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1978 Report Part II

THE RHUM GOAT COUNT

The idea seamed straightforward enough - in return for the privilege of staying on Rhum we were to spend a day counting goats around the coast. However, in practice there were problems ranging from the startling discovery that goats were capable of locomotion to an even greater extent than humans (especially on sixty degree slopes) to the complete lack of numeracy amongst expedition members (one, two, three……..errr, lots) and our complete innocence which made us incapable of sexing any of the horned beasts (quite simple - you turn them upside down and look underneath).

The expedition was divided into four groups, each of which was to walk along a different stretch of coastline, counting the goats. The groups usually split into two, one keeping close to the coast and the other about two hundred yards inland. This ensured that each goat was counted at least once by at least one group.

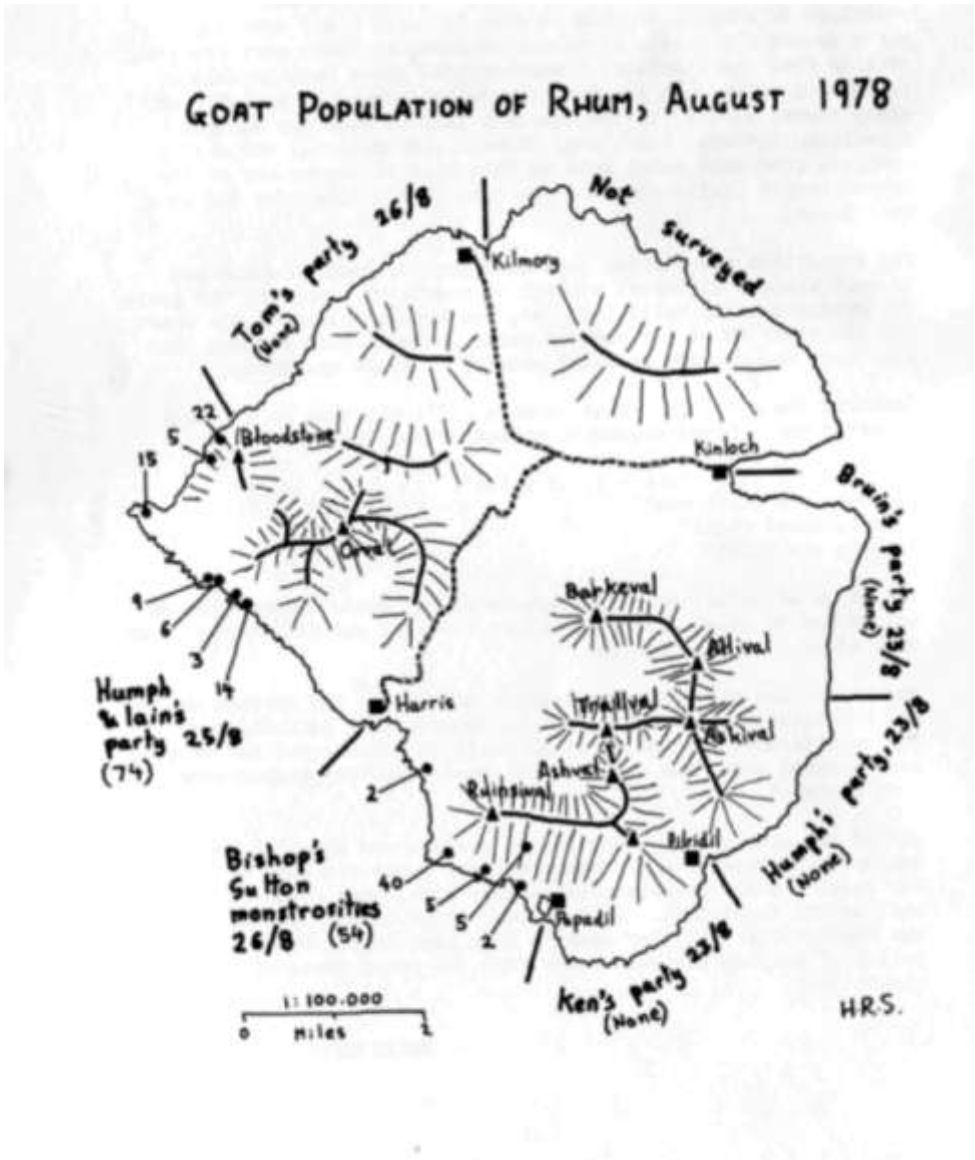
Counting the goats proved to be more difficult than it at first appeared and violent arguments echoed around the island:

"No, there's six; look - 1,2,5,4,5,6" "Where's the sixth one?" "The furthest right" "That's the fifth" and so on ad infinitum, or rather until the goats changed places and we had to start again. Counting the legs and dividing by four only added to the confusion.

Anyway, in the chart are the results which, for the reasons stated and countless others, should not be considered a definitive survey. The results have been slightly simplified: some stretches of coast were covered more than once and in these cases the higher count has been included.

One of the aims of the count was to compare our somewhat amateur survey with those of a much more careful count for part of the coast. Our results seem to compare reasonably with those produced by an earlier SHS expedition. as for conclusions, these are best left to the Conservancy, but they seem to have been fairly successful in their policy of keeping the goats away from the young trees of the Kinloch plantations.

DAVID THOMAS



QUANTIFICATION OF THE 'CONDITION' OF TROUT CAUGHT IN THE HARRIS BURN, RHUM

Only too frequently one hears of anglers stating that fish caught are in "good" or "poor" condition. This study attempts to quantify the "condition" of a fish, thus hopefully enabling one to compare fish caught from different streams on a scientific basis.

Method

The trout Salmo Trutta was fished for in the peaty Harris burn from 14 – 27th August. Fish caught were weighed and had their length recorded. The results were then incorporated into the 'Condition Formula' to be found in the monograph on the trout by Frost and Brown. If the calculated condition factor (k) was greater than or equal to one then the fish was GOOD, otherwise it was POOR.

Results

A total of 32 trout were caught. Of these, 10 were selected for the study. Their weights and length were incorporated into the Condition Formula:

$$k = \frac{1000 \times \text{Weight (lbs)}}{0.427 \times \text{Length}^3 \text{ (inches)}}$$

k 1 'GOOD'
k 1 'POOR'

This formula assumes that the weight of a trout is directly proportional to the cube of its length:

$\text{Weight} / \text{Length}^3 = 0.000427$

Table 1: Weight, length and calculated Condition Factor (k) for ten randomly selected trout

TABLE 1

Weight (lbs)	Length (inches)	Condition Factor k	Conclusions
0.06	5.77	0.73	POOR
0.08	6.52	0.67	VERY POOR
0.13	7.16	0.83	FAIRLY POOR
0.14	7.16	0.89	FAIRLY POOR
0.16	7.96	0.74	POOR
0.18	7.99	0.83	FAIRLY POOR
0.19	8.36	0.76	POOR
0.22	8.27	0.91	ALMOST GOOD
0.27	8.75	0.94	ALMOST GOOD
0.45	10.45	0.80	FAIRLY POOR

Conclusion

Evidently none of the trout caught were in 'good' condition! However, it would appear that the fish tending towards a half-pound were in better condition than the smaller ones, much as might be expected. This study has shown that it is feasible to quantify the 'condition' of trout using a simple formula. Hopefully anglers on future expeditions will be able to assess fish caught in this manner.

Acknowledgments

This study was entirely dependent upon the angling skills of Tim Reed, Tim Caldicott, Adrian Davidge and Graham Tarling.

Reference

Frost, N.E. & Brown, M. B. (1967) The Trout (Collins)

BRUIN THOMPSON

A CENSUS OF BREEDING SHEARWATERS ABOVE 1900 FEET ON TRALLVAL, RHUM

Introduction

A recent census of the breeding population of the Manx Shearwater PUFFINUS PUFFINUS in Britain totalled 300,000 pairs - an intensive census undertaken by Peter Wormell of the NCC during July/August 1965 - 69 produced 116,000 occupied nesting burrows. This constitutes Rhum as being unique as it holds a third of the British breeding population, all of which nest in self excavated burrows on the mountain tops, whereas elsewhere shearwaters nest in grassy slopes or in turf above sea cliffs.

The aims of our census, a decade after Wormell's, were twofold: primarily they were to establish the number and therefore density of occupied and vacant nesting burrows on one selected area - we chose the top of Trallval (2,300') above 1900 feet; secondly it was hoped that our results would substantiate a suspected upsurge of breeding shearwaters on Rhum over the past few years, a lot of these birds possibly coming from the neighbouring island of Eigg.

Method

The method employed followed that of Wormell's, and can be summarised as follows:

It Is known that the fertile AGROCTIS/FESTUCA grasslands on the mountain slopes and ridges are a resultant of breeding shearwater presence, Wormell obtained aerial photographs of Rhum and, because he had already marked on a map the specific locations of all these 'greens' he succeeded in calculating the total surface area of 'greens' on Rhum, this area above 1900 feet on Trallval being 85.8 square chains.

Following this, several areas (ground plots) were selected in the 'greens' for shearwater burrow counts, each ground plot being a square chain in area. With these burrow totals it was possible to calculate the mean number of burrows per square chain of 'green', and thus by transferring this result to the total surface area of greens it was possible to calculate the total number of occupied burrows, which came to 16,130 a decade ago on our study area.

However, one problem exists, namely that the ground plot areas were incompatible with aerial map surface areas due to their degree of slope. Therefore 'inclined' hole counts were adjusted to 'horizontal projection' hole numbers by the following formula:

$N2 = \frac{N\ 1}{\cos\ \theta}$

N1 = No. holes/plot area inclined
N2 = No. holes/plot area horizontal
θ = Degree of slope

Our team, consisting of Chris Buckley, John Carey, Graham Kramer, Dave Nichols, Mark Schofield, Graham Tarling, Iain Colquhoun and myself, paid several visits to the Trallval tops to enumerate burrows on eight selected ground plots of areas between 64 and 400 sq. metres. Occupied burrows were identifiable as being flattened soil with droppings and feathers at the entrance, and by a rather unpleasant smell!

Results

Results obtained were surprisingly uniform. On average 85% of burrows were occupied with a mean density of 0.46 occupied burrows per square metre, being higher than that of 0.44 recorded by Wormell ten years ago After calculation we found the total number of occupied burrows to be 17,224 ± 6,199, roughly a 7% increase on the 1965 - 69 estimate.

Discussion

The results excitingly suggest a population upsurge of breeding shearwaters on Rhum, however, we must objectively question whether a rise on the tops of Trallval reflects a similar trend on the rest of Rhum. Secondly, if there is such an increase is this expressed as an extension of breeding 'greens' or an increase in breeding density - as we assumed.

Little is known about the non-breeding shearwater population -how many burrows were occupied by visiting immature birds? How many nests were deserted? There were numerous practical problems such as deciding upon how many burrows there were under a number of large slabs. Corrections should have been made for areas of ground plot not eligible for nests such as large boulders and hard rock underneath the 'green' making burrowing impossible. Had such corrections been made the percentage increase could have been much larger.

Surely the importance of a census such as ours is to attempt a portrayal of number fluctuations, subsequent intensified studies should explain the differences. If, as our results suggest, there is an influx of shearwaters to Rhum from areas such as Eigg then we can speculate as to the reason. One suggestion connects an Eigg population decline with ingestion of toxic contaminants - to support this more information is needed on the feeding patterns of the Inner Hebrides shearwaters.

We have fulfilled our aima and in doing so have appreciated and learnt much from problems associated with this census. Acknowledgements are due to the team for their wonderful spirit and dedication and to Bob Sutton and John Love of the NCC residential staff for invaluable advice and c cements.

Useful Reading

BOURNE, W.R.P., CRAMP, D. and SAUNDERS, D. (1974) The Seabirds of Britain and Ireland

LOCKLEY, R.M. (1942) Shearwaters

MACKENZIE, C., THOMPSON, B. (1973) SHS Annual Report: p49-50

SHARROCK, J.M.R. (2976) The Atlas of Breeding Birds in Britain and Ireland.

WORMELL, P. (1976) Manx Shearwaters of Rhum SCOTTISH BIRDS 9 (2): 103-118

BRUIN THOMPSON

METEOR PROJECT - SOUTH UIST 1978

In June of this year, after consultation with one of the French Masters at Poole Grammar School, who is also an Astronomy enthusiast, I decided to attempt a Meteor project on the South Uist expedition. However, it did not turn out quite as I expected.

One would imagine that the Hebrides would be the ideal venue for astronomy, with crisp, clear skies and no interference from street lights etc. 'The latter proved correct but the crisp clear skies failed to make an appearance and therefore the meteors too were lost in Hebridean mist!

What we had hoped to see was the PERSEID SHOWER which appears annually, anytime between July 27th and August 17th. (What we actually saw and felt was a nightly RAIN SHOWER!)

In normal clear weather conditions a few meteors can usually be seen, this is because space is filled with small lumps of rock and other inter-stellar debris. These rocks sometimes enter the earth's atmosphere and burn up due to the frictional heat when passing through air. Some rocks and debris are spread in a belt running round the sun and probably exist because of the break-up of an old planet between the orbits of Mars and Jupiter. These are known as the ASTEROIDS. Some asteroids are clustered together in swarms. When the earth passes through one of these swarms the amount of rock entering the earth's atmosphere increases and thus an apparent shower of meteors is seen. When plotted on a chart the meteors appear to radiate from one point called (you've guessed it) the RADIANT POINT.

This can be explained using an analogy -

The parallel lanes of a motorway appear to radiate from one point on the horizon and the traffic coming down these lanes appear to diverge from this point; thus when the earth moves through the swarm of rocks they appear to come from one point.

Observation of the Shower

This was carried out between the hours of eleven pm and one-thirty am on the night of August 10th and morning of August 11th. This was the only clear night and, of course, was also the final night at camp.

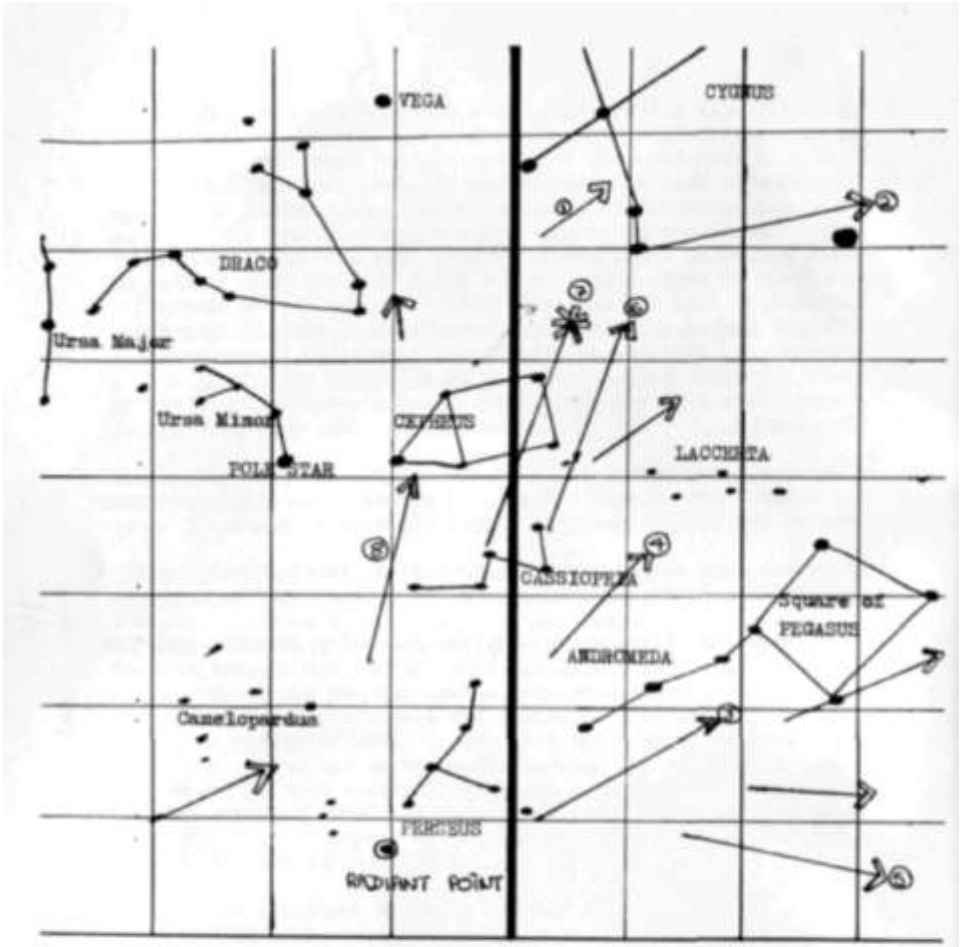
Only a few meteors were recorded since very few of us were seriously observing. Others were gathered round a fire made from our camp furniture singing from the SHS "Songbook". When each meteor was sighted, the time was taken and converted to Universal Time by subtracting one hour. Its duration was recorded and a description of the trail was noted if it possessed one. The area of sky watched was about 40 degrees up from the ridge on Beinn Mhor to the zenith i.e. from the constellation of Perseus to the constellation of Cygnus. During the times stated a total of fourteen meteors were sighted, details having been taken on eight of these. One of the eight was a FIREBALL which exploded. A slight noise followed the explosion which could be heard above the singing.

After returning home I analysed the chart I had made and plotted the meteors onto a master sheet. I extended the trails ignoring some of the stray meteors to obtain the radiant point.

The conclusion reached was that the radiant point of meteors in the PERSEID SHOWER is found in the constellation of Perseus.

Many thanks to Miles Peters and Doug Payne for actually spotting some meteors.

JOHN RINGROW



The centre line is approximately East about midnight

NUMBER	TIME	DURATION	TRAIL
1.	22.10 U.T.	½ second	Smokey orange
2	22.50 U.T.	1 second	Smokey
3.	22.51 U.T.	½ second	Very fast moving
4.	22.55 U.T.	½ second	No trail
5.	22.59 U.T.	½ second	Smokey trail
6.	23.10 U.T.	1 second	Orange trail
7.	23.15 U.T.	1 second	Fireball, smokey trail with Orange explosion - noise audible.
8.	01.03 U.T.	1 second	Smokey trail

DISTRTBUTION OF VEGETATION ON THE SLOPES BY THE CAMP-SITE ON SOUTH UIST - 1978

You may be surprised to know that we did know what we were doing carrying 6’ ranging poles, tape measure and check lists up the purple moliniated [purple moor grass] slopes of South Uist. Our aim (according to the gospel of St. Pete alias Mr. Weston, sir, at school) was to see if there was any significance in the distribution of vegetation in relation to slope angle, aspect and edaphic factors. First we measured the slope angle using a clinometers and our ranging poles. Then we identified the most abundant species in a quadrat thrown at 5m intervals along the transect. Finally, we collected soil samples where there was a definite zoning of vegetation along each transect.

Back at school we analysed the soil, measuring pH, moisture and humus content. Results have not yet been tested statistically, but we have been able to get a general idea of the conditions which affect the vegetation. The pH of the soil, ranging from pH2 up to pH6 (the average being around pH5), is what would be expected In these peaty conditions, with the underlying rock being gneiss. There were only two or three stations where the pH of the soil was alkaline, these being near the streams and the loch shore. Here there was a marked change in the texture of the soil with it being more sandy and better drained. Generally, the slopes were dominated by purple molinia and heather, but on the lazy-beds there was a much greater variety of grasses and flowering plants.

Much to Pete's annoyance, the SHS provided us with too many distractions during the daytime. Ros provided her own distraction when she stepped out in enthusiasm and straight into a peat bog!

We were very relieved to finish the last section of our project and to enjoy the last day of our holiday without Pete's never-ending demand of "Why aren't you working?” (slave-driver). Finally we would like to say a big thank-you to everyone who helped in the various stages of the project, and especially to John Jones whose help in identifying flora was invaluable.

ROS DRING AND TERESA DURRANT

GEOLOGY INVESTIGATION SOUTH RONA

I set out from London Euston with high hopes of doing a fairly comprehensive survey of part of the Island. Sadly, due to lack of enthusiasm except for Tarmac and myself, this was not to be, but we were quite successful as far as specimens were concerned.

There were quite a large number of intrusions of which the dykes were more prolific. The dykes were made up of quite a large variety of materials from the pink potassium rich orthclase in the sills, to the fine grained basalt to gabbro and from diorite to microdiorite. The dykes were on the whole major intrusions and much bigger than the sills. In one of the bigger dykes there is an outcrop of columnar basalt. The columns are quite well defined in places and are in the shape of hexagons but are not spectacular like the Giants Causeway (Co. Antrim, Northern Ireland).

The sills appear to all be made up of the pink orthoclase which was mentioned earlier and were considerably smaller than the dykes. Both the sills and the dykes were of about the same hardness as the country rock, as there seemed to be no real difference in their rates of erosion.

On the beaches I found quite a large number of boulders of arkose and Torridonian sandstone. As there are no outcrops of either of these on the island, they must have been carried by ice erratics, probably from the Applecross strata on the mainland.

I found that the most profitable places to look for specimens was in the ruins of the crofts. Some found here showed some very good examples of folding and layering, foliations, though unfortunately they were usually too big to bring back.

In the south of the island there are a number of quite large outcrops of quartz, which vary in colour quite considerably. These were probably the results of stress relief in the vicinity. There were also many small veins of quartz only a few inches in width running through otherwise unveined country rock. These were again most apparent in the southern end of the island. I discovered quite a large vein of biotite mica about six inches in width on one of the islands at the entrance to Dry Harbour. This was not really surprising, since all the rocks, barring the quartz, had a large percentage of mica in them, including bands of mica in the arkose.

Although not able to complete as much as we had hoped we did at least manage to collect some nice specimens including: basalt, gabbro, diorite, mica, arkose, sandstone and an innumerable number of pieces of gneiss and schist.

DAVE WILKINSON AND DAVE ELLIS

THE HAGGIS PROJECT

The Birth of our Project

When I and several other of my compatriots were driven from the shelter of the house into the raging tempest outside we were told not to return without a Project. When the barrage of cigar butts and bits of Tilley lamps had subsided, we looked up to find that the sun was shining after all. But we had no project. We looked around in desperation for a suitable subject. Alas, all the rocks on the beach were taken, there wasn't any spare rubbish - the winkles had left in a mass exodus and a strike by Air Traffic Controllers in France meant that the meteorites weren't flying, what could we do?

"Why not investigate the Haggis?" someone suggested.

"Yes, and we could put in a few more metres whilst we're at it"

And so it was decided, we were to investigate that rarity of the Highlands, the Haggis.

Method by which the Project was Conducted

Firstly we chose a mountain which supported what we considered an average population of Haggises (are you sure it's not Haggi?- Ed). We tried to mark each Haggis with nail varnish, thus enabling us to trace their movements more easily, but this proved impractical as the Haggises proved very evasive. Instead we took quadrats at different heights and plotted the results. We also turned over the rocks at three different levels and observed the varying quantities of Haggises beneath them. Finally, we observed the behaviour of the Haggis on a more informal basis, noting down any interesting or novel aspects that we saw.

Results and Conclusions

Before I go any farther, I think it important that the actual appearance of the Haggis is described, so that the myths and legends that have been built up around this unique creature can be sorted into fact and fiction.

The Haggis is a tripedal organism, having one long and two short legs. The body is almost completely round and devoid of hair. Issuing from the centre of its face is a large 'trumpet like' nose. The Haggis is about a foot high.

The first notable feature we observed was that there appeared to be two varieties of Haggis - those with the long leg on the right and those with it on the left. We later found these to be male and female. Because of their leg structure Haggis can move very rapidly around the contours of a hill (males go clockwise and females go anticlockwise). If a Haggis wishes to climb a hill it has to contour extensively; however, to go down, it simply folds up its legs and rolls down with the agility of a mountain boulder.

The Haggis is entirely nocturnal and it issues a mating call (through its large nose no doubt) sounding not unlike human sound. During the mating season a male and female approach each other in a forward direction and undergo preliminary identification rituals. When each is satisfied that the other would be a suitable mate they race off backwards around the mountain. Mrs. Whitehouse will be pleased to learn that no-one was agile enough to reach the other side in time to see what happened when they finally met…

There were certain Haggises which went around in the opposite direction to their sex. These, needless to say because of their leg structure, were inclined markedly from the straight vertical.

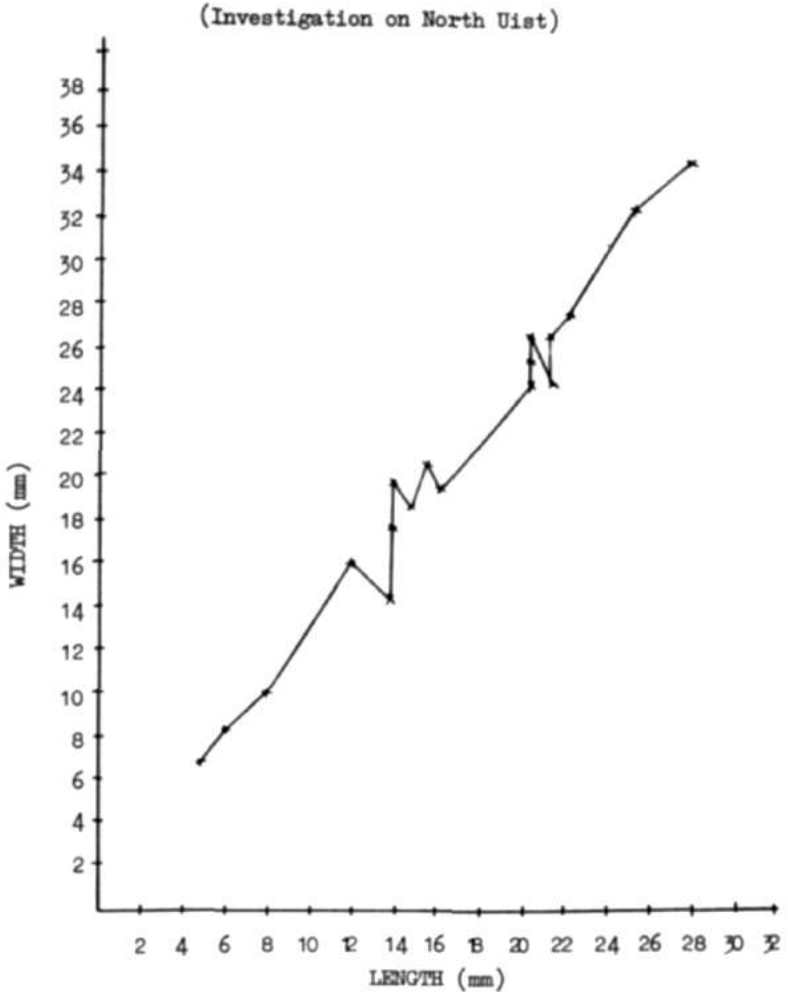
Among the many and varied propositions as to the Haggises position in the animal kingdom, the most attractive was that it was the larval stage of the Loch Ness monster. Those interested in learning more on the Haggis behaviour may wish to know that a paper will be read to the Royal Society in the New Year.

RICHARD JUCKES - KNOYDART

COMMON SHORE CRAB PROJECT

Method

Twenty-one crabs were picked up from a stretch of shore approximately twenty yards square. They were washed, identified and measured and a graph plotted to show the variations in size.



SEA-SHORE ZONATION (RHUM)

The study was carried out on the rocky shore on the western side of the island - the part most exposed to the weather. The beach consists of a region of boulders just above the low tide mark, followed by a rocky outcrop rising above the boulders to the high tide mark.

To examine the zonations of life on the shore four rock pools at different levels were chosen and surveyed with a level to find their relative heights. Each was then examined individually and its contents recorded. The percentage cover of each variety of alga encountered was estimated and the approximate numbers of each animal) species noted. The percentage cover figures do not add up to 100 in each case, since some species overlapped, and bare rock was present in some pools.

Rock Pool 1

Distance below theodolite = 2.28m Area: $3m^2$

FLORA:

Chaetomorpha linum	40%
Enteromorpha intestinalils	20%
Lithophyllum incrustans	1%
(Fucus serratus - washed up)	

FAUNA:

Chthalamus stellatus	100 (barnacle)
Littorina littorea	25 (periwinkle)
Amphipods	numerous
Goloy	1

Rock Pool 2

Distance below theodolite = 2.80m Area: $0.8m^2$

FLORA:

Bifurioria bifuriata	25%
Corallina officialiinis	20%
Enteromorpha intestinalis	5%
Fucus serratus	5% (serrated wrack)
Ulva lactuca	2%
Lithophyllum incruatans -	rock entirely covered but only 50% was actually living

FAUNA:

Patella vulgate	13 (limpet)
Chthalamua stellatus	50
Littorina littoralis	2 (flat winkle)
Actinia eguina	5 (sea anemone)

Rock Pool 3

Distance below theodolite - 4.42m Area: $.5m^2$

FLORA:

Halarachrlon ligulatum	50%
Enteromorpha linza	10%
Lithophyllum incrustans	90%

FAUNA:

Chthalamus stellatus	100
Patella vulgate	17
Mussel (Hytilus edulis?)	numerous, small, attached to Halarachrion
Goby	1

Rock Pool 4

Distance below theodolite = 6.37m Area: $1m^2$

FLORA:

Enteromorpha linza	69%
Chaetomorpha linum	5%
Chondus crlspus	1% (carragheen)
Ulva lactuca	1% (sea lettuce)
Cladaphora rupestris	1%

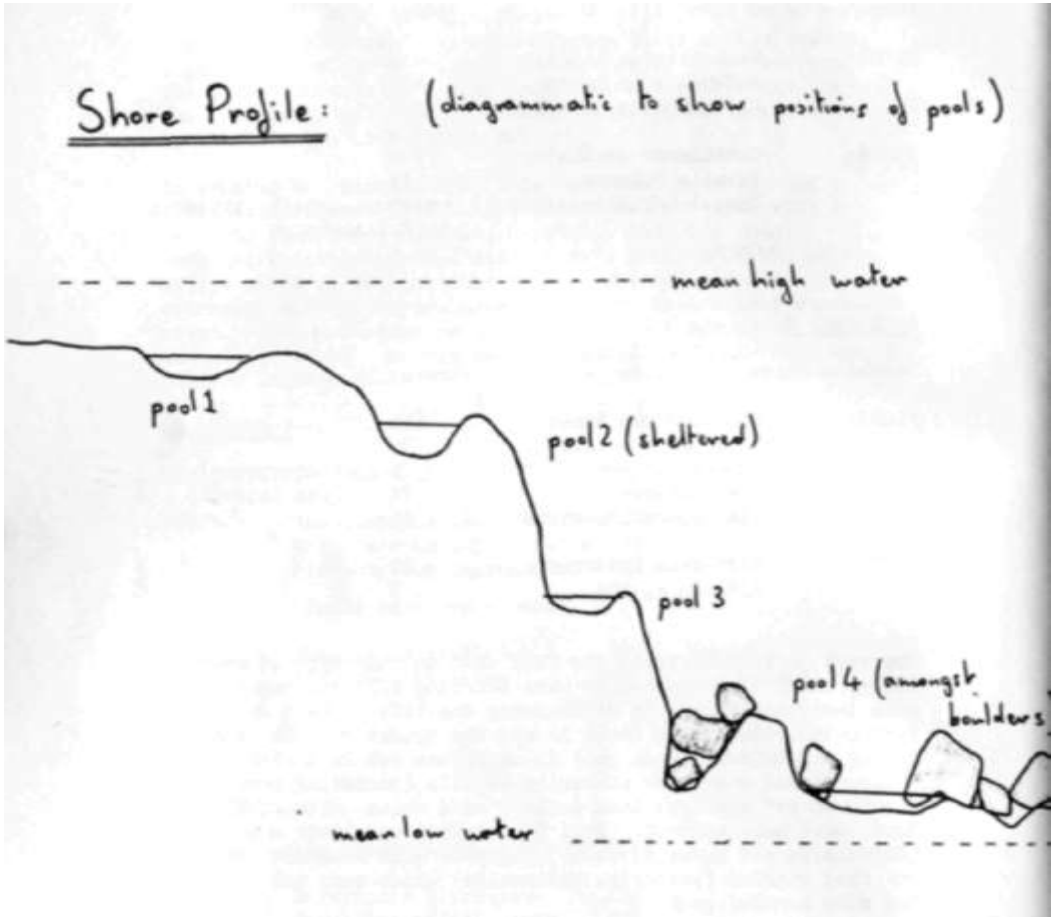
FAUNA:

Littorina littorea	20
Actinia eguina	7

The rock pools illustrate the fact that on this type of rocky shore, which is subjected to wave pounding all year round, the most important factor in determining the life present at a particular site on the beach is not the height so much as the amount of shelter. Rock pool 2, which was set in a cleft in the rocks, showed a greater diversity of life (including several "lower shore" species) than pools 3 or 4 which, although lower down, were more exposed. Pool 2 contained two lower shore species (Bifuriaria and Fucus serratus) together with anemones (Actinia) and flat winkles (Littorina littoralis) which were not found in the more exposed pool }•

The only clear trend which emerges is the replacement of Enteromorpha Intestinalis by Enteromorpha linza lower down the shore. Both are filmy green weeds which are abundant at their respective levels on the shore.

CHRIS BUCKLY AND BRUIN THOMPSON



A STUDY OF THE MUTE SWAN POPULATION ON SOUTH UIST

Although this project is definitely not the brainchild of the SHS most of the members of the South Uist expedition spent many hours helping Chris Spray - an ex-SHS man, himself - gather his data. We hope that future expeditions to the island may be able to offer Chris further help.

Dave and Angle

Firstly, many thanks to all members of the SHS for your help. I hope the expedition members enjoyed the unusual opportunity to get soaking wet and exhausted wading or canoeing in and through the Lochs. It is always difficult to know how well inexperienced folk will fare in such a situation, but I was most impressed by everyone's willingness to help, to do what was asked and the few complaints about conditions.

For the record, we managed to catch 62 adults on East Loch Bee on the Saturday after you left, as well as 2 broods of cygnets, and then a further 52 adults on Tuesday on West Loch Bee. The Mid Loch Ollay catch (our first attendance - D.& A.) was the most successful with 115 adults and we also did a much smaller flock the day after West Loch Bee catching 35 up on North Uist. So the total was 264 non-breeding adults, 19 breeding adults, and 102 cygnets (from 23 broods), or a total of 383 Mute swans (we also caught a further 5 Whoopers).

We were "making British history on the bird-ringing front, as these were the first collars put on wild birds in Britain. Similar collars have been used on swans in Russia, Sweden, America and New Zealand, but until now only plastic 'Darvic' leg rings have been put on swans in Britain. Collars have been used in this particular study because of a number of factors; firstly, swans here rarely get out of the water to enable a leg ring to be read; secondly, swans in the Uists are wild compared to swans elsewhere in the U.K. and are very •difficult to approach, so leg ring numbers would be too small to be read; thirdly, in an area where there are a lot of swans and relatively few people it was an ideal place for the first collars in Britain, since if any major problems did occur it wouldn't be so bad as if it had occurred in Richmond ponds, Poole Harbour, Abbotsbury or anywhere else where swans and people are in close contact. In addition I was interested in seeing if any of the Uist swans do migrate off the islands, and whereas leg colour rings are fairly inconspicuous neck collars might be noticed and reported back to me.

So, the main aims of our 10 days catching and ringing can be taken as follows:

(a) To individually mark swans, to see whether the Uist population is a self contained one or contains migrant birds.
(b) To get data on local distribution of marked birds after the moult period.
(c) To collect data on sex ratio, age structure and general condition of the birds in the moulting flocks.
(d) To take blood samples for work on blood proteins and genetics.
(e) In addition, the ringing of cygnets should provide information about juvenile survival and dispersal.

Obviously I haven't analysed the mounds of data we collected yet, but as an indicator of what sort of information can be gathered the following facts have already emerged. Out of the total 264 flock birds we caught there is a marked excess of males (rough ratio of 3:2), and an amazing lack of one year old birds (only 4½% of all caught were identified as birds hatched in 1977)- The latter suggests 1977 was an atrocious breeding season, and that the population as a whole is a long lived one, with birds not breeding until quite an advanced age. The overall aim of the project, which is a 3 year government-financed research project based at Aberdeen University, is to understand the processes underlying the natural regulation of numbers in an isolated, self-contained population of wild swans. Mute swans have been well studied in Southern England by various people, but there, swans are at least partly maintained by man, and also are subject to a high rate of mortality from unnatural causes (overhead wires, ingestion of lead shot, etc.). Southern stocks of swans are in fact declining in number, whereas from what little is known about the Hebridean situation the population here is stable or even increasing slightly. Much of my work, therefore, is directly comparable to work being done elsewhere, and the comparison of results (when I get then) should be very revealing.

Unfortunately, due to the wild nature of swans in the Uists, the methods regularly employed in England for catching swans - feeding them bread and then catching them with a swan pole, or catching them at the nest when they are most aggressive - just won’t work up here. This, therefore, only left one option; to catch them when they are in full wing moult, and hence flightless, and that is what we were, with your assistance, trying to do. Basically it was like driving sheep into a pen, but, unlike sheep, swans are very reluctant to go precisely where you want them to - hence the need for a lot of canoes, people on the bank and careful planning.

Once caught, we had a process line going, starting with the swan being tied with 2 bandages to stop it moving away. Each swan then went along the

line being ringed, (with a standard British Trust for Ornithology ring) collared, (with our specially designed collars) aged, sexed (by cloacal examination), weighed (Min. 5.3 kilos for a female, Max. 13.5 kilos for an adult breeding male), and then 3 measurements taken, wing length (gives an idea of when it began moulting), tarsus bone length and .-skull-bill tip length (which together give a better indication of size than weight alone would). Lastly, a blood sample was taken from the leg vein, and was later centrifuged and deep frozen for analysis at Oxford University for research into the genetics of the swan population.

If you are coming up this way again, please get in touch. In the meantime, my best wishes and many thanks to all expedition members for your help.

CHRIS SPRAY

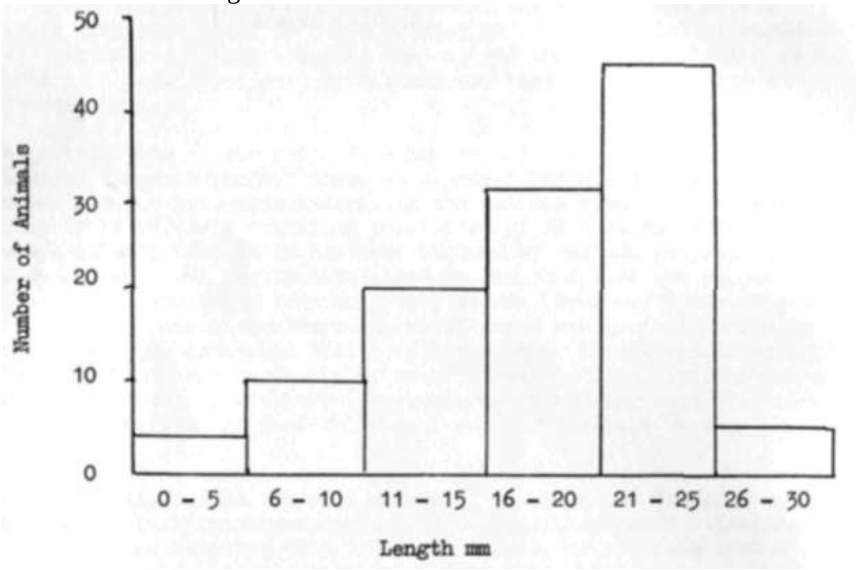
UNIVERSITY OF ABERDEEN (S. Uist branch)

ANIMAL SIZE PROJECT

The edible winkle Littorina Littorea was selected for the mini-project on the distribution of different sizes of animals. This periwinkle is described as being –

Shell usually ½- 1" high, sharply pointed, with marked surface sculpturing, usually dark grey-black, always with concentric darker lines. The curve of aperture is deflected as it approaches the junction with the spire to meet tangentially. Middle shore and below, on rocks and weed. Widely distributed and very common.

The shell length of one-hundred specimens was measured and then a graph drawn from these lengths:



It can be seen that the vast majority of the periwinkles were in the size range of 16-25 mm in length. Why should this be? One possible explanation is this:- growth in young periwinkles is rapid, slowing down gradually as they get older, they remain the same size once they have reached a certain age. Thus amongst the larger periwinkles there may be several generations while the smaller size ranges represent only one generation. This would account for the greater numbers of large periwinkles.

NORTH UIST (SIMON ATKINSON)

PAST EXPEDITIONS OF THE S.H.S.

EXPEDITION	YEAR	LEADER
Geometra	1962	John Abbott
Rhum	1965	John Abbott
Geometra	1965	Tim Wilcocks
Mingulay	1964	Martin Child
South Rona	1964	John Abbott
Raasay	1964	Richard Pountaine
Geometra	1964	James Emerson
Harris	1965	John Abbott
Jura	1965	Johnny Ker
Raaaay	1965	Clifford Fountain*
Morvern	1965	Jim Hardy
Lewis	1966	Roger Dennien
Harris	1966	Alan Bateman
Jura	1966	Andrew Wilson
Colonsay	1966	Chris Dawson
Dingle	1966	John Hough ton
Mingulay	1967	Kenneth Huxham
Rhum	1967	John Dobinson
Harris	1967	Andrew Wilson
Lewis	1967	John Abbott
Colonsay	1967	John Jackson
Vatersay	1966	Phil Renold
Lewis	1968	David Cullingford
South Rona	1966	Chris Hart
South Uist	1968	John Cullingford
Colonsay	1966	Alan Bateman
Shetlands	1969	Chris Dawson
South Uist	1969	John Cullingford
Lewis	1969	John Hutchison

EXPEDITION	YEAR	LEADER
Rhum	1969	Chris Hart
Colonsay	1969	Roger Trafford
South Uist	1970	Geoffrey David
Shetland*	1970	David Vigar
Fladday	1970	Mike Baker
Lewis	1970	Alan Howard
North Uistt	1970	Phil Renold
Ulva	1970	Alan Fowler
South Rona	1971	Roger Weatherly
Rhum	1971	Phil Renold
Jura	1971	Charles Hooper
Colonsay	1971	Alan Howard
Mingulay	1971	Hugh Williams
Muckle Roe	1972	Ray Winter
South Uist	1972	Alan Fowler
Lewia	1972	Gavin Macpherson
Raasay	1972	Paul Caffrey
North Uist	1972	Roger Weatherly
Harris	1973	Phil Renold
South Uist	1973	Alan Fowler
South Rona	1973	Jim Turner
Rhum	1973	Mark Rayne
Jura	1973	Dave Bradshaw
Colonsay	1973	Alan Howard
South Uist	1973	Jl» Turner
Raasay	1974	Peter Carlisle
Harris	1974	John Hutchison
North Uist	1974	John Cullingford
Outer Isles	1974	Paul Caffery
Colonsay	1975	Phil Renold
Jura	1975	Lawrence Hall
South Uist	1975	Alan Evison

EXPEDITION	YEAR	LEADER
Raasay	1975	Gavin Macpherson
Mingulay I	1975	Nick Deeley
Mingulay II	1975	Nick Deeley
Lewis	1976	Paul Caffery
Harris	1976	John Bromley
South Uist	1976	Mike Hayward
North Uist	1976	Alan Fowler
Rhum	1976	Roger Weatherly
Lewis Uig Sands	1977	Nick Deeley
Jura	1977	Dave Harding
Colonsay	1977	David Lennard-Jones
Lewis Mealista*	1977	Phil Renold
Knoydart	1977	Craig Roscoe
Loch Shiel	1977	Peter Liver
Raasay	1978	Roger Weatherly
North Uist	1976	Simon Atkinson
South Rona	1978	Mike Hayward
South Uist*	1978	Dave and Angle Crawford
Rhum	1978	Humphrey Southall
Knoydart*	1978	Jim Turner

* denotes mixed expeditions