

The Atlantic Seal From Island of Skomer: Ed J. Buxton & R.M. Lockley (1950)

Whatever primeval fires once shaped the molten rock of which Skomer is fashioned, the island as we know it now was hewn by the sea's waves and tides. It was the sea that cut through the weathering rock to make Jack Sound, and later chopped off the eastern end of the new island with the racing tide of Little Sound. In time - perhaps no very long time either - the sea will tear down those last few yards of rock that separate North and South Havens by the windy isthmus called the Neck, and then another island will lie between the remains of Skomer and Middleholm. The sea is for ever shovelling away the debris that falls from the cliffs, broken down by sun and wind and rain, and here and there below the sheer cliffs of the island there are beaches of shingle whose tops are washed only on spring tides or in storm. Elsewhere the sea has cut into the softer rock, and mined great caves far under the island. At the eastern end there is the Lantern, a high and spacious place with three entrances, from north, south and east. On the floor of this cave is a bed of shingle which shifts in the storms, so that sometimes there is a platform well above the reach of most tides, and at others a hollow which holds water too deep, even when the tide ebbs, for a man to wade through. There are smaller caves, some with the sea always washing to and fro in them, others which can only be entered when the tide is out; some are shallow and go but a few yards into the island; others go far and deep. Of these the deepest is the cave on the east side of South Haven which has long been known as Seal Hole. Here a high arched entrance leads into a cave whose floor is covered with polished boulders that glisten in the half light. After 20 or 30 yards the cave turns sharp left, and then runs for 40 or 50 yards due north, narrowing all the way and with the roof coming lower till near the end one must stoop as one gropes along. In this last narrow passage there is a floor of fine, close sand, and here, at this distance from the sea, the water only laps gently even in days of south-westerly gale. There is a second entrance a little way past the bend in the cave, and the mouth of this is always awash. It is this entrance, with its gentle slope of rounded pebbles; that the seals mostly use.

These seals, the Atlantic 'grey' seals, are the most impressive of all the creatures that inhabit this frontier between land and sea. They are mammals, animals that give birth to living young and suckle them. They left the land to live in the sea at a more recent date in the world's history than the whales, or their nearer relatives, the manatees and dugongs, seal-like and principally vegetarians, whose skeletons reveal no hind legs as the skeletons of the true seals do, but only the developed and adapted forelegs. Seals must still return to the land to mate and to bear their young, as the whales never do. But when they come to land they remain near to the sea, and so for a few brief weeks in autumn possess the shingle beaches and the caves, the places where land and sea meet in endless conflict.

The Atlantic seal is the rarest of all the seals in the world, and the great majority of its kind live and breed about the shores of Britain. Their metropolis is North Rona, whose name means the Seals' Island, and where at the end of 1938 Dr. Darling saw 5,000 ashore together, which he considers may well have been half the Atlantic seals in the world. There, and elsewhere about Scotland, these seals come ashore in large numbers to breed in the open, on the turf plateau of uninhabited islands. And once they have reached this inland mating and breeding ground neither bulls nor cows return to the sea for some weeks. They are safe enough there (except when man goes to slaughter them); the expenditure of time and energy required to climb so far as they do from the sea - perhaps as much as a quarter of a mile, and 300 feet up from the tide-line - is too great to be often repeated.

But in Pembrokeshire the cliffs are usually too sheer for the seals to climb out on to the top of the islands; and on uninhabited Grassholm, where they could reach the top, they do not breed. On Skomer and on Ramsey and elsewhere, therefore, these seals stay close to the water's edge, returning at once to the sea when any danger threatens. Indeed, they spend much time in the sea

even when undisturbed, and do not seem to fast during the breeding season as the seals of Rona must.

This coast has therefore modified the life of the seals in several ways, and the account here given must be regarded as an account of the Pembrokeshire colony only, which is by no means typical of the species. There are other colonies which inhabit caves, in North Wales, in Ireland and Scotland and on the north coast of Devon and Cornwall, but probably the majority do not.

When we first came to the island one or two seals were to be seen most days either swimming offshore or lying out on a low flat rock on the sheltered side of the Garland Stone. On April 15th, a warm, sunny day, there were 14 basking together there, but so large a number was unusual. A few remained round about the island during May and June, many of them young seals in their first year, but old bulls and cows were also seen. At the end of June there were tracks of a seal in the sand which forms a little beach at the end of Seal Hole, and a cow was swimming outside South Haven. On visits to Grassholm at this season many seals were to be seen lying out on their favourite rock on the exposed western side, below the gannetry. This island, as well as the reefs of the Smalls, six miles west of Grassholm, seems to be a collecting ground, where the seals come before moving to the inner islands to breed. Where they wander in the first half of the year is not properly known, but it seems likely that they spread round the neighbouring coasts, and perhaps do not travel beyond the open sea. They are seen at Skokholm all the year, but not numerous in the months December to March. (There is a colony to the west, off the east and south-east coasts of Ireland, on Lambay and the Saltee Islands, and others across the Bristol Channel on the mainland coast, and on the Isles of Scilly. It is not known whether the Pembrokeshire seals have any contact with these.) When the seals come in to Grassholm they may sometimes be crowded very close together on the rocks, but in spite of this there is little quarrelling, and no attempt to defend territory. They are resting, 'basking' we say, for they appear to enjoy the warmth of the summer sun, though their thick blubber must make them more or less indifferent to cold. But certainly they seem to bask on the rocks on sunny days in preference to cold or windy days; and on days of storm, when the sea will not let them climb out on to the foaming rocks, they play and dive in the surf below the cliffs, when the strength and vigour of their bodies is beautiful to watch.

The Atlantic seal is the biggest and most powerful of our native animals: an old bull may weigh 7 cwt. and will be about 9 feet long. The bull may be distinguished from the cow not only by his greater size, but by his darker colour, and by the deep wrinkles which furrow the sides of his neck; and his underparts are usually darker than in the cow. The cows are usually a light slate-grey on the back, but on the chest and belly they are a light yellowish fawn, dappled with dark spots, like the breast of a mistle-thrush. When they dive they often show their thrush-patterned breasts as they go.

The tracks of the cow seal on the sand in Seal Hole at the end of June suggested that it would not be long before she came in to drop her calf, and the first calf was born there some time in the first week of July. Throughout the month their numbers about the island continued to increase until, by the end of the month, there were about thirty to be seen every day. On July 24th a calf was born on the open beach of Castle Bay, the first to be born outside a cave. We did not see the birth, but next morning part of the umbilical cord was still present, and the calf could only have been a few hours old when we first saw it. Its mother was then on the shore, between her calf and the tide, while a bull was swimming close inshore accompanied by another cow. The length of this new-born calf was about 3 and a half feet.

The Atlantic seal is polygamous. In Scotland the bulls climb ashore and establish a small territory which they defend against rival bulls; where they mate with the four or five cows that come there to drop their calves. In Pembrokeshire the bulls seem to patrol a small stretch of coast: their territory may be a cave, or a beach, or two or three tiny adjacent beaches. This bull, an old black beast with a grey nose, served the cows on two beaches, and spent much of his time swimming to and fro between them.

Now we watched, unseen, from the cliff top. The cow began to moan, and the soft, melancholy sound reverberated against the cliffs about her. The bull had come in to meet the cow, and they lay muzzle to muzzle at the edge of the tide, the bull silent, the cow moaning all the while. Then the bull heaved himself out of the water and shuffled round till he lay alongside the cow, and so they held or patted each other with their fore-flippers, with their muzzles just touching the water, and copulated. Afterwards the bull gave a soft sharp bark, returned to the sea and swam out of the bay. The cow lay for a while with the tide washing over her muzzle, and then began to clamber up the beach again to suckle her calf.

It is not normal for copulation to take place so soon after the birth of the calf: this more often occurs when the calf is about two weeks old. The newly-born calf is clothed in long white fur, which may have a greenish-yellow tinge, and is very soft, and greasy to the touch; and the exposed patches of skin, on muzzle and flippers, are pale pink. At birth it weighs nearly half a hundredweight, and the skin lies in loose folds about its body. It is then very active and scrambles about vigorously, and its hind flippers are used on land as they never are after the first day or two. It is perfectly well able to swim, and (if it is born at a spring tide or in stormy weather) it may need to save itself by swimming. But it is not till it has lost its long coat of fur that it swims deliberately. Its mother's milk is so rich that the growth of the young seal is astonishingly fast - we estimate that it is at the rate of about 2 lb. a day. Within a few days all the looseness of the skin has been taken up and the calf looks like a white motionless barrel. It moves very little now. It spends most of its time asleep, often lying on its back, with its flippers folded on its chest. The mother suckles it for a quarter of an hour or twenty minutes every two or three hours in the first few days, and afterwards at rather longer intervals. The teats are withdrawn, except during suckling, to prevent damage when the seal heaves herself along the shore. After suckling, the cow usually scratches the calf's back with her foreflipper, a habit which the calf clearly enjoys and expects. When this calf was four days old the spring tides must have floated it off the top of the beach, and for two or three days we did not see it - perhaps the cow had guided it into a small cave at one end of the beach. But the weather was quiet enough then, and it survived on that beach till it was ready to go to sea. In stormy weather the cows try to protect their calves by lying between them and the breaking surf, but they cannot always save them, nor are the calves always able to haul themselves out of danger. In some of the Pembrokeshire caves they may be battered to death as easily as on the open beaches of the Scottish islands, but in a deep, well-guarded cave like Seal Hole, the calves are safe in the heaviest weather, as we were to find later in the season.

At the end of July there was a well grown, weaned calf in the end of this cave, ready to go to sea, and already abandoned by his mother. The long white coat begins to moult at the end of a fortnight, and often one may find the calf in its short blue-grey coat lying surrounded by a ridge of this white fur. The calf is weaned about this time (two to three weeks old), and thus has a shorter infancy than a mouse! The spongy tissue below the calf's skin is filled with blubber and there is a sufficient reserve of food in its body to keep it during the week or two that elapses between its weaning and its scramble down to the sea. It must find its own way to the sea just as the young puffin or shearwater must; on Skomer at least the young seal has often never seen the sea (though it will have heard and smelt it) before it makes its first journey out of the cave where it was born.

It has been suggested that the seals of Pembrokeshire breed in the caves for lack of open beaches, where they are undisturbed by man, and that they only go into the caves when beaches have been occupied. It may be true of the species - it may be that the normal habit of the Atlantic seal is to breed in the open, but it is certainly not true of the members of the seal colony on Skomer. The first calves of the season are usually dropped in Seal Hole, and not in the daylight entrance, but in the pitch-dark, inmost recesses. Beaches may remain long unoccupied, or may be used, like Skokholm North Haven, only now and again, at intervals of several years; but the caves are always used. How many seals were born in Seal Hole in 1946 cannot be stated, since we left before the season was over, but from early July onwards there were always one, two or three

calves there, and it seems almost as if the Skomer seals prefer caves to open beaches. But more breed on open beaches on Ramsey Island than in caves, although there are plenty of caves on Ramsey, and they are all used if sufficiently provided with pebble beaches above normal high-water mark. It may be that in some remote past these seals first learnt to use cave-beaches because the open beaches could not accommodate them, but that is speculation, and here we are concerned with observed facts. We know that at present, on Skomer and Ramsey, the cave-beaches are usually occupied first, and then the open beaches.

In Scotland it seems that mating usually takes place in the bull's territory on land, as we should expect, since the bulls remain ashore for several weeks, fasting, until they are spent, and during that time serve those cows which come into their territory to drop calves. But in Pembrokeshire it seems likely that copulation normally takes place in the sea, though it may occur, as in the instance already described, on the beach, or (probably) inside a cave. The more normal behaviour may best be described by a quotation from the field notes for September 14th. The cow here was on the pebbly shore of North Haven - the shore where the yacht was wrecked a few days later and had given birth to a calf there thirteen days before. 'The bull was resting on the beach at first, near the cow and her calf, but he soon went into the sea and swam there at the edge till the cow followed. He then swam across to head her off, but she went into the water and snapped at him. Soon after the bull held on to the cow with his foreflippers, and rested his head upon her neck as he lay full length along her back. His hind quarters were twisted to one side to meet the cow's frontally. More than an hour later they were still in the same posture, both fast asleep at the bottom of the sea - which was only a few feet deep and transparent to us from the cliff-top. At fairly regular intervals they rose to the surface, still clasped together, and still asleep, to breathe. Their eyes remained fast closed till they sank again together. At last they woke, and before long the bull slipped his hind quarters off the cow as they rose to the surface, he still holding her with his flippers. When he released her she dived under him, then swam brushing against his side.'

The cow normally comes on heat about a fortnight after the calf is born, that is, shortly before the calf is weaned, as on this occasion. The period of gestation is therefore eleven and a half months: a very long period in contrast with the brief two or three weeks during which the calf is suckled. This is presumed to be a necessary adaptation to minimise the risks that would accompany a prolonged stay ashore in an animal so helpless there. But it must be remembered that this seal has only one enemy on shore to-day - man - and since the periods of gestation and infancy must have been fixed for the species long before man ever molested a seal we should probably look elsewhere for the explanation of so unusual an arrangement. It may perhaps be due to the social behaviour of the seals: to their polygamous habit, and to their obviously gregarious nature when ashore. It is more than likely that, as in the roe-deer, the fertilised ovum in the grey seal undergoes a period of quiescence and may not begin to develop very actively until the spring.

We have seen that before the seals come in to their breeding places they gather together on the sea-washed rocks, notably off the Smalls lighthouse and off Grassholm, and presumably there accustom them-selves to each other's society, in preparation for the crowded breeding stations. They are not observed to quarrel much, nor with the ferocity that sometimes comes upon them at the season of greatest sexual activity. Before they gathered on these rocks the seals had lived more independently in the sea in late winter and early spring, not hunting in packs, nor meeting their own kind except briefly and casually along the shore and in the world of short horizons below the water. For a while the youngest seals, a few months old, may be seen playing together in twos and threes in some Pembrokeshire bay on a quiet winter's day, but after this most occurrences we have noted have been of single individuals. It is desirable that, before they come ashore to breed, they should learn to tolerate each other's presence, out of their usual opaque element, lest too much quarrelling on the breeding ground should endanger the species through injury to the small and more or less defenceless calves. Observations at Grassholm show that they are already together in small companies in April: visits we have made in April (twice) gave counts of 20 and 40; in May, five visits gave counts of 30, 20, 40, 20, 10; in June counts were 60, 30, 25, 25; in July 15, 25, 30; in August 46, 50, 60, 30, 40, 35; in September 50, 30, 50; and in October 60. A visit on

November 27th, 1936, showed that only 12 seals (8 adults and 4 yearlings) were present at Grassholm; there were no young ones under a year old. Records kept by the keepers at the Smalls lighthouse from February 2nd to June 9th, 1948, showed that there was a gradual increase in the numbers of Atlantic seals basking or resting on the rocks each day there, from two or three in February to fifty or sixty in late May and early June.

It is likely that the situation and topography of the Welsh islands limit the seal's gregariousness much more severely than do those of their breeding places in Scotland. On these narrow beaches and caves they cannot congregate in the huge numbers of Rona. This may be the reason why the breeding season is spread over a much longer period, from the beginning of July to December, than in Scotland, where the season lasts only from mid-September to mid-November: two months instead of five as in Wales. Presumably the first cows to calve are served by the older stronger bulls, and the last by the young bulls that are not yet strong enough to challenge their elders in their full vigour. The earlier calves are likely to have a better chance of survival than the later, as in July and August the beaches are less often swept by gales than in the later months. It may be that the Welsh bull seals are able to serve a greater number of cows, both because of a more protracted season and because they remain swimming in the sea most of the time where it may be supposed (though it has not yet been proved) that they do not starve at this time as Scottish seals must. It seems probable that the cows also feed during the period when they are suckling their calves, unlike the Scottish cows; and certainly we never saw them emaciated as they are on Rona, where Dr. Darling estimated that the cow loses about 200 lb. between calving and her return to the sea. We did however notice that some cows, when quite undisturbed by man, both on Skomer and Ramsey, and also on one occasion on Skokholm, would remain with their calf without visiting the sea (and therefore without feeding) for four or five days at least.

This Welsh colony of Atlantic seals, of which those on Skomer form only a small unit, flourishes today, and is little subject to persecution. (It is true that one day we found some naval men ashore on the island with the confessed purpose of shooting seals. They were dissuaded.) But owing to the inaccessibility of the tops of the islands, and the scarcity of suitable caves and beaches it is unlikely, even under very favourable conditions and protection, to attain anything like the size of the metropolitan colony of North Rona. The extension of the breeding season does enable the seals to increase further than if it were limited to two months, but the whole colony of Pembrokeshire seals is to be numbered in hundreds, not in thousands.

It is fortunate that we could contrast this colony with those other, quite different colonies so ably described by Dr. Darling in his chapter on the life history of the Atlantic grey seal (1947), to which for a more general account of the breeding of this seal we refer readers. Here we have been concerned particularly to describe the characteristics of the Skomer seals that bred in 1946 in Seal Hole, and Castle Bay, and Matthews Wick, on the beaches of South and North Havens, that visited in Bull Hole, and basked on the Garland Stone; the seals that watched us as we stood on the cliffs at the Spit, or Tom's House, or in Pigstone Bay, and that came floundering past us, flinging the pebbles to either side, as we flattened ourselves against the walls of the Lantern and the other caves of Skomer.

It only remains for us to round off this account with some notes on the main breeding colony of Pembrokeshire seals on Ramsey Island which lies eight miles north of Skomer. This was studied by members of the West Wales Field Society for short periods in the autumns of 1945, 1946, and 1947, and showed a similar protracted breeding season. But the colony is much larger than the Skomer one: some 200 calves were born there between July and December in each of these autumns. From the information which this census and other reports have yielded we are able to estimate that the total population of breeding cow seals in Pembrokeshire in 1947 was as follows: Ramsey, 200; Skomer, 50; North Pembrokeshire coast from St. David's to Cardigan Island, 60; South Pembrokeshire coast from Jack Sound to Caldey Island, 25 - total 335 breeding cows.

On one beach (Aber Myharan) on the south-east side of Ramsey a remarkable assembly of immatures, virgin cows, many young, and a few old bulls took place in these years. Between 70 and 100 gathered there, on a rough beach of large pebbles, boulders and sand which is submerged to the cliff-foot at high spring tides, and is therefore not suitable for calving cows. This assembly is akin to the gathering or reservoir of young bulls and virgin cows on the tidal rocks of North Rona as described by Dr. Darling, which was quite separated from the breeding group of mature cows, new-born calves and prime bulls inland on Rona. Here, at Aber Myharan, as at Loba Sgeir on Rona, the virgin cows are probably mated, presumably by the younger bulls and possibly those older bulls which have not secured territories (and harems) on the breeding beaches. When a boat approached Aber Myharan (which is practically inaccessible from the land - hence its selection, we suppose, by the seals), the assembled seals were a magnificent sight as they charged into the water in panic. As far as we are aware there is no other site of this description in Wales; and in fact North Rona is the only other seal ground where such an assembly has, to our knowledge, been recorded.

Eighteen Atlantic grey seal calves were marked (with variants of the letter W (representing W.W.F.S.)), sexed, weighed and measured on October 26th, 1946, on Ramsey. Particulars of these ten males and eight females are appended. They show that at birth the white-coated calf weighs approximately half a hundredweight. The average daily weight increase would appear to be about 2 lb. There does not appear to be a marked difference between the weight and size of the male and female either at birth or during the suckling period. Although these figures are insufficient for adequate comparison, they may be of interest as the first to be published of this species at the calf stage.

A single immature female grey seal was secured by A. N. Worden, and the skin and skeleton are now exhibited at the British Museum (Natural History). The vitamin A content of the liver and other organs was determined by Alan W. Davies, and recorded by him in his studies with Rodahl (1949) on various species of seal. The composition of the fat was studied by Hilditch and Pathak (1947) at Liverpool University. The histology of the tissues was studied by E. T. Rees Evans, University College of Wales, Aberystwyth.