, to more conventional pictures of birds and rock formations, and to old photographs of islanders involved in such activities as fish-gutting and illicit whisky distilling.

The account of the island's history is comprehensive and interesting, but it is in the description of the modern

problems and strengths of the communities that Murray is at his best. He conveys a vivid picture of the reactions of the people to their treatment by outsiders from the early nineteenth Century onwards, and finishes the book with some radical but practical suggestions for the future of the islands.

For someone new to the Hebrides, this book provides an interesting and informative introduction. For more experienced visitors, who have adopted particular fields of interest, Murray's broadminded approach should contribute to a more general appreciation of the Western Isles.

- ANDREW HALL

PLANS FOR 1974

RA AS AY JXPEDITION 19th August to 3rd September

Group M (121-14 years)*

NORTH UIST EXPEDITION ... 23rd July to 8th August

Group L (14-15 years)

HARRIS EXPEDITION 22nd July to 8th August

Group K (15-16 years)

SOUTH UIST EXPEDITION ... 14th August to 28th August

Group J (16 -17 years)

In addition to these Expeditions, the Society is planning two smaller Expeditions for Senior Boys (17 years and over) :

MINGULAY EXPEDITION ... 22nd July to 11th August

The Mingulay Expedition will be project-orientated and will be particularly interested in continuing the project work started on previous expeditions,

OUTER ISLES EXPEDITION 14th August to 4th September

The Outer Isles Expedition will be orientated towards out-door activities, and may be mobile.

The dates of the Expeditions are dates of departure from, and return to London, and are subject to revision on publication of final train and steamer time-tables,

* Age on 1st August, 1974

Details and copies of the prospectus may be obtained from

A.K. FOWLER, Esq.,
74, Adelaide Street,
NORWICH NOR 67J.

THE SOCIETY'S TENTH ANNUAL CONFERENCE WILL

BE HELD AT

WANTAGE HALL

THE UNIVERSITY OF READING

BERKSHIRE

FROM THE 4TH - 6TH JANUARY 1974

* * *

Full details may be obtained from the Conference Organiser:

PETER FORSAITH,

Reading Y.M.C.A.,
Parkside Road,
Reading, Berkshire.

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PAST EXPEDITIONS OF THE S.H.S.

Gometra Expedition	1962	<i>Leader;</i>	John Abbott
Rhum	"	1963	John Abbott
Gometra	11	1963	" Tim Willcocks
Mingulay	"	1964	ii Martin Child
South Rona	"	1964	" John Abbott
Raas ay	"	1964	M Richard Fountaine
Gometra	"	1964	" James Emerson
Harris	"	1965	ii John Abbott
Jura	ii	1965	" Jonny Ker
Raas ay	ii	1965	M Clifford Fountaine
Morvern	ii	1965	" Jim Hardy
Lewis	ii	1966	ii Roger Dennien
Harris	ii	1966	ii Alan Bateman
Jura	ii	1966	" Andrew Wilson
Co Ions ay	n	1966	ii Chris Dawson
Dingle	it	1966	ii John Houghton
Mingulay	ii	1967	ii Kenneth Huxham
Rhum	"	1967	ii John Dob ins on
Harris	11	1967	ii Andrew Wilson
Lewis	M	1967	ii John Abbott
Co Ions ay	ii	1967	ii John Jackson
Vatersay	ii	1968	ii Philip Renold
Lewis	ii	1968	ii David Cullingford
South Rona	M	1968	" Chris Gascoine Hart
South Uist	ii	1968	ii John Cullingford
Co Ions ay	ii	1968	ii Alan Bateman
She t lands	ii	1969	" Chris Dawson
South Uist	ii	1969	11 John Cullingford
Lewis	M	1969	ii John Hutchison
Rhum	"	1969	ii Chris Gascoine Hart
Co Ions ay	ii	1969	ii Roger Trafford
South Uist	ii	1970	ii Geoffrey David
Shetlands	ii	1970	ii Dave Vigar
Fladday	ii	1970	11 Mike Baker
Lewis	ii	1970	ii Alan Howard
North Uist	ii	1970	ii Philip Renold
Ulva	ii	1970	ii Alan Fowler
South Rona	ii	1971	ii Roger Weatherly
Rhum	ii	1971	ii Philip Renold
Jura	ii	1971	ii Charles Hooper
Colonsay	M	1971	ii Alan Howard
Mingulay	"	1971	ii Hugh Williams

Muckle Roe Expedition	1972	Leader:	Ray Winter
South Uist	" 1972	"	Alan Fowler
Lewis	" 1972	"	Gavin Macpherson
Raasay	1972	"	Paul Caffery
North Uist	" 1972	"	Roger Weatherly
Harris	" 1973	"	Philip Renold
South Uist	" 1973	"	Alan Fowler
South Rona	" 1973	"	Jim Turner
Rhum	" 1973	"	Mark Rayne
Jura	" 1973	"	David Bradshaw
Colonsay	" 1973	"	Alan Howard