

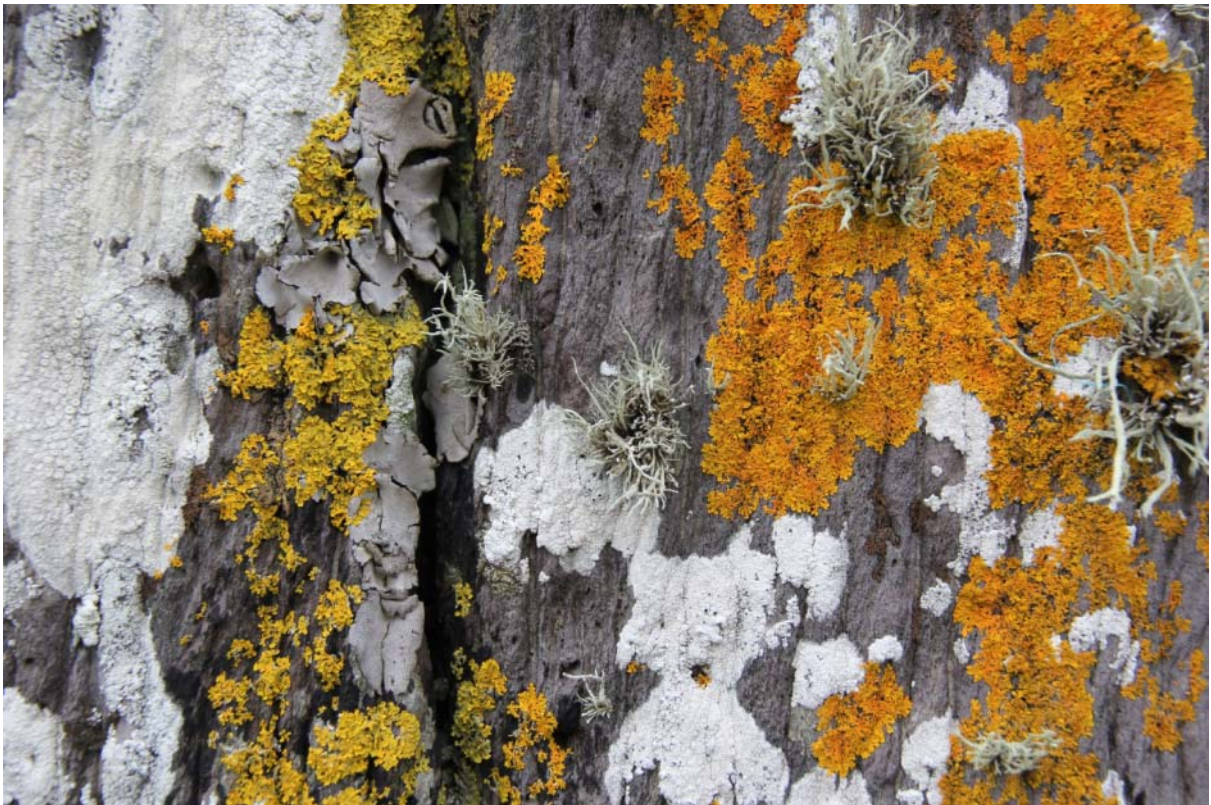
Lichens of Sherkin Island

by

Ishpi Blatchley

Ken Sandell

Chris Spurrier



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Executive Summary

The earliest lichen records for Sherkin Island date from the early part of the 20th century. Further work on the island was not undertaken until Sherkin Island Marine Station was established in 1975. The most recent study, reported here, was carried out in August 2016.

There are no published lichenology accounts for Sherkin so this report also collates all previous data.

203 lichen taxa were recorded from fieldwork in 2016 of which 10 (possibly 12) are new vice-county records for West Cork and 48 are new to the 10 x 10 km grid square (hectad) W02; evaluation of historic data suggests a further 3 vice-county records and 10 from the hectad.

103 species were additions to the island's own lichen inventory bringing the total to over 250 – the habitat diversity on Sherkin is a contributory factor to this remarkable species richness.

149 specimens were added to the Marine Station's lichen herbarium; there are now 143 different species represented in the collection.

W02 is believed to be in the topmost 1% nationally in terms of lichen species richness with around 340 reported to date – the evidence from the brief survey in 2016 suggests more are still to be found.

The distribution of lichens on the island and their associations with each of the major habitats are considered and an indication is given of the frequency of occurrence of individual species.

Sherkin lies within a Special Area of Conservation with Features of Interest that include "Vegetated sea cliffs of the Atlantic and Baltic coasts" and "European dry heaths" for which particularly good examples are found on Sherkin that support lichen (and wild plant) rarities.

Sherkin Island is possibly the 'type locality' for a new species of *Verrucaria*; the potential 'holotype' for this species now resides in the Natural History Museum collection in London; the Marine Station's herbarium holds one 'isotype' from this specimen and another has been given to Ireland's national collection in Dublin.

A specimen of *Hydropunctaria* may also prove to be a species new to science is still being examined by an expert in the family to which it belongs. Specimens of what is thought to be this same species had previously been found by Alan Orange, John Douglass and Andy Acton in different localities in the UK.

The discovery of *Gyalecta biformis* on Sherkin represents the first Irish record of this species.

The conservation status of each species is given and the importance of Sherkin is evaluated within a regional and national context.

County Cork's Biodiversity Action Plan for 2009-14 did not include any lichens, yet Sherkin's rich lichen diversity of 203 species recorded during this survey alone includes:

- 1 possible addition to the Irish and UK Flora – *Verrucaria* sp. indet.
- 1 addition to the Irish Flora – *Gyalecta biformis* and another possible addition to the Irish Flora - *Hydropunctaria* sp. indet.
- 3 species for which Ireland has an International Responsibility – *Degelia ligulata*, *Heterodermia leucomela*, *Usnea esperantiana*
- 2 Red Data Book (RDB – see page 96) Vulnerable – *Degelia ligulata*, *Teloschistes flavicans*
- 1 RDB Endangered – *Heterodermia leucomela*
- 2 RDB Near Threatened – *Usnea esperantiana*, *U.florida*
- 5 species considered to be Nationally Rare within Scotland – *Degelia ligulata*, *Ephebe hispidula*, *Gyalecta biformis*, *Usnea esperantiana*, or Great Britain - *Heterodermia leucomela*
- 10 Nationally Scarce (UK) species
- 2 listed on Schedule 8 of the UK Wildlife & Countryside Act, 1981 as being specially protected under its law
- 3 Priority taxa on the UK BAP (Biodiversity Action Plan) register
- 21 Maritime Indicator species

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Context

The idea behind this project began when one of us (Chris Spurrier), a former volunteer biologist, or 'bod', at Sherkin Island Marine Station in the early 1980s was invited to attend the celebrations in May 2015 that marked the 40th anniversary of the Station and the 80th birthday of its co-founder, Matt Murphy.

It was apparent from the exhibitions at that event, depicting the Marine Station's work over the years, that lichens were an underworked group compared to some of the other plant and animal studies that had been carried out there.

Matt recognised the potential importance of this group and welcomed the prospect of further study so Chris approached a long-standing friend from his local Field Club, Ishpi Blatchley, who is a keen lichenologist and active member of the British Lichen Society (BLS). Her specialist interest is churchyard lichens but she was willing to transfer her skills to a study of the marine and maritime lichen communities of Sherkin Island. When a friend and experienced fellow member of the BLS expressed an interest in joining this venture he was eagerly co-opted onto our mini-expedition, and so the three of us visited the island in the summer of 2016.

Beforehand we had gathered as much information about the island's lichen flora as possible, both from the Marine Station's archives and elsewhere; this is a process that continued after our visit. Matt was keen for all the data relating to Sherkin, that included those of our own study, to be consolidated into one report. We were also asked to produce an article of more general interest for the Marine Station's quarterly environmental publication, *Sherkin Comment*. A summary of our findings has also been published in an article in the recent summer issue of the BLS Bulletin (Sandell *et al.*, 2017).

Introduction

When the Marine Station was established at Sherkin Island in 1975 a lichen survey (McCarthy, 1975a, 1975b) was undertaken as one of the range of studies that were carried out by its volunteer biologists in that year. Prior to that, the only records of lichens from the island were from a herbarium collection and a few field observations made by the Cork-based lichenologist Lilian Porter when she was active in the area in the 1930s. Two further datasets for lichens were produced by biologists working at the Marine Station in 1986 and in 1999. 1986 also saw the creation of a lichen collection which was incorporated into the Marine Station's plant herbarium.

A field visit to the island by the present authors was made in August 2016 to further enhance the lichen information for Sherkin and contribute some more recent records.

As far as we are aware there are no published accounts of the island's lichens in the scientific literature apart from one brief mention so this report aims to address the issue by drawing together all existing data.

Ireland is home to around 1200 known lichen taxa, a number that is continually growing with each new study. Botanical recording has traditionally been based on vice-county distribution, of which there are 40 in Ireland (Praeger, 1901; Webb, 1980), but recent mapping of species richness utilises the more geometric pattern of hectads (10 x 10 km squares) which are the basis of the National Grid system. Sherkin Island lies within the Grid square W02, in West Cork, Irish vice-county number H3. The most recent census of the lichens of Ireland (Seaward, 2010) lists 656 species from West Cork, over half the number recorded nationally. Data from the British Lichen Society (BLS) mapping scheme extracted in January 2010 and accessed via

the National Biodiversity Network (NBN) Gateway in 2016 showed 241 species for National Grid square W02.

The six-day survey in August 2016 produced records of 203 lichen taxa, bringing the total for Sherkin Island alone to more than 250. These figures include 48 new additions in 2016 for the grid square W02, 10 new vice-county records for West Cork, one of which is also a species new to the Irish flora, one possibly yet to be described new to the Irish Flora and another previously unknown species that has yet to be described.

As a result of the dedicated work carried out by volunteers at the Marine Station over the past 40 years the islands of Roaringwater Bay have long been recognised as a 'hot spot' for vascular plants (Akeroyd, 1996; Akeroyd *et al.*, 2011) and indeed for many animal groups as well. The findings presented here suggest that the same criterion may well also apply to the lichens.

County Cork produced a Biodiversity Action Plan for 2009-2014, but it did not include any lichens in the list of protected species found within the county. Although there is no official Red Data Book list of lichens for Ireland (see p.96), several of the species that have been found on Sherkin are included in the equivalent inventory of endangered species for Britain (Church *et al.*, 1996). Sherkin Island lies within the *Roaringwater Bay and Islands Special Area of Conservation* (SAC) which notably includes within its attributes the dry heath, and vegetated sea cliff habitats that support several of these vulnerable species on Sherkin.

It is therefore hoped that this report will also draw attention to the conservation importance that Sherkin Island holds within a wider regional and national context.

Background

Sherkin Island is situated within Roaringwater Bay, West Cork in the south-western corner of Ireland. It lies close to the mainland and occupies an area of approximately 6 km². At its highest point the island rises to 112 metres on its hilly backbone, Slievemore, which provides shelter for other parts of the island. There is a wide diversity of habitat with small pockets of woodland although the majority of the land area is rough grazing and heathland where cattle are the main grazing animals.

The climate on Sherkin is dominated by the maritime influence of the Atlantic Ocean and shows few temperature extremes as a result of the effect of the warm Gulf Stream current. Because of its offshore situation the island also enjoys a relatively pollution-free atmosphere which enables several lichen species that are intolerant of atmospheric pollutants, such as sulphur dioxide, to survive/flourish here. Lichens are generally hardy and often resistant to the strong winds and salt spray that influence island habitats and on Sherkin they form a conspicuous component of the biodiversity.

Previous lichen studies

Through the immense contribution of its volunteer biologists, Sherkin has become famous for its natural history and in particular the studies of its wild flower flora, the rocky shore communities and the richness of the adjacent seas. Although the lichenology of the island has been explored on a few occasions, there are no prior publications of this work. Nevertheless, before our field visit in 2016, around 150 different lichens had been recorded on Sherkin and over

a third of those were represented in a herbarium collection at the Marine Station.

An account by Knowles (1929) gives details of the first two centuries of Irish lichenology. The earliest lichen records for Sherkin date from a little later in the first half of the twentieth century and are reported by Porter (1936 and 1948), the latter a supplement to the earlier work by Knowles, although Sherkin receives but a brief mention.

Lilian E. Porter (1885-1973) worked alongside Professor Renouf in 1934-5 mainly in connection with his survey of the Lough Hyne area, but her herbarium collection, which contains specimens collected between 1917 and 1944, included examples from Baltimore and Sherkin Island. The lichen herbarium, originally kept at University College, Cork, contains many specimens collected during the early work of both Knowles and Porter (Cullinane, 1971). Mrs Porter was associated with the collection during her husband's term of office as Professor of Ancient History at Cork University until his retirement in 1951. It is worth noting here that the accounts of Irish lichens by Knowles and Porter formed part of the foundation of the first Census Catalogue of British lichens (Watson, 1953) and the subsequent catalogues of Irish lichens by Seaward (1984, 1994 and 2010).

However, Porter (1948) only recorded 14 different species from Sherkin in August 1934, presumably from a rather brief visit to the island, with specimens of three of them lodged in her lichen herbarium. The collection also holds another 12 specimens from Sherkin although their origin was not specified in an earlier listing (Porter, 1936).

During 1975, the inaugural year of Sherkin Island Marine Station, lichens were one of the focal groups; they were studied by a young Pat McCarthy who was one of its volunteer biologists at the time. His

reports (McCarthy 1975a, 1975b) described the lichen flora from several islands within Roaringwater Bay in addition to Sherkin for which a list of species was given. These typewritten reports are reproduced in an appendix. Work on lichens in the area later formed the basis of his PhD thesis (McCarthy, 1981). The records of Sherkin lichens from 1975 (based on the cards he submitted later to the Biological Records Centre in the UK) are presented elsewhere in this report. Pat later devoted his life to a career as a lichenologist which eventually led him to Australia where he has recently retired.

Long-term monitoring of the rocky shore communities both on Sherkin and further afield formed a major part of the work of the Marine Station from its conception in 1975 until 2015. Lichens are an important component of the upper shore communities and data have been collected annually at 19 marked locations on the island in addition to seven separate sites that have been monitored monthly between April and October each year. Bishop (2003) produced a twenty-year analysis of the rocky shore ecology that includes lichen occurrences for the period 1981-2000. The lichen records from the monitoring programme are presented in tables in the Discussion section.

There are four lichens from the rocky shore list that are considered by us to be dubious identifications (see Discussion) although the difficulty of accurate species determination *in situ*, and by non-lichenologists in particular, is accepted.

In 1986 Sherkin's lichens were studied alongside a botanical survey of flowering/higher plants when three English botanists from the University of Reading visited the island. The party comprised Mrs Carol Hora, wife of a celebrated mycologist and lecturer at the university, and two younger colleagues, Stephen Jury and John

Akeroyd. It was at that time that a lichen (and moss) reference collection was established by Stephen Jury as part of the Marine Station herbarium in which lichens were previously represented by only four common species collected in 1984. Indeed, all 50 of the lichen species recorded in 1986 were underpinned by a specimen that was lodged in the collection.

During the following decade volunteer biologists at Sherkin Island Marine Station made further contributions to the island's lichenology. In 1997 six additions were made to the lichen herbarium by Leander Wolstenholme but none of them represented new species. However, two years later a study by Caroline Kingsnorth recorded 50 species from the island and she contributed a further 13 specimens. Seven species found on Sherkin were new to the collection; one other new species was from nearby Heir Island.

No further lichenology had been carried out until the present undertaking by which time 149 lichen species were known for the island and the herbarium contained specimens of 58 of them.

Other studies

As part of an evaluation of the conservation status of 'vegetated sea cliffs', which Ireland has an obligation to monitor under the EU Habitats Directive, a national Irish Sea-cliff Survey (ISCS) was begun in 2009. Following an initial desk-based study, 32 sites were selected for field-based investigation to provide baseline information (Barron *et al.*, 2011) that included a cliff section at Cloddagh North on Sherkin which was surveyed in 2010. The lichen communities were included as part of the assessment but because of the difficulties, acknowledged in the report, in identifying this group within the

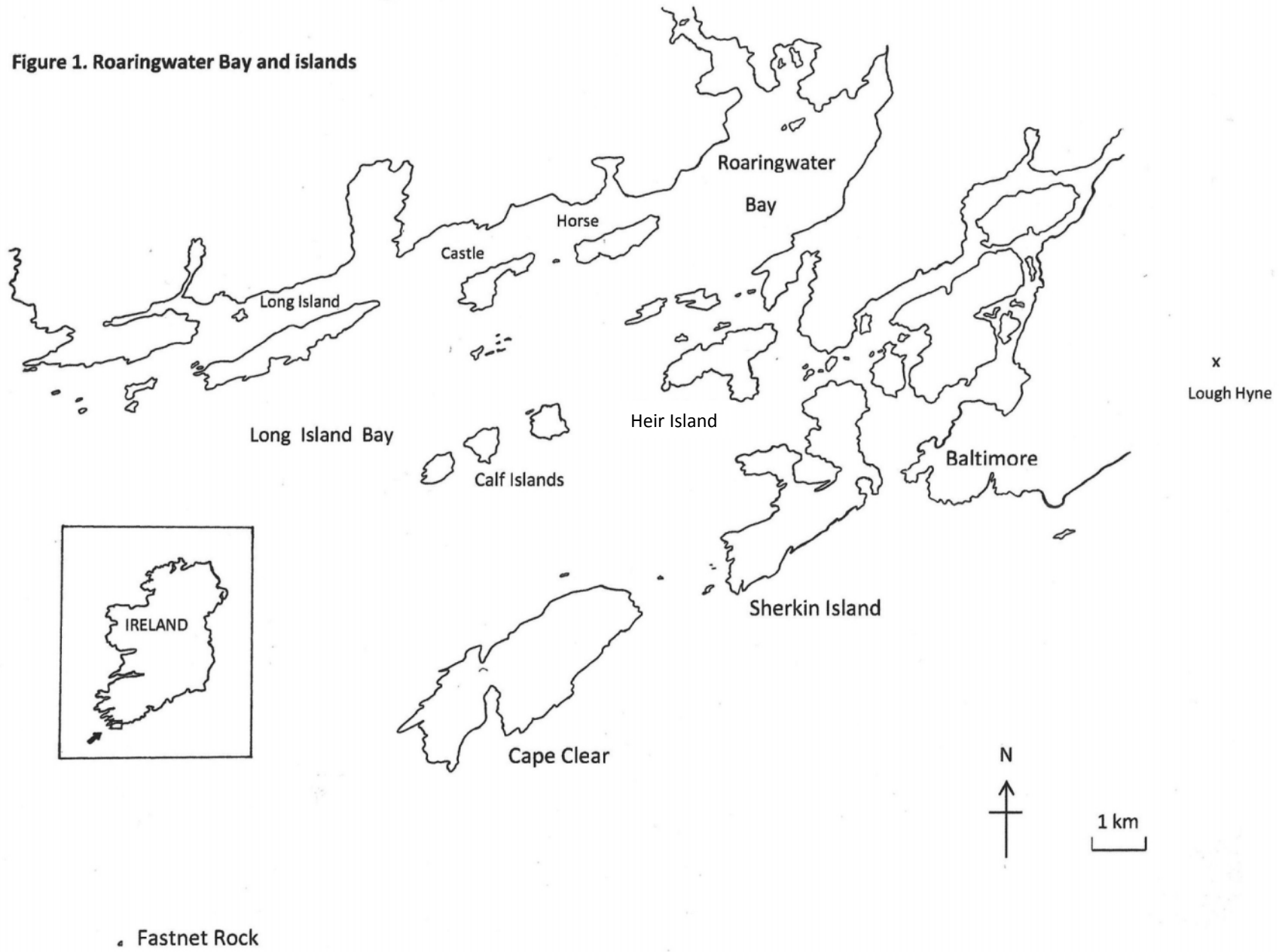
constraints of the remote techniques that were employed, no useful contributions to the lichenology for Sherkin were obtained.

The LichenIreland[#] project 2005-2010 was an initiative that undertook field recording from sites and habitats throughout Ireland, using new and existing recorders, in addition to collating previous lichen data on the Recorder database in order to determine the status and distribution of lichen species throughout Ireland. It focussed on underworked areas that were lacking or deficient in records. Sherkin Island was not included within the scope of the project, although nearby sites on the mainland at Baltimore and Lough Hyne were visited in 2006, and the latter subsequently in 2011.

Our small scale study on Sherkin followed very similar objectives and the results contained within this report will hopefully provide an important contribution to the wider aims of the project.

Footnote [#] LichenIreland is a collaboration supported by National Parks and Wildlife Service, National Botanic Gardens, Glasnevin, Environment and Heritage Service and the Ulster Museum, National Museums Northern Ireland.

Figure 1. Roaringwater Bay and islands



Geology

The areas of higher ground that constitute the islands of Roaringwater and Long Island Bays are arranged in linear series within an area of drowned valleys, or rias (Figure 1). Cape Clear and Sherkin are the largest of these islands, formed from the highest ridge that continues on the mainland running in a south-west to north-east direction.

The rocks on Sherkin are Old Red Sandstones, part of the Munster Basin that dates to the Middle and early Upper Devonian period. The lowest series is the Sherkin Formation which consists mainly of fine- to medium-grained greyish sandstones, which are often slaty, irregularly interspersed with more greenish or purple mudstones. The rocks are extensively folded to form near vertical strata (Plate 1) that have eroded to produce jagged rock outcrops and cliffs, particularly on the south side of Slievemore.



Plate 1. Rock strata at the western end of Slievemore

The Sherkin Formation is overlain by the Castlehaven Formation, predominantly finer and more readily eroded purple mudstones, which on Sherkin are seen at the most northerly part of the island near The Dock as well as in outcrops at the far south-west of Slievemore, where rock crevices provide damp niches that are favoured by certain lichens.

Because there are no exposures of Carboniferous Limestone on Sherkin, a calcareous rock that underlies much of lowland Ireland, the lichens that require a less acidic substrate are restricted on the island to man-made structures that incorporate lime-based mortars.

The acidic rock geology, and its influence on the island's soils, has a strong bearing on the lichen flora, although salt-spray can help to reduce acidity through mineral deposition. In a few localised areas wind-blown sand deposits with high lime content from shell fragments have produced a lime-rich habitat favoured by some plants (Akeroyd, 1996) but time did not allow us to investigate these areas for lichens during our visit. Although deeper soils have developed in parts of the island, most notably to the south of Kinish Harbour where areas of woodland have become established, for the most part the soil is thin and acidic, especially on higher broken ground where rocky outcrops are a feature. It is in these areas where the important coastal heaths are well-developed on Sherkin.

Habitat diversity

The use of the term 'habitat' in the context of lichens is normally applied to the particular substrate on which they grow rather than the broader sense of the word which describes the vegetative or structural environment in which they occur. The principal categories of lichens, based on the surfaces that they colonise, are saxicolous

(growing on rock), corticolous (on tree trunks and branches or stems of smaller plants), lignicolous (on non-living wood, such as fence posts) and terricolous (on the ground). A few bryicolous species are associated with moss-covered surfaces. All of these categories are represented in the lichens of Sherkin.

Often more than one substrate type occurs within a given wider habitat and the same lichen species may also be found in a variety of different habitats if suitable substrates are available. Although many lichens have specific preferences there are other more generalist species that may be found on either rocks or trees, for example.

Sherkin has all the major habitats that occur within Roaringwater Bay. Much of the island is surrounded by rocky coastline which has been the subject of extensive long-term monitoring studies that have produced reports of over 40 lichen species from this habitat. In 1913 the Irish lichenologist Matilda Knowles was the first to assign species to the zonation of coastal lichens. An example of this can be clearly seen at the north of the island (Plate 2) where the different zones are compressed into narrow, different coloured bands in the splash zone, the high, supra-littoral area of the shore where lichens occur. The rocky shores on Sherkin are subjected to varying degrees of wave exposure and a range of these were visited in 2016. In exposed sites the zones are much broader and stretch high above the tide mark.

Coastal rock outcrops occur at vegetated cliff top sites and in grassy areas above the rocky shore splash zone, providing a different habitat that is favoured by some of the scarcer lichen species on Sherkin (Plate 3). The most important salt-tolerant plants that occur amongst the grassland vegetation in these situations are Thrift, Sea and Buck's Horn Plantains and Rock Spurrey. The Thrift (*Armeria maritima*) stems, notably, provide a specialist corticolous niche for

some lichens. The relatively high levels of sunshine and wind combine to subject these areas to desiccation during the summer months.



Plate 2. Lichen zonation at a sheltered site near The Dock



Plate 3. Coastal rock outcrops and cliffs at Poulacurra, an exposed site on the south-west coast of Sherkin

Areas of higher terrain are often occupied by coastal heathland that is dominated by low, dense cover of Dwarf or Western Gorse (*Ulex gallii*), Ling (*Calluna vulgaris*) and Bell Heather (*Erica cinerea*) along with several characteristic grass species (Plate 4). Akeroyd (1996) described the heathlands as “an extensive, conspicuous and floristically rich element in the vegetation of the islands. Overall they represent the most important semi-natural vegetation type. On exposed coasts over shallow soils they are the natural vegetation that replaces woodland.” He also considered the rocky areas within heathland to support the most species-rich communities with several of the rarest plants of the islands of Roaringwater Bay, and the same is true of the lichen flora which forms a diverse shorter turf growing low down, often with mosses, amongst this heath.

The well-developed ‘Dry Atlantic *Erica-Ulex* heath’ that occurs on Sherkin and Cape Clear is recognised for its quality and importance

within the Roaringwater Bay and Islands SAC. Two of the five Annex I habitat types that are listed as qualifying interests for the site are the ‘Vegetated sea cliffs of the Atlantic and Baltic coasts (1230)’ and ‘European dry heaths (4030)’. But although the Natura 2000 summary of the conservation value of the SAC mentions nine Red Data plant species, no reference is made to lichens.



Plate 4. The coastal heathland here on Slievemore, Sherkin can also be seen on neighbouring Cape Clear in the distance.

Sherkin is the only island in Roaringwater Bay with any true woodland. Its presence is in part due to the protection afforded by Cape Clear and by the bulk of Slievemore and this shelter together with the mild climate creates conditions for lush growth. The area south of Kinish Harbour, near the road junction known locally as The

Cross, and areas that border part of the track that leads towards Slievemore, have the best stands of English Elm. There are also pockets of woodland in the lee of the main ridges on Slievemore itself (Plate 5) and scrub and tree cover appears to be increasing on the island in general. There is a pine copse on the road that leads from the Jolly Roger towards the eastern side of Kinish Harbour, and some tall pines at the road junction just above the Abbey. The remainder of the trees and shrubs on Sherkin are individual specimens, often where hedge specimens have been allowed to mature, or small groups in gardens or near buildings. There is an avenue of mature Sycamores bordering a track near The Cross, and Ash grows near the hotel.



Plate 5. The main bulk of Slievemore is covered by heathland but areas of woodland can be seen in sheltered situations.



Plates 6 and 7. A profusion of foliose and fruticose lichens on a garden tree and a variety of species growing on the damp lower trunk of a Sycamore.

Different host trees are associated with different lichen species because the surface pH values and the texture of the bark differ between trees. The variety and number of trees, though small, contributes to the lichen diversity on Sherkin with about 35 species found in 2016 dependent on trees (Plates 6 and 7). But the vast majority of lichens found on the island are saxicolous. The natural rocky landscape of the coastline and outcrops among heath and grassland make up most of this habitat but the beautiful dry-stone walls that have been built by farmers (seen in Plate 5) contribute to the surfaces of natural rock available to lichens.

Due to the island's siliceous sandstone geology this provides only an acidic rock substrate for lichens, but ancient buildings that include the Abbey (Plates 8 and 9) and Castle as well as more recent housing and man-made walls bonded by lime-rich mortar provide a different opportunity for calcicolous species. Concrete structures and render (Plate 10) also contribute to the more alkaline surfaces preferred by these lichens. The variety of material used for gravestones, which often differs from the local stone, can also increase the diversity of lichens and so this habitat was also investigated.



Plates 8 and 9. The island's graveyard lying within the ruins of the 15th Century Friary, known locally as the Abbey, and lichen and moss growth on a north-facing outer wall of the Abbey.



Plates 10 and 11. Lichens growing on a concrete gatepost and different species on a nearby roadside dry-stone wall made from natural rock material.

2016 FIELD STUDY

Methodology

The primary aim of the field study in 2016 was to provide an up-to-date baseline survey of the lichens of Sherkin Island by visiting as many different habitats and parts of the island as possible in the time available. At the same time we also aimed to contribute further specimens to the herbarium collection to provide voucher material for as many species as possible whilst developing a resource that would be of value for future work.

We also hoped to relocate and report on the health of the populations of the six Red Data Book (RDB) species that had been found by previous studies, and in the report writing to bring together all the known lichen data for the island.

Prior to the fieldwork, a data search of lichens previously recorded from Sherkin Island and adjacent islands in Roaringwater Bay was undertaken. This included datasets from the National Parks and Wildlife Service (NPWS), information held at Sherkin Island Marine Station (SIMS) including results of the long-running rocky shore transect data, notes and reports held by Matt Murphy (Director of SIMS), and the Marine Station's lichen herbarium database. The Census Catalogue of Irish Lichens (Seaward, 2010) was also a useful resource. The process of tracking down details of early records continued after our return to the UK.

A six-day field study was carried out from 25-30 August 2016. Accommodation on the island was provided by the Marine Station and during our stay we were allowed full use of its facilities. These included laboratories with dissecting and compound microscopes,

the herbarium collection and an extensive library. A list of the library's lichen resources is given in Appendix 1 and a list of the lichen specimens contained in the herbarium prior to 2016 is provided in Appendix 2. Examination of the existing herbarium was made at an early stage and updates were made to specimen labels and to the database records where nomenclatural changes were appropriate.

Fieldwork covered as many different areas and habitats of the island as possible during the six days when lists of lichens present were made. Whenever possible the lichens were identified in the field using a x10 hand-lens, but if this could not be achieved, or if specimens were required for the herbarium, then samples were collected. Field identification methods included the use of spot tests with chemicals which react with some lichen acids to give specific colour changes in the cortex and/or medulla of certain species. The chemicals used were household bleach (C), 10% potassium hydroxide (KOH) and Pd (*para*-phenylenediamine, used as a stable solution – alcoholic Steiners and small quantity of crystals of Pd).

Samples were collected into packets or boxes with notes on the locality, substrate, small scale habitat and other relevant information written on the packets or in notebooks. Samples from bark or lignum were collected using a knife, those on natural rock outcrops using a geological hammer and chisel and those from man-made substrates using a razor blade so as to collect a portion of the lichen without damaging the underlying structure, the collected sample then being glued to card using a small amount of Copydex (trade name). This technique was invented and perfected by Mark Powell (pers. comm.) in order to collect critical specimens from gravestones and has become a standard method used by lichenologists studying churchyard lichens.

On returning to the Marine Station, specimens were allowed to dry naturally. They were examined under a low-powered microscope and the characters of the thallus, fruiting bodies, rhizines and any other features were noted. In some cases, the chemical spot tests were repeated because the reactions to many of these are fleeting and are best seen under the dissecting microscope. Spot tests relating to the medullary reaction cannot be carried out accurately in the field.

Where necessary, sections of the fruiting bodies were prepared for examination under a compound microscope at high (x400 or x1000) magnification. The structure of the fruiting body, the type and size of spore, colour changes with KOH, and I (Lugol's iodine), measurement and anatomical details of ascomata were noted.

There was insufficient time while on Sherkin to examine all collected samples and many specimens were identified on our return to England. Having made a preliminary identification of some of the more difficult specimens, these were sent to referees for determination/confirmation; this was particularly important in the case of new county or country records. In order to preserve the lichens, all specimens were placed in a freezer for several days to kill off mites and other harmful organisms, and then allowed to come to room temperature gradually before being placed in labelled packets and returned to Sherkin Island Marine Station for curation into the herbarium collection. The electronic record of specimens was also updated in the herbarium database.

During fieldwork, photographs of habitat, and close-up pictures of lichens were taken using a Canon EOS 60D SLR camera with a Canon EFS 15-85mm lens and tripod. A few selected species were also photographed by Robbie Murphy using a specialist 60 mm macro lens attached to a Canon EOS 7D to obtain higher quality images.

Copies of all photographs were deposited in the photographic archive maintained by the Marine Station. An accurate position of a few critical species was also recorded using a Garmin GPS device.



Plate 12. Ishpi and Ken engrossed in fieldwork on Slievemore near Poulacurra.

When doubt later arose regarding the identity of the *Degelia* we had found near Poulacurra it became apparent that we needed better photographs and samples in order to determine the species concerned. To address this in our absence, Robbie returned to the site on 5 February 2017 to photograph and re-sample two of the lichens.

Results

The results of the 2016 fieldwork are presented below. A total of 203 different lichens were recorded during the six-day study of which 103 were new records for the island. Forty-eight of these species had not previously been recorded from within the 10 kilometre national grid square W02 and 10 species represent new vice-county records.

Gyalecta biformis is a new national record and two specimens of *Verrucaria / Hydropunctaria* are being examined by experts and may represent new species.

Table 1. Sampling locations and habitats investigated in 2016.

Survey date	Locality	Main habitat types
24 August	Drolain Point	Rock outcrops amongst clifftop grassland
		Rocky shore habitat
25 August	Drolain Point	Elm trees and bushes behind bunkhouses at the Marine Station
		Dry-stone wall on clifftop edge
		Rock outcrops amongst clifftop grassland
		Grassy slopes, low turf and soil habitats
	Road from the Marine Station to the Cross	Dry-stone walls bordering both sides along the length of the road, mortared walls, fence posts, gates and bushes
	Track near the Cross	Avenue of mature sycamore trees bordering track
	Near the Cross	Damp sycamore woodland in the vicinity of the Cross
26 August	Road from the Cross past the church	Walls, fence posts, wooden post box, occasional trees and bushes
	North-west slope of Slievemore	Rock outcrops, heathland habitats, grassland, thin soil and bare peaty ground, stems of ericaceous plants, water seepage areas
	Summit of Slievemore	Exposed rock surfaces and dry-stone walls
27 August	The 'New wall'	Low, mortared roadside wall bordering the lagoon behind Kinish Harbour
	Slopes north of Horseshoe Harbour	Rock outcrops, mossy areas and soil amongst grazed short turf and heathland overlooking the harbour
	Road from the Jolly Roger to The Dock	Walls of an abandoned house, roadside willow trees and bushes, walls and posts
	Seashore near The Dock	Sheltered site with rocky outcrops and intertidal rocks
28 August	Track to Poulacurra	Bed of freshwater stream running off Slievemore
	Near Poulacurra	<i>Teloschistes</i> site 'A' on map on clifftop overlooking Badger Island with rock outcrops and heathy turf and thin peaty soil
	Above Poulacurra	Site 'B' on map where <i>Degelia</i> was found with soil pockets, low and vertical rock outcrops, heathland and grassy slopes, exposed rocky seashore and clifftop vegetation with Thrift
29 August	Near the pub and hotel	Dry-stone and mossy wall tops and trees including ash and sycamore in the vicinity of <i>The Islander's Rest</i> and the <i>Jolly Roger</i>
	Road from Jolly Roger towards Kinish East	Roadside trees and a pine plantation, dry-stone walls and a grass-covered wall near a farm

	Gardens between the school and the Abbey	Trees, bushes and shrubs including <i>Prunus</i> and <i>Berberis</i>
	Kinish Harbour West	Rock outcrops near shore monitoring transect site
	Track leading towards Lough Ordree	Damp woodland areas to either side of the road from the Cross to Slievemore, just south of the Council houses
30 August	The Abbey	Interior and external wall surfaces and mossy gravestones
	The Castle	External mortared walls

In the main section below, a brief descriptive account is given of the localities and habitats in which each of the lichen species was found alongside an indication of the frequency of its occurrence on the island. Table 1 gives a summary of the sampling locations. A map of Sherkin indicating the main areas of study and the place names that are referred to in the text is shown in Figure 2. Each species account is preceded by its British Lichen Society (BLS) identification number. This reference number is linked to the original description of that species so that even if its name changes, or has been changed, as a result of any taxonomic revision the lichen records can still be compared with records made using different nomenclature. Throughout this report nomenclature follows Smith *et al.* (2009); Appendix 5 lists a few cases where more recent names now apply.

Table 2, which follows the species accounts, presents a summary of all the species recorded in 2016 and gives a conservation evaluation based on the British Lichen Society assessments by Woods and Coppins (2012) for these species. The table also indicates species (denoted by an asterisk) for which voucher specimens have been added to the Sherkin Island Marine Station (SIMS) lichen herbarium. A full sequential list of the specimens collected in 2016 is given in Appendix 3.

In addition to the photographic archive held by the Marine Station, Appendix 4 provides a photographic record of selected species and habitats recorded on Sherkin.

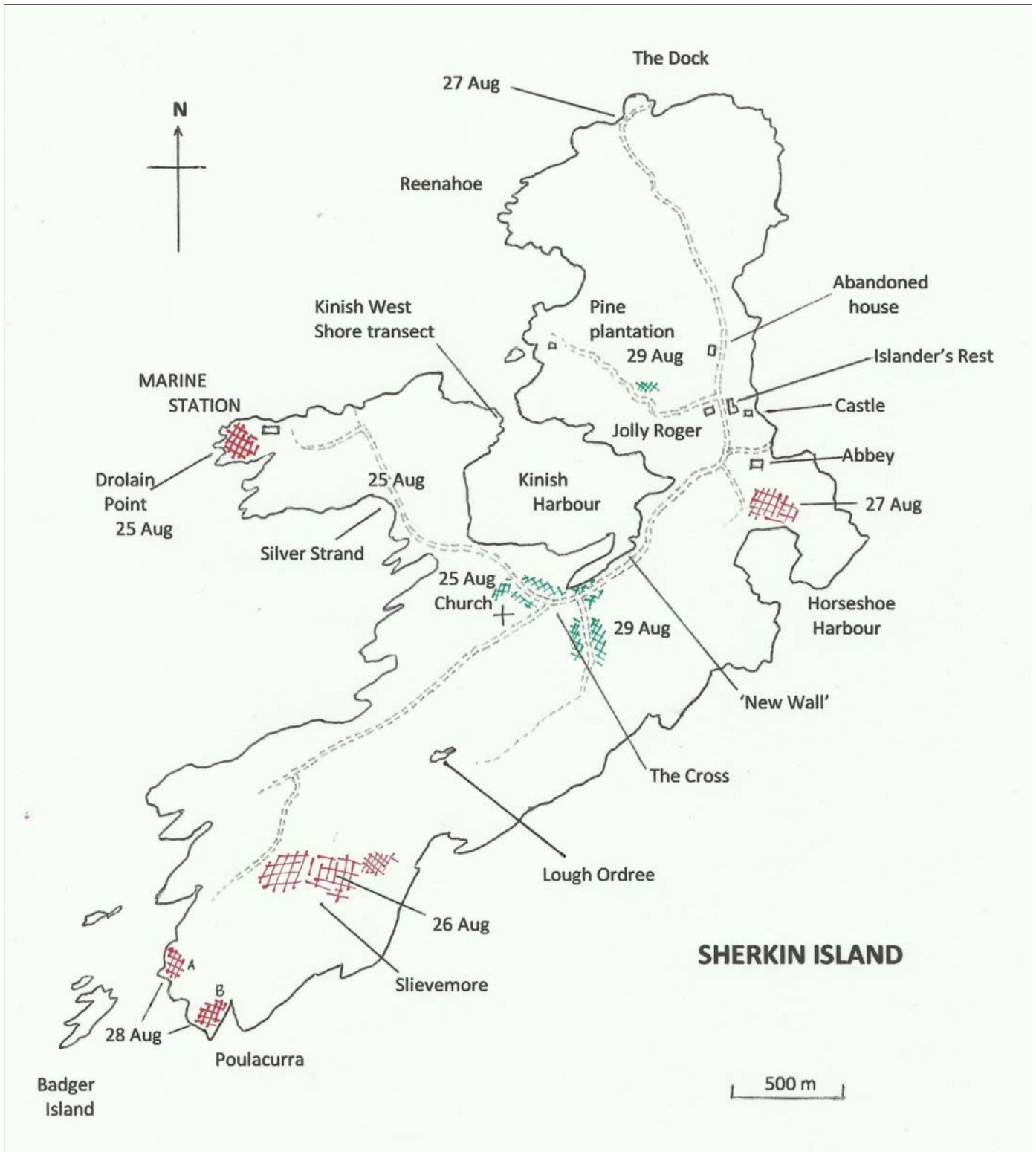


Figure 2. Map of Sherkin Island showing the main study areas in 2016. Green hatching represents woodland and red hatching shows areas of heathland habitat investigated. 'A' is the *Teloschistes* site and 'B' where *Degelia* was found.

Occurrences of lichen species recorded in August 2016

BLS Id. No.

- 10 *Acarospora fuscata* Rare. Only found on a wall near farm at the north end of the Island (29/8) and on a south facing vertical rock on Drolain Point (25/8) and wall of Abbey (30/8).
- 5 *Acarospora impressula* Rare. Only found on dry-stone wall at Drolain Point (25/8).
- 34 *Acrocordia gemmata* Occasional. On Sycamore near The Cross (25/8) and in garden near Kinish Harbour (29/8).
- 36 *Acrocordia salweyi* Rare. On mortared wall at Marine Station (25/8).
- 38 *Agonimia tristicula* Rare. Overgrowing moss on walls of Abbey (30/8).
- 212 *Amandinea punctata* Occasional and probably overlooked. Found on ash near The Dock (27/8).
- 47 *Anaptychia runcinata* Common. Found at all coastal sites visited including Drolain Point (25/8), lower eastern slopes of Slievemore (26/8), Horseshoe Harbour (27/8), The Dock (27/8) and Poulacurra (28/8).
- 49 *Anisomeridium polypori* Frequent on Sycamore near The Cross (25/8), near The Islander's Rest (29/8) and in a garden near Kinish Harbour (29/8).
- 72 *Arthonia cinnabarina* Rare. Only found on one or two Sycamore trees near The Cross (25/8).
- 69 *Arthonia radiata* Frequent. Found on trunks and branches of a variety of trees throughout the lower parts of the island including Elm (25/8), Sycamore (25/8) and *Prunus* sp. (29/8).
- 1542 *Arthopyrenia punctiformis* Rare. *Prunus* twigs on roadside near Kinish Harbour (29/8).
- 102 *Aspicilia caesiocinerea* Rare. On large boulder at Horseshoe Harbour (27/8).

- 103 *Aspicilia calcarea* Occasional. On man-made structures usually concrete on 'New Wall' (27/8) near Kinish Harbour, on an abandoned house north of the hotel (27/8) and on the Abbey (30/8).
- 131 *Bacidia arceutina* Rare. On fence post on road from Marine Station to The Cross (25/8).
- 155 *Bacidia laurocerasi* Rare. On Sycamore near The Cross (25/8).
- 176 *Baeomyces rufus* Rare. On peaty soil on Slievemore (26/8) and at *Teloschistes* site (28/8).
- 179 *Belonia nidarosiensis* Rare. Only on mortared wall at the Abbey (30/8).
- 165 *Bilimbia sabuletorum* Rare. Only found amongst moss on top of wall between Silver Strand and The Cross (25/2) and at the Abbey (30/8).
- 1628 *Botryolepraria lesdainii* Occasional. In shady crannies on the abandoned house north of the hotel (27/8) and on the Abbey walls (30/8).
- 200 *Buellia aethalea* Common on natural rock outcrops and dry stone walls throughout the island. Found at all saxicolous sites.
- 207 *Buellia griseovirens* Rare. On lignum of fence posts near Silver Strand (25/8).
- 219 *Buellia ocellata* Occasional. Mainly on dry stone walls. Found at Drolain Point (25/8) and on a roadside wall north-west of the hotel (29/8).
- 216 *Buellia stellulata* Rare. Only found on dry stone wall at Drolain Point (25/8).
- Buellia* sp. Rare. An unidentified *Buellia* species on pine in the pine plantation along road from The Jolly Roger to Kinish Harbour (29/8).
- 2442 *Caloplaca arcis* Occasional on man-made substrata, mostly mortar of walls. Found at 'New Wall' near Kinish Harbour lagoon (27/8) and abandoned house north of the hotel (27/8) and at the Abbey (30/8).

- 1644 *Caloplaca ceracea* Frequent. Found at most coastal sites including Drolain Point (25/8), the 'New Wall' at Kinish Harbour (27/8), Horseshoe Harbour (27/8) and The Dock (27/8).
- 241 *Caloplaca cerina* var. *cerina* Occasional on elm bushes at the Marine Station (25/8), a garden near Kinish Harbour (29/8) and ash at The Islander's Rest (29/8).
- 247 *Caloplaca citrina* s. lat. Occasional on mortared walls and on elm bushes. Drolain Point (25/8), road to The Cross (25/8), 'New Wall' at Kinish Harbour (27/8), the abandoned house (27/8) and The Islander's Rest (29/8).
- 253 *Caloplaca crenularia* Frequent on rock outcrops and dry-stone walls. Drolain Point (25/8), near Silver Strand (25/8), Slievemore (26/8), Horseshoe Harbour (27/8), both study sites near Poulacurra (28/8) and the Abbey (30/8).
- 249 *Caloplaca crenulatella* Rare. Only found on a concrete gatepost by the road on the way to Slievemore past the church (26/8).
- 259 *Caloplaca flavescens* Occasional. On mortared walls at the Marine Station (25/8) and roadsides near Silver Strand (25/8), 'New Wall' (25/8), the abandoned house (27/8) and the Abbey (30/8).
- 2527 *Caloplaca holocarpa* s.str. Widespread but occasional on acid rocks *in situ* and on dry-stone walls. Drolain Point (25/8), Horseshoe Harbour (27/8), *Teloschistes* site (28/8) and at the Abbey (30/8).
- 267 *Caloplaca marina* Occasional on natural rocks at maritime sites. Drolain Point (25/8), near The Dock (27/8), Poulacurra (28/8).
- 268 *Caloplaca microthallina* Rare. Only found on maritime rocks at Drolain Point (25/8).
- 2461 *Caloplaca oasis* Frequent on concrete and mortar. Roadsides at Silver Strand (25/8), 'New Wall' (27/8), abandoned house (27/8), roadside walls north-west of the hotel (29/8) and at the Abbey (30/8).

- 282 *Caloplaca thallincola* Frequent on maritime rocks at all sites examined. Drolain Point (25/8), The Dock (27/8), Poulacurra (28/8).
- 286 *Caloplaca verruculifera* Rare. Only found in small quantity on maritime rocks at Poulacurra (28/8).
- 298 *Candelariella vitellina* f. *vitellina* Common on rock outcrops and some man-made sites. Found at all sites except those dominated by trees.
- 306 *Catillaria chalybeia* var. *chalybeia* Rare but probably overlooked. On rocks and walls in small quantity at Drolain Point (25/8), Slievemore (26/8), Poulacurra (28/8), and the Abbey (30/8).
- 311 *Catillaria lenticularis* Occasional on man-made substrates. Drolain Point (25/8), abandoned house (27/8) and the Abbey (30/8).
- 430 *Cetraria aculeata* Rare. Only found in small quantity on north-west slope of Slievemore (26/8).
- 369 *Cladonia cervicornis* subsp. *cervicornis* Frequent. In short acid turf on Slievemore (26/8) and both study areas at Poulacurra (28/8).
- 370 *Cladonia cervicornis* subsp. *verticillata* Occasional. In short acid turf on Slievemore (26/8).
- 371 *Cladonia chlorophaea* s. lat. Occasional. On soil at Horseshoe Harbour (27/8) and low memorial at the Abbey (30/8).
- 373 *Cladonia ciliata* var. *tenuis* Occasional among short heathy vegetation near The Dock (27/8) and *Teloschistes* site (28/8).
- 374 *Cladonia coccifera* s. lat. Rare. Terricolous among sparse vegetation on north-west slope of Slievemore (26/8).
- 386 *Cladonia floerkeana* Rare. Terricolous among sparse vegetation on north-west slope of Slievemore (26/8).
- 387 *Cladonia foliacea* Rare. Only found in short vegetation at Poulacurra (28/8).

- 389 *Cladonia furcata* subsp. *furcata* Common among heathy vegetation in most suitable habitats. Drolain Point (25/8), Slievemore (26/8), Horseshoe Harbour (27/8), both study sites at Poulacurra (28/8).
- 409 *Cladonia portentosa* Occasional on heathy turf. Slopes of Slievemore (26/8), Horseshoe Harbour (27/8).
- 410 *Cladonia pyxidata* Rare. Overgrowing roadside rocks on road to Kinish Harbour (29/8).
- 359 *Cladonia ramulosa* Rare. Only found on Slievemore (26/8).
- 412 *Cladonia rangiformis* Occasional in short turf at Drolain Point (25/8) and Slievemore (26/8).
- 416 *Cladonia squamosa* s. lat. Rare. Only found in short turf at *Teloschistes* site (28/8).
- 2365 *Cladonia squamosa* var. *squamosa* Rare. Only found on one memorial at the Abbey (30/8).
- 421 *Cladonia subcervicornis* Rare. Only found at *Teloschistes* site (28/8).
- 426 *Cladonia uncialis* subsp. *biuncialis* Rare. Only found on Slievemore (26/8).
- 429 *Cliostomum griffithii* Occasional. On holly near Kinish Harbour (27/8) and on sycamore in a garden near Kinish Harbour (29/8).
- 440 *Collema crispum* var. *crispum* Occasional. On dry-stone wall (25/8) and mortared wall by farm north-west of The Jolly Roger Pub (29/8).
- 442 *Collema cristatum* var. *cristatum* Occasional. On dry-stone wall (25/8), and walls (29/8, 30/8).
- 449 *Collema furfuraceum* Occasional. On rock outcrops at both study sites at Poulacurra (28/8).
- 463 *Collema fuscovirens* Rare. Only on headstone at the Abbey (30/8).

- 460 *Collema tenax* var. *ceranoides* Occasional. On soil of minor roads between tyre tracks. Found near Silver Strand (25/8) and track near the base of Slievemore (26/8).
- 459 *Collema tenax* var. *tenax* Occasional. Mostly terricolous. Found on track near Slievemore (26/8) but also on mortar of walls at 'New Wall' (27/8) and near the hotel (29/8).
- 85 *Collemopsidium foveolatum* Frequent on barnacles on rocky shores. Probably common but only collected near The Dock and positively identified to species (27/8).
- 1597 *Degelia ligulata* Occasional on low rock outcrops and in crevices and seepage tracks on south-facing slopes of Poulacurra (28/8). GPS W00355 23210 at least 6 thalli in a line on quartz-rich rock.
- 484 *Dermatocarpon miniatum* Occasional. Several thalli on damp rocks near The Dock (27/8) and at Poulacurra (28/8).
- 490 *Dimerella lutea* Rare. Only found on moss on pine trees in a small plantation by the road north-west of the Jolly Roger Pub (29/8).
- 491 *Diploicia canescens* Locally abundant. Fertile on fence post near Silver Strand (25/8), and on walls and pines north-west of the Jolly Roger Pub (29/8); abundant on the Castle (30/8).
- 504 *Enterographa crassa* Occasional. On larger sycamores (25/8) and trees in a garden near Kinish Harbour (29/8).
- 506 *Enterographa hutchinsiae* Rare. Only found on a sycamore with *E. crassa* at the end of the avenue GPS 01702 25139 (25/8).
- 508 *Ephebe hispidula* Rare. Only a small quantity found on damp rocks with seepage on Slievemore (26/8) and Poulacurra (28/8).
- 511 *Evernia prunastri* Frequent. On fence posts near Silver Strand (25/8) on sycamore (25/8) and small trees in garden near Kinish Harbour (29/8).

- 987 *Flavoparmelia caperata* Common on rocks and trees. Frequent on rocks at Drolain Point (25/8), Slievemore (26/8), Horseshoe Harbour (27/8) and Poulacurra (28/8). On pines in plantation north-west of the Jolly Roger Inn (29/8) and elsewhere on small trees (*Berberis* and *Prunus*). (Surprisingly not on sycamores near The Cross on 25/8).
- 515 *Fuscidea cyathoides* var. *cyathoides* Common on rock outcrops and dry-stone walls throughout the island.
- 521 *Fuscidea lightfootii* Occasional. On small branches in pine plantation to north-west of Jolly Roger Pub (29/8). Possibly overlooked elsewhere.
- 529 *Graphina anguina* [New name: *Graphis inustuloides*] Occasional. On sycamores (25/8) and in a garden near Kinish Harbour (29/8).
- 533 *Graphis scripta* Rare. On sycamores (25/8) and on *Prunus* in a garden near Kinish Harbour (29/8).
- 534 *Gyalecta bififormis* Rare. On base of thrift at Drolain Point (24/8). New to Ireland.
- 558 *Heterodermia leucomela* Rare. Amongst moss and grass on a north-facing bank at Drolain Point (25/8) GPS W00433 25778. Also in small quantity on north-facing slope on way to Poulacurra GPS W00257 23329 (28/8).
- 582 *Hypogymnia physodes* Occasional. On ericaceous stems on slopes of Slievemore (26/8).
- 1013 *Hypotrachyna revoluta* s.lat. Occasional on rock outcrops on Slievemore (26/8).
- 573 *Ionaspis lacustris* Rare. Only on damp rocks with seepage on lower slopes of Slievemore (26/8).
- 613 *Lecania cyrtella* Occasional. On small branches and fence posts. Found near the Marine Station and on road to The Cross (25/8).
- 1707 *Lecania inundata* Rare. On top of 'New Wall' by Kinish Harbour (27/8).

- 159 *Lecania naegelii* Occasional. On twigs near Marine Station (25/8) and on lignum of fence posts near Silver Strand (25/8) and Slievemore (26/8).
- 624 *Lecanora actophila* Occasional on rocky shores. Found at Poulacurra (28/8).
- 627 *Lecanora albescens* Frequent on man-made saxicolous substrates throughout the island, especially roadside mortared walls and concrete posts where it was at all sites examined.
- 685 *Lecanora argentata* Rare. Only found on pine in small plantation north-west of the Jolly Roger Pub (29/8).
- 635 *Lecanora campestris* subsp. *campestris* Frequent on man-made substrates at Drolain Point (25/8), roadside walls towards The Cross (25/8), 'New Wall' (27/8), the abandoned house (27/8) and the Abbey (30/8).
- 639 *Lecanora chlarotera* Frequent on trees and fences. Fence posts near Silver Strand (25/8), sycamores near The Cross (25/8), ash at The Islander's Rest (29/8) and *Prunus* in garden near Kinish Harbour (site 12, 29/8).
- 641 *Lecanora confusa* Occasional on fence posts on the road between the Marine Station and The Cross (25/8) and on small trees including a palm tree in a garden (29/8).
- 644 *Lecanora crenulata* Rare. Only on mortared wall and headstone at the Abbey (30/8).
- 646 *Lecanora dispersa* Frequent. Mostly on mortared walls at the Marine Station (25/8), near Silver Strand (25/8), the 'New Wall' (27/8), the abandoned house (27/8) and the Abbey (30/8).
- 649 *Lecanora expallens* Frequent on boles of trees and some fence posts. Found between the Marine Station and The Cross (25/8), on Slievemore (26/8) and generally around the more populated areas of the island.
- 652 *Lecanora fugiens* Occasional on rock outcrops at Drolain Point (25/8) and Poulacurra (28/8).

- 653 *Lecanora gangaleoides* Common on rock outcrops and dry-stone walls. Found at Drolain Point (25/8), Slievemore (26/8), Horseshoe Harbour (27/8) and both study sites near at Poulacurra (28/8).
- 621 *Lecanora hagenii* Rare. Only found on bushes near the Marine Station (25/8).
- 655 *Lecanora helicopsis* Occasional on rocky shores. Found near The Dock (27/8) and at Poulacurra (28/8).
- 656 *Lecanora intricata* Rare. Only found near Poulacurra on rocks at the *Teloschistes flavicans* site (28/8).
- 667 *Lecanora polytropa* Frequent on rock outcrops and dry-stone walls. Drolain Point (25/8), Slievemore (26/8), Horseshoe Harbour (27/8), near Poulacurra (28/8), and the Abbey (30/8).
- 674 *Lecanora rupicola* var. *rupicola* Frequent on rock outcrops and dry-stone walls including Drolain Point (25/8), Horseshoe Harbour (27/8), and the Abbey (30/8).
- 675 *Lecanora saligna* Rare. On fence post by roadside on the way past the church to Slievemore (26/8).
- 783 *Lecanora sulphurea* Occasional. Found at Poulacurra (28/8) on low rock outcrops.
- 688 *Lecanora symmicta* Occasional. Found on fence posts on road from the Marine Station (25/8), on Slievemore (26/8) and near Poulacurra (28/8).
- 2287 *Lecanora zosterae* Occasional. Clifftop habitat on the base of thrift stems at Drolain Point (24/8) and Poulacurra (28/8).
- 2474 *Lecidea grisella* Rare. Only found in small quantity at Drolain Point (25/8) and Horseshoe Harbour (27/8).
- 804 *Lecidella asema* Frequent on rocky shores. Drolain Point (25/8) and Poulacurra (28/8).

- 796 *Lecidella carpathica* Rare. Only found on dry-stone wall on road from Marine Station to The Cross (25/8).
- 797 *Lecidella elaeochroma* f. *elaeochroma* Frequent. On elm, sycamore, ash, other bushes and on lignum including fence posts at Drolain Point (25/8), road from the Marine Station (25/8), near The Cross (25/8), Horseshoe Harbour (27/8), near The Dock (27/8), The Islander's Rest (29/8) and gardens (29/8).
- 802 *Lecidella scabra* Common on rocks and dry-stone and mortared walls throughout the island.
- 803 *Lecidella stigmataea* Frequent on mortared walls between the Marine Station and Silver Strand (25/8), the 'New Wall' (27/8), the abandoned house (27/8), around the hotel (29/8) and at the Abbey (30/8).
- 820 *Lepraria incana* s. lat. Frequent and probably under-recorded. Found near The Dock (27/8), The Islander's Rest (29/8) and the Abbey (30/8).
- 1629 *Lepraria lobificans* Occasional. On mortared walls at the Abbey (30/8).
- 839 *Leptogium lichenoides* Rare. On elm in damp grove by track to Lough Ordree (29/8) and on moss by the Jolly Roger Pub (29/8).
- 2530 *Leptogium pulvinatum* Occasional. On mossy wall top near Silver Strand (25/8) and on the ground near the Jolly Roger Pub (29/8).
- 851 *Lichina confinis* Frequent on coastal rocks. Seen near The Dock (27/8) and at Poulacurra (28/8) but probably present elsewhere in suitable habitat.
- 852 *Lichina pygmaea* Occasional. Only seen at Drolain Point (25/8) but probably also at other sites.
- 998 *Melanelixia fuliginosa* Occasional on rocks at Drolain Point (25/8) and Horseshoe harbour (27/8).
- 1020 *Melanelixia subaurifera* Surprisingly rare. Found on twigs and small branches of sycamore (25/8) and *Prunus* in garden near Kinish Harbour (29/8).

- 880 *Micarea lignaria* var. *lignaria* Occasional. Terricolous on stony areas halfway up west side of Slievemore (26/8) and near Poulacurra (28/8).
- 920 *Normandina pulchella* Occasional but widespread on trees including sycamores (25/8), near The Islander's Rest (29/8) and in gardens (29/8). Also on moss covered rocks near The Dock (27/8) and Horseshoe Harbour (27/8).
- 921 *Ochrolechia androgyna* Common on rocks at Slievemore (26/8) and near Poulacurra (28/8).
- 926 *Ochrolechia parella* Common at all saxicolous sites except where affected by mortar. Found throughout the island.
- 938 *Opegrapha atra* Frequent on trees especially on sycamores (25/8) and ash (29/8). Also on elm at Drolain Point (25/8) and on shrubs in gardens (29/8).
- 959 *Opegrapha calcarea* Frequent on rock outcrops and dry-stone walls. Drolain Point (25/8), Slievemore (26/8), Poulacurra (28/8), and the Abbey (30/8).
- 947 *Opegrapha gyrocarpa* Rare on shaded dry-stone walls (including fertile material; 25/8) and rock outcrops (28/8).
- 951 *Opegrapha lithyrgea* Rare. On underhang at southern end of Slievemore (26/8). Probably elsewhere and overlooked.
- 943 *Opegrapha vulgata* Frequent. On sycamore (25/8), pines in small plantation north-west of the Jolly Roger Pub and on ash at The Islander's Rest (29/8).
- 1006 *Parmelia omphalodes* Occasional on upper slope of Slievemore (26/8) and near Poulacurra (28/8).
- 1015 *Parmelia saxatilis* Common on rock outcrops and dry-stone walls. Drolain Point (25/8), near Silver Strand (25/8), Slievemore (26/8), and both study areas at Poulacurra (28/8). Fertile material seen on Slievemore.

- 1022 *Parmelia sulcata* Frequent on rocks and dry-stone walls. Drolain Point (25/8) and near Silver Strand (25/8). On small trees in a garden near Kinish Harbour (29/8).
- 989 *Parmotrema crinitum* Occasional amongst turf and ericaceous plants at Drolain Point (25/8), Slievemore (26/8), near Poulacurra (28/8) and the Abbey (30/8).
- 1008 *Parmotrema perlatum* Abundant. The most conspicuous lichen on the island. Found in good quantity at all sites examined except the 'New Wall' and the abandoned house. On stone, lignum and trees including sycamore, pine, *Berberis*, *Prunus* and a palm tree.
- 1012 *Parmotrema reticulatum* Rare. Only found near the *Teloschistes flavicans* site on rock outcrop (28/8) but possibly under-recorded.
- 1047 *Peltigera membranacea* Occasional. In turf on south-facing slope at Drolain Point (25/8) and at Horseshoe Harbour (27/8).
- 1057 *Pertusaria albescens* var. *corallina* Rare. On rock outcrops and soil on Slievemore (26/8) and at Poulacurra (28/8).
- 1058 *Pertusaria amara* f. *amara* Rare. Found on rock at Poulacurra near the *Teloschistes* site (28/8) and on sycamore (25/5).
- 1066 *Pertusaria corallina* Occasional. On rock outcrops on Slievemore (26/8).
- 1072 *Pertusaria flavicans* Occasional on small rock face near summit of Slievemore (26/8) and near Poulacurra (28/8). Also at the Abbey (30/8).
- 1076 *Pertusaria hymenea* Rare. Only found on trees in garden near Kinish Harbour (29/8) and on sycamore at The Islander's Rest (29/8).
- 1079 *Pertusaria leioplaca* Rare. On sycamore near The Cross (25/8).
- 1087 *Pertusaria pertusa* Rare. Only found on a tree in a garden near Kinish Harbour (29/8) and on ash at The Islander's Rest (29/8).

- 1089 *Pertusaria pseudocorallina* Abundant. Present in good quantities at all saxicolous sites throughout the island except those affected by mortar (but not found near The Dock).
- 1103 *Phaeographis smithii* Occasional. On sycamore (25/8) and in garden near Kinish Harbour (29/8).
- 1107 *Phaeophyscia orbicularis* Rare. Found in small patches on the 'New Wall' (27/8).
- 1112 *Physcia adscendens* Rare. Only found on bushes at Drolain Point (25/8) and on a postbox on the road past the church.
- 1113 *Physcia aipolia* Rare. On sycamore twigs (25/8) and bushes in a garden near Kinish Harbour (29/8) and on ash at The Islander's Rest (29/8).
- 1114 *Physcia caesia* Rare. Found on the 'New Wall' by Kinish Harbour (27/8).
- 1118 *Physcia leptalea* Occasional. On south-facing rock outcrop at Drolain Point (24/8), on sycamore twigs (25/8), near The Islander's Rest (29/8) and in a garden (29/8).
- 1120 *Physcia tenella* Occasional. On small trees and twigs in a garden near Kinish Harbour (29/8) and on an ash near The Islander's Rest (29/8).
- 756 *Placynthiella oligotropha* Rare. Found on bare soil at Drolain Point (25/8).
- 1139 *Placynthium nigrum* Rare. Only small amounts on the 'New Wall' by Kinish Harbour (27/8).
- 1167 *Polysporina simplex* Rare. On dry-stone wall near Kinish Harbour.
- 562 *Porpidia cinereoatra* Frequent. On rocks and dry-stone walls at Drolain Point (25/8), roadsides between the Marine Station and the The Cross (25/8) and at Horseshoe Harbour (27/8).
- 564 *Porpidia crustulata* Rare. Only positively identified from a wall at Drolain Point (25/8), Slievemore (26/8) and near Kinish Harbour (29/8), but probably under-recorded.

- 568 *Porpidia macrocarpa* f. *macrocarpa* Occasional. On rocks, pebbles and dry-stone walls on Slievemore (26/8) and Poulacurra (28/8).
- 572 *Porpidia tuberculosa* Occasional on rocks and dry-stone walls on the upper slopes of Slievemore (26/8).
- 1189 *Protoblastenia rupestris* Occasional on mortar of walls and on concrete posts. Found at the Marine Station, 'New Wall' (27/8), abandoned house (27/8) and the Abbey (30/8).
- 1211 *Pycnothelia papillaria* Rare. Only found at one site on the north-west slope of Slievemore (26/8) but common over several hundred square metres of very thinly vegetated damp soil. GPS W00644 20691
- 1221 *Pyrenula chlorospila* Common on suitable trees such as elm at the Marine Station (25/8) and sycamore near The Cross (25/8), and in a garden near Kinish Harbour (29/8).
- 1224 *Pyrenula macrospora* Occasional. On elm at Drolain Point (25/8), and sycamore near The Cross (25/8), in a garden near Kinish Harbour (29/8) and near The Islander's Rest (29/8).
- 1230 *Ramalina canariensis* Rare. On shrub at side of the road from the Marine Station to The Cross (25/8).
- 1232 *Ramalina cuspidata* Frequent on coastal rocks at Drolain Point (25/8), near The Dock (27/8) and Poulacurra (28/8).
- 1234 *Ramalina farinacea* Occasional. On sycamore (25/8), in a garden near Kinish Harbour (29/8) on *Prunus*, *Berberis* and a palm tree, and on ash near The Islander's Rest (29/8).
- 1235 *Ramalina fastigiata* Occasional on trees and shrubs. On sycamore (25/8), in a garden near Kinish Harbour (29/8).
- 1233 *Ramalina lacera* Rare. Only on a fallen willow near The Dock (27/8) and on pine in a small plantation north-west of the Jolly Roger Pub (29/8).

- 1240 *Ramalina siliquosa* Common on all natural coastal rocks visited and on dry-stone walls near the sea. Also on walls at the Abbey (30/8).
- 1241 *Ramalina subfarinacea* Rare. Only found near the *Teloschistes* site (28/8).
- 1257 *Rhizocarpon geographicum* Occasional on rocks at Slievemore (26/8), Horseshoe Harbour (27/8) and the Abbey walls (30/8).
- 1266 *Rhizocarpon reductum* Common on all natural rock outcrops and walls at all sites not influenced by mortar.
- 1250 *Rhizocarpon richardii* Frequent on rock outcrops and dry-stone walls. Found at Drolain Point (25/8), Slievemore (26/8), Horseshoe Harbour (27/8) and at Poulacurra (28/8).
- 1281 *Rinodina atrocinerea* Rare. Only on rocks on north side of Horseshoe Harbour (27/8).
- 1320 *Scoliciosporum chlorococcum* Rare but probably overlooked. On twigs of elder and elm at the Marine Station (25/8).
- 1325 *Solenopsora holophaea* Occasional on soil in pockets among rocks at Poulacurra (28/8).
- 1326 *Solenopsora vulturiensis* Occasional on soil and earthy walls. Steps to landing stage at the Marine Station, soil at Drolain Point (25/5) and at Poulacurra (28/8) and at the Abbey (30/8). Probably more widespread but overlooked.
- 1332 *Sphaerophorus fragilis* Rare. Only found in small quantity on rocks on north-west slopes of Slievemore (26/8).
- 1381 *Teloschistes flavicans* RDB Rare. Found on an exposed site on cliff top near Poulacurra (site A, Figure 2). On vertical outcrop at W00262 23314 and on outcrops at ground level at W00279 23318 spread over several square metres (28/8).
- 630 *Tephromela atra* var. *atra* Common at all natural rock sites and on dry-stone walls.

- 1415 *Toninia aromatica* Occasional on mortared walls at the Marine Station (25/5), the abandoned house (27/8), and the Abbey (30/8).
- 1432 *Trapelia glebulosa* Rare. Only on rock outcrops on Slievemore (26/8).
- 1595 *Trapelia placodioides* Rare. On dry-stone walls north-west of the Jolly Roger Pub (29/8).
- 1582 *Trapeliopsis pseudogranulosa* Occasional on soil in short heathy turf. Found near The Dock (27/8) and Horseshoe Harbour (27/8).
- 1816 *Usnea esperantiana* Rare. Only found on small tree in a garden near Kinish Harbour (29/8).
- 1461 *Usnea flammea* Rare. On low rock outcrops on Slievemore (26/8).
- 1462 *Usnea florida* Rare. Only on twigs in a garden near Kinish Harbour (29/8).
- 1471 *Usnea subfloridana* Occasional. On low rock outcrops on Slievemore (26/8) and on twigs in a garden near Kinish Harbour (29/8).
- 977 *Vahliella leucophaea* Rare. In crevices of rocks on south-facing grassy slope above the grey shore zone at Poulacurra (28/8).
- 1492 *Verrucaria fuscella* [New name: *Placopyrenium fuscellum*] Rare. Only found on mortared gatepost by roadside near the Marine Station (25/8).
- 1491 *Verrucaria fusconigrescens* Occasional. On dry-stone walls at Drolain Point (25/8), roadside north-west of the Jolly Roger Pub (29/8) and at the Abbey (30/8).
- 1519 *Verrucaria macrostoma* f. *furfuracea* Occasional on mortared walls on roadside near the Jolly Roger Pub (29/8) and at the Abbey (30/8).
- 1502 *Verrucaria macrostoma* f. *macrostoma* Frequent on man-made saxicolous substrates. Walls near Marine Station (25/8), Silver Strand (25/8), at the abandoned house (27/8) and the Abbey (30/8).
- 1504 *Verrucaria maura* [New name: *Hydropunctaria maura*] Common on coastal rocks at Drolain Point (25/5), near The Dock (27/8) and Poulacurra (28/8).

- 1507 *Verrucaria muralis* Rare. Found on pebbles on a soily wall top on the road from the Marine Station to The Cross (25/8).
- 1518 *Verrucaria viridula* Rare. On roadside mortared walls near Silver Strand (25/8).
- 988 *Xanthoparmelia conspersa* Rare. Only found on rock outcrops at Horseshoe Harbour (27/8).
- 990 *Xanthoparmelia delisei* Rare. Found on rocks on north side of Horseshoe Harbour (27/8).
- 1009 *Xanthoparmelia pulla* Rare. On boulders on Slievemore (26/8).
- 1026 *Xanthoparmelia verruculifera* Occasional on natural rock outcrops on Slievemore (26/8) and Horseshoe Harbour (27/8).
- 1538 *Xanthoria aureola* Occasional on coastal rocks at Drolain Point (25/8) and Poulacurra (28/8).
- 1530 *Xanthoria parietina* Common throughout the island on trees, natural rocks, walls and lignum. Found at all sites visited.

Habitats and lichen distributions on Sherkin

Table 2 (below on page 51) shows that the vast majority of the lichens we recorded were saxicolous (116 species); another eight were found on rock and another substrate. The next most frequent group were corticolous lichens with 37 species being dependent on this substrate and another 15 occurring on other substrates as well. In the following sections the distribution of the characteristic lichens on Sherkin is summarised according to the main habitat types that were investigated.

Rocky seashore

The rocky shore is by far the most widespread saxicolous habitat on Sherkin but because of time constraints we restricted our recording in this habitat to two exposed shores on the west coast at Poulacurra and Drolain Point, and two

more sheltered shores at Kinish Harbour West, and a site near The Dock at the northern end of the island (Figure 2). The typical rocky shore zonation of lichens, first described by Matilda Knowles, was seen at all sites. We did not spend much time in the 'black' (littoral) zone and the *Verrucaria* species in particular, that are associated with this shore zone, were not sampled, although *V. maura* was positively identified. *Collemopsisidium foveolatum* (on barnacles) and the two *Lichina* species (*L. pygmaea* and *L. confinis*) were also found. Above this zone, the 'orange' (supralittoral) or splash zone was dominated by *Caloplaca* species that included *C. marina*, *C. thallincola* and *C. ceracea*. In the vegetated clifftop habitat above the splash zone at the two exposed sites, old thrift stems were targeted to see if *Lecanora zosterae* could be found. It was present at both sites and at Drolain Point growing amongst this lichen a diminutive *Gyalecta* was collected which turned out to be *Gyalecta biformis*, a new species for Ireland.

Rock crevices within exposures of the more easily eroded Castlehaven Formation which occurs at the north and extreme SW of the island, including the shore site visited near The Dock, provide damp niches that are favoured by certain lichens such as *Dermatocarpon miniatum* which was only found in these situations.

At the highest shore levels species such as *Anaptychia runcinata*, *Ramalina siliquosa*, *R. cuspidata*, *Lecanora helicopsis* and *Xanthoria aureola* were common and these merged into the species typical of another widely occurring saxicolous habitat, that of dry-stone walls, where *Ochrolechia parella*, *Lecanora gangaleoides*, *Verrucaria fusconigrescens*, *Lecanora rupicola*, *Pertusaria pseudocorallina*, *Lecidella asema* and *Rhizocarpon richardii* were all locally common.

Clifftop rocky outcrops

In clifftop situations rock exposures amongst short turf were frequently covered by one of the commonest saxicolous lichens on the island, *Parmotrema perlatum*, and to a lesser extent *P. crinitum*. *Peltigera membranacea*, *Cladonia furcata* and *C. rangiformis* were also sometimes present. The short turf itself, in close association with the rocky outcrops, provided a niche for the RDB species

Heterodermia leucomela which was found in this situation on a north-facing ridge at Drolain Point and in a northwest-facing aspect opposite Badger Island at the south-western end of Slievemore at the Poulacurra site 'A' (Figure 2). At the latter location, a good population of another RDB species, *Teloschistes flavicans*, was found primarily on low-lying rock outcrops among the short turf although it was also present on some vertical rock faces. Other lichens associated with this species included *Collema furfuracea*, *Lecanora fugiens*, *Anaptychia runcinata* and *Flavoparmelia caperata*. On nearby rocks where *Xanthoria parietina* was plentiful, the absence of *T. flavicans* suggested that too much enrichment from bird droppings was detrimental to *Teloschistes*.

The other main area of investigation, site 'B', at Poulacurra (Figure 2) that was studied in some detail on 28th August proved to be most interesting with several species found there that were not encountered elsewhere on the island. Thus several thalli of a third RDB species, *Degelia ligulata*, were found on quartz-rich rock outcrops at ground level, together with *Solenopsora holophaea*, *Ephebe hispidula* and *Vahliella leucophaea* in damper crevices. *Dermatocarpon miniatum* was also present in damp crevices at this site and it is possible that the different geological nature of the Castlehaven Formation was a contributory factor in the variation in lichen species composition at this site.

A very attractive *Verrucaria*-like species was collected from this location which had prominent domed perithecia covered with pruina. It appears to be an unnamed species similar to one collected by John Douglass and Andy Acton in Fair Isle, Scotland (J. Douglass pers. comm.) and early investigations by Alan Orange, who has also collected similar material, suggest that it may belong to the genus *Hydropunctaria* which is closely related to that of *Verrucaria*.

On the rocky outcrops above Horseshoe Harbour we found some lichens that were not recorded in this habitat at the south-western end of the island that included two species of *Xanthoparmelia*, namely *X. conspersa* and *X. delisei*.

Dry heathland

Towards the summit of Slievemore the vegetation forms a mosaic of dense gorse and heather interspersed with areas of grassland and shallow peaty soils

that have developed a rich lichen heath flora dominated by species of *Cladonia* that included *C. portentosa*, *C. ciliaris* var. *tenuis*, *C. cervicornis* var. *cervicornis* and *C. cervicornis* var. *verticillata*. In one area a substantial population of *Pycnothelia papillare* was found in damper conditions together with *Baeomyces rufus*, *Coelocaulon aculeatum* and *Trapeliopsis pseudogranulosa*. Rock outcrops within this habitat supported typical acid-loving saxicolous species as well as less commonly occurring fruticose *Usnea* species and *Sphaerophorus fragilis*; *Hypogymnia physodes* was found solely in heathland on ericaceous stems. This was the only *Cladonia*-rich habitat we sampled, but further sites are probably present on the island where terricolous lichens form a major component of the lichen flora and a more detailed search would undoubtedly have added more species.

Trees and woodland

Although several of the trees on the island can be considered to have reached maturity, no 'mature woodland' has been able to develop on Sherkin due to the exposed nature of most of the island. Oak trees were not encountered at all and although pockets of trees have developed in more sheltered spots they are limited in species diversity. There is an avenue of sycamores near The Cross and damper, mossy areas of woodland dominated by sycamore and elm are present to the south of Kinish Harbour and at the base of Slievemore. A pine plantation, probably planted as a shelter break, is situated on the road that runs from the Jolly Roger towards the east side of Kinish Harbour and several tall pines grow near the road junction by the Abbey. Otherwise, trees are restricted to gardens, roadside and hedgerows or scrubby shelter belts. The large majority of corticolous lichen species (29) were found on sycamore which was the most abundant of the mature trees. Lower numbers were found on elm (11), pine (8) and ash (7).

Pyrenula chlorospila was very common on all mature trees, *P. macrospora* less so. *Enterographa crassa* was only found in quantity on one sycamore tree and within the mosaics of this species, *Enterographa hutchinsiae* was also present. Other species mostly confined to sycamore were *Graphis scripta*, *Graphina anguina*, *Phaeographis smithii*, *Bacidia laurocerasi* and *Pertusaria hymenea*. The

damp moss-covered elms were relatively poor in species but *Leptogium lichenoides* was found here. Species on shrubs included the ubiquitous *Lecidella elaeochroma* along with *Caloplaca cerina*, *Ramalina canariensis*, *R. fastigiata* and *R. farinacea*, *Usnea esperantiana*, *Opegrapha atra* and the inconspicuous *Arthonia punctiformis*. *Dimerella lutea* was found in quantity on only one pine tree in the plantation, while *Opegrapha vulgata* was widespread at this site.

Man-made habitats

The island's dry-stone walls are constructed from local stone and had a typical lichen flora that reflected the acidic nature of the sandstone; *Pertusaria pseudocorallina*, *Lecanora rupicola*, *Tephromela atra*, *Caloplaca crenularia* and *Buellia aethalea* were exceedingly common. *Opegrapha calcarea* was also common, but *O. gyrocarpa*, some of which was fertile, less so. The Abbey with its mortared walls and occasional basic tombstones added some more lime-loving species but the Castle flora was poor, dominated by *Diploicia canescens* which was abundantly fertile.

Lichens encountered on other walls included various *Collema* and *Leptogium* species, and those commonly associated with mortar such as *Verrucaria viridula*, *V. muralis* and both forms of *V. macrostoma*. An abandoned house on the road to The Dock had abundant *Opegrapha calcarea* and *Toninia aromatica* as well as *Verrucaria* species.

Freshwater habitats

There is very little freshwater on Sherkin. One lake near the summit of Slievemore (Lough Ordree) was not investigated because it appeared to have extensive marginal vegetation and no rock outcrops for lichen species. A wet flush at the time of our survey, which becomes a stream in winter, at the base of the northwest flank of Slievemore contained some loose rock fragments, one of which had an interesting species of *Verrucaria* growing on it. This is at present undergoing further tests at the Natural History Museum, London to establish its identity; it may prove to be an undescribed species.

Table 2. List of lichens recorded from 24-30 August 2016. Nomenclature follows Smith *et al.* (2009). An asterisk (*) after the species name denotes lichens for which specimens were added to the herbarium.

BLS No.	Lichens on Sherkin Island 2016	Conservation evaluation	Substrate	Habitat	Occurrence
10	<i>Acarospora fuscata</i>	LC	Sax	Rock outcrops, dry-stone walls	rare
5	<i>Acarospora impressula</i>	LC	Sax	Dry-stone wall	rare
34	<i>Acrocordia gemmata*</i>	LC	Cort	Sycamore	occasional
36	<i>Acrocordia salweyi*</i>	LC	Sax	Mortar of house	rare
38	<i>Agonimia tristicula</i>	LC	Bry	Mossy wall	rare
212	<i>Amandinea punctata*</i>	LC	Cort	Ash	occasional
47	<i>Anaptychia runcinata*</i>	LC	Sax	Rock outcrops	common
49	<i>Anisomeridium polypori*</i>	LC	Cort	Sycamore	frequent
72	<i>Arthonia cinnabarina*</i>	LC	Cort	Sycamore	rare
69	<i>Arthonia radiata*</i>	LC	Cort	Sycamore, elm, ash, <i>Prunus</i>	frequent
1542	<i>Arthopyrenia punctiformis*</i>	LC	Cort	<i>Prunus</i> sp.	rare
102	<i>Aspicilia caesiocinerea*</i>	LC	Sax	Rock outcrops	rare
103	<i>Aspicilia calcarea</i>	LC	Sax	Wall	occasional
131	<i>Bacidia arceutina*</i>	LC	Lig	Fence post	rare
155	<i>Bacidia laurocerasi*</i>	LC	Cort	Sycamore	rare
176	<i>Baeomyces rufus*</i>	LC	Terr	Heathland	rare
179	<i>Belonia nidarosiensis</i>	LC	Sax	Wall	rare
165	<i>Bilimbia sabuletorum*</i>	LC	Bry	Wall	rare
1628	<i>Botryolepraria lesdainii</i>	LC	Sax	Wall	occasional
200	<i>Buellia aethalea*</i>	LC	Sax	Rock outcrops, dry-stone walls	common
207	<i>Buellia griseovirens</i>	LC	Lig	Fence post	rare
219	<i>Buellia ocellata</i>	LC	Sax	Rock outcrops, dry-stone walls	occasional
216	<i>Buellia stellulata</i>	LC ?NS	Sax	Dry-stone wall	rare
	<i>Buellia</i> sp.*		Cort	Pine	rare
2442	<i>Caloplaca arcis</i>	LC NS	Sax	Wall	occasional
1644	<i>Caloplaca ceracea</i>	LC	Sax	Rock outcrops	frequent
241	<i>Caloplaca cerina</i> var. <i>cerina*</i>	LC	Cort	Ash, elm	occasional
247	<i>Caloplaca citrina</i> s. lat.	LC	Sax	Wall	occasional
253	<i>Caloplaca crenularia</i>	LC	Sax	Rock outcrops, dry-stone walls	frequent
249	<i>Caloplaca crenulatella</i>	LC	Sax	Concrete gate-post	rare
259	<i>Caloplaca flavescens</i>	LC	Sax	Wall	occasional
2527	<i>Caloplaca holocarpa</i> s.str.	LC	Sax	Wall and rock outcrops	occasional
267	<i>Caloplaca marina</i>	LC	Sax	Rock outcrops	occasional
268	<i>Caloplaca microthallina</i>	LC	Sax	Rock outcrops	rare
2461	<i>Caloplaca oasis</i>	LC	Sax	Wall	frequent
282	<i>Caloplaca thallincola</i>	LC	Sax	Rock outcrops	frequent
286	<i>Caloplaca verruculifera</i>	LC	Sax	Rock outcrops	rare
298	<i>Candelariella vitellina</i> f. <i>vitellina</i>	LC	Sax	Rock outcrops, dry-stone walls	common
306	<i>Catillaria chalybeia</i> var. <i>chalybeia*</i>	LC	Sax	Dry-stone wall	rare
311	<i>Catillaria lenticularis</i>	LC	Sax	Wall	occasional
430	<i>Cetraria aculeata</i>	LC	Terr	Heathland	rare
369	<i>Cladonia cervicornis</i> subsp. <i>cervicornis*</i>	LC	Terr	Heathland	frequent
370	<i>Cladonia cervicornis</i> subsp. <i>verticillata*</i>	LC	Terr	Heathland	occasional
371	<i>Cladonia chlorophaea</i> s. lat.*	LC	Terr + Sax	Heathland and memorial	occasional
373	<i>Cladonia ciliata</i> var. <i>tenuis*</i>	LC	Terr	Heathland	occasional
374	<i>Cladonia coccifera</i> s. lat.		Terr	Heathland	rare
386	<i>Cladonia floerkeana*</i>	LC	Terr	Heathland	rare
387	<i>Cladonia foliacea</i>	LC	Terr	Short turf	rare
389	<i>Cladonia furcata</i> subsp. <i>furcata*</i>	LC	Terr	Heathland	common
409	<i>Cladonia portentosa*</i>	LC	Terr	Heathland	occasional
410	<i>Cladonia pyxidata*</i>	LC	Sax	Rock outcrops	rare
359	<i>Cladonia ramulosa*</i>	LC	Terr	Heathland	rare
412	<i>Cladonia rangiformis*</i>	LC	Terr	Heathland	occasional
416	<i>Cladonia squamosa</i> s. lat.		Terr	Heathland	rare
2365	<i>Cladonia squamosa</i> var. <i>squamosa*</i>	LC	Sax	Headstone	rare
421	<i>Cladonia subcervicornis</i>	LC	Terr + Sax	Heathland	rare
426	<i>Cladonia uncialis</i> subsp. <i>biuncialis*</i>	LC	Terr	Heathland	rare
429	<i>Cliostomum griffithii*</i>	LC	Cort	Holly and sycamore	occasional
440	<i>Collema crispum</i> var. <i>crispum*</i>	LC	Sax	Dry-stone wall, wall	rare

442	<i>Collema cristatum</i> var. <i>cristatum</i> *	LC	Sax	Walls	occasional
449	<i>Collema furfuraceum</i>	LC	Sax	Rock outcrops	occasional
463	<i>Collema fuscovirens</i> *	LC	Sax	Headstone	rare
460	<i>Collema tenax</i> var. <i>ceranoides</i> *	LC	Terr	Path	occasional
459	<i>Collema tenax</i> var. <i>tenax</i> *	LC	Terr	Path	occasional
85	<i>Collemopsidium foveolatum</i>	LC	Other	Barnacles	frequent
1597	<i>Degelia ligulata</i> *	VU D2 NR Sc IR	Sax	Rock outcrops	occasional
484	<i>Dermatocarpon minutum</i> *	LC	Sax	Rock outcrops	occasional
490	<i>Dimerella lutea</i> *	LC	Cort	Pine	rare
491	<i>Diploicia canescens</i>	LC	Sax + Cort	Walls, pine	locally abundant
504	<i>Enterographa crassa</i> *	LC	Cort	Sycamore	occasional
506	<i>Enterographa hutchinsiae</i> *	LC	Cort	Sycamore	rare
508	<i>Ephebe hispidula</i> *	NT NR Sc	Sax	Rock outcrops	rare
511	<i>Evernia prunastri</i>	LC	Cort + Lig	Sycamore and fence post	frequent
987	<i>Flavoparmelia caperata</i>	LC	Sax + Cort	Rock outcrops, dry-stone walls, pine	common
515	<i>Fuscidea cyathoides</i> var. <i>cyathoides</i>	LC	Sax	Rock outcrops, dry-stone walls	common
521	<i>Fuscidea lightfootii</i>	LC	Cort	Pine	occasional
529	<i>Graphina anguina</i> *	LC	Cort	Sycamore	occasional
533	<i>Graphis scripta</i>	LC	Cort	Sycamore	rare
534	<i>Gyalecta biformis</i> *	DD NR Sc	Other	Thrift stem	rare
558	<i>Heterodermia leucomela</i> *	EN C2 NR P Eng Wa S8 IR	Terr	Short turf	rare
	<i>Hydropunctaria</i> sp.* (awaiting confirmation)		Sax	Rock outcrop at ground level	rare
582	<i>Hypogymnia physodes</i> *	LC	Cort	Ericaceous stems	occasional
1013	<i>Hypotrachyna revoluta</i> s. lat.		Sax	Rock outcrops	occasional
573	<i>Ionaspis lacustris</i> *	LC	Sax	Rock outcrops	rare
613	<i>Lecania cyrtella</i>	LC	Cort + Lig	Elm	occasional
1707	<i>Lecania inundata</i> *	LC NS	Sax	Wall	rare
159	<i>Lecania naegelii</i> *	LC	Cort + Lig	Elm	occasional
624	<i>Lecanora actophila</i>	LC	Sax	Rock outcrops	occasional
627	<i>Lecanora albescens</i>	LC	Sax	Wall	frequent
685	<i>Lecanora argentata</i> *	LC NS	Cort	Pine	rare
635	<i>Lecanora campestris</i> subsp. <i>campestris</i>	LC	Sax	Wall	frequent
639	<i>Lecanora chlarotera</i>	LC	Cort + Lig	Sycamore, elm, fence post	frequent
641	<i>Lecanora confusa</i>	LC	Lig + Cort	Fence post, <i>Prunus</i> , palm	occasional
644	<i>Lecanora crenulata</i>	LC	Sax	Wall, headstone	occasional
646	<i>Lecanora dispersa</i>	LC	Sax	Wall	frequent
649	<i>Lecanora expallens</i>	LC	Cort + Lig	Fence post	frequent
652	<i>Lecanora fugiens</i>	LC	Sax	Rock outcrops	occasional
653	<i>Lecanora gangaleoides</i>	LC	Sax	Rock outcrops, dry-stone walls	common
621	<i>Lecanora hagenii</i>	NE	Cort	Elm	rare
655	<i>Lecanora helicopis</i>	LC	Sax	Rock outcrops	occasional
656	<i>Lecanora intricata</i>	LC	Sax	Rock outcrops	rare
667	<i>Lecanora polytropa</i> *	LC	Sax	Rock outcrops, dry-stone walls	frequent
674	<i>Lecanora rupicola</i> var. <i>rupicola</i> *	LC	Sax	Rock outcrops, dry-stone walls	frequent
675	<i>Lecanora saligna</i> *	LC	Lig	Fence post	rare
783	<i>Lecanora sulphurea</i> *	LC	Sax	Rock outcrops, dry-stone walls	occasional
688	<i>Lecanora symmicta</i>	LC	Lig	Fence post	occasional
2287	<i>Lecanora zosteræ</i> *	LC NS	Other	Thrift stem	occasional
2474	<i>Lecidea grisella</i> *	LC	Sax	Rock outcrops	rare
804	<i>Lecidella asema</i>	LC	Sax	Rock outcrops	frequent
796	<i>Lecidella carpathica</i> *	LC	Sax	Dry-stone wall	rare
797	<i>Lecidella elaeochroma</i> f. <i>elaeochroma</i> *	LC	Cort + Lig	Sycamore, elm, fenceposts	frequent
802	<i>Lecidella scabra</i>	LC	Sax	Rock outcrops, walls	common
803	<i>Lecidella stigmatea</i>	LC	Sax	Wall	frequent
820	<i>Lepraria incana</i> s. lat.*		Sax	Wall	frequent
1629	<i>Lepraria lobificans</i> *	LC	Sax	Wall	occasional
839	<i>Leptogium lichenoides</i> *	LC	Cort + Bry	Elm, mossy wall top	rare
2530	<i>Leptogium pulvinatum</i> *	LC	Terr + Bry	Bank, mossy wall top	occasional
851	<i>Lichina confinis</i> *	LC	Sax	Rock outcrops	frequent
852	<i>Lichina pygmaea</i> *	LC	Sax	Rock outcrops	occasional
998	<i>Melanelixia fuliginosa</i>	LC	Sax	Rock outcrops	occasional
1020	<i>Melanelixia subaurifera</i>	LC	Cort	Sycamore, <i>Prunus</i>	rare
880	<i>Micarea lignaria</i> var. <i>lignaria</i> *	LC	Terr	Heathland	occasional
920	<i>Normandina pulchella</i> *	LC	Cort + Bry	Sycamore	occasional
921	<i>Ochrolechia androgyna</i> *	LC	Sax	Rock outcrops	common

926	<i>Ochrolechia parella</i>	LC	Sax	Rock outcrops, dry-stone wall, walls	common
938	<i>Opegrapha atra</i>	LC	Cort	Elm, sycamore, ash	frequent
959	<i>Opegrapha calcarea*</i>	LC	Sax	Rock outcrops, dry-stone walls, walls	frequent
947	<i>Opegrapha gyrocarpa</i>	LC	Sax	Dry-stone wall	occasional
951	<i>Opegrapha lithyrgea*</i>	LC NS	Sax	Rock underhang	rare
943	<i>Opegrapha vulgata*</i>	LC	Cort	Pine, sycamore	frequent
1006	<i>Parmelia omphalodes</i>	LC	Sax	Rock outcrops	occasional
1015	<i>Parmelia saxatilis</i>	LC	Sax	Rock outcrops	common
1022	<i>Parmelia sulcata</i>	LC	Cort + Sax	Rock outcrops, dry-stone walls	frequent
989	<i>Parmotrema crinitum*</i>	LC	Sax	Rock outcrops	occasional
1008	<i>Parmotrema perlatum</i>	LC	Cort + Sax + Lig	Rock outcrops, dry-stone walls	abundant
1012	<i>Parmotrema reticulatum*</i>	LC	Sax	Rock outcrops	rare
1047	<i>Peltigera membranacea*</i>	LC	Terr	Short turf	occasional
1057	<i>Pertusaria albescens</i> var. <i>corallina*</i>	LC	Sax	Rock outcrops, dry-stone walls	rare
1058	<i>Pertusaria amara</i> f. <i>amara*</i>	LC	Cort + Sax	Sycamore, rock outcrop	rare
1066	<i>Pertusaria corallina</i>	LC	Sax	Rock outcrops	occasional
1072	<i>Pertusaria flavicans</i>	LC	Sax	Rock outcrops	occasional
1076	<i>Pertusaria hymenea</i>	LC	Cort	Sycamore	rare
1079	<i>Pertusaria leioplaca</i>	LC	Cort	Sycamore	rare
1087	<i>Pertusaria pertusa</i>	LC	Cort	Sycamore, ash	rare
1089	<i>Pertusaria pseudocorallina*</i>	LC	Sax	Rock outcrops, dry-stone walls	abundant
1103	<i>Phaeographis smithii*</i>	LC	Cort	Sycamore	occasional
1107	<i>Phaeophyscia orbicularis</i>	LC	Lig + Cort	Post-box, elm	rare
1112	<i>Physcia adscendens</i>	LC	Sax	Wall	rare
1113	<i>Physcia aipolia*</i>	LC	Cort	Sycamore, ash	rare
1114	<i>Physcia caesia*</i>	LC	Sax	Wall	rare
1118	<i>Physcia leptalea*</i>	LC	Cort + Sax	Sycamore	occasional
1120	<i>Physcia tenella</i>	LC	Cort	Sycamore	occasional
756	<i>Placynthiella oligotropha*</i>	LC NS	Terr	Heathland	rare
1139	<i>Placynthium nigrum</i>	LC	Sax	Wall	rare
1167	<i>Polysporina simplex*</i>	LC	Sax	Dry-stone wall	rare
562	<i>Porpidia cinereoatra*</i>	LC	Sax	Rock outcrops, dry-stone wall	frequent
564	<i>Porpidia crustulata*</i>	LC	Sax	Rock outcrops, dry-stone walls	rare
568	<i>Porpidia macrocarpa</i> f. <i>macrocarpa*</i>	LC	Sax	Dry-stone wall	occasional
572	<i>Porpidia tuberculosa</i>	LC	Sax	Rock outcrops, dry-stone walls	occasional
1189	<i>Protoblastenia rupestris</i>	LC	Sax	Wall	occasional
1211	<i>Pycnothelia papillaria*</i>	LC	Terr	Heathland	rare
1221	<i>Pyrenula chlorospila*</i>	LC	Cort	Sycamore, elm	common
1224	<i>Pyrenula macrospora*</i>	LC	Cort	Sycamore	occasional
1230	<i>Ramalina canariensis*</i>	LC	Cort	Shrub	rare
1232	<i>Ramalina cuspidata</i>	LC	Sax	Rock outcrops	frequent
1234	<i>Ramalina farinacea*</i>	LC	Cort	Sycamore, ash, shrubs	occasional
1235	<i>Ramalina fastigiata</i>	LC	Cort	Sycamore, shrubs	occasional
1233	<i>Ramalina lacera*</i>	LC	Cort	Pine, willow	rare
1240	<i>Ramalina siliquosa</i>	LC	Sax	Rock outcrops, dry-stone wall	common
1241	<i>Ramalina subfarinacea</i>	LC	Sax	Rock outcrops	rare
1257	<i>Rhizocarpon geographicum*</i>	LC	Sax	Rock outcrops, walls	occasional
1266	<i>Rhizocarpon reductum</i>	LC	Sax	Rock outcrops, dry-stone walls	common
1250	<i>Rhizocarpon richardii</i>	LC	Sax	Rock outcrops	frequent
1281	<i>Rinodina atrocinerea*</i>	LC	Sax	Rock outcrops	rare
1320	<i>Scoliciosporum chlorococcum*</i>	LC	Cort	Elm	rare
1325	<i>Solenopsora holophaea*</i>	LC NS	Sax	Rock outcrops	occasional
1326	<i>Solenopsora vulturiensis*</i>	LC	Sax	Rock outcrops, walls	occasional
1332	<i>Sphaerophorus fragilis</i>	LC	Terr	Heathland	rare
1381	<i>Teloschistes flavicans</i>	VU A NS P Eng Wa S8	Sax	Rock outcrops	rare
630	<i>Tephromela atra</i> var. <i>atra</i>	LC	Sax	Rock outcrops, dry-stone walls	common
1415	<i>Toninia aromatica*</i>	LC	Sax	Wall	occasional
1432	<i>Trapelia glebulosa</i>	LC	Sax	Dry-stone wall	rare
1595	<i>Trapelia placodioides</i>	LC	Sax	Dry-stone wall	rare
1582	<i>Trapeliopsis pseudogranulosa</i>	LC	Terr	heathland	occasional
1816	<i>Usnea esperantiana*</i>	NT NR Sc IR	Cort	Shrub	rare
1461	<i>Usnea flammea*</i>	LC	Sax	Rock outcrops	rare
1462	<i>Usnea florida*</i>	NT ? P Eng Sc Wa	Cort	<i>Berberis</i>	rare
1471	<i>Usnea subfloridana*</i>	LC	Sax	Rock outcrops	occasional
977	<i>Vahliella leucophaea*</i>	LC	Sax	Rock outcrops	rare

1492	Verrucaria fuscella	LC	Sax	Wall	rare
1491	Verrucaria fusconigrescens	LC	Sax	Dry-stone wall	occasional
1519	Verrucaria macrostoma f. furfuracea	LC	Sax	Wall	occasional
1502	Verrucaria macrostoma f. macrostoma*	LC	Sax	Wall	frequent
1504	Verrucaria maura	LC	Sax	Rock outcrops	common
1507	Verrucaria muralis*	LC	Sax	On pebbles on soily wall top	rare
1518	Verrucaria viridula*	LC	Sax	Wall	occasional
	Verrucaria sp.* (awaiting confirmation)		Sax	Bed of stream	rare
988	Xanthoparmelia conspersa*	LC	Sax	Rock outcrops	rare
990	Xanthoparmelia delisei*	LC NS	Sax	Rock outcrops	rare
1009	Xanthoparmelia pulla*	LC	Sax	Rock outcrops	rare
1026	Xanthoparmelia verruculifera	LC	Sax	Rock outcrops	occasional
1538	Xanthoria aureola	LC	Sax	Rock outcrops	occasional
1530	Xanthoria parietina	LC	Sax	Rock outcrops, walls	common

Current total 203

Key to the conservation evaluation abbreviations

IUCN threat categories

EX -Extinct

CR -Critically Endangered

EN -Endangered

VU -Vulnerable

DD -Data Deficient

NT -Near Threatened

LC - Least Concern

NE -Not Evaluated

IR - International Responsibility

IUCN - International Union for the Conservation of Nature

NR - Nationally Rare

NS - Nationally Scarce

P - Priority National BAP species

RDB - Red Data Book

S8 - Lichen listed on Schedule 8 (and subsequent reviews) of the Wildlife and Countryside Act 1981

Discussion

Historical lichen records for Sherkin

Table 3 gives a summary of all the lichen records known from Sherkin Island prior to the field study that was undertaken in August 2016. The contributors to this data record are considered in turn below; a few species have been omitted because the reliability of the reports is considered by us to be doubtful. Many of the records in early reports use older synonyms but the checklist in Table 3 follows Smith *et al.* (2009). A nomenclatural table (Appendix 5) allows a comparison to be made between older and current names.

Lilian Porter's 1934 records

A Blue Plaque was erected at the National Botanic Gardens, Dublin in October 2014 to commemorate the life and work of the pioneering Irish lichenologist Matilda Knowles (1864-1933). Her most significant work, published in 1929, was an account entitled *The Lichens of Ireland*, the first national checklist. However, the earliest lichen records from Sherkin were not recorded until a year after her death when Lilian Porter visited the island in 1934. A Supplement to the work by Knowles was produced by Porter in 1948 in which she documented 14 species that had been found on Sherkin. A shorter publication by Porter in 1936 listed ninety-two species collected from Lough Hyne, Baltimore and Sherkin, but their individual localities were not specified.

With the help of museum curators from several institutions some of these specimens have recently been traced to the herbarium collection in Trinity College Dublin (TCD) where they are now kept.

We believe that samples of three of the lichens listed in 1948 now reside in the Lilian Porter Lichen Herbarium collection along with a

Table 3. List of lichens recorded on Sherkin prior to 2016.

BLS No.	LICHENS	1930s	Rocky shore (1976-2015)		1975	1984/1986	1997/1999
47	Anaptychia runcinata	1934	Monthly	Yearly	1975	1984, 1986	1997, 1999
176	Baeomyces rufus	1934					
216	Buellia stellulata	1934			1975		
217	Buellia subdisciformis	1934					
1644	Caloplaca ceracea		Monthly				
247	Caloplaca citrina s. lat.		Monthly				
253	Caloplaca crenularia		Monthly	Yearly		1986	
2280	Caloplaca ferruginea s. lat.				1975		1999
259	Caloplaca flavescens		Monthly	Yearly	1975		
255	Caloplaca flavovirescens*		Monthly				
261	Caloplaca holocarpa s.lat.	1934					
265	Caloplaca littorea**						1999
267	Caloplaca marina [Orange Sea Lichen]	1934	Monthly	Yearly	1975	1986	1999
280	Caloplaca maritima		Monthly	Yearly			
268	Caloplaca microthallina		Monthly	Yearly			
282	Caloplaca thallincola		Monthly	Yearly	1975	1986	1999
286	Caloplaca verruculifera [Orange Sea Star]				1975		
296	Candelariella medians**						1999
298	Candelariella vitellina f. vitellina				1975	1986	
306	Catillaria chalybeia var. chalybeia		Monthly		1975		
430	Cetraria aculeata	1934, 1917-44					1999
360	Cladonia arbuscula subsp. squarrosa				1975		
362	Cladonia bellidiflora						1999
369	Cladonia cervicornis subsp. cervicornis					1986	1997, 1999
370	Cladonia cervicornis subsp. verticillata						1999
371	Cladonia chlorophaea (s. lat.)					1986	
374	Cladonia coccifera s. lat.				1975		1999
375	Cladonia coniocraea						1999
378	Cladonia cornuta RDB	1934, 1938					
386	Cladonia floerkeana	1934				1986	1999
389	Cladonia furcata subsp. furcata	1934				1986	1999
403	Cladonia ochrochlora*						1999
407	Cladonia pocillum					1986	
408	Cladonia polydactyla						1999
409	Cladonia portentosa					1986	1999
410	Cladonia pyxidata	1934					1999
412	Cladonia rangiformis					1986	
416	Cladonia squamosa s. lat.	1934				1986	1999
421	Cladonia subcervicornis				1975		
422	Cladonia subulata*						1999
426	Cladonia uncialis subsp. biuncialis				1975		
689	Cliostomum tenerum				1975		
433	Collema auriforme*						1999
449	Collema furfuraceum				1975		
85	Collemopsidium foveolatum		Monthly	Yearly	1975		
87	Collemopsidium halodytes	1934					
1027	Degelia atlantica RDB				1975		
484	Dermatocarpon miniatum				1975		
491	Diploicia canescens	1934			1975		
492	Diploschistes caesioplumbeus**						1999
511	Evernia prunastri [Oak Moss]				1975	1986	
987	Flavoparmelia caperata				1975	1986	1997, 1999
515	Fuscidea cyathoides var. cyathoides				1975		
532	Graphis elegans						1999
533	Graphis scripta [Script Lichen]					1986	1999
558	Heterodermia leucomela [Ciliate Strap-lichen] RDB				1975		
582	Hypogymnia physodes [Dark Crottle]				1975		
1013	Hypotrachyna revoluta		Monthly				
624	Lecanora actophila		Monthly	Yearly	1975		1999
635	Lecanora campestris subsp. campestris		Monthly	Yearly	1975	1986	
639	Lecanora chlarotera		Monthly		1975		
646	Lecanora dispersa				1975		
652	Lecanora fugiens		Monthly	Yearly			
653	Lecanora gangaleoides		Monthly	Yearly			
655	Lecanora helicopis		Monthly	Yearly		1986	
667	Lecanora polytropa				1975		
674	Lecanora rupicola var. rupicola		Monthly	Yearly		1986	
783	Lecanora sulphurea		Monthly	Yearly			
711	Lecidea confluens	1934					
2474	Lecidea grisella		Monthly				
804	Lecidella asema		Monthly	Yearly	1975		
797	Lecidella elaeochroma f. elaeochroma				1975	1986	
798	Lecidella elaeochroma f. soralifera				1975		
802	Lecidella scabra		Monthly			1986	
820	Lepraria incana s. lat.						1999
824	Leprocaulon microscopicum*		Monthly	Yearly			

851	Lichina confinis		Monthly	Yearly	1975		
852	Lichina pygmaea [Black Lichen]	1917-44	Monthly	Yearly	1975	1984	
998	Melanelixia fuliginosa				1975	1986	
1020	Melanelixia subaurifera				1975		
25	Myriospora smaragdula				1975		
921	Ochrolechia androgyna				1975		
926	Ochrolechia parella [Parelle]	1934	Monthly	Yearly	1975		1999
928	Ochrolechia tartarea						1999
938	Opegrapha atra				1975		
959	Opegrapha calcarea	1934		Yearly	1975		
943	Opegrapha vulgata					1986	
1006	Parmelia omphalodes				1975		
1015	Parmelia saxatilis	1934			1975	1986	1999
1022	Parmelia sulcata [Netted Shield Lichen]				1975	1986	
989	Parmotrema crinitum				1975	1986	
1008	Parmotrema perlatum				1975	1986	1997, 1999
1012	Parmotrema reticulatum					1986	
1039	Peltigera canina						1999
1047	Peltigera membranacea					1986	
1051	Peltigera rufescens	1934			1975		
1058	Pertusaria amara f. amara				1975		
1066	Pertusaria corallina						1999
1078	Pertusaria lactescens RDB	-1948					
1089	Pertusaria pseudocorallina				1975	1986	
1100	Phaeographis dendritica				1975		
1107	Phaeophyscia orbicularis	1934			1975		
1112	Physcia adscendens nom. cons.			Yearly	1975		1999
1118	Physcia leptalea					1986	
1120	Physcia tenella					1986	
1171	Porina chlorotica f. chlorotica				1975		
564	Porpidia crustulata					1986	1999
572	Porpidia tuberculosa			Yearly	1975		
1021	Punctelia subrudecta s. lat.				1975		
1224	Pyrenula macrospora					1986	1999
1231	Ramalina calicaris					1986	
1230	Ramalina canariensis					1986	
1232	Ramalina cuspidata					1986	1999
1234	Ramalina farinacea				1975	1986	1999
1233	Ramalina lacera				1975		
1240	Ramalina siliquosa [Sea Ivory]		Monthly	Yearly	1975	1984, 1986	1997, 1999
1241	Ramalina subfarinacea	1934			1975	1986	
1257	Rhizocarpon geographicum		Monthly	Yearly	1975		1999
1264	Rhizocarpon lavatum	1934				1986	
1266	Rhizocarpon reductum				1975		
1250	Rhizocarpon richardii		Monthly	Yearly			
1299	Rinodina beccariana*			Yearly			
1289	Rinodina oleae				1975		
1325	Solenopsora holophaea		Monthly	Yearly	1975		
1326	Solenopsora vulturienensis		Monthly		1975		
1333	Sphaerophorus globosus				1975		
1367	Sticta fuliginosa RDB				1975	1986	
1381	Teloschistes flavicans [Golden Hair-lichen] RDB				1975	1986	1997
630	Tephromela atra var. atra	1934	Monthly	Yearly	1975	1986	1999
1410	Thelotrema lepadinum						1999
1415	Toninia aromatica					1986	
1440	Tylothallia biformigera	1934					
1469	Usnea cornuta					1986	
1462	Usnea florida						1999
1817	Usnea fragilescens var. mollis				1975		
1471	Usnea subfloridana						1999
1474	Verrucaria amphibia				1975		
1491	Verrucaria fusconigrescens			Yearly		1986	
1493	Verrucaria halizoa				1975		
1504	Verrucaria maura		Monthly	Yearly	1975	1986	1999
1506	Verrucaria mucosa		Monthly	Yearly	1975		
1514	Verrucaria prominula		Monthly		1975		1999
1517	Verrucaria striatula		Monthly	Yearly	1975		
1518	Verrucaria viridula				1975		
988	Xanthoparmelia conspersa						1999
1003	Xanthoparmelia loxodes					1986	
1005	Xanthoparmelia mougeotii*						1999
1538	Xanthoria aureola						1999
1530	Xanthoria parietina [Common Orange Lichen]		Monthly	Yearly	1975	1984, 1986	1999

Species denoted by one (*) or two (**) asterisks may represent unreported new records for W02 and West Cork vice-county, respectively.

further 12 specimens from the island, bringing the total to 26 for this early period. It is not clear why these additional herbarium records were not included in the 1948 work by Porter.

Cladonia cornuta, *Collembosidium halodytes* and *Tylothallia biformigera* have not been found since 1934 so the specimens represent their only records from the island, and although these specimens from Sherkin are believed to reside at TCD, they were not listed in either of Porter's works. For *Caloplaca holocarpa* s. lat., *Lecidea confluens* and *Pertusaria lactescens* (a Red Data Book species) the reports of these lichens in Porter's 1948 account are also their only records to date, but all other species have been found by subsequent workers. Eighteen of the 26 from this period were re-found during the present study in 2016.

Pat McCarthy's 1975 records

No further lichenology was carried out on Sherkin Island until the Marine Station was established there in 1975. During its inaugural year Pat McCarthy was one of the volunteer biologists who worked at the station and his developing interest in lichens led to records from that time from several of the islands in Roaringwater Bay that he visited. These included Heir (Hare) Island, Spanish Island, Long Island and the three Calf Islands (East, Middle and West) in addition to Sherkin. Sections on lichens in the early Marine Station reports, which are reproduced in Appendix 6, highlighted some of the more interesting finds that included *Teloschistes flavicans* and *Anaptychia leucomelaena* (= *Heterodermia leucomela*), both RDB species; another, *Sticta sylvatica*, was found on Long Island on 31st July 1975 and later, on 2nd September, on Spanish Island. However, this species has not yet been found on Sherkin.

Reference is made in these accounts to specimens that were collected at the time but we have been unable to establish the whereabouts of any of these so have to conclude that it is unlikely that any are still in existence. The Marine Station does not hold any specimens from this time and we have eliminated the possibility that they were incorporated into the herbarium collections at University College, Cork and University College, Galway where Pat was based at the time he was working on his PhD thesis. The herbarium from UCC, which included the Lilian Porter collection, was moved to Dublin (TCD) during David Richardson's tenure as Professor of Botany at Trinity College. In 2000, lichens in the UCC herbarium were also transferred to Dublin (DBN), the collection at the National Botanic Gardens, Glasnevin, and although some of Pat's specimens from other parts of Ireland now reside in the National Herbarium, there are none that originated from Sherkin. We have also been able to discount the collection at TCD as a final possibility. However, the records from Roaringwater Bay islands were submitted by Pat in 1975 on Biological Records Centre (BRC) cards and this data has been transferred to the British Lichen Society database. It is these records that form the basis of the Sherkin lichens listed in Table 3.

A hand-typed list held in the marine Station archive consists of 92 entries for Sherkin that include some duplication but Pat (pers. comm.) has expressed his reservations about some of the species listed and indeed there are differences between that list and those that were eventually submitted on the BRC record card (Appendix 6). However a number of those that were left out have been reported since, including at least eight during the present study.

The BRC card for Sherkin included 80 entries plus an earlier synonym for *Ramalina siliquosa* (*R. incrassata*) that has since been merged with this species. As a result of other taxonomic revisions, three of

the reports have had to be omitted from our checklist because of possible confusion with other synonyms for the species, but the remaining 77 records from 1975 are listed in Table 3.

During the 2016 survey, 59 of the 77 lichens found by Pat McCarthy were re-discovered and a further six have been recorded by other studies on the island. The remaining 12 species found on Sherkin only in 1975, with the exception of *Cliostomum tenerum*, have all been recorded in W02 at Baltimore or Lough Hyne, or within West Cork from Roaringwater Bay sites. But the report of *C. tenerum* is the only vice-county record for this lichen.

Rocky shore data 1975-2015

Pat McCarthy was also instrumental in developing the methodology that was to be used in monitoring lichens in the rocky shore surveys that grew out of the pioneering studies at the Marine Station in 1975.

In order to monitor changes in the rocky shore habitat over time, seven monthly monitoring stations and nineteen annual sites were set up on the island and surveys have been undertaken of the many organisms associated with the rocky shore for over 40 years.

Amongst the huge amount of data collected, lichens were also recorded although it is likely that none of the surveyors were experienced lichenologists.

An analysis of the monthly surveys carried out between 1981 and 2000 has been published in a twenty-year perspective (Bishop, 2003) and a summary of monthly surveys thereafter until 2015, along with annual monitoring site records, has been provided to the authors as unpublished data by the Marine Station.

Table 4. Frequency of occurrence of lichens at the monthly seashore monitoring sites on Sherkin between 1981 and 2000.

Lichen species	Poulacurra	Drolain	Globe Rocks	Horseshoe	Reenahoe	Kinish (E)	Kinish (W)
Anaptychia runcinata					1	4	2
Caloplaca crenularia					1	1	
Caloplaca marina	1	20	17	16	19	20	20
Caloplaca thallincola			2		2		2
Lichina confinis	7	20	16	12	20	20	14
Lichina pygmaea	20	20	17	16	20	20	17
Ochrolechia frigida*			(1)		(2)	(1)	(2)
Ochrolechia parella		5	10	6	12	11	9
Ophioparma ventosa*			(1)		(1)	(1)	(1)
Ramalina siliquosa			17	2	20	20	
Rhizocarpon geographicum					1		
Tephromela atra	3	16	18	17	20	20	20
Verrucaria maura	20	20	20	20	20	20	20
Verrucaria mucosa	18	18	20	20	19	19	19
Xanthoria parietina		10	16	12	20	20	20
Total	6	8	10	9	13	11	10

Notes: The figures show the number of years, out of 20, that each lichen was recorded at the seven monthly monitoring sites on Sherkin. Details of the individual years of occurrence are given in Appendix 3 in Bishop, 2003. Doubtful identifications are denoted here by an asterisk (*) and these figures excluded from the site totals.

In the period reviewed by Bishop, 15 lichen species were recorded on the monthly surveys, although two are probably mis-identifications (see below), and details of their occurrences at the seven sites are given for each of the 20 years in an appendix in the book. Table 4 is a summary of this data which shows that only *Verrucaria maura* had a ubiquitous presence. Post 2000 a further 28 species (including two more possible mis-identifications) were recorded bringing the total to 43, or 39, species from the monthly rocky shore sites. A slightly lower species count of 34 has been recorded from the annual survey stations on Sherkin with an overall total of 44 reliable identifications from the rocky shore habitat (Table 5).

The table shows that a high proportion of these species were found on the 2016 survey suggesting that although the rocky shore lichen data has been collected by non-specialists, it is for the most part sound, but there are a few exceptions.

Table 5. Summary of annual and monthly seashore monitoring records from 1975-2015; those species that were re-found in August 2016 are indicated.

Lichen species	Annual records	Monthly records	Records from individual monthly monitoring sites on Sherkin							2016 records	
			Poulacurra	Drolain	Globe Rks	Horseshoe	Reenahoe	Kinish (E)	Kinish (W)		
Anaptychia runcinata	•	•		+				+	+	+	•
Caloplaca ceracea		•		+					+		•
Caloplaca citrina		•						+			•
Caloplaca crenularia	•	•		+				+	+	+	•
Caloplaca flavescens	•	•								+	•
Caloplaca flavovirescens		•				+		+	+		
Caloplaca marina	•	•	+	+	+		+	+	+	+	•
Caloplaca maritima	•	•		+	+		+	+	+	+	
Caloplaca microthallina	•	•		+	+		+	+	+	+	•
Caloplaca thallicola	•	•		+	+		+	+	+	+	•
Catillaria chalybeia		•								+	•
Diploschistes scruposus*		(•)						(+)			
Hypotrachyna revoluta		•							+		•
Lecanora actophila	•	•	+	+	+		+	+	+	+	•
Lecanora campestris	•	•		+			+		+		•
Lecanora chlarotera		•							+		•
Lecanora fugiens	•	•			+			+	+	+	•
Lecanora gangaleoides	•	•		+	+		+	+	+	+	•
Lecanora helicopis	•	•		+	+			+	+	+	•
Lecanora rupicola	•	•			+		+				•
Lecanora sulphurea	•	•		+	+			+	+	+	•
Lecidea grisella		•		+	+		+	+	+	+	•
Lecidella asema	•	•		+	+					+	•
Lecidella scabra		•							+		•
Leprocaulon microscopicum	•	•		+				+	+		
Lichina confinis	•	•	+	+	+		+	+	+	+	•
Lichina pygmaea	•	•	+	+	+		+	+	+	+	•
Ochrolechia frigida*	(•)	(•)			(+)			(+)	(+)	(+)	
Ochrolechia parella	•	•	+	+	+		+	+	+	+	•
Opegrapha calcarea	•										•
Ophioparma ventosa*		(•)			(+)			(+)	(+)	(+)	
Physcia adscendens	•										•
Porpidia tuberculosa	•										•
Pyrenocollema halodytes	•	•	+	+	+		+	+	+	+	•
Ramalina siliquosa	•	•		+	+		+	+	+	+	•
Rhizocarpon geographicum	•	•						+			•
Rhizocarpon richardii	•	•		+			+	+			•
Rinodina beccariana	•										•
Solenopsora holophaea	•	•							+		•
Solenopsora vulturienis		•						+			•
Squamarina cartilaginea*		(•)						(+)			
Tephromela atra	•	•	+	+	+		+	+	+	+	•
Verrucaria fusconigrescens	•										•
Verrucaria maura	•	•	+	+	+		+	+	+	+	•
Verrucaria mucosa	•	•	+	+	+		+	+	+	+	•
Verrucaria prominula		•					+				
Verrucaria striatula	•	•		+			+	+		+	
Xanthoria parietina	•	•		+	+		+	+	+	+	•
Totals	44	34	39	9	26	22	21	29	29	25	37

Note: Uncertain identifications are denoted by an asterisk (*) after the species name and bracketed figures which are excluded from column totals.

Ophioparma ventosa was found in 1999 on four transects but in that year only. *Ochrolechia frigida* was found on the same four transects but in 1995 and in an additional year at two of these sites, in 1994 and 1997 respectively. Both species had been reported from the Kinish Harbour West transect and as we were sceptical about these two records we devoted some time to relocating the position of the transect site and hunting for these lichens, but neither was re-found. Although both species are quite distinctive we suspect that these were mis-identifications. Both are considered to be unlikely, but if validated would represent new vice-county records; *O. frigida* is known from one vice-county only in Ireland.

Squamarina cartilaginea was recorded at only one monthly site (Reenahoe), post 2000, but this is regarded as being very unlikely because it is a strongly calcicolous species. The report is likely to represent possible confusion with *Solenopsora holophaea* which was not recorded there, but if confirmed the *Squamarina* would be a new vice-county and county record, although the species is fairly widely distributed throughout Ireland as a whole.

The post 2000 record of *Diploschistes scruposus* from only one monitoring site (Reenahoe) would, if confirmed, be the only record for this species in VC3, but it is possible that this is another mis-identification. We came across several specimens of very contorted and strange-looking *Lecanora gangaleoides* which at first glance suggested a *Diploschistes* species but the C- reaction ruled this out. The fact that *L. gangaleoides* is also known to occur on the transect at Reenahoe reinforces the likelihood of this confusion.

Of the other lichens not recorded on the 2016 survey, the *Verrucaria* species (*V. mucosa*, *V. prominula*, and *V. striatula*) are the ones that are almost certainly present and indeed all three species were also recorded by Pat McCarthy in 1975. *V. mucosa* was by far the most frequently recorded of these three during monitoring studies (Tables 4 and 5) and is one of nine species shown in bold that have been found at each of the seven monthly sites (Table 5). We spent little

time on the actual seashore and we are non-specialists in this environment. We are not familiar with the dark brown to black *Verrucaria* and *Hydropunctaria* species and did not sample them. On the other hand we did try hard to find *Caloplaca maritima*, but to no avail. It was recorded from Heir Island (W02) in 2013 and there are several other recent vice-county records (LichenIreland 2009, 2012) so we probably overlooked this species.

Although we did not find *Caloplaca flavovirescens* either, this lichen has been recorded in recent years from West Cork (LichenIreland 2005-2012), but not from elsewhere in the 10 km square W02. *Rinodina beccariana* is mentioned in Seaward (2010) as being present in VC3 but it is not on the NPWS or LichenIreland databases, although it is quite possible that this species is present on the island.

Leprocaulon microscopicum was recorded on three of the monthly monitoring sites post 2000 and at one of the annual transects (Table 5) but we did not find it in 2016. However, there are three vice-county records – one on an unspecified date from hectad V72, one on Cape Clear (V92) in 1983 by Mark Seaward, and one at Milltown (W33) in 2007 by Vince Giavarini, so it is also likely that it is present on Sherkin.

Table 5 includes all the species recorded during the rocky shore surveys but the four doubtful determinations, denoted by an asterisk in this table, have been omitted from the compilation of historic records presented in Table 3.

1986 lichen collection

The first specimens of lichens in the Sherkin Island Marine Station (SIMS) herbarium were deposited during the botanical survey carried out by Carol Hora, John Akeroyd and Stephen Jury in August 1986 when Stephen Jury established a cryptogamic collection. All fifty of the lichens reported from the study were backed up by a specimen lodged in the herbarium. Many of the identifications were confirmed

by or determined by Brian Coppins, so all are reliable records. Four incidental samples of common lichens collected in 1984 were incorporated into the cryptogamic herbarium at this time, contributing one further species.

Copies of the original hand-written herbarium notes from 1986 held in the Marine Station archive (Appendix 6) were submitted to the BLS recording scheme and the records added to their data.

Other studies

In 1997 six specimens were added to the herbarium by Leander Wolstenholme but none were new species, although the sample of *Teloschistes flavicans* confirmed its continued presence on the island.

Two years later, Caroline Kingsnorth added specimens of 12 lichens to the collection that represented eight additional species, and although one of these (*Sphaerophorus fragilis*) was collected on Heir Island it was subsequently found on Sherkin during the 2016 survey.

In total, 50 species were reported from Sherkin in 1999 of which 34 were also recorded by the present study and another two had been found previously. Specimens were provided for two further species but the remaining 12 records cannot be verified. However, there are vice-county records for nine of them including five from Lough Hyne in W02, or from nearby Cape Clear. But for the other three, *Caloplaca littorea*, *Candelariella medians* and *Diploschistes caesioplumbeus*, the 1999 reports are the only vice-county records for these lichens. These three species together with seven others including *Cladonia ochrochlora*, *C. subulata*, *Collema auriforme* and *Xanthoparmelia mougeotii* from the 1999 survey, and *Caloplaca flavovirescens*, *Leprocaulon microscopicum* and *Rinodina beccariana*

from the rocky shore study, may also be new for W02 from these hitherto unreported sources.

Before the 2016 field study was carried out, 149 lichen species had already been recorded from the island (Table 3) and the SIMS cryptogamic herbarium held specimens of 58 of them (Appendix 2).

Comparison with previous records

During the 2016 field survey, 203 species were found of which 103 were previously unrecorded from the island. Table 6 shows a checklist of all known lichen records from Sherkin Island that combines historical records with those from the current study. The table indicates which species are new records, not just to the island flora, but for the 10 kilometre square, the vice-county and, in three cases, nationally as well.

About half of the new-to-Sherkin lichens were common species (although not necessarily common on Sherkin) which have almost certainly been overlooked during previous surveys of the lichen flora of the island. Many were from man-made habitats which tend to be under-recorded by lichenologists faced by a rich variety of natural habitats. This is further underlined by the fact that there were half as many (48) new hectad records (W02) as there were new-to-Sherkin records.

Ten of the lichens found in 2016 are also believed to be new vice-county records with a further two awaiting verification. In a couple of instances, because recent re-evaluation of the species concept has occurred, the records may not strictly be new although our reports may represent the first confirmation for these lichens in the new taxonomic sense.

Table 6. Combined checklist of all known lichen records from Sherkin Island. Nomenclature follows Smith *et al.* (2009).

BLS No.	LICHENS	2016	pre	New records from 2016 survey		
10	Acarospora fuscata	•		Sherkin		
5	Acarospora impressula	•		Sherkin	W02	
34	Acrocordia gemmata	•		Sherkin		
36	Acrocordia salweyi	•		Sherkin	W02	
38	Agonimia tristicula	•		Sherkin	W02	
212	Amandinea punctata	•		Sherkin		
47	Anaptychia runcinata	•	•			
49	Anisomeridium polypori	•		Sherkin	W02	
72	Arthonia cinnabarina	•		Sherkin		
69	Arthonia radiata	•		Sherkin		
1542	Arthopyrenia punctiformis*	•		Sherkin		
102	Aspicilia caesiocinerea	•		Sherkin		
103	Aspicilia calcarea	•		Sherkin	W02	
131	Bacidia arceutina	•		Sherkin	W02	
155	Bacidia laurocerasi	•		Sherkin		
176	Baeomyces rufus	•	•			
179	Belonia nidarosiensis	•		Sherkin	W02	
165	Bilimbia sabuletorum	•		Sherkin		
1628	Botryolepraria lesdainii	•		Sherkin	W02	
200	Buellia aethalea	•		Sherkin		
207	Buellia griseovirens	•		Sherkin		
219	Buellia ocellata	•		Sherkin		
216	Buellia stellulata	•	•			
217	Buellia subdisciformis		•			
	Buellia sp.	•		Sherkin		
2442	Caloplaca arcis	•		Sherkin	W02	VC
1644	Caloplaca ceracea	•	•			
241	Caloplaca cerina var. cerina	•		Sherkin	W02	
247	Caloplaca citrina s. lat.	•	•			
253	Caloplaca crenularia	•	•			
249	Caloplaca crenulatella	•		Sherkin		
2280	Caloplaca ferruginea s. lat.		•			
259	Caloplaca flavescens	•	•			
255	Caloplaca flavovirescens		•			
261	Caloplaca holocarpa s.lat.		•			
2527	Caloplaca holocarpa s. str.	•		Sherkin	W02	VC
265	Caloplaca littorea		•			
267	Caloplaca marina [Orange Sea Lichen]	•	•			
280	Caloplaca maritima		•			
268	Caloplaca microthallina	•	•			
2461	Caloplaca oasis	•		Sherkin	W02	
282	Caloplaca thallincola	•	•			
286	Caloplaca verruculifera [Orange Sea Star]	•	•			
296	Candelariella medians		•			
298	Candelariella vitellina f. vitellina	•	•			
306	Catillaria chalybeia var. chalybeia	•	•			
311	Catillaria lenticularis	•		Sherkin		
430	Cetraria aculeata	•	•			

360	<i>Cladonia arbuscula</i> subsp. <i>squarrosa</i>		•				
362	<i>Cladonia bellidiflora</i>		•				
369	<i>Cladonia cervicornis</i> subsp. <i>cervicornis</i>		•	•			
370	<i>Cladonia cervicornis</i> subsp. <i>verticillata</i>		•	•			
371	<i>Cladonia chlorophaea</i> (s. lat.)		•	•			
373	<i>Cladonia ciliata</i> var. <i>tenuis</i>		•		Sherkin		
374	<i>Cladonia coccifera</i> s. lat.		•	•			
375	<i>Cladonia coniocraea</i>			•			
378	<i>Cladonia cornuta</i>	RDB		•			
386	<i>Cladonia floerkeana</i>		•	•			
387	<i>Cladonia foliacea</i>		•		Sherkin		
389	<i>Cladonia furcata</i> subsp. <i>furcata</i>		•	•			
403	<i>Cladonia ochrochlora</i>			•			
407	<i>Cladonia pocillum</i>			•			
408	<i>Cladonia polydactyla</i>			•			
409	<i>Cladonia portentosa</i>		•	•			
410	<i>Cladonia pyxidata</i>		•	•			
359	<i>Cladonia ramulosa</i>		•		Sherkin	W02	
412	<i>Cladonia rangiformis</i>		•	•			
416	<i>Cladonia squamosa</i> s. lat.		•	•			
2365	<i>Cladonia squamosa</i> var. <i>squamosa</i>		•		Sherkin		
421	<i>Cladonia subcervicornis</i>		•	•			
422	<i>Cladonia subulata</i>			•			
426	<i>Cladonia uncialis</i> subsp. <i>biuncialis</i>		•	•			
429	<i>Cliostomum griffithii</i>		•		Sherkin		
689	<i>Cliostomum tenerum</i>			•			
433	<i>Collema auriforme</i>			•			
440	<i>Collema crispum</i> var. <i>crispum</i>		•		Sherkin		
442	<i>Collema cristatum</i> var. <i>cristatum</i>		•		Sherkin		
449	<i>Collema furfuraceum</i>		•	•			
463	<i>Collema fuscovirens</i>		•		Sherkin	W02	
460	<i>Collema tenax</i> var. <i>ceranoides</i>		•		Sherkin		
459	<i>Collema tenax</i> var. <i>tenax</i>		•		Sherkin		
85	<i>Collemopsidium foveolatum</i>		•	•			
87	<i>Collemopsidium halodytes</i>			•			
1027	<i>Degelia atlantica</i>	RDB		•			
1597	<i>Degelia ligulata</i>	RDB	•		Sherkin	W02	
484	<i>Dermatocarpon miniatum</i>		•	•			
490	<i>Dimerella lutea</i>		•		Sherkin		
491	<i>Diploicia canescens</i>		•	•			
492	<i>Diploschistes caesioplumbeus</i>			•			
504	<i>Enterographa crassa</i>		•		Sherkin		
506	<i>Enterographa hutchinsiae</i>		•		Sherkin	W02	
508	<i>Ephebe hispidula</i>		•		Sherkin	W02	VC
511	<i>Evernia prunastri</i> [Oak Moss]		•	•			
987	<i>Flavoparmelia caperata</i>		•	•			
515	<i>Fuscidea cyathoides</i> var. <i>cyathoides</i>		•	•			
521	<i>Fuscidea lightfootii</i>		•		Sherkin	W02	
529	<i>Graphina anguina</i>		•		Sherkin		
532	<i>Graphis elegans</i>			•			
533	<i>Graphis scripta</i> [Script Lichen]		•	•			
534	<i>Gyalecta biformis</i>		•		Sherkin	W02	VC Ireland

558	Heterodermia leucomela [Ciliate Strap-lichen]	RDB	•	•			
	Hydropunctaria sp.* (awaiting confirmation)		•		Sherkin	?W02	?VC ?Ireland
582	Hypogymnia physodes [Dark Crottle]		•	•			
1013	Hypotrachyna revoluta		•	•			
573	Ionaspis lacustris		•		Sherkin	W02	
613	Lecania cyrtella		•		Sherkin	W02	
1707	Lecania inundata		•		Sherkin	W02	VC
159	Lecania naegelii		•		Sherkin		
624	Lecanora actophila		•	•			
627	Lecanora albescens		•		Sherkin		
685	Lecanora argentata		•		Sherkin	W02	VC
635	Lecanora campestris subsp. campestris		•	•			
639	Lecanora chlarotera		•	•			
641	Lecanora confusa		•		Sherkin		
644	Lecanora crenulata		•		Sherkin	W02	VC
646	Lecanora dispersa		•	•			
649	Lecanora expallens		•		Sherkin	W02	
652	Lecanora fugiens		•	•			
653	Lecanora gangaleoides		•	•			
621	Lecanora hagenii		•		Sherkin		
655	Lecanora helicopis		•	•			
656	Lecanora intricata		•		Sherkin		
667	Lecanora polytropa		•	•			
674	Lecanora rupicola var. rupicola		•	•			
675	Lecanora saligna		•		Sherkin	W02	VC
783	Lecanora sulphurea		•	•			
688	Lecanora symmicta		•		Sherkin		
2287	Lecanora zosteræ		•		Sherkin	W02	
711	Lecidea confluens			•			
2474	Lecidea grisella		•	•			
804	Lecidella asema		•	•			
796	Lecidella carpathica		•		Sherkin	W02	VC
797	Lecidella elaeochroma f. elaeochroma		•	•			
798	Lecidella elaeochroma f. soralifera			•			
802	Lecidella scabra		•	•			
803	Lecidella stigmatæa		•		Sherkin	W02	
820	Lepraria incana s. lat.		•	•			
1629	Lepraria lobificans		•		Sherkin		
824	Leprocaulon microscopicum			•			
839	Leptogium lichenoides		•		Sherkin		
2530	Leptogium pulvinatum		•		Sherkin	W02	
851	Lichina confinis		•	•			
852	Lichina pygmaea [Black Lichen]		•	•			
998	Melanelixia fuliginosa		•	•			
1020	Melanelixia subaurifera		•	•			
880	Micarea lignaria var. lignaria		•		Sherkin	W02	
25	Myriospora smaragdula			•			
920	Normandina pulchella		•		Sherkin		
921	Ochrolechia androgyna		•	•			
926	Ochrolechia parella [Parelle]		•	•			
928	Ochrolechia tartarea			•			
938	Opegrapha atra		•	•			

959	<i>Opegrapha calcarea</i>		•	•			
947	<i>Opegrapha gyrocarpa</i>		•		Sherkin		
951	<i>Opegrapha lithyrga</i>		•		Sherkin	W02	
943	<i>Opegrapha vulgata</i>		•	•			
1006	<i>Parmelia omphalodes</i>		•	•			
1015	<i>Parmelia saxatilis</i>		•	•			
1022	<i>Parmelia sulcata</i> [Netted Shield Lichen]		•	•			
989	<i>Parmotrema crinitum</i>		•	•			
1008	<i>Parmotrema perlatum</i>		•	•			
1012	<i>Parmotrema reticulatum</i>		•	•			
1039	<i>Peltigera canina</i>			•			
1047	<i>Peltigera membranacea</i>		•	•			
1051	<i>Peltigera rufescens</i>			•			
1057	<i>Pertusaria albescens</i> var. <i>corallina</i>		•		Sherkin	W02	
1058	<i>Pertusaria amara</i> f. <i>amara</i>		•	•			
1066	<i>Pertusaria corallina</i>		•	•			
1072	<i>Pertusaria flavicans</i>		•		Sherkin		
1076	<i>Pertusaria hymenea</i>		•		Sherkin		
1078	<i>Pertusaria lactescens</i>	RDB		•			
1079	<i>Pertusaria leioplaca</i>		•		Sherkin	W02	
1087	<i>Pertusaria pertusa</i>		•		Sherkin		
1089	<i>Pertusaria pseudocorallina</i>		•	•			
1100	<i>Phaeographis dendritica</i>			•			
1103	<i>Phaeographis smithii</i>		•		Sherkin		
1107	<i>Phaeophyscia orbicularis</i>		•	•			
1112	<i>Physcia adscendens</i> nom. <i>cons.</i>		•	•			
1113	<i>Physcia aipolia</i>		•		Sherkin	W02	
1114	<i>Physcia caesia</i>		•		Sherkin		
1118	<i>Physcia leptalea</i>		•	•			
1120	<i>Physcia tenella</i>		•	•			
756	<i>Placynthiella oligotropha</i>		•		Sherkin	W02	VC
1139	<i>Placynthium nigrum</i>		•		Sherkin	W02	
1167	<i>Polysporina simplex</i>		•		Sherkin	W02	
1171	<i>Porina chlorotica</i> f. <i>chlorotica</i>			•			
562	<i>Porpidia cinereoatra</i>		•		Sherkin	W02	
564	<i>Porpidia crustulata</i>		•	•			
568	<i>Porpidia macrocarpa</i> f. <i>macrocarpa</i>		•		Sherkin		
572	<i>Porpidia tuberculosa</i>		•	•			
1189	<i>Protoblastenia rupestris</i>		•		Sherkin		
1021	<i>Punctelia subrudecta</i> s. <i>lat.</i>			•			
1211	<i>Pycnothelia papillaria</i>		•		Sherkin		
1221	<i>Pyrenula chlorospila</i>		•		Sherkin		
1224	<i>Pyrenula macrospora</i>		•	•			
1231	<i>Ramalina calicaris</i>			•			
1230	<i>Ramalina canariensis</i>		•	•			
1232	<i>Ramalina cuspidata</i>		•	•			
1234	<i>Ramalina farinacea</i>		•	•			
1235	<i>Ramalina fastigiata</i>		•		Sherkin		
1233	<i>Ramalina lacera</i>		•	•			
1240	<i>Ramalina siliquosa</i> [Sea Ivory]		•	•			
1241	<i>Ramalina subfarinacea</i>		•	•			
1257	<i>Rhizocarpon graphicum</i>		•	•			

1264	Rhizocarpon lavatum		•					
1266	Rhizocarpon reductum		•	•				
1250	Rhizocarpon richardii		•	•				
1281	Rinodina atrocinerea		•			Sherkin		
1299	Rinodina beccariana			•				
1289	Rinodina oleae			•				
1320	Scoliciosporum chlorococcum		•			Sherkin	W02	
1325	Solenopsora holophaea		•	•				
1326	Solenopsora vulturiensis		•	•				
1332	Sphaerophorus fragilis		•			Sherkin		
1333	Sphaerophorus globosus			•				
1367	Sticta fuliginosa	RDB		•				
1381	Teloschistes flavicans [Golden Hair-lichen]	RDB	•	•				
630	Tephromela atra var. atra		•	•				
1410	Thelotrema lepadinum			•				
1415	Toninia aromatica		•	•				
1432	Trapelia glebulosa		•			Sherkin		
1595	Trapelia placodioides		•			Sherkin	W02	
1582	Trapeliopsis pseudogranulosa		•			Sherkin	W02	
1440	Tylothallia biformigera			•				
1469	Usnea cornuta			•				
1816	Usnea esperantiana		•			Sherkin	W02	
1461	Usnea flammea		•			Sherkin	W02	
1462	Usnea florida		•	•				
1817	Usnea fragilescens var. mollis			•				
1471	Usnea subfloridana		•	•				
977	Vahliella leucophaea		•			Sherkin		
1474	Verrucaria amphibia			•				
1492	Verrucaria fuscella		•			Sherkin		
1491	Verrucaria fusconigrescens		•	•				
1493	Verrucaria halizoa			•				
1519	Verrucaria macrostoma f. furfuracea		•			Sherkin	W02	
1502	Verrucaria macrostoma f. macrostoma		•			Sherkin		
1504	Verrucaria maura		•	•				
1506	Verrucaria mucosa			•				
1507	Verrucaria muralis		•			Sherkin	W02	
1514	Verrucaria prominula			•				
1517	Verrucaria striatula			•				
1518	Verrucaria viridula		•	•				
	Verrucaria sp.* (awaiting confirmation)		•			Sherkin	?W02	?VC ?Ireland
988	Xanthoparmelia conspersa		•	•				
990	Xanthoparmelia delisei	?RDB	•			Sherkin		
1003	Xanthoparmelia loxodes			•				
1005	Xanthoparmelia mougeotii			•				
1009	Xanthoparmelia pulla		•			Sherkin		
1026	Xanthoparmelia verruculifera		•			Sherkin		
1538	Xanthoria aureola		•	•				
1530	Xanthoria parietina [Common Orange Lichen]		•	•				

Total 252 lichen taxa

Caloplaca arcis and *C. holocarpa* s. str. are both recent clarifications of the species in the *Caloplaca citrina* and *Caloplaca holocarpa* groups (Arup, 2006 and 2009). However, following these revisions, *C. arcis* was first reported in Ireland in 2009 from Skellig Michael (Douglass and Whelan, 2009) and was regarded at the time as a new addition to the Irish flora; it is still considered to be a species that is nationally scarce but this may be because it has only relatively recently been recognised as a distinct species rather than being a reflection of its true status.

In the case of a few species, although the reports may not be new local records, specimens recently deposited in the SIMS herbarium probably represent the first voucher specimens for these lichens from the area.

Lecidea grisella had already been recorded at six of the seven monthly shore-monitoring sites on Sherkin so the records in 2016 were not the first from the island, and although these reports possibly represent the first vice-county records of the lichen, this may not be the case; there has been much taxonomic confusion between this species and *L. fuscoatra* (Seaward, 2010). There are a few reports of *L. fuscoatra* from within West Cork, including one from Cape Clear in 1983, but our specimen from 2016 of *L. grisella* in the SIMS herbarium is likely to be the first voucher for the species from the area.

Leptogium pulvinatum had not been reported from West Cork until recent records from the LichenIreland project, but it has been the subject of much confusion with *L. gelatinosum* in the past. Although *L. gelatinosum* has been recorded on numerous occasions from the vice-county, there are only two other records from within W02, a

report from Lough Hyne under an earlier synonym in Porter (1948) and a pre-1960 field observation from an unspecified locality, so the 2016 voucher specimen of *L. pulvinatum* is the first of either species from the Roaringwater Bay locality.

Lecanora hagenii was recorded on Sherkin for the first time in 2016 but it is a species that is often overlooked. It is very similar to *L. dispersa* and could have been recorded as *L. dispersa* s. lat. in other areas. However, it is not new to W02 because it was reported by Porter (1948) from Lough Hyne, but these two records may be the only ones from West Cork to date.

Rare and interesting species

Four of the new vice-county records found on Sherkin, *Caloplaca arcis*, *Lecania inundata*, *Lecanora argentata* and *Placynthiella oligotropha*, are species that are nationally scarce while *Ephebe hispidula*, at least in Scotland, is considered to be nationally rare and falls within the IUCN (International Union for the Conservation of Nature) category of 'near threatened'. *E. hispidula* is a somewhat inconspicuous species that occurs on rocks in seepage channels. *L. inundata* has often been confused with the much more commonly recorded *L. erysibe* which has been reported nearby from Baltimore, Lough Hyne and Cape Clear, although it has not yet been found on Sherkin.

Usnea esperantiana and *U. florida* are also both 'near threatened' lichens; *U. esperantiana* is nationally rare in Scotland and is a species for which international responsibility protection is accorded, while *U. florida* is a priority national Biodiversity Action Plan (BAP) species in England, Scotland and Wales. Both species were rare on Sherkin, occurring only in a garden habitat, and in Ireland there are only occasional records for each of them.

There were some exciting new records collected from Sherkin, the most notable being *Gyalecta biformis* which is new to Ireland. Because the report of *G. biformis* is the first for the country it does not have a national conservation assessment. It is data deficient in the UK but considered nationally rare in Scotland. Further investigation of the niche in which it was found in Ireland may prove that this inconspicuous species has merely been overlooked in the past. It was found growing on old thrift stems alongside *Lecanora zosteræ*, a species that itself is regarded as being nationally scarce. Whelan (2009) has conjectured that this too may have been under-reported, the scarcity of records possibly due to its cryptic nature – its typical host species *Armeria maritima* is certainly not in short supply in Irish clifftop habitats and we found *L. zosteræ* quite easily at two sites on Sherkin.

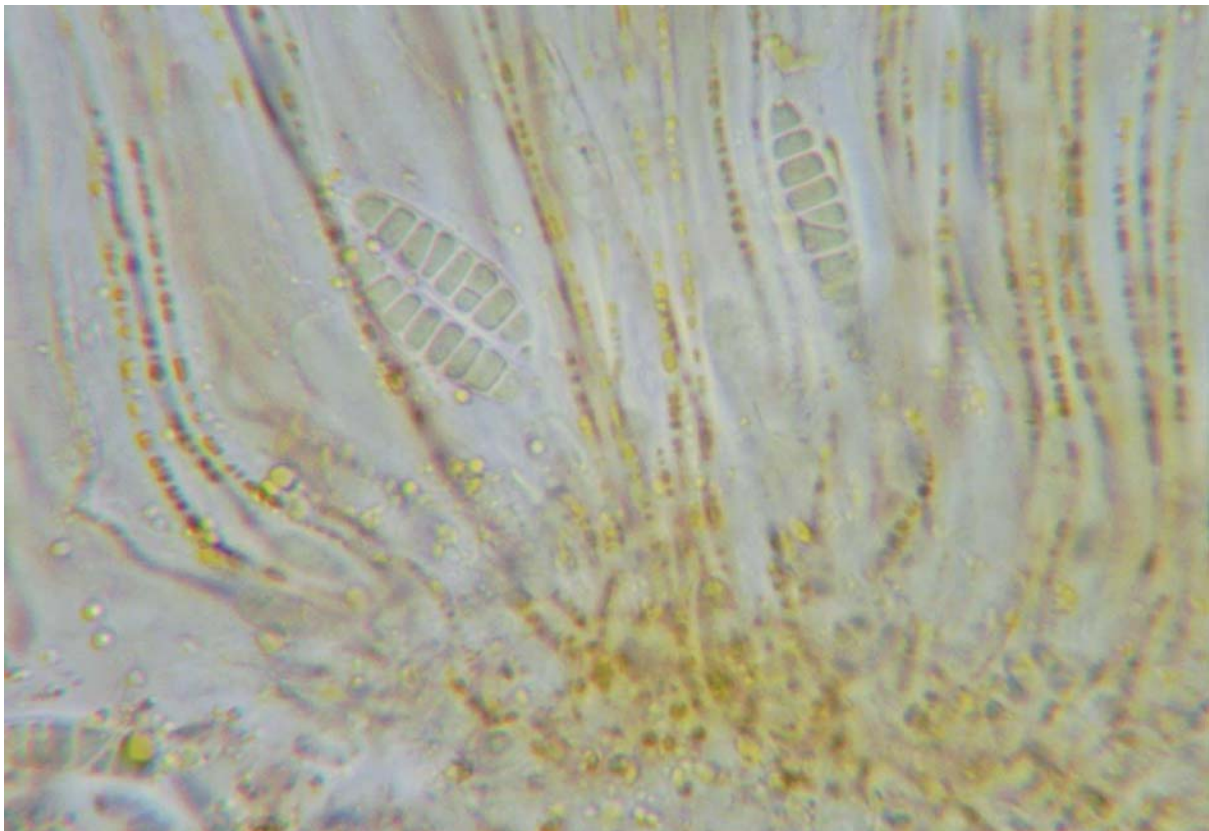


Plate 13. Photomicrograph of *Gyalecta biformis* ascospores showing its transverse septae and an occasional single longitudinal or oblique septum (© Mark Powell).

Photographs of the specimen of *Gyalecta biformis*, taken by Mark Powell, accompany its inclusion on the *Fungi of Great Britain and Ireland* website (<http://fungi.myspecies.info>). A macro-photograph of the specimen is reproduced in Appendix 4 and the microscopic detail of the ascospore structure is shown here in Plate 13.

Two other potentially important lichens were found in the vicinity of Slievemore at the southwestern end of the island. The first was a species of *Verrucaria* that was found in a habitat influenced by freshwater run-off, growing on rock fragments in an area that was little more than a seepage channel in August that becomes a more viable stream in winter (Plate 14).



Plate 14. The freshwater stream locality at the foot of Slievemore from which an as yet unidentified specimen of *Verrucaria* was collected.

Preliminary examination and genetic sequencing of the specimen at the Natural History Museum (NHM), London suggests that this may be a species new to science. Should this prove to be the case, Sherkin would become the 'type locality' for this new lichen. The sample collected in 2016 has been divided into three parts. The original material has been lodged in the NHM herbarium (barcode number: BM001247020); a sample is held in the SIMS cryptogamic herbarium (ref. no: 2016.8.28.12) with the third portion due to be donated to the Irish national collection at Glasnevin, Dublin.

The other lichen, found on the south-facing slope of Slievemore near Poulacurra (Figure 2, site 'B'), belongs to another closely related genus, that of *Hydropunctaria* and it may also be an undescribed lichen. It is currently being examined by another lichen taxonomist, Alan Orange, who is an expert in this group.

Four species of *Buellia* (Table 2) were identified in 2016, including one, *B. stellulata*, that may be nationally scarce. It was found only once in 2016, at Drolain Point. Its conservation status is uncertain because it has been over-recorded in the past owing to confusion with *B. aethalea*, a more common species that was widely occurring on Sherkin. A further, different, sample of *Buellia*, growing on pine, was collected which we were unable to determine to species level; this is an atypical habitat for the genus and the lichen may prove to be another of scientific interest.

Two more lichens found in 2016 are also considered nationally scarce. Occasional examples of *Solenopsora holophaea* were recorded at Poulacurra, while at Horseshoe Harbour *Xanthoparmelia delisei* was rare. Specimens of both were added to the herbarium, the latter representing a new record for the island.

Red Data Book species

One of the survey aims was to relocate and report on the health of the populations of the six previously found RDB species.

The most recent dates that these lichens had been recorded on the island were: *Cladonia cornuta* 1934/1938; *Degelia atlantica* 1975; *Heterodermia leucomela* 1975; *Pertusaria lactescens* 1948; *Sticta fuliginosa* 1986; and *Teloschistes flavicans* 1997. Of these six, there were specimens of only *S. fuliginosa* and *T. flavicans* lodged in the Marine Station herbarium. We have been unable to trace any of Pat McCarthy's specimens from 1975, but specimens of *C. cornuta* and *P. lactescens* may exist in the Lilian Porter collection which now resides in Dublin (TCD).

Three of these RDB lichens were not re-found in 2016. The site for *Sticta fuliginosa* was on a wall on the road leading from the Abbey to the Jolly Roger but this habitat was no longer in a suitable condition to support the lichen, being very overgrown with bramble and ivy. *Cladonia cornuta* might still be present in the heathland habitat that covers much of Slievemore; it can be easily overlooked or mistaken for the non cup-bearing *Cladonia* species, although interestingly *Cladonia* species of this group were surprisingly rare. We were also unable to find *Pertusaria lactescens* although there is plenty of suitable habitat available for this species in the abundant rock outcrops and dry-stone walls. The specific locations in which these species were previously found is not known.

We were unable to verify the 1975 report of *Degelia atlantica* in the absence of a herbarium specimen but there are numerous vice-county records for this species including recent survey findings by the LichenIreland project. However, an additional species of *Degelia*

has been recognised since *D. atlantica* was recorded on Sherkin, and all of the lichens belonging to this genus that we discovered in 2016 were of *D. ligulata*; this is also a RDB species. So although we were unable to confirm the continued existence of *D. atlantica*, we can report instead that there appears to be a healthy, although possibly restricted, population of *D. ligulata* on low rock outcrops above Poulacurra Bay (Figure 2, site 'B'). Voucher specimens of this lichen are now in the SIMS herbarium.

Elsewhere, *Degelia ligulata* is known in the UK primarily from Scotland, and it occurs on the west coast of Ireland, Madeira and the Azores. In Scotland, where it is still considered to be nationally rare, it is confined to rocky coastal habitats being found on sheltered more-or-less vertical rock faces, by seepage tracks or in gullies. In other places it has been found at the base of coastal trees and



Plate 15. Typical low rock outcrop habitat of *Degelia ligulata* near Poulacurra

shrubs. Its RDB status is that of 'vulnerable' because of the small size of its populations and it is also a species with an international responsibility designation attached.

On Sherkin, the lichen was found on sloping rock outcrops near ground level and in seepage tracks (Plate 15). Its locality on the island is not well visited and the population would appear to be under no immediate threat, but a change in the management or grazing regime could be detrimental.

The other two RDB lichens first seen on Sherkin in 1975 were both re-discovered during the present study. Although no specimen existed before for one of these, *Heterodermia leucomela* was validated from examples found at two locations in 2016 and a voucher added to the herbarium. It was found straggling over low turf on rock ledges at Drolain Point (Plate 16) and opposite Badger Island on Slievemore.

Heterodermia leucomela has a SW distribution with its northern limit in the UK in Anglesey, Wales. It occurs in west Cornwall, south Devon and the Isles of Scilly, but at one time it was found along the south coast of England into West Sussex. It is well-established in the extreme southwest of Ireland and it is widely distributed in most temperate and tropical parts of the world, but in Europe it is mostly oceanic and western. It likes sunny, exposed, mainly coastal clifftop sites where it scrambles over mosses and other vegetation in both acid and alkaline situations. Decline seems to be due to scrub encroachment, over-collecting in the past, burning, air pollution and possibly trampling (cliff top paths). At both of the Sherkin sites where this lichen was found the threat from trampling is minimal. However a change in the grazing regime may be detrimental. *H. leucomela* is nationally rare and is in the 'endangered' RDB category as well as

being a species for which we have an international responsibility. It is a priority BAP species in England and Wales and is listed on Schedule 8 of the UK Wildlife and Countryside Act, 1981 and as such it is the species with the highest conservation importance that was found on Sherkin.



Plate 16. *Heterodermia leucomela* habitat at Drolain Point

The other RDB species, *Teloschistes flavicans*, had also been reported from near Poulacurra and a strong population was found at a similar location (Figure 2, site 'A'). The SIMS herbarium already held specimens of this lichen from the studies in 1986 and 1997 so no further sampling was undertaken on this occasion but evidence of its continued presence was recorded by photography (Plate 17). It occurred on several low rock outcrops, sometimes extending onto

short turf. The specimen of *T. flavicans* from 1986 had been collected from a rock outcrop near a farm on the track to Horsehoe Harbour. We tried to re-locate this population as well but realised later that we had been looking in the wrong area. We did not have sufficient time to re-investigate this site but the lichen may still persist in this location. It probably occurs elsewhere on the island as it was also re-discovered in a similar habitat on the mainland, near Baltimore Beacon, by one of us (IB) after the survey.



Plate 17. *Teloschistes flavicans* growing amongst other turf species on Slievemore

T. flavicans is a striking bright orange shrubby lichen – the golden hair lichen. In the UK it is mainly found in southwest Wales and the west of England but it has recently been found in Scotland on the Shiantas, just east of the Isle of Lewis. Over a century ago it was

known from Scotland on Ailsa Craig and formerly extended in England to Kent along the south coast. In Ireland it is also confined to the southwest although previously it was more widely distributed. In Europe it has a Mediterranean-Atlantic distribution. Overall it occurs widely in warm-temperate and tropical regions. Its habitat preference is for windy cliff tops along the coast, usually on siliceous rocks near the ground or straggling in short turf or heather. Some of the largest remaining populations are on islands; it is rare inland but it may be found on predominantly ash, and occasionally sycamore, in the upper canopy of the trees where it is easily overlooked. Decline has been attributed to sulphur dioxide pollution to which it is extremely sensitive. But with improvements in air quality, current threats are mainly from unsuitable management including over or under grazing, burning and ploughing of heathland, application of slurry and agrochemicals and removal of wayside trees. At present the population on Slievemore (Sherkin Island) is in no immediate danger; however a change in management may pose a threat. Lack of grazing (leading to unsuitable sward) or over-grazing (leading to too much nutrient enrichment and trampling/poaching by cattle) are potential threats to the population. However, there is evidence (Gilbert and Purvis, 1996) that dust from unmade trackways was an important requirement for *Teloschistes* at inland sites, at least in Devon, and it is interesting to note that the population on the mainland near Sherkin was in an area of disturbance adjacent to the path leading to the Beacon.

Teloschistes flavicans is also a Schedule 8 species and has the same BAP status as *H. leucomela* in England and Wales. It is considered to be nationally scarce and a 'vulnerable' RDB species.

Lichens which were not re-found

One hundred of the 149 lichens that had previously been recorded from the island were found again in 2016, in addition to the 103 that were new to the flora. More of the remaining 49 lichens would undoubtedly have been re-discovered had we had more time to search for them. For example, we were only able to investigate a relatively small part of the dry heathland habitat on the island which would probably have produced more species of *Cladonia*, including the RDB lichen *C. cornuta*. This species has the appearance of a flamboyant *C. coniocraea*, another species that we were unable to find, although this group of lichens presents considerable difficulty to most lichenologists.

However, we are confident that we would have recognised *Candelariella medians* if we had come across it and we did not expect to find *Thelotrema lepadinum* because there do not appear to be any suitable trees on the island. *Collembosidium halodytes* may well have been present but we did not sample specifically for this species which cannot be differentiated from *C. foveolatum* in the field.

Peltigera canina is a species often confused with the more widely-occurring *P. membranacea*, but we were a little surprised that these lichens were poorly represented on the island in general. The paucity of *Sphaerophorus* and *Punctelia* species was also surprising, the latter in particular being a very common early coloniser in the UK. *Xanthoparmelia mougeotii*, recorded in 1999, was not seen in 2016 although this is a species that is frequent in the UK, often becoming common in quite urban situations.

Temporal changes

Whilst some of the species that we might have expected to find were not encountered during our visit, there were a number of species we recorded in 2016 that are unlikely to have been overlooked in the past. Two such lichens are *Fuscidea lightfootii* and *Normandina pulchella*.

The first records of *F. lightfootii* were made on both Cape Clear (National Biodiversity Data Centre, 2016) and Sherkin within a couple of months of each other; previously it had not been found in either of the neighbouring hectads, V92 and W02, in which these islands are situated. Prior to 1992 there were only two reports from West Cork, but since 2004 it has been widely reported in the vice-county, mainly as a result of more recent LichenIreland surveys so it would appear to be a species that has become more common in recent years. But the distribution map on the BLS website for this lichen is out of date as it does not show any post-2000 records for Ireland.

There are a few early reports of *Normandina pulchella* from West Cork, that include Lough Hyne, but the vast majority of records for this lichen are again derived from the work of the LichenIreland project. It has been found regularly since 2005 throughout the area, although the first report from Cape Clear may not have been until 2016. On Sherkin it was easily encountered, occurring at a number of sites, so it may be another species that has become more common recently. *N. pulchella* likes damp conditions and in the UK it occurs predominantly in the west but it is increasingly found in other areas, with several recent records as far east as Kent.

Although these two species may exhibit recent local increases in abundance, it is difficult to assess temporal changes on the basis of the available data. Many of the other new additions to the island

flora are cryptic species or lichens that are more easily overlooked. But it is puzzling that *Buellia aethalea* had not been recorded before as it was common in 2016. However, it often forms small patches within a mosaic of other lichens where it can become inconspicuous. Many other species were also present in small quantities or were discovered later only when collected material was examined in more detail. But as the Marine Station holds long-term monitoring records for lichens in the rocky shore habitat, further examination of this data could reveal temporal trends.

The wider context

The re-discovery of two-thirds of the island's lichens that had been recorded prior to our investigation in 2016, which itself found just over 200 species, suggests that it would not be unreasonable to expect a total for Sherkin of at least 300 species. The tally for the island currently stands at 252.

Lough Hyne, situated on the mainland just a few kilometres to the east of Sherkin, is a sheltered sea inlet surrounded by well wooded hills (see Appendix 4). It is an area that was studied in some detail for its lichen flora in the 1930s by Lilian Porter and has been visited more recently by the LichenIreland project. Porter (1948) listed around 170 species from the locality and there are now in excess of 200 known from the area. About half of these lichens have not been recorded on Sherkin. An analysis of the species list shows that a number are lichens with a habitat preference for old, humid woodland in sheltered conditions or that are dependent on dry veteran trees such as oaks. Neither habitat is available on Sherkin, but there are around 50 other species from the Lough Hyne list that could reasonably be expected to occur on the island.

Species richness assessment

Sherkin Island has an area of approximately 600 hectares occupying just 6% of its 10 kilometre square W02 in which an estimated 60% is sea. Before our field survey, the National Biodiversity Network (NBN) database held a checklist of around 240 records for this hectad which includes within its ambit the well documented area that surrounds Lough Hyne. Recent surveys by LichenIreland around Baltimore and Lough Hyne have contributed over 40 new lichen records, mainly from field observations by Vince Giavarini in 2011, which have not yet been incorporated into the NBN dataset. The 2016 study on Sherkin revealed around 50 more new records for W02 and there are possibly a further 10 from hitherto unpublished reports from the island, bringing the current total for the grid square to around 340.

Figure 3 is a snapshot that shows the number of lichen records for each of the 10 kilometre squares within West Cork and adjacent hectads in the neighbouring vice-counties. It is based on the data uploaded in January 2010 to the NBN database (NBN Gateway, 2016) which in turn uses the most recent data provided by the BLS Mapping Scheme dataset (1750-2009). Although the figures in the illustration are now out of date they give an indication of the relative species richness for lichens across this part of south-west Ireland. Factors such as geology, topography and local climate, as well as anthropogenic influences all affect habitat availability for lichens which in turn has a bearing on the potential biodiversity of an area. But the extent to which it has been recorded is largely dependent on survey effort which inevitably differs between areas. In recent years considerable lichenological activity in Ireland through the LichenIreland project in particular has contributed a significant number of new records whilst trying to address the issue of variation in survey effort by focussing on under-recorded sites.

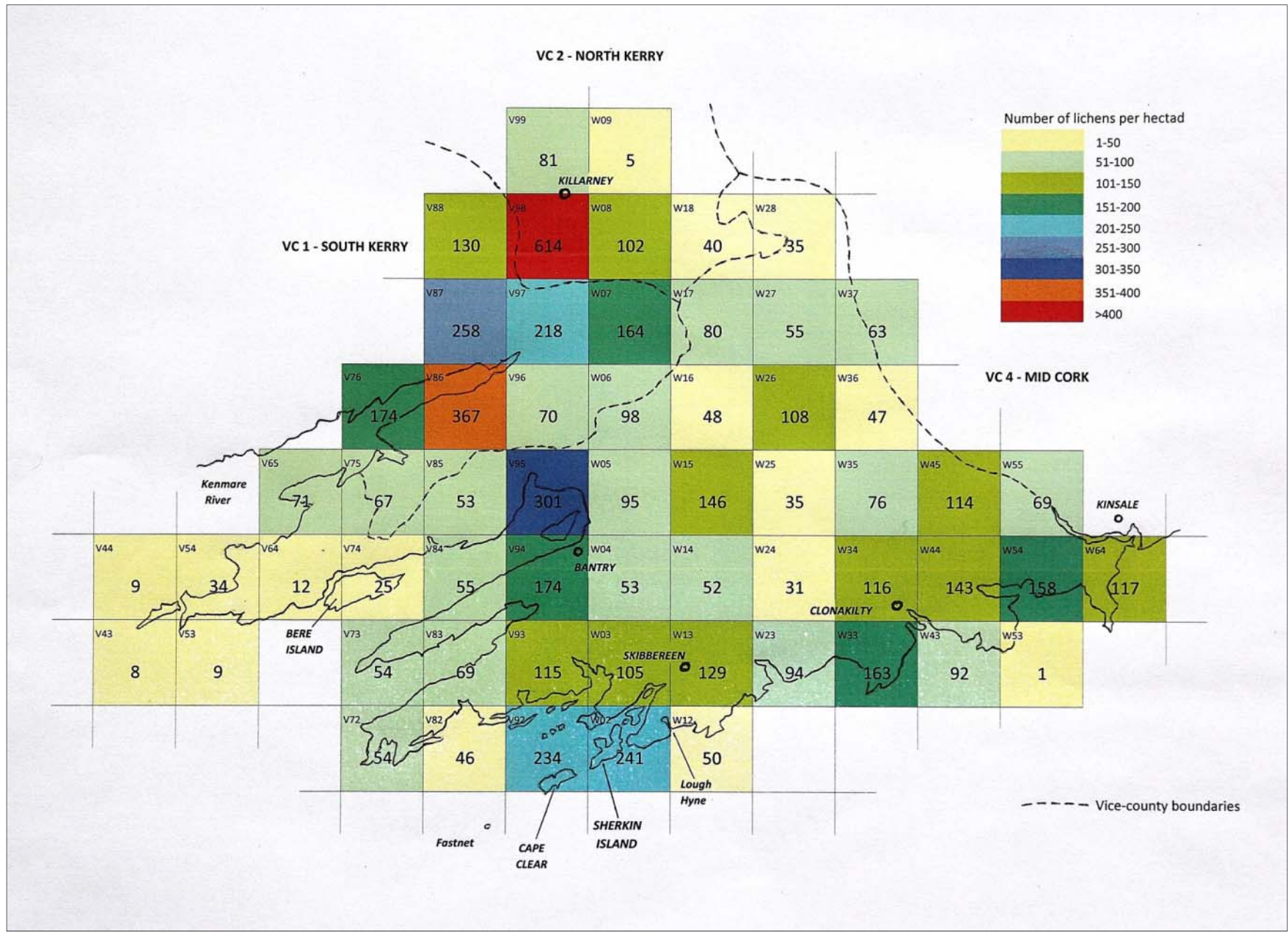


Figure 3. Map of West Cork and neighbouring vice-counties showing species-richness for lichens in 10 x 10 km squares.

Before these more recent studies, hectad W02 was already fifth highest in the region (Figure 3) in terms of species-richness, falling within the top 10%. Higher diversity in other grid squares is attributable, for example, to areas of rich habitat for lichens provided by luxuriant native woodlands where the mild and moist climate creates ideal conditions for lichens to flourish, such as in Killarney National Park, Co. Kerry (V98, the richest in the whole of Ireland), and Glengarriff Woods State Forest which lies within Grid square V95 in West Cork. The addition of around 100 new hectad records for W02 since the data capture shown in Figure 3 suggests that its lichen diversity may now exceed that of V95 and is believed to be in the top 1% nationally as a result of this review.

Of course, other lichen surveys have continued to contribute data for other grid squares. Cape Clear was one of five islands selected for study during a recent Bioblitz, co-ordinated by Ireland's National Biodiversity Data Centre, which aimed to record as much biodiversity as possible, including lichens, during an intensive survey carried out over a week in June 2016. Lichenological recording on Cape Clear, led by Howard Fox, produced 93 species (National Biodiversity Data Centre, 2016) within the 24-hour timed competitive search, including 26 lichens that are thought to be additions to the 10 kilometre square V92 and a nationally scarce species of *Cladonia* that represents a new vice-county record. The Bioblitz event also included Bere Island in Bantry Bay where 92 lichens were recorded in a similar search. This island spans two grid squares and data apportionment to each is not known, but these surveys will also have increased their lichen numbers accordingly. Twenty-three of the 93 lichens recorded on Cape Clear in 2016 have not yet been recorded on Sherkin, but all are species likely to be present on the island.

In 2010 when the latest census catalogue of Irish lichens was published by Seaward, the number of lichen taxa for West Cork stood at 656, having increased by 23% since the previous census in 1994. The total is now believed to be around 700, and new records reported here will undoubtedly add to the current tally.

The Irish sea-cliff survey and lichen records

Long-term monitoring of the rocky shore communities both on Sherkin and further afield has formed a major part of the work of the Marine Station since its conception in 1975. This habitat falls within the remit of sea cliffs for which Ireland has a national responsibility under EU legislation and an obligation to monitor their conservation status to ensure that a 'favourable condition' is maintained. The Irish sea-cliff survey (ISCS) was initiated in 2009 to meet this requirement.

The Sherkin coastline includes six cliff sections identified from the ISCS desk study, namely Cloddagh North and South, Slievemore North and South, Harboursmouth and Kilmoon. Sherkin Island Marine Station's rocky shore monitoring transect sites probably lie within two or three of these and provide lichen records that are more detailed than those likely to be obtained by remote cliff surveillance methodologies. In the 2010 sea-cliff field study five of the lichen genera were included as records to genus only (Barron *et al.*, 2011) but it was recognised that recording lichens to species would be beneficial to the vegetation analysis. The rocky shore monitoring work carried out by the Marine Station over a 40-year period has recorded 26 different lichen species on the Drolain Point transects alone (Table 5) which lie within the ISCS 2010 study area at Cloddagh North. It is perhaps ironic that the ISCS surveillance was oblivious to other more important elements of the lichen flora at this site where a nationally scarce lichen (*Lecanora zosterae*), a nationally

rare and endangered RDB species (*Heterodermia leucomela*) and a new Irish record (*Gyalecta biformis*) were all discovered within a few metres of these cliffs that surround Drolain Point just below the site of the Marine Station!

Almost a quarter of the total resource of sea cliff habitat in the country occurs in Co. Cork (24.1%). Within the county as a whole the ICS has identified 66 cliff sections; the Marine Station's rocky shore study also extends far beyond Sherkin itself, covering over 700 miles of indented coastline from Cork Harbour to Bantry Bay which includes Roaringwater and Dunmanus Bays. The coastal section between Baltimore and Cork Harbour alone includes 20 rocky shore monitoring sites on the open coast that have been surveyed annually since 1995 and probably coincide with some of the ICS cliff sections. The majority of the annual monitoring sites in Bantry Bay were also set up in 1995, those in Dunmanus Bay in 1981 and in Roaringwater Bay a little earlier: all contain valuable lichen data.

Conservation evaluation

Sherkin is one of the islands within the *Roaringwater Bay and Islands Special Area of Conservation (SAC)*. The vegetated sea cliffs (above) and European dry heaths are two of the five Annex I habitats of importance in the conservation area. The summary data which forms part of the supporting documentation for the SAC acknowledges the quality of the floristically rich heathland that occurs on Sherkin and Cape Clear by mentioning nine RDB plant species.

The SAC does not include all of the islands in their entirety, and its delineation notably excludes areas of settlement and the ribbon development that follows roads, such as on Heir Island. On Sherkin significant tracts of farmed land to the north of the island are

excluded, and the protected area on Cape Clear is restricted to only about 10 hectares in the centre of the island. It is perhaps surprising that the steep slopes above South Harbour there, with some of the best dry coastal heathland in the islands according to Akeroyd (1996), are not included. But on Heir Island and Sherkin in particular, the important habitats are encompassed within the protection of the SAC boundary. On Sherkin this includes the whole of Slievemore, the area surrounding Horseshoe Harbour, and other areas of coastal heathland and cliff-top vegetation such as Trabawn and Drolain Point and the evidence for this is likely to have been derived from the wild plant records of Akeroyd. We did not have sufficient time during our own study to visit Trabawn, an area with a range of vegetation that includes very fine coastal heathland; the best examples on Sherkin are considered by Akeroyd to be here and at Horseshoe Harbour. But significantly, the main areas of importance for lichens identified by this study happen to coincide with those of the wild plants and so are already incorporated within the bounds of the SAC. On Heir Island, heathland is also regarded by Akeroyd as being the most interesting and notable habitat, particularly the most westerly part where the coastal heath is surrounded by cliffs.

Our own brief study of heathland areas on Sherkin has shown that just on Slievemore, for example, there are three RDB lichens and for two of these Ireland has an international responsibility. All three have also been reported from Cape Clear. Several other lichens were found in coastal heath situations on Sherkin that are nationally rare or nationally scarce as well as a species which may prove to be new to science. Historic records suggest that three more RDB species could exist on the island although one of these, *Sticta fuliginosa*, may no longer be present. However, *S. sylvatica*, another RDB lichen has been reported from several localities in Roaringwater Bay and was

found again in June 2016 on Cape Clear along with *Pannaria conoplea*, another species for which international responsibility is given. On this evidence the previously unrecognised value of the lichen flora is as significant as the wild plants that occur in the SAC and the presence of several RDB lichens helps to reinforce the quality and importance of the heathland on Sherkin.

However, we are not aware of a management assessment having been undertaken for this habitat within the Roaringwater Bay SAC and nor does any monitoring work appear to have been carried out to match that of the sea-cliff study, however limited that may have been.

Lough Hyne lies outside the Roaringwater Bay SAC, but the lough itself was declared Ireland's first Marine Nature Reserve in 1981, and it is now included within the designation of Lough Hyne Nature Reserve and Environs Special Area of Conservation. This includes an area of sheltered woodland on the hill to the north of the lough that contributes to the lichen diversity for the area. But although the terrestrial component of the SAC is mentioned among the site characteristics, in which the principal qualifying interests are marine habitats, only one RDB plant species is noted and no mention is made of the well-documented lichen flora which also includes several RDB species.

That it was possible in only six days for two amateur lichenologists to record over 200 species, including a new Irish record and two that may be new to science, hints at the lichen potential for Sherkin. There is a predominance of siliceous rock on the island and converse scarcity of alkaline substrates which precludes many calcicolous species and there is also an absence of the extensive woodland that contributes to the high lichen biodiversity in some localities.

Nevertheless there is already a remarkable checklist of 252 species for Sherkin that is likely to increase. At the time of the 2010 lichen census, only 290 from a total of 1010 hectads in Ireland were known to have more than 100 different species. There are several areas on Sherkin that would undoubtedly repay further investigation such as the coastal and European dry heathland at Horseshoe Harbour and on Slievemore and the similar habitats at Trabawn and near the lighthouse that we did not have time to visit. The rich diversity of the rocky shore environment is also likely to yield further discoveries to an expert in this habitat.

There is a similar number of lichens known from the neighbouring island of Cape Clear which, with the addition of recent reports from the 2016 Bioblitz, probably stands at around 260 species, although there are differences between the inventories from each island. When taken as a whole, the islands of Roaringwater Bay, which include others that have not been considered in detail here, hold a remarkable richness of lichens that is on a par with the astonishing number of flowering plants that are catalogued in the Flora by Akeroyd (1996) and its Supplement (Akeroyd *et al.*, 2011). He thus regarded the area to be of immense importance for plants both nationally and internationally and the same criteria have been seen to be relevant to the lichen flora. But these aspects of the biodiversity are just a part of the wealth of the natural diversity that is such a precious resource in this corner of Ireland.

Sherkin's rich lichen diversity of 203 species recorded during this survey alone includes:

- 1 possible addition to the Irish and UK Flora – *Verrucaria* sp. indet.
- 1 addition to the Irish Flora – *Gyalecta biformis* and another possible addition - *Hydropunctaria* sp. indet.
- 3 species for which Ireland has an International Responsibility – *Degelia ligulata*, *Heterodermia leucomela*, *Usnea esperantiana*

- 2 Red Data Book (RDB) Vulnerable – *Degelia ligulata*, *Teloschistes flavicans*
- 1 RDB Endangered – *Heterodermia leucomela*
- 2 RDB Near Threatened – *Usnea esperantiana*, *U.florida*
- 5 species considered to be Nationally Rare within Scotland – *Degelia ligulata*, *Ephebe hispidula*, *Gyalecta bififormis*, *Usnea esperantiana*, or Great Britain - *Heterodermia leucomela*
- 10 Nationally Scarce (UK) species
- 2 listed on Schedule 8 of the UK Wildlife & Countryside Act, 1981 as being specially protected under its law
- 3 Priority taxa on the UK BAP (Biodiversity Action Plan) register
- 21 Maritime Indicator species

When a conservation assessment of the rocky island of Skellig Michael, Co. Kerry was made by Douglass and Whelan (2009), a comparison was drawn with other islands in Ireland and Scotland for which lichen data was available to ascertain its status within a wider context.

Although much smaller than Sherkin at only about 22 hectares, 128 lichens were present on Skellig Michael that included a similar number of notable species and range of conservation attributes. The comparative evaluation included St Kilda in Scotland, equivalent in size to Sherkin, which had 194 recorded lichens. [Following a survey by Andy Acton, Brian Coppins, John Douglass and Steve Price in 2014, 323 taxa are now known from St. Kilda (JD. pers. comm.)] Although the number of species within the various assessment categories varies between the three islands, they can be considered to be very similar in terms of their overall conservation value. Douglass and Whelan concluded that Skellig was of equal importance to Ireland as St Kilda was to Scotland. Maritime lichen heathland communities in the UK are graded according to their value and under this classification St Kilda is regarded as being of national importance. It was therefore suggested that equivalent status should be accorded to Skellig Michael, and the same could probably be applied to Sherkin and possibly also to Cape Clear in terms of their lichen flora.

Table 7 lists the species of greatest conservation significance and includes the maritime indicator species found on Sherkin in 2016. The Maritime Index is a work in progress but it originated as a list in a report by Wolseley and James (1991) that was refined by Coppins and Coppins (1999). Seven additional maritime indicators have been recorded by the earlier studies on the island.

Table 7. Lichens of conservation importance and maritime indicator species.

BLS No.	Lichens found on Sherkin Island in 2016	Maritime indicator	Conservation evaluation
5	Acarospora impressula	Yes	LC
216	Buellia stellulata		LC ?NS
2442	Caloplaca arcis		LC NS
286	Caloplaca verruculifera	Yes	LC
449	Collema furfuraceum	Yes	LC
459	Collema tenax var. tenax	Yes	LC
1597	Degelia ligulata	Yes	VU D2 NR Sc IR
484	Dermatocarpon miniatum	Yes	LC
506	Enterographa hutchinsiae	Yes	LC
508	Ephebe hispidula		NT NR Sc
534	Gyalecta biformis		DD NR Sc New to Irish flora
558	Heterodermia leucomela	Yes	EN C2 NR P Eng Wa S8 IR
	Hydropunctaria sp. (awaiting confirmation)		?New to UK and Irish flora
1707	Lecania inundata		LC NS
685	Lecanora argentata		LC NS
652	Lecanora fugiens	Yes	LC
621	Lecanora hagenii		NE
2287	Lecanora zosteriae		LC NS
920	Normandina pulchella	Yes	LC
951	Opegrapha lithyriga	Yes	LC NS
1012	Parmotrema reticulatum	Yes	LC
756	Placynthiella oligotropha		LC NS
1230	Ramalina canariensis	Yes	LC
1233	Ramalina lacera	Yes	LC
1325	Solenopsora holophaea	Yes	LC NS
1326	Solenopsora vulturiensis	Yes	LC
1381	Teloschistes flavicans	Yes	VU A NS P Eng Wa S8
1415	Toninia aromatica	Yes	LC
1816	Usnea esperantiana		NT NR Sc IR
1461	Usnea flammea	Yes	LC
1462	Usnea florida		NT ? P Eng Sc Wa
977	Vahliella leucophaea	Yes	LC
	Verrucaria sp. (awaiting confirmation)		?New to UK and Irish flora
990	Xanthoparmelia delisei	Yes	LC NS

Conclusion and recommendations

The two terrestrial habitat types that are listed as qualifying interests for the Roaringwater Bay and Islands SAC do not embrace lichens within the conservation evaluation summary for the site and nor did they receive any recognition in the county's recent Biodiversity Action Plan. This may in part be due to the lack of published lichen data for the region and Sherkin in particular. It is hoped that by drawing attention to the importance of lichens and bringing together this information for Sherkin into one document that it will serve as a useful resource to inform the decision process with regard to the conservation and management of these wildlife resources.

Following the contributions to the cryptogamic herbarium during this study, the lichen specimens held by Sherkin Island Marine Station (Appendix 7) probably now comprise one of the most recent and comprehensive collections for this part of Ireland. The Marine Station has also accumulated an invaluable dataset from long-term monitoring of the rocky shore environment.

It is clear from the high lichen diversity, which includes several species with RDB status or other conservation significance, that lichens need to be included in future biodiversity assessments and management plans. Throughout this report the mention of RDB lichens has been in reference to the list for Britain (Church *et al.*, 1996). At present there is no Irish equivalent, only an unpublished draft produced by Church and Stewart (1998), so it is hoped that an updated version of this document can be finalised to provide a more specific tool with which to evaluate the importance of lichens in an Irish context as well as within the wider international framework.

We hope that the publication of this report in a readily accessible electronic format will maximise the dissemination of the data

contained within it, thereby providing a useful contribution to the lichenological knowledge for south-west Ireland.

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The wild plants of Sherkin, Cape Clear and adjacent islands of West Cork, edited by Dr John Akeroyd, was an invaluable source for much of the background to this report and we acknowledge his willingness to allow us to use the information as well as the lichen data he collected on the island with colleagues in 1986. We would also like to make recognition of the early work carried out at the Marine Station in 1975 by Pat McCarthy who made a valuable contribution to the lichenological knowledge for Sherkin and other islands in Roaringwater Bay at that time.

We are indebted to Dr Mike Wyse Jackson (National Parks and Wildlife Service), Damian McFerran (Record Centre Manager for the LichenIreland Project) and Professor Mark Seaward (British Lichen Society Mapping Scheme) for providing records from their respective lichen databases. We were also assisted by Dr Micheline Sheehy Skeffington (NUI, Galway), Dr Matthew Jebb and Howard Fox

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Various members of the British Lichen Society have provided their expertise in identifying specimens or confirming our determinations so we would like to place on record our thanks to Steve Chambers, Brian Coppins, John Douglass, Vince Giavarini, Mark Powell, and Rebecca Yahr. Investigations are still ongoing regarding the identity of two further species and we are grateful to Holger Thüs at the Natural History Museum, London and to Alan Orange in Cardiff for taking on these challenges. Thanks are also due to Mark Powell for use of his photomicrograph of *Gyalecta biformis*. Several images taken by Robbie Murphy are reproduced with his kind permission.

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Appendix 1. List of lichen resources in the Sherkin Island Marine Station library.

Title	Author	Code
Books		
Bryology for the 21st Century	Bates, J.W., Ashton, N.W. and Duckett, J.G.	BK:60:BAD
Bryology for the 21st Century	Bates, J.W., Ashton, N.W. and Duckett, J.G.	BK:60:BAD
Lichenology: Progress and Problems. Proceedings of a Symposium sponsored by the Systematics Association and the British Lichen Society, University of Bristol, April 1974		
Red Data books of Britian and Ireland : Lichens : Volume 1 : Britain	Brown, D.H., Hawksworth, D.L. and Bailey, R.H.	BK:60:BR
A Monitoring Role for Arboreal Lichens	Church, J.M., Coppins, B.J., Gilbert, O.L., James, P.W. and Stewart, N.F.	BK:60:CCG
A Field Guide to Common Churchyard Lichens	Davies, R.W. and Watton, J.S.	BK:60:DA
A Field Key to Coastal and Seashore Lichens	Dobson, F. S.	BK:60:DO
A Field Key to Common Churchyard Lichens	Dobson, F. S.	BK:60:DO
Lichens, An Illustrated Guide to the British and Irish Species	Dobson, Frank	BK:60:DO
Introduction to British Lichens	Dobson, Frank S.	BK:60:DO
Guide to the Literature for the Identification of British Lichens	Duncan, Ursula K. and James, P.W.	BK:60:DU
Lichens as Pollution Monitors, Studies in Biology no. 66	Hawksworth, D.L.	BK:60:HA
A Coded List of Freshwater Macrophytes of the British Isles: Lichens, Bryophytes, Vascular Plants	Hawksworth, David L. and Rose, Francis	BK:60:HA
A New Check-List of British Lichens	Holmes, N.T.H., Whitton, B.A. and Hargreaves, J.W.	BK:25:-
<i>Rhododendron ponticum</i> : impact on lower plants and fungi communities on the west coast of Scotland	James, P.W.	BK:60:JA
British Fungi and Lichens	Long, Deborah and Williams, Jill	BK:60:LW
Lichens of the Burren Hills and the Aran Islands	Massee, George	BK:50:MA
Grasses, Ferns, Mosses and Lichens of Great Britain and Ireland	McCarthy, P.M. and Mitchell, M.E.	BK:60:MC
The Wild and Wonderful World of Scottish Lichens	Phillips, Roger	BK:25:PH
Lichen	Plantlife	BK:60:PL
Pollution Monitoring with Lichens	Purvis, William	BK:60:PU
The Vanishing Lichens, their History, Biology and Importance	Richardson, D.H.S.	BK:60:RI
Atlas of Sussex Mosses Liverworts and Lichens	Richardson, David.	BK:60:RI
British Lichens Part II	Rose, F., Stern, R.C., Matcham, H.W. and Coppins, B.J.	BK:60:FO
A Handbook of the British Lichens	Smith, Anne Lorrain. Trustees of the British Museum.	BK:60:SM/II
The Lichens of Great Britain and Ireland: Revised Edition	Smith, Annie Lorrain	BK:60:SM
Lichens of Ireland - an illustrated introduction to over 250 species	Smith, Aptroot, Coppins, Fletcher, Gilbert, James and Wolseley	BK:60:SA
	Whelan, Paul	BK
Other literature		
Zur Kenntnis der sudlichen Arealgrenzen einiger Vogelarten in den griechischen Rhodopen	Bauer, W. and Bohr, H.J.	R:BDT:162
Lichens of Sherkin Island	Blatchley, I., Sandell, K. and Spurrier, C.J.H.	
British Lichen Society Bulletin: Volumes ?1987 to present day	British Lichen Society	
The Lichenologist: Volume 19 (1987) to present day - two or three single issues missing	British Lichen Society	
Grundzuge eines naturlichen Systems der Mikroorganismen	Casper, S. Jost	BJ:1:CA
Extracts from: Der Futterwert der naturlichen Fischnahrung	Geng, H.	R:P:1397
Die Hormonale Sterilisierung des weiblichen Organismus	Haberlandt, Ludwig	BO:1:HA
Die Entwicklung des menschlichen Gehirns wahrend der ersten Monate	His, Wilhelm	BN:5:HI
Brutvorkommen des Wendehalses (Jynx torquilla) an seiner sudlichen Arealgrenze in Griechenland	Holzinger, V.J.	R:BDS:386
Der Tastappart der Hand der menschlichen Rassen und der Affen in seiner Entwicklung und Gliederung	Kollmann, Arthur	BN:1:KO
An Air Quality Survey of the South-East coast carried out by Schoolchildren	Lamhna, E.Ni, Richardson, D.H.S. and Dowding, P.	BG:26:IRL:2
An Air Quality Survey of the South Coast (Waterford and E.Cork) carried out by Schoolchildren	Lamhna, E.Ni, Richardson, D.H.S. and Dowding, P.	BG:26:IRL:3
An Air Quality Survey of the Cork Area carried out by Schoolchildren	Lamhna, E.Ni, Richardson, D.H.S. and Dowding, P.	BG:26:IRL:4
An Air Quality Survey of the East Coast of Ireland, North of Dublin, Carried out by Schoolchildren	Lamhna, E.Ni, Richardson, D.H.S. and Dowding, P.	BG:26:IRL:5

Appendix 2. List of specimens in the Sherkin Island Marine Station lichen herbarium prior to 2016.

Species	Year	Date	Grid Ref.	Location	Habitat	Collected by:	Ref. No.	Other ID No.
<i>Anaptychia fusca</i> * (Huds.) Vain.	1997	04/1997		Horseshoe Harbour	Rock outcrops in heath	L.J.Wolstenholme	19	105
<i>Anaptychia fusca</i> * (Huds.) Vain.	1984	07-Sep-84		Horseshoe Harbour	On rock in splash zone	S.J.Lagden	2	86
<i>Anaptychia fusca</i> * (Huds.) Vain.	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm	J.R.Akeroyd, C.J.Hora and S.L.Jury	7857	3
<i>Anaptychia fusca</i> * (Huds.) Vain.	1986	03-Aug-86	W031248	E side of Horseshoe Harbour	On rock with Teloschistes	J.R.Akeroyd, C.J.Hora and S.L.Jury	7971	2
<i>Caloplaca festiva</i> * (Ach.) Zwackh.	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm	J.R.Akeroyd, C.J.Hora and S.L.Jury	7858	7
<i>Caloplaca festiva</i> * (Ach.) Zwackh.	1986	03-Aug-86	W027255	Castle ruins	On rocks and walls	J.R.Akeroyd, C.J.Hora and S.L.Jury	7943	4
<i>Caloplaca festiva</i> * (Ach.) Zwackh.	1986	03-Aug-86	W011250	Road near Tranaplousa Strand	On wall	J.R.Akeroyd, C.J.Hora and S.L.Jury	7883	5
<i>Caloplaca marina</i> (Wedd.) Zahlbr.	1986	03-Aug-86	W009251	Tranaplousa Strand	On rocks at top of strand, + <i>Verrucaria maura</i> Wahlenb.	J.R.Akeroyd, C.J.Hora and S.L.Jury	7876	8
<i>Caloplaca thallicola</i> (Wedd.) Du Rietz	1986	03-Aug-86	W009251	Tranaplousa Strand	On rocks at top of strand, with <i>Verrucaria maura</i> Wahlenb.	J.R.Akeroyd, C.J.Hora and S.L.Jury	7877	6
<i>Candelariella vitellina</i> (Hoffm.) Mull. Arg.	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm + <i>Lecidella scabra</i>	J.R.Akeroyd, C.J.Hora and S.L.Jury	7862	9
<i>Cladonia bellidiflora</i> (Ach.) Schaerer	1999	15-Jun-99		N.E.Horseshoe Harbour	On wall, with <i>Dicranum scoparium</i> , + <i>Polytrichum juniperinum</i>	C.R.Kingsnorth	3	89
<i>Cladonia cervicornis</i> (Ach.) Flotow	1997	04/1997		Sherkin Island		L.J.Wolstenholme	14	100
<i>Cladonia cervicornis</i> (Ach.) Flotow	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm	J.R.Akeroyd, C.J.Hora and S.L.Jury	7859	10
<i>Cladonia cervicornis</i> (Ach.) Flotow	1986	03-Aug-86	W031248	E side of Horseshoe Harbour	On ground with Teloschistes	J.R.Akeroyd, C.J.Hora and S.L.Jury	7970	11
<i>Cladonia chlorophaea</i> (Floerke ex Sommerf.) Sprengel	1986	02-Aug-86	W010253	Above Tranaplousa Strand	On wall with fragments of <i>Parmelia omphalodes</i>	J.R.Akeroyd, C.J.Hora and S.L.Jury	7805	15
<i>Cladonia chlorophaea</i> (Floerke ex Sommerf.) Sprengel	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm	J.R.Akeroyd, C.J.Hora and S.L.Jury	7860	12
<i>Cladonia chlorophaea</i> (Floerke ex Sommerf.) Sprengel	1986	02-Aug-86	W010242	Trabawn Strand	On rocks above strand	J.R.Akeroyd, C.J.Hora and S.L.Jury	7817	14
<i>Cladonia chlorophaea</i> (Floerke ex Sommerf.) Sprengel	1986	03-Aug-86	W025255	Above castle ruins	On rock with <i>Parmelia perlata</i> (Hudson) ach.	J.R.Akeroyd, C.J.Hora and S.L.Jury	7939	13
<i>Cladonia coccifera</i> (L.) Willd.	1999	17-Jun-99		Heath SW of Marine Station	On ground in heath, with <i>C.floerkeana</i>	C.R.Kingsnorth	1	1
<i>Cladonia coniocraea</i> (Floerke) Sprengel.	1999	19-Jun-99		E side of Horseshoe Harbour	On W face of wall, among bryophytes	C.Kingsnorth	10	81
<i>Cladonia floerkeana</i> (Fr.) Sommerf.	1986	03-Aug-86	W030248	E Horseshoe Harbour	On the ground	J.R.Akeroyd, C.J.Hora and S.L.Jury	7961	16
<i>Cladonia floerkeana</i> (Fr.) Sommerf.	1999	17-Jun-99		Heath SW of Marine Station	On ground on heath, with <i>C.coccifera</i>	C.R.Kingsnorth	2	84
<i>Cladonia furcata</i> (Hudson) Schrader	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop with <i>Parmelia omphalodes</i> and <i>Teloschistes flavicans</i>	J.R.Akeroyd, C.J.Hora and S.L.Jury	7861	19
<i>Cladonia furcata</i> (Hudson) Schrader	1986	02-Aug-86	W010253	Above Tranaplousa Strand	On rocks	J.R.Akeroyd, C.J.Hora and S.L.Jury	7792	17
<i>Cladonia furcata</i> (Hudson) Schrader	1986	03-Aug-86	W031248	E Horseshoe Harbour	On rock, with Teloschistes	J.R.Akeroyd, C.J.Hora and S.L.Jury	7969	18
<i>Cladonia pocillum</i> (Ach.) O.J.Rich	1986	03-Aug-86	W031248	E of Horseshoe Harbour	On soil, with Teloschistes	J.R.Akeroyd, C.J.Hora and S.L.Jury	7967	20
<i>Cladonia portentosa</i> (Dufour) Coem.	1986	03-Aug-86	W030248	E Horseshoe Harbour	On ground with <i>Calluna</i>	J.R.Akeroyd, C.J.Hora and S.L.Jury	7959	21
<i>Cladonia rangiformis</i> Hoffm.	1986	02-Aug-86	W010253	Above Tranaplousa Strand	On wall	J.R.Akeroyd, C.J.Hora and S.L.Jury	7795	22
<i>Cladonia rangiformis</i> Hoffm.	1986	03-Aug-86	W025255	Above castle ruins	On rock	J.R.Akeroyd, C.J.Hora and S.L.Jury	7939	23
<i>Cladonia squamosa</i> (Scop.) Hoffm.	1986	03-Aug-86	W022266	Near The Dock past Jolly	On S-facing rock	J.R.Akeroyd, C.J.Hora and S.L.Jury	7931	24
<i>Cladonia verticillata</i> * (Hoffm.) Schaerer	1999	19-Jun-99		Side of wall overlooking the Abbey	Growing on wall with bryophytes	C.Kingsnorth	9	94
<i>Evernia prunastri</i> (L.) Ach.	1986	02-Aug-86	W019246	Road below Church, Kilmoon	On Malus	J.R.Akeroyd, C.J.Hora and S.L.Jury	7844	25
<i>Graphis scripta</i> (L.) Ach.	1986	02-Aug-86	W019246	Kilmoon, road below Church	On <i>Crataegus</i>	J.R.Akeroyd, C.J.Hora and S.L.Jury	7845	26
<i>Lecanora atra</i> * (Huds.) Ach.	1986	03-Aug-86	W020247	Kilmoon near road juncton	On <i>Acer pseudoplatanus</i>	J.R.Akeroyd, C.J.Hora and S.L.Jury	7902	27
<i>Lecanora atra</i> * (Huds.) Ach.	1986	03-Aug-86	W009251	Tranaplousa Strand	On rocks at the top of the strand	J.R.Akeroyd, C.J.Hora and S.L.Jury	7878	28
<i>Lecanora atra</i> * (Huds.) Ach.	1999	19-Jun-99		Road to Marine Station above Silver Strand	On rocks	C.Kingsnorth	13	98
<i>Lecanora campestris</i> (Schaerer) Hue.	1986	03-Aug-86	W027255	Around Castle ruins	On rocks and walls	J.R.Akeroyd, C.J.Hora and S.L.Jury	7947	29
<i>Lecanora helicopsis</i> (Wahlenb. ex Ach.) Ach.	1986	03-Aug-86	W009251	Tranaplousa Strand	On rocks at top of strand	J.R.Akeroyd, C.J.Hora and S.L.Jury	7879	30
<i>Lecanora rupicola</i> (L.) Zahlbr.	1986	03-Aug-86	W031248	E side of Horseshoe Harbour	On rocks with Teloschistes	J.R.Akeroyd, C.J.Hora and S.L.Jury	7967	31
<i>Lecidella elaeochroma</i> (Ach.) M.Choisy	1986	03-Aug-86	W023264	1km N of Jolly towards The Dock	On <i>Salix</i>	J.R.Akeroyd, C.J.Hora and S.L.Jury	7916	32
<i>Lecidella scabra</i> (Taylor) Hertel & Leuckar	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm, with <i>Ramalina siliquosa</i> and <i>Parmelia caperata</i>	J.R.Akeroyd, C.J.Hora and S.L.Jury	7863	33
<i>Lepraria incana</i> (L.) Ach.	1999	19-Jun-99		Lane to Horseshoe Harbour	In shade, on soil in rock crevice	C.Kingsnorth	8	93
<i>Lepraria incana</i> (L.) Ach.	1999	19-Jun-99		Road just past lagoon	Growing on sycamore in shade	C.Kingsnorth	11	96
<i>Lichina pygmaea</i> Lightf.	1984	07-Sep-84		Horseshoe Harbour	Upper shore on rock	S.J.Lagden	4	88
<i>Ochrolechia parella</i> (L.) Massal.	1999	19-Jun-99		Road just past Silver Strand	On rocks	C.Kingsnorth	12	97
<i>Opegrapha vulgata</i> (Ach.) Ach.	1986	02-Aug-86	W019246	Road below Church, Kilmoon	On Malus, with <i>Opegrapha atra</i> , <i>Porina</i> sp. and <i>Pyrenula macrospora</i>	J.R.Akeroyd, C.J.Hora and S.L.Jury	7844	34
<i>Parmelia caperata</i> * (L.) Ach.	1997	04/1997		Sherkin Island		L.J.Wolstenholme	15	101
<i>Parmelia caperata</i> * (L.) Ach.	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm	J.R.Akeroyd, C.J.Hora and S.L.Jury	7864	36
<i>Parmelia caperata</i> * (L.) Ach.	1986	03-Aug-86	W031248	E side of Horseshoe Harbour	On ground, with Teloschistes	J.R.Akeroyd, C.J.Hora and S.L.Jury	7968	35
<i>Parmelia crinita</i> * Ach.	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm, with <i>Cladonia</i> cf. <i>squamosa</i>	J.R.Akeroyd, C.J.Hora and S.L.Jury	7868	37

<i>Parmelia glabratula</i> (L.) subsp. <i>fuliginosa</i> *	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm, with <i>Pertusaria</i> sp. (K+y/r) and <i>Candelariella</i>	J.R.Akeroyd, C.J.Hora and S.L.Jury	7865	38
<i>Parmelia loxodes</i> * Nyl.	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm	J.R.Akeroyd, C.J.Hora and S.L.Jury	7866	39
<i>Parmelia perlata</i> * (Huds.) Ach.	1997	04/1997		Sherkin Island		L.J.Wolstenholme	18	104
<i>Parmelia perlata</i> * (Huds.) Ach.	1986	02-Aug-86	W010253	Above Tranaplousa Strand	On rocks	J.R.Akeroyd, C.J.Hora and S.L.Jury	7791	40
<i>Parmelia perlata</i> * (Huds.) Ach.	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm, fruiting specimen	J.R.Akeroyd, C.J.Hora and S.L.Jury	7867	43
<i>Parmelia perlata</i> * (Huds.) Ach.	1986	02-Aug-86	W019246	Road below Church, Kilmoon	On Malus	J.R.Akeroyd, C.J.Hora and S.L.Jury	7844	44
<i>Parmelia perlata</i> * (Huds.) Ach.	1986	03-Aug-86	W025262	1km N of Jolly towards The Dock	On Ulex	J.R.Akeroyd, C.J.Hora and S.L.Jury	7922	41
<i>Parmelia perlata</i> * (Huds.) Ach.	1986	03-Aug-86	W023264	1km N of Jolly towards The Dock	On Salix	J.R.Akeroyd, C.J.Hora and S.L.Jury	7915	42
<i>Parmelia reticulata</i> * Taylor	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm, with <i>Teloschistes flavicans</i>	J.R.Akeroyd, C.J.Hora and S.L.Jury	7870	45
<i>Parmelia saxatilis</i> (L.) Ach.	1986	02-Aug-86	W010253	Above Tranaplousa Strand	On rocks	J.R.Akeroyd, C.J.Hora and S.L.Jury	7791	46
<i>Parmelia saxatilis</i> (L.) Ach.	1986	03-Aug-86	W030248	E of Horseshoe Harbour	On rock	J.R.Akeroyd, C.J.Hora and S.L.Jury	7962	47
<i>Parmelia sulcata</i> Taylor	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm	J.R.Akeroyd, C.J.Hora and S.L.Jury	7868	48
<i>Parmelia taylorensis</i> * Mitch.	1999	18-Jun-99		Road by Lagoon, Kinish	Growing on <i>Crataegus</i>	C.R.Kingsnorth	6	91
<i>Peltigera membranacea</i> (Ach.) Nyl.	1986	02-Aug-86	W010242	Trabawn Strand	On soil on wall	J.R.Akeroyd, C.J.Hora and S.L.Jury	7815	49
<i>Pertusaria pseudocorallina</i> (Lilj.) Arno.	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm (k+, y/r)	J.R.Akeroyd, C.J.Hora and S.L.Jury	7869	50
<i>Pertusaria pseudocorallina</i> (Lilj.) Arno.	1986	03-Aug-86	W011250	Near Tranaplousa Strand	On wall (K+, y/r)	J.R.Akeroyd, C.J.Hora and S.L.Jury	7886	51
<i>Physcia semipinnata</i> * (Gmelin.) Moberg.	1986	03-Aug-86	W018246	Near road junction, Kilmoon	On <i>Crataegus</i> , with <i>Lecidella elaeochroma</i>	J.R.Akeroyd, C.J.Hora and S.L.Jury	7895	52
<i>Physcia tenella</i> (Scop.) DC.	1986	03-Aug-86	W023264	1km N of Jolly towards The Dock	On Salix	J.R.Akeroyd, C.J.Hora and S.L.Jury	7916	53
<i>Porpidia crustulata</i> (Ach.) Hertel & Knoph	1986	03-Aug-86	W011250	Near Tranaplousa Strand	On wall	J.R.Akeroyd, C.J.Hora and S.L.Jury	7884	54
<i>Pyrenula macrospora</i> (Degel.) Cop. & P.Jam.	1986	02-Aug-86	W019246	Road below Church, Kilmoon	On Malus	J.R.Akeroyd, C.J.Hora and S.L.Jury	7844	55
<i>Pyrenula macrospora</i> (Degel.) Cop. & P.Jam.	1986	03-Aug-86	W018246	Near road junction	On <i>Crataegus</i>	J.R.Akeroyd, C.J.Hora and S.L.Jury	7896	57
<i>Pyrenula macrospora</i> (Degel.) Cop. & P.Jam.	1986	03-Aug-86	W020247	Near road junction, Kilmoon	On <i>Acer pseudoplatanus</i>	J.R.Akeroyd, C.J.Hora and S.L.Jury	7901	56
<i>Ramalina calicaris</i> (L.) Fr.	1986	03-Aug-86	W023264	1km N of Jolly towards The Dock	On Salix	J.R.Akeroyd, C.J.Hora and S.L.Jury	7914	58
<i>Ramalina canariensis</i> Steiner	1986	03-Aug-86	W023264	1km N of Jolly towards The Dock	On Salix	J.R.Akeroyd, C.J.Hora and S.L.Jury	7914	59
<i>Ramalina cuspidata</i> (Ach.) Nyl.	1986	02-Aug-86	W010253	Above Tranaplousa Strand	On rocks	J.R.Akeroyd, C.J.Hora and S.L.Jury	7790	60
<i>Ramalina farinacea</i> (L.) Ach.	1986	02-Aug-86	W019246	Road below Church, Kilmoon	On Malus	J.R.Akeroyd, C.J.Hora and S.L.Jury	7844	61
<i>Ramalina farinacea</i> (L.) Ach.	1986	03-Aug-86	W023264	1km N of Jolly towards The Dock	On Salix	J.R.Akeroyd, C.J.Hora and S.L.Jury	7917	62
<i>Ramalina farinacea</i> (L.) Ach.	1999	18-Jun-99		Road past Lagoon	Growing on <i>Acer pseudoplatanus</i>	C.R.Kingsnorth	5	92
<i>Ramalina siliquosa</i> (Huds.) Ach.	1997	04/1997		Sherkin Island		L.J.Wolstenholme	16	102
<i>Ramalina siliquosa</i> (Huds.) Ach.	1984	07-Sep-84		Horseshoe Harbour	On rock in splash zone	S.J.Lagden	1	85
<i>Ramalina siliquosa</i> (Huds.) Ach.	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm	J.R.Akeroyd, C.J.Hora and S.L.Jury	7870	67
<i>Ramalina siliquosa</i> (Huds.) Ach.	1986	03-Aug-86	W031248	E Horseshoe Harbour near lighthouse	On rock, with <i>Teloschistes</i>	J.R.Akeroyd, C.J.Hora and S.L.Jury	7970	69
<i>Ramalina siliquosa</i> (Huds.) Ach.	1986	03-Aug-86	W022266	Near The Dock, N of island	On S-facing rock	J.R.Akeroyd, C.J.Hora and S.L.Jury	7932	68
<i>Ramalina siliquosa</i> (Huds.) Ach.	1986	03-Aug-86	W022266	Near The Dock, N of island	On rock	J.R.Akeroyd, C.J.Hora and S.L.Jury	7936	66
<i>Ramalina siliquosa</i> (Huds.) Ach.	1986	03-Aug-86	W022266	Near The Dock, N of island	On rock	J.R.Akeroyd, C.J.Hora and S.L.Jury	7936	65
<i>Ramalina siliquosa</i> (Huds.) Ach.	1986	03-Aug-86	W011250	Near Tranaplousa Strand	On wall	J.R.Akeroyd, C.J.Hora and S.L.Jury	7887	64
<i>Ramalina siliquosa</i> (Huds.) Ach.	1986	03-Aug-86	W009251	Tranaplousa Strand	On rocks at the top of the strand	J.R.Akeroyd, C.J.Hora and S.L.Jury	7882	63
<i>Ramalina subfarinacea</i> (Ny. ex Crombie) Nyl.	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm	J.R.Akeroyd, C.J.Hora and S.L.Jury	7870	70
<i>Rhizocarpon obscuratum</i> * (Ach.) Massal.	1986	03-Aug-86	W011250	Near Tranaplousa Strand	On wall	J.R.Akeroyd, C.J.Hora and S.L.Jury	7888	71
<i>Sphaerophorus fragilis</i> (L.) Pers.	1999	31-Aug-99		West end of Heir Island	On rock outcrop with thin layer of peaty soil in heath vegetation, pinkish tinge	C.Kingsnorth	7	95
<i>Sticta fuliginosa</i> (Dickinson) Ach.	1986	03-Aug-86	W027253	Road from the Abbey to Jolly Roger	On grazed wall	J.R.Akeroyd, C.J.Hora and S.L.Jury	7907	72
<i>Teloschistes flavicans</i> (Swartz.) Norman	1997	04/1997		Sherkin Island		L.J.Wolstenholme	17	103
<i>Teloschistes flavicans</i> (Swartz.) Norman	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm, with <i>Parmelia</i> spp. and <i>Ramalina</i> sp.	J.R.Akeroyd, C.J.Hora and S.L.Jury	7870	73
<i>Toninia aromatica</i> (Sm.) Massal	1986	03-Aug-86	W009251	Tranaplousa Strand	Under soil overhang on cliff at N end of beach	J.R.Akeroyd, C.J.Hora and S.L.Jury	7875	74
<i>Usnea florida</i> (L.) Weber.	1999	15-Jun-99		N.E.Horseshoe Harbour	Growing in low vegetation on a dry wall, no fruiting bodies	C.R.Kingsnorth	4	90
<i>Usnea inflata</i> * Delise	1986	02-Aug-86	W019246	Road below Church, Kilmoon	On Malus	J.R.Akeroyd, C.J.Hora and S.L.Jury	7844	75
<i>Usnea inflata</i> * Delise	1986	02-Aug-86	W026251	Track to Horseshoe Harbour	Rock outcrop by farm	J.R.Akeroyd, C.J.Hora and S.L.Jury	7870	76
<i>Usnea inflata</i> * Delise	1986	03-Aug-86	W023264	1km N of Jolly towards The Dock	On Salix	J.R.Akeroyd, C.J.Hora and S.L.Jury	7918	77
<i>Verrucaria fusconigrescens</i> Nyl.	1986	03-Aug-86	W027255	Around Castle ruins	On rocks and walls	J.R.Akeroyd, C.J.Hora and S.L.Jury	7948	78
<i>Verrucaria maura</i> Wahlenb.	1986	03-Aug-86	W009251	Tranaplousa Strand	On rocks at top of strand with <i>Caloplaca marina</i>	J.R.Akeroyd, C.J.Hora and S.L.Jury	7876	80
<i>Verrucaria maura</i> Wahlenb.	1986	03-Aug-86	W009251	Tranaplousa Strand	On rocks at top of strand	J.R.Akeroyd, C.J.Hora and S.L.Jury	7881	79
<i>Xanthoria parietina</i> (L.) Th. Fr.	1984	07-Sep-84		Horseshoe Harbour	On rock in splash zone	S.J.Lagden	3	87
<i>Xanthoria parietina</i> (L.) Th. Fr.	1986	03-Aug-86	W009251	Tranaplousa Strand	On rocks at top of strand	J.R.Akeroyd, C.J.Hora and S.L.Jury	7880	83
<i>Xanthoria parietina</i> (L.) Th. Fr.	1986	03-Aug-86	W011250	Near Tranaplousa Strand	On wall	J.R.Akeroyd, C.J.Hora and S.L.Jury	7888	82

Notes:

1. All specimens were found on Sherkin Island with the exception of *Sphaerophorus fragilis* which was collected on Heir (Hare) Island.
2. The identification of *Parmelia taylorensis* (= *Hypotrachyna taylorensis*) was found to be incorrect. It has been redetermined as *Parmotrema perlatum* because it had sorelia and C tested negative.
3. The nomenclature of several species (indicated by an asterisk *) has been updated since these specimens were collected. The changes are listed in the table below and the current nomenclature according to Smith *et al.*, 2009 is used in the compilation table in Appendix 7.
4. Herbarium specimen labels have been updated to follow Smith *et al.*, 2009 and the SIMS herbarium database has also been changed accordingly.

OLD NAME	CURRENT NAME
Anaptychia fusca (Huds.) Vain.	Anaptychia runcinata
Caloplaca festiva (Ach.) Zwackh.	Caloplaca crenularia
Cladonia verticillata (Hoffm.) Schaerer	Cladonia cervicornis subsp. verticillata
Lecanora atra (Huds.) Ach.	Tephromela atra
Parmelia caperata (L.) Ach.	Flavoparmelia caperata
Parmelia crinita Ach.	Parmotrema crinitum
Parmelia glabratula (L.) subsp. fuliginosa	Melanelixia fuliginosa
Parmelia loxodes Nyl.	Xanthoparmelia loxodes
Parmelia perlata (Huds.) Ach.	Parmotrema perlatum
Parmelia reticulata Taylor	Parmotrema reticulatum
Physcia semipinnata (Gmelin.) Moberg.	Physcia leptalia
Rhizocarpon obscuratum (Ach.) Massal.	Rhizocarpon lavatum
Usnea inflata Delise	Usnea cornuta

Appendix 3. Sequential listing of lichen specimens added to the SIMS herbarium in August 2016; all specimens were collected by Ken Sandell, Ishpi Blatchley and Chris Spurrier. Two additional specimens were sampled by Robbie Murphy in February 2017. Nomenclature follows Smith *et al.*, 2009. A total of 149 specimens are listed of which 108 are identified to species and 13 to a lower taxonomic level. The collection includes 28 replicates.

Lichen taxon	Date collected	Reference no.	Habitat and locality	Notes	Determined by:	Confirmed by:	SIMS reference
Opegrapha calcarea	24/8/2016	2016.8.24.1	Drolain Point	3-septate spores, not measured	K Sandell, I Blatchley		106
Lichina pygmaea	24/8/2016	2016.8.24.2	Rocks in littoral zone, Drolain Point		K Sandell, I Blatchley		107
Cladonia furcata subsp. furcata	24/8/2016	2016.8.24.3	Short turf at Drolain Point		K Sandell, I Blatchley		108
Gyallecta biformis	24/8/2016	2016.8.24.4	Thrift stem at Drolain Point	5-7 septate spores; 15-22x5u	K Sandell, I Blatchley	J Douglass	109
Lecanora zosteriae	24/8/2016	2016.8.24.5	Thrift stem at Drolain Point		K Sandell, I Blatchley		110
?Porpidia cinereoatra	24/8/2016	2016.8.24.6	Rock outcrop at Drolain Point		K Sandell, I Blatchley		111
Unknown crust A	24/8/2016	2016.8.24.7	Rock outcrop at Drolain Point	Rocky shore habitat. Chem reactions negative	K Sandell, I Blatchley		112
Unknown crust B	24/8/2016	2016.8.24.8	Rock outcrop at Drolain Point	with <i>Opegrapha calcarea</i> ; same species as 2016.8.24.7	K Sandell, I Blatchley		113
Placynthiella oligotropha	25/8/2016	2016.8.25.1	Ridge to the west, Drolain Point, on ground between rock outcrops		K Sandell, I Blatchley		114
Cladonia rangiformis	25/8/2016	2016.8.25.2	Drolain Point on soil		K Sandell, I Blatchley		115
Parmotrema crinitum	25/8/2016	2016.8.25.3	North-facing vertical grassy slope, Drolain Point		K Sandell, I Blatchley		116
Physcia leptalea	25/8/2016	2016.8.25.4	South-facing rocky outcrop, Drolain Point		K Sandell, I Blatchley		117
Heterodermia leucomela	25/8/2016	2016.8.25.5	Amongst turf above vertical rock outcrop, Drolain Point	Close-up photos taken by Robbie Murphy	K Sandell, I Blatchley		118
Bilimbia sabuletorum	25/8/2016	2016.8.25.6	Wall top by Kinish harbour on east side of road between Marine Station and The Cross		K Sandell, I Blatchley		119
Collema tenax var. ceranoides	25/8/2016	2016.8.25.7	On ground between rocks on outcrop at Drolain Point		K Sandell, I Blatchley		120
Anaptychia runcinata	25/8/2016	2016.8.25.8	Rock outcrops at Drolain Point		K Sandell, I Blatchley		121
Lecidella elaeochroma f. elaeochroma	25/8/2016	2016.8.25.9	Road from Marine Station to The Cross on fence post		K Sandell, I Blatchley		122
Ramalina canariensis	25/8/2016	2016.8.25.10	Roadside shrub on road from Marine Station to The Cross		K Sandell, I Blatchley		123
Peltigera membranacea	25/8/2016	2016.8.25.11	Short turf, Drolain Point		K Sandell, I Blatchley		124
Pyrenula macrospora	25/8/2016	2016.8.25.12	Sycamore - damp woods, near The Cross	fruits c.1mm	K Sandell, I Blatchley		125
Bilimbia sabuletorum	25/8/2016	2016.8.25.13	Moss on wall on road from Marine Station to The Cross		K Sandell, I Blatchley		126
Bacidia arceutina	25/8/2016	2016.8.25.14	Fence post on roadside near the Marine Station	spores 40x1u	K Sandell, I Blatchley		127
Bacidia laurocerasi	25/8/2016	2016.8.25.15	Sycamore - damp woods near The Cross		K Sandell, I Blatchley	M Powell	128
Caloplaca cerina var. cerina	25/8/2016	2016.8.25.16	Elm, at the Marine Station near the bunk houses		K Sandell, I Blatchley		129
Lecidella carpathica	25/8/2016	2016.8.25.17	Dry-stone wall on the road from the Marine Station to The Cross		M Powell		130
Phaeographis smithii	25/8/2016	2016.8.25.18	Sycamore - damp woods near The Cross	5-7 septate spores; 30-32.5um	K Sandell, I Blatchley		131
Verrucaria viridula	25/8/2016	2016.8.25.19	Soily wall top with pebbles on the road from the Marine Station to The Cross	Spores 20x11um	K Sandell, I Blatchley		132
Anisomeridium polypori	25/8/2016	2016.8.25.20	Sycamore - damp woods near The Cross		K Sandell, I Blatchley		133
Arthonia cinnabarina	25/8/2016	2016.8.25.21	Sycamore - damp woods near The Cross		K Sandell, I Blatchley		134
Buellia aethalea	25/8/2016	2016.8.25.22	Dry-stone wall on the road from the Marine Station to The Cross		K Sandell, I Blatchley		135
Catillaria chalybeia var. chalybeia	25/8/2016	2016.8.25.23	Dry-stone wall at Drolain Point	dark hypothecium, immature spores	K Sandell, I Blatchley	M Powell	136
Lecidea grisella	25/8/2016	2016.8.25.24	Rock outcrops at Drolain Point	C+r	K Sandell, I Blatchley		137
Leptogium pulvinatum	25/8/2016	2016.8.25.25	Dry-stone wall with moss on the road from the Marine Station to The Cross	muriform spores 40x15um	K Sandell, I Blatchley		138
Pyrenula chlorospila	25/8/2016	2016.8.25.26	Sycamore - damp woods near The Cross	fruits 0.5 mm	K Sandell, I Blatchley		139
Scoliosporum chlorococcum	25/8/2016	2016.8.25.27	Elm by bunk house at the Marine Station		K Sandell, I Blatchley		140
Solenopsis vulturienis	25/8/2016	2016.8.25.28	Soil crevice at Drolain Point		K Sandell, I Blatchley		141
Graphina anguina = Graphis inustuloides (latest name)	25/8/2016	2016.8.25.29	Sycamore - damp woods, near The Cross	Large muriform spores; >20 cells	K Sandell, I Blatchley		142
Enterographa hutchinsiae	25/8/2016	2016.8.25.30	Sycamore - damp woods, near The Cross	3 septate spores 20-22x5um, with <i>E. crassa</i>	M Powell		143
Verrucaria muralis	25/8/2016	2016.8.25.31	On pebbles on soily wall top on the road from the Marine Station to The Cross	Spores 17-20x12-14um	K Sandell, I Blatchley		144
Verrucaria sp. A	25/8/2016	2016.8.25.32	Dry-stone wall between the Marine Station and The Cross	Spores 20x5-7.5um. With <i>Pertusaria pseudocoralina</i>	K Sandell, I Blatchley		145
Collema crispum var. crispum	25/8/2016	2016.8.25.33	Dry-stone wall on the road from the Marine Station to The Cross		K Sandell, I Blatchley		146
Verrucaria sp. B	25/8/2016	2016.8.25.34	Rock outcrop at Drolain Point	simple spores; 12.5x7.5um	K Sandell, I Blatchley		147
Opegrapha calcarea	26/8/2016	2016.8.26.1	In underhang, top of Slievemore	3-septate spores, not measured	K Sandell, I Blatchley		148
Cladonia uncialis subsp. biuncialis	26/8/2016	2016.8.26.2	Slievemore on ground		K Sandell, I Blatchley		149
Cladonia cervicornis subsp. cervicornis	26/8/2016	2016.8.26.3	Slievemore on ground / Slievemore on soil	K-, C-, Pd+ o/r	K Sandell, I Blatchley		150
Cladonia floerkeana	26/8/2016	2016.8.26.4	Slievemore on soil		K Sandell, I Blatchley		151
Usnea subfloridana	26/8/2016	2016.8.26.5	On rock and soil towards the Poulacurra end of Slievemore		K Sandell, I Blatchley		152
Pycnothelia papillaria	26/8/2016	2016.8.26.6	Slievemore on ground - Grid Ref: W00644/20691		K Sandell, I Blatchley		153

Cladonia portentosa	26/8/2016	2016.8.26.7	Slievemore on ground	Pd-	K Sandell, I Blatchley		154
Baeomyces rufus	26/8/2016	2016.8.26.8	Soil pockets among rock outcrops, Slievemore		K Sandell, I Blatchley		155
Hypogymnia physodes	26/8/2016	2016.8.26.9	On heather stems, Slievemore		K Sandell, I Blatchley		156
Micarea lignaria	26/8/2016	2016.8.26.10	Slievemore on soil		K Sandell, I Blatchley		157
Cladonia furcata	26/8/2016	2016.8.26.11	Slievemore on ground		K Sandell, I Blatchley		158
Xanthoparmelia deleseii / pulla	26/8/2016	2016.8.26.12	On rocks overlooking the sea on the east side of Slievemore		K Sandell, I Blatchley		159
Cladonia cervicornis subsp. cervicornis	26/8/2016	2016.8.26.13	Slievemore on ground / Slievemore on soil	K-, C-, Pd+ o/r	K Sandell, I Blatchley		160
Cladonia cervicornis subsp. verticillata	26/8/2016	2016.8.26.14	Slievemore on ground		K Sandell, I Blatchley		161
Cladonia ramulosa	26/8/2016	2016.8.26.15	Slievemore on soil	Pd+ y (rather than red), K-, C-	K Sandell, I Blatchley		162
Collema tenax var. tenax	26/8/2016	2016.8.26.16	Amongst gravel on track outside house near the end of the road to Slievemore		K Sandell, I Blatchley		163
Cladonia portentosa	26/8/2016	2016.8.26.17	Heathland, Slievemore		K Sandell, I Blatchley		164
Porpidia crustulata	26/8/2016	2016.8.26.18	Rock outcrop, Slievemore	simple spores 15-20x8um	K Sandell, I Blatchley		165
Ionaspis lacustris	26/8/2016	2016.8.26.19	Wet rock outcrops on Slievemore		K Sandell, I Blatchley		166
Lecania naegeli	26/8/2016	2016.8.26.20	Fence post by track to Slievemore	mostly 3 septate spore; occ 1 septate	K Sandell, I Blatchley		167
Lecanora saligna	26/8/2016	2016.8.26.21	Fence post by road to Slievemore	simple colourless spores 17.5-20x10um	K Sandell, I Blatchley	M Powell	168
Porpidia macrocarpa f. macrocarpa	26/8/2016	2016.8.26.22	Rock outcrop on Slievemore	no spores found	K Sandell, I Blatchley		169
Usnea flamma	26/8/2016	2016.8.26.23	Rock outcrop on Slievemore	immature specimen, no blackened base but K+y, Pd+r	K Sandell, I Blatchley	R Yahr	170
Xanthoparmelia pulla	26/8/2016	2016.8.26.24	Rock outcrop on Slievemore		K Sandell, I Blatchley		171
Ephebe hispidula	26/8/2016	2016.8.26.25	Rock outcrops on Slievemore	Many branchlets	K Sandell, I Blatchley		172
Ochrolechia androgyna	26/8/2016	2016.8.26.26	Rock outcrop and overgrowing moss on Slievemore	C+r	K Sandell, I Blatchley		173
Pertusaria albescens var. corallina	26/8/2016	2016.8.26.27	Rock outcrop and soil on Slievemore		K Sandell, I Blatchley		174
Usnea subfloridana	26/8/2016	2016.8.26.28	Rock outcrop on Slievemore	Blackened base K+y, Pd+r/o	K Sandell, I Blatchley	V Giavarini	175
?Lecanora gangaleoides	26/8/2016	2016.8.26.29	Rock outcrop on Slievemore	Underhang. C-; simple spores	K Sandell, I Blatchley		176
?Pertusaria sp.	26/8/2016	2016.8.26.30	Rock outcrop on Slievemore	C-, K+y->r quickly; Pd+y. Squash K+r with crystals	K Sandell, I Blatchley		177
Opegrapha lithyrgea	26/8/2016	2016.8.26.31	Underhang on near vertical rockface on south side of Slievemore		K Sandell, I Blatchley		178
Usnea flamma	26/8/2016	2016.8.26.32	Rock outcrop on Slievemore	Blackened base K+y, Pd+r/o	V Giavarini		179
Physcia caesia	27/8/2016	2016.8.27.1	Top of 'New Wall' (causeway) along the side of Kinish Harbour lagoon		K Sandell, I Blatchley		180
Xanthoparmelia conspersa	27/8/2016	2016.8.27.2	Rock outcrops in field at the head (N) of Horseshoe Harbour		K Sandell, I Blatchley		181
Normandina pulchella	27/8/2016	2016.8.27.3	On moss over rock outcrop, head of Horseshoe Harbour	Photographed at another site on a sycamore tree	K Sandell, I Blatchley		182
Lichina confinis	27/8/2016	2016.8.27.4	Rocks in supra-littoral zone near The Dock		K Sandell, I Blatchley		183
Opegrapha calcarea	27/8/2016	2016.8.27.5	On mortar of abandoned house past <i>Jolly Roger</i>		K Sandell, I Blatchley		184
Ramalina lacera	27/8/2016	2016.8.27.6	On <i>Salix</i> on road to The Dock		K Sandell, I Blatchley		185
Amandinea punctata	27/8/2016	2016.8.27.7	On <i>Salix</i> on road to The Dock		K Sandell, I Blatchley		186
Cladonia chlorophaea	27/8/2016	2016.8.27.8	Horseshoe Harbour on ground		K Sandell, I Blatchley		187
Toninia aromatica	27/8/2016	2016.8.27.9	Abandoned house past <i>Jolly Roger</i> on the road to The Dock		K Sandell, I Blatchley		188
Lichina confinis	27/8/2016	2016.8.27.10	Rocks in supra-littoral zone near The Dock		K Sandell, I Blatchley		189
Peltigera membranacea	27/8/2016	2016.8.27.11	Short turf, Horseshoe Harbour		K Sandell, I Blatchley		190
Normandina pulchella	27/8/2016	2016.8.27.12	On moss, Horseshoe Harbour		K Sandell, I Blatchley		191
Lecania inundata	27/8/2016	2016.8.27.13	On the 'New Wall'		K Sandell, I Blatchley		192
Porpidia cinereoatra	27/8/2016	2016.8.27.14	Rock outcrops at Horseshoe Harbour		K Sandell, I Blatchley	J Douglass	193
Rinodina atrocinerea	27/8/2016	2016.8.27.15	Rock outcrops at Horseshoe Harbour	Spores Pachysporaria type; C+r fleeting, K-	J Douglass		194
Dermatocarpon minutum	27/8/2016	2016.8.27.16	Rock outcrops near The Dock		K Sandell, I Blatchley		195
Verrucaria macrostoma f. macrostoma	27/8/2016	2016.8.27.17	Wall of abandoned house on the road to The Dock	simple spores 25-29.5x12.5um	K Sandell, I Blatchley		196
Xanthoparmelia delisei	27/8/2016	2016.8.27.18	Rock outcrops at Horseshoe Harbour		K Sandell, I Blatchley		197
Aspicilia caesiocinerea	27/8/2016	2016.8.27.19	Rock outcrops at Horseshoe Harbour	K-, Pd-	K Sandell, I Blatchley		198
Buellia aethalea	27/8/2016	2016.8.27.20	Rock outcrops at Horseshoe Harbour	On rock sample with three other species	K Sandell, I Blatchley		199
Lecanora rupicola	27/8/2016	2016.8.27.21	Rock outcrops at Horseshoe Harbour	On rock sample with three other species	K Sandell, I Blatchley		200
Pertusaria pseudocorallina	27/8/2016	2016.8.27.22	Rock outcrops at Horseshoe Harbour	On rock sample with three other species	K Sandell, I Blatchley		201
Rhizocarpon geographicum	27/8/2016	2016.8.27.23	Rock outcrops at Horseshoe Harbour	On rock sample with three other species	K Sandell, I Blatchley		202
Cladonia ciliata var. tenuis	28/8/2016	2016.8.28.1	Above Poulacurra		K Sandell, I Blatchley		203
Degelia ligulata	28/8/2016	2016.8.28.2	Above Poulacurra		K Sandell, I Blatchley	B Coppins	204
Parmotrema reticulatum	28/8/2016	2016.8.28.3	Above Poulacurra		K Sandell, I Blatchley		205
Micarea lignaria var. lignaria	28/8/2016	2016.8.28.4	Heathland/short turf, Poulacurra	3-5 septate spores; poor Pd reaction	K Sandell, I Blatchley		206
Opegrapha calcarea	28/8/2016	2016.8.28.5	Rock outcrop slight underhang, west side of Poulacurra	Other species on upper surface	K Sandell, I Blatchley		207
Pertusaria amara	28/8/2016	2016.8.28.6	Rock outcrop on the track towards Poulacurra		K Sandell, I Blatchley		208
Solenopsora holophaea	28/8/2016	2016.8.28.7	Soil pocket in rock outcrops at Poulacurra	1 septate spores	K Sandell, I Blatchley		209
Vahliella leucophaea	28/8/2016	2016.8.28.8	Soil pocket in rock outcrops at Poulacurra		J Douglass		210
Lecanora sulphurea	28/8/2016	2016.8.28.9	Vertical rock outcrop facing sea above Poulacurra		K Sandell, I Blatchley		211
Lecanora zosterae	28/8/2016	2016.8.28.10	Thrift stem above Poulacurra		K Sandell, I Blatchley	J Douglass	212
Porpidia macrocarpa f. macrocarpa	28/8/2016	2016.8.28.11	Rock outcrop at Poulacurra	no spores found	K Sandell, I Blatchley		213

Verrucaria sp. (awaiting confirmation) - Holger Thüs	28/8/2016	2016.8.28.12	Bed of stream on the track to Poulacurra	Sent to H Thüs, NHM.	K Sandell, I Blatchley		214
Hydropunctaria sp. (awaiting confirmation) - Alan Orange	28/8/2016	2016.8.28.13	Rock outcrop at ground level at Poulacurra	Sent to A Orange Cardiff ?undescribed species	K Sandell, I Blatchley		215
?Pertusaria lactea	28/8/2016	2016.8.28.14	Rock outcrop at Poulacurra	C+r; K prob -; Pd-	K Sandell, I Blatchley		216
?Porpidia sp.	28/8/2016	2016.8.28.15	Vertical face of rock outcrop at Poulacurra	In grey zone	K Sandell, I Blatchley		217
Usnea florida	29/8/2016	2016.8.29.1	On <i>Berberis</i> in garden between the school and the Abbey	Unusually the specimen is not fertile	K Sandell, I Blatchley		218
Cladonia pyxidata	29/8/2016	2016.8.29.2	On vertical wall surface by farm at the end of the road from the <i>J.Roger</i> towards Kinish East		K Sandell, I Blatchley		219
Physcia aipolia	29/8/2016	2016.8.29.3	On ash tree near <i>The Islander's Rest</i>		K Sandell, I Blatchley		220
Dimerella lutea	29/8/2016	2016.8.29.4	Amongst moss on <i>Pinus</i> trunk, pine copse on road from the <i>Jolly Roger</i> towards Kinish East		K Sandell, I Blatchley		221
Usnea esperantiana	29/8/2016	2016.8.29.5	On <i>Berberis</i> in garden between the school and the Abbey	Medulla K+ y->r	K Sandell, I Blatchley		222
Enterographa crassa	29/8/2016	2016.8.29.6	On Sycamore tree on the track from The Cross past the council houses to Slievemore		K Sandell, I Blatchley		223
Opegrapha vulgata	29/8/2016	2016.8.29.7	On Sycamore near <i>The Islander's Rest</i>	5-6 septate spores, sickle shape conidia	K Sandell, I Blatchley		224
Opegrapha vulgata	29/8/2016	2016.8.29.8	On Pine, road from <i>Jolly Roger</i> to Kinish East		K Sandell, I Blatchley		225
Ramalina farinacea	29/8/2016	2016.8.29.9	Unknown shrub, near The Cross		K Sandell, I Blatchley		226
Usnea esperantiana	29/8/2016	2016.8.29.10	On <i>Berberis</i> near the Old School House		K Sandell, I Blatchley		227
Opegrapha calcarea	29/8/2016	2016.8.29.11	Rock outcrops at shore monitoring transect site at Kinish Harbour West		K Sandell, I Blatchley		228
Acrocordia gemmata	29/8/2016	2016.8.29.12	Sycamore - damp woods, near The Cross	Spores uniseriate 1-septate 25x12u	K Sandell, I Blatchley		229
Acrocordia salweyi	29/8/2016	2016.8.29.13	Mortar of house, Sherkin Marine Station		K Sandell, I Blatchley		230
Arthopyrenia punctiformis	29/8/2016	2016.8.29.14	Prunus sp. by road near the school	1-septate colourless spores 12.5-15x7.5u	K Sandell, I Blatchley		231
Buellia sp.	29/8/2016	2016.8.29.15	Pine on the road from the <i>Jolly Roger</i> to Kinish Harbour East	1-septate spores 12-15x6-7u	M Powell		232
Cliostomum griffithii	29/8/2016	2016.8.29.16	Holly, near the 'New Wall'		K Sandell, I Blatchley		233
Collema crispum var. crispum	29/8/2016	2016.8.29.17	Dry-stone wall, by farm on the road towards Kinish Harbour East		K Sandell, I Blatchley		234
Graphina anguina = Graphis inustuloides (latest name)	29/8/2016	2016.8.29.18	Sycamore - damp woods, near The Cross	Large muriform spores	K Sandell, I Blatchley		235
Leptogium lichenoides	29/8/2016	2016.8.29.19	Elm amongst moss - damp woods, near The Cross		K Sandell, I Blatchley		236
Polysporina simplex	29/8/2016	2016.8.29.20	Dry-stone wall between <i>The Islander's Rest</i> and the <i>Jolly Roger</i> pub		K Sandell, I Blatchley		237
Lecanora polytropa	29/8/2016	2016.8.29.21	Rock outcrops near the transect site at Kinish Harbour West		M Powell		238
Solenopsora vulturienis	29/8/2016	2016.8.29.22	Landing stage wall at the Marine Station		K Sandell, I Blatchley		239
Caloplaca cerina var. cerina	29/8/2016	2016.8.29.23	Ash near <i>The Islander's Rest</i> , with <i>Arthonia radiata</i> (2016.8.29.30)	On bark sample with another species	K Sandell, I Blatchley		240
Collema cf crispum var. crispum	29/8/2016	2016.8.29.24	Dry-stone wall near Cow Strand		M Powell		241
Leptogium lichenoides	29/8/2016	2016.8.29.25	Wall top amongst moss near <i>The Islander's Rest</i> and road near <i>Jolly Roger</i>		K Sandell, I Blatchley		242
Phaeographis smithii	29/8/2016	2016.8.29.26	Sycamore near The Cross		K Sandell, I Blatchley		243
Lecanora argentata	29/8/2016	2016.8.29.27	Pine on the road from the <i>Jolly Roger</i> to Kinish Harbour East	K+y, Pd-, crystals in margin persistent in K	K Sandell, I Blatchley	M Powell	244
Lecidella cf elaeochroma	29/8/2016	2016.8.29.28	Rock outcrops near shore transect site at Kinish Harbour West	Unusual substrate (stone) suggests possibility of ? <i>L. patavina</i>	K Sandell, I Blatchley		245
Unknown pyrenocarp	29/8/2016	2016.8.29.29	Dry-stone wall near Cow Strand	Simple spores 15-20x10-12um	K Sandell, I Blatchley		246
Arthonia radiata	29/8/2016	2016.8.29.30	Ash near <i>The Islander's Rest</i> , with <i>Caloplaca cerina</i> var. <i>cerina</i> (2016.8.29.23)	On bark sample with another species	K Sandell, I Blatchley		247
Cladonia squamosa	30/8/2016	2016.8.30.1	Mossy gravestone in the Abbey	K-, Pd+ r	K Sandell, I Blatchley		248
Lepraria incana s. lat.	30/8/2016	2016.8.30.2	Abbey wall	C-, K-, Pd-, UV faint y	K Sandell, I Blatchley		249
Collema cristatum var. cristatum	30/8/2016	2016.8.30.3	Stone window sill at the Abbey		M Powell		250
Collema fuscovirens	30/8/2016	2016.8.30.4	Drainage channel at the Abbey		K Sandell, I Blatchley		251
Lepraria lobificans	30/8/2016	2016.8.30.5	Wall of the Abbey	C-, K+y, Pd+y, UV+yellowish	K Sandell, I Blatchley		252
Degelia ligulata	05/2/2017	2017.2.5.1	Low rock outcrop above Poulacurra	Sampled by R Murphy	K Sandell, I Blatchley	B Coppins	253
Degelia ligulata	05/2/2017	2017.2.5.2	Low rock outcrop above Poulacurra	Sampled by R Murphy	K Sandell, I Blatchley	B Coppins	254

Appendix 4. Photographic record

Section 1. Fieldwork, habitats and landscape



Looking from Drolain Point towards Sherkin Point and the western end of Slievemore



Lichen encrusted rock on dry-stone wall near the sea



Examining rock outcrops at Drolain Point



Examining a lignicolous habitat



Another lignicolous habitat!



Examining a rock outcrop amongst gorse and heather on Slievemore



Typical heathland habitat on Slievemore with rock outcrops among heather and gorse



Landscape on top of Slievemore with grassland, heath, rock outcrops and dry-stone walls



Fields used for pasture surrounding development that follows the road past the church below the slopes of Slievemore to the west of the island



Pockets of woodland in the lee of the spine of Slievemore with Lough Ordree visible below surrounded by reedbeds



Examining exposed rock surfaces near the summit of Slievemore



Rocky shore zonation near The Dock showing the black, yellow and grey bands



Testing for a chemical reaction



Applying a spot test to a specimen in a crevice microhabitat



Rock outcrops at the *Teloschistes* 'site A' at Poulacurra



Something interesting!



Cliff-top habitat with short grassland and rock outcrops at the *Teloschistes* 'site A'.



Cliff-top vegetation with grassy turf, plantain, sea thrift and dense lichen turf of *Ramalina* above the exposed cliffs at Poulacurra



Degelia 'site B' above Poulacurra



Deeply creviced rock outcrops (of the Castlehaven Formation) at the extreme southwest tip of Sherkin



Dermatocarpon miniatum (arrows) in shaded rock crevice surrounded by other grey zone species



Ken looking for lichens in the splash zone on the exposed rocky shore at Poulacurra



Orange zone lichens on areas of higher topography surrounded by lower and damper areas dominated by *Verrucaria* species in the black zone



Ishpi and Ken in discussion



Solenopsora holophaea habitat



Working above Poulacurra



Labelling samples in the field



Specimen collecting box



Robbie Murphy taking close-up photographs



The lighthouse just visible on Sherkin and Baltimore beacon on the mainland behind showing the continuation of the rocky heathland habitat to the east of the island



Lough Hyne woodland

Section 2. Selected species



Anaptychia runcinata

Image © Robbie Murphy



Aspicilia caesiocinerea



Belonia nidarosiensis



Caloplaca crenularia



Caloplaca flavescens



Cladonia cervicornis
subsp. *verticillata*



Cladonia chlorophaea



Cladonia coccifera s. lat.



Cladonia floerkeana



Cladonia portentosa



Cladonia pyxidata



Cladonia rangiformis



Cladonia uncialis subsp.
biuncialis



Collema furfuraceum



Collema tenax var. *tenax*



Degelia ligulata

Image © Robbie Murphy



Dermatocarpon miniatum



Dimerella lutea

(pale caramel coloured discs
amongst moss on trunk of pine
tree)



Diploicia canescens

(lignicolous specimen)



Diploicia canescens

(richly fertile saxicolous specimen
on castle ruins)



Enterographa crassa

(surrounding another lichen -
Pyrenula sp.)



Gyalecta biformis

Image © Mark Powell



Heterodermia leucomela

Image © Robbie Murphy



Ionaspis lacustris

(thin brown sheet covering mossy rock surface in an area of water seepage)



Lecania inundata



Lecanora fugiens

(diffuse lichen with result of chemical spot test : C+ orange)



Lecanora sulphurea



Lepraria incana s. lat.



Lepraria lobificans



Normandina pulchella



Ochrolechia parella



Opegrapha atra



Opegrapha calcarea



Parmotrema perlatum

(saxicolous on dry-stone wall)



Parmotrema perlatum

(corticolous on tree branch)



Pertusaria albescens var.
corallina



Pertusaria
pseudocorallina

(showing result of spot test K+
yellow, which turns quickly to red)



Phaeographis smithii



Physcia caesia



Physcia leptalia



Placynthiella oligotropa



Pyrenula chlorospila



Ramalina farinacea

(growing on twig with *Parmotrema perlatum*)



Rhizocarpon geographicum



Solenopsora holophaea



Teloschistes flavicans

Image © Robbie Murphy



Usnea esperantiana

(growing on *Berberis*)



Usnea subfloridana



Verrucaria macrostoma
var. *macrostoma*



Xanthoparmelia
conspersa



Xanthoria parietina

The original images are held in the Sherkin Island Marine Station photographic archive. Except where stated, the photographs were taken by Chris Spurrier.

Appendix 5. Table of nomenclature changes relative to Smith *et al.*, 2009 for comparing older species names that have been used in earlier studies.

OLD NAME	CURRENT NAME <i>sensu</i> Smith <i>et al.</i> , 2009	MORE RECENT CHANGE
Acarospora smaragdula	Myriospora smaragdula	
Anaptychia fusca (Huds.) Vain.	Anaptychia runcinata	
Anaptychia leucomelaena	Heterodermia leucomela	
Buellia canescens	Diploicia canescens	
Buellia ryssolea	Buellia subdisciformis	
Caloplaca festiva (Ach.) Zwackh.	Caloplaca crenularia	
Caloplaca heppiana	Caloplaca flavescens	
Cladonia cervicornis (Ach.) Flotow	Cladonia cervicornis subsp. cervicornis	
Cladonia macilenta subsp. floerkeana	Cladonia floerkeana	
Cladonia squamosa (Scop.) Hoffm.	Cladonia squamosa var. squamosa	
Cladonia verticillata (Hoffm.) Schaerer	Cladonia cervicornis subsp. verticillata	
Coelocaulon aculeatum	Cetraria aculeata	
Collema auriculatum	Collema auriforme	
Cornicularia aculeata	Cetraria aculeata	
Haematomma ventosum	Ophioparma ventosa	
Lecanora atra (Huds.) Ach.	Tephromela atra	
Lecanora parella	Ochrolechia parella	
Lecanora tenera	Cliostomum tenerum	
Lecidea cyathoides	Fuscidea cyathoides var. cyathoides	
Lecidea limitata	Lecidella elaeochroma f. elaeochroma	
Lecidea limitata var. soralifera	Lecidella elaeochroma f. soralifera	
Lecidea tumida	Porpidia tuberculosa	
Lecidella subincongrua	Lecidella asema	
Leptogium sinuatum	Leptogium gelatinosum	
Opegrapha conferta	Opegrapha calcarea	
Opegrapha confluens	Opegrapha calcarea	
Parmelia caperata (L.) Ach.	Flavoparmelia caperata	
Parmelia conspersa	Xanthoparmelia conspersa	
Parmelia crinita Ach.	Parmotrema crinitum	
Parmelia glabratula (L.) subsp. fuliginosa	Melanelixia fuliginosa	
Parmelia loxodes Nyl.	Xanthoparmelia loxodes	
Parmelia mougeotii	Xanthoparmelia mougeotii	
Parmelia perlata (Huds.) Ach.	Parmotrema perlatum	
Parmelia physodes	Hypogymnia physodes	
Parmelia prolixa	Xanthoparmelia pulla	
Parmelia reticulata Taylor	Parmotrema reticulatum	
Parmelia saxatilis f. furfuracea	Parmelia saxatilis	
Parmelia subaurifera	Melanelixia subaurifera	
Parmelia subrudecta	Punctelia subrudecta s. lat.	
Parmeliella atlantica	Degelia atlantica	
Physcia fusca	Anaptychia runcinata	
Physcia orbicularis	Phaeophyscia orbicularis	
Physcia semipinnata (Gmelin.) Moberg.	Physcia leptalia	
Placodium lobulatum	Caloplaca marina	
Placodium pyraceutum	Caloplaca holocarpa s. lat.	
Pyrenocollema halodytes	Collemopsisidium foveolatum	
Pyrenocollema orustense	Collemopsisidium halodytes	
Ramalina evernioides	Ramalina lacera	
Ramalina incrassata	Ramalina siliquosa	
Rhizocarpon confervoides	Rhizocarpon reductum	
Rhizocarpon obscuratum (Ach.) Massal.	Rhizocarpon lavatum	
Rinodina subexigua	Rinodina oleae	
Teloschistes flavens	Teloschistes flavicans	
Usnea inflata Delise	Usnea cornuta	
Verrucaria microspora	Verrucaria halizoa	
	Arthonia pruinata	Pachnolepia pruinata
	Graphina anguina	Graphis inustuloides
	Pertusaria lactea	Varicellaria lactea
	Verrucaria amphibia	Hydropunctaria amphibia
	Verrucaria fuscella	Placopyrenium fuscillum
	Verrucaria maura	Hydropunctaria maura

Appendix 6. Copies of archive documents held by the Marine Station.

Extracts from the first Marine Station reports in 1975

THE LICHENS OF ROAR NEWATER BAY (1st REPORT)

In the first week of the Survey (July 20 - 27th), transects were set up on Sherkin Island and on the Calf Islands. On the transects, determination of lichen abundance was based on Ballantine's biologically-defined exposure scale for rocky shores, (Ballantine; W.J.; 1961), a method which for lichens is vague and inaccurate e.g. the category COMMON includes percentage cover of 1-19%. At present new methods are being devised and should be ready for the first revision of the transects next month.

Little terrestrial work has been done on Sherkin so far, but even in a few short expeditions, some extremely interesting and indicative plants have been found. On a visit to the sea-cliffs near Poulacurra (southern tip of the island) 26.7.75, two lichens were noted in particular:

Teloschistes flavicans (Sw.) Norm.
Anaptychia leucomelaena (L.) Massal.

The most recent and authoritative work on Maritime and Marine Lichens on acid rocks (Fletcher 1975) describes Teloschistes as "Now rare.....(should not be collected).", and Anaptychia as "extremely local and very rare, in sheltered hollows". In Britain these lichens have been virtually wiped out by atmospheric sulphur dioxide. They remain in 'pure' areas of Cornwall and North Wales. Here on Sherkin they indicate an atmosphere more or less free of SO₂. The flora of the Island looks very promising, and when compared with the Calf Islands which have been worked comprehensively (see below) there could be as many as 150 species on the Island.

In the following week (July 28 - August 1st), five islands in the bay were visited and collections made. On July 28th, 29th, and 30th, P. McCarthy visited the three Calfs; West, Middle and East on the respective dates.

On West Calf approximately 60 species were noted. 35 of these could be identified in the field and were not collected. Samples of about 25 specimens were collected, stored and will be studied later. (Incidentally, lichens need no preservatives and merely need to be stored in such a way that they will not abrade each other).

On Middle Calf about 75 species were recorded and/or collected. On this and the previously mentioned island all specimens were on rock or peat, no tree or fence flora was present.

On East Calf about 70 species were collected and/or recorded. Here however, the list included lichens on gorse and sloe bushes and on fence posts.

The lichens of the Calf Islands though they have a good variety, seem to be pretty uniform from island to island. The highlight must have been the finding of Anapychia leucomelaena (also on Sherkin and Cape Islands).

On July 31st, Long Island was partially covered, 65-75 species being collected. Much of the flora is identical to that of the Calfs, with some exceptions - the most notable being the presence of a solitary plant of Sticta sylvatica (Huds.) Ach. in a damp, mossy rock crevice. This is another lichen which is very intolerant of atmospheric pollution. The island must be revisited.

On August 1st a collection of lichens was made on Horse Island by P. Whelan. Among others, a good selection of tree lichens was taken.

CONCLUSIONS

Even following this introductory look at the lichens of some islands in Rosaringwater Bay, one can see that future work could be very rewarding. The finding of the two rarities on Sherkin may be followed by even more exciting discoveries. The more mundane work of transect making and general lichen-hunting may lead to important results, especially in the seasonal variation in lichen cover on the sea-shore.

Pat McCarthy
2.8.75

Identification books being used:

DUNCAN, U.K. (1970) Introduction to British Lichens. Arbroath: T. Dunle.

FLETCHER, A. (1975) Key for the Identification of British Marine and Maritime

Lichens I. Siliceous rocky shore species. Lichenologist 7: 1-52.

SHERKIN ISLAND FIELD STUDY CENTRE
SHERKIN ISLAND, Co. COKIB, IRELAND.

Report 2

LICHENS

Since the First Report, work has proceeded along two lines. Laboratory examination has enabled the identification of many species, e.g. the shore species of Caloclelea (4) and Verrucaria (6). Secondly, improved sampling techniques on transects have effectively illustrated the classical patterns of zonation among marine and maritime lichens.

Seventy two species have been identified on Sherkin Island. (38 crustose, 21 foliose and 12 fruticose). Approximately 40 await examination. A second station for Teloschistes flavicans (see First Report), has been found near Horseshoe Harbour on Sherkin.

On September 2nd, Spanish Island was visited and 70-75 species were collected and/or recorded. One day later Long Island was revisited and a number of species were added to the list. 60 species have now been identified on the island.

Transect methods for lichens:

Having found the Pollentine Exposure Scale unsuitable owing to the broad abundance categories (which tend to make recording subjective in nature), more accurate methods were employed to determine % lichen cover.

A wooden frame 50 cm square, and 5 cm deep with cross wires at both sides, was used. The wires divide the frame (100%) into 25 squares (4% each). The observer looks vertically down on each square and estimates the percent cover of each species. Using this method the lichen zone of a transect has taken up to five hours on exposed shores, but improved accuracy makes it very worthwhile.

PAT McJARTHY

10.9.75.

Grid Ref.	•	LOCALITY	SHERKIN ISLAND		Name	P.H. MCCARTHY	
	•		CO. CORK.			Date	V.C. No.
	•	HABITAT	SILICEOUS ROCKS (MARITIME), MORTAR, FENCES		* H. 3	V.C.	
	•		SYCAMORE, TREES, PEAT.		WEST CORK		Code No.
100	•			Alt.	0-325ft		

0024	Acar atra	0326	sabu	0611	grif	0824	bach	1020	prem	1376	fuli
0024	cerv	0328	scop	0617	lent	0835	crisp	1022	sten	1381	furv
0040	fuscata	0331	spha	0619	ligh	0838	crisp	1026	Lecania	1400	fuacoat f
0043	glau	0347	umbr	0632	pras	0841	fasc		aipo	1401	gris
0046	hepp	0366	Baco plac	0634	pulv	0843	flac	1033	cyrtella	1403	gela
0048	macr	0368	rose	0638	spha	0846	fragil	1038	erys	1405	glau
0072	sino	0370	rufu	0647	Catin	0848	fragr	1040	fusc	1408	goni
0074	smar-c	0373	Belo russ		gros	0850	furf	1043	nyla	1410	gran
0075	lesd	0375	Biat camp	0654	Cave hult	0854	limo	1056	Lecanor	1417	hydr
0083	vero	0385	mori	0656	Cetr chlo	0856	mult		note	1421	illi
0087	Alec bico	0388	ochr	0657	comm	0857	nigr	1072	stee	1430	jura
0090	chal	0403	Botr vulg	0659	eric	0860	poly	1078	badi	1432	koch
0091	fusc	0407	Buel aeth	0660	glau	0863	subf	1082	caes	1435	lapi
0093	impl	0409	albo	0663	hepa	0865	subn	1084	calc	1437	leuc
0095	lane	0413	atra	0666	isla	0867	tena r	1088	camp	1440	limi f
0096	nigr	0422	oane	0676	niva	0868	cera	1090	carp	1441	sora
0098	ochr	0424	chlo	0678	norv	0869	vulg	1094	chlaron	1442	limo
0100	pube	0427	disc	0680	pina	0871	tuni	1095	chlaron	1443	lith
0103	sarm	0452	punc	0682	sepi	0876	Coni furf	1097	cinerea	1444	lopa
0106	subc	0457	scha	0684	Chae aeru	0882	Cono homa	1105	confus	1445	luci
0110	Anap cili	0460	stel	0685	brun	0883	Cori viri	1108	coni	1447	luri
0112	fusc	0462	subd	0690	chry	0885	Corn acul	1110	cont	1450	macr
0115	leuc	0465	verr	0691	fert	0887	muri	1112	cren	1457	ochr
0117	obac	0473	Call abie	0710	Cied abie	0888	norm	1122	disp	1459	oros
0127	Arthon	0480	lent	0712	baci	0894	Cyph inqu	1124	epan	1460	pant
	cinn	0485	sali	0714	bell	0898	seas	1128	expa	1463	pelo
0129	didy	0488	viru	0716	botr	0900	Cyst nige	1134	fugi	1464	perc
0131	disp	0495	Calo	0718	caes	0904	Dermati	1138	gang	1466	phae
0138	impo		aurantia	0721	cari		quer	1140	gibb	1469	plan
0140	lapi	0496	aurantiaca	0722	carn	0908	Dermato	1142	heli	1470	poli
0145	luri	0498	caes	0725	cerv		cine	1152	intr i	1472	pycn
0152	punctif	0499	cerina	0727	chlo	0909	fluv	1153	sora	1473	quer

- - - F O L D - - - H E R E - - -

0156	radi	0501	cerinel	0728	oooo	0910	hepa	1155	intu	1479	scab
0158	spad	0503	chal	0730	conio	0915	mini	1157	jame	1480	scal
0172	Arthop	0506	cirr	0732	conis	0918	rufe	1160	lacu	1484	semi
	alba	0508	citr	0736	corn	0919	Dime dilu	1162	laovat	1485	sila
0174	ante	0515	deci	0738	cris	0920	lute	1165	lepr	1487	sore
0178	bifo	0518	feru	0750	digi	0922	Dipl caea	1174	mori	1489	spei
0188	cine	0520	gran	0754	fimb	0924	gyps	1176	mura	1492	stig
0190	cono	0524	hepp	0758	floe	0926	scru	1178	pall	1498	subin
0195	fall	0527	holo	0760	foli	0943	Ente cras	1182	pini	1504	sulp
0199	halo	0532	lact	0762	furf f	0947	hutc	1184	polio	1506	aylv
0205	punc	0534	litt	0763	subr	0950	Ephe lana	1188	poly	1508	symm
0206	pyre	0536	lute	0764	glau	0956	Ever prun	1194	prev	1511	tayl
0209	salw	0538	mari	0765	gone	0959	Fulg fulg	1202	rupi	1513	temp
0211	saxi	0541	micr	0766	grac	0960	Gomp caly	1206	samb	1515	tenebrica
0237	Arthoth	0543	muro	0768	impe	0964	Gong sabu	1212	subcar	1517	tenebricos
	ilic	0545	obli	0770	incr	0966	Graphina	1214	subcir	1519	tenebros
0242	ruan	0547	ochr	0772	lute		angu	1217	subf	1525	tuni
0245	spec	0557	stil	0774	maci	0970	ruiz	1222	tene	1529	turg
0253	Baci arce	0558	teic	0780	ochr	0972	Graphis	1226	vari	1533	ulig
0257	beck	0559	tetr	0782	papi		eleg	1231	verr	1541	vern
0265	chlo	0561	thal	0784	para	0975	scri	1239	Lecid	1552	wall
0269	citr c	0563	vari	0786	pity	0984	Gyal ftof		agla	1557	wata
0270	alpi	0570	Candelaria	0788	poci	0985	fove	1241	alboe	1634	Lemp botr
0273	cupr		conc	0789	poly	0988	geoi	1263	assi	1652	Lepr cand
0277	endo	0572	Candelariel	0791	pyxi	0990	jene	1269	auri	1653	chlo
0283	frie		aure	0793	rangifer	0994	trun	1279	caes	1655	cras
0291	herba	0574	cora	0794	rangifor	0996	ulmi	1285	cine	1656	inea
0296	inco	0577	medi	0796	scab	0998	Haem cocc	1287	cina	1661	memb
0300	inun	0579	vite	0798	squa s	1000	elat	1291	coar	1665	negl
0304	lepr	0581	xant	0799	allo	1002	vent	1303	crus	1672	xant
0307	lign	0586	Catil	0800	stre	1004	lcma eric	1305	cyat	1676	Leptog
0310	mela		atro	0802	sube	1006	Iona epul	1355	deci		breb
0314	musc	0588	bifo	0805	subu	1010	suav	1356	demi	1678	burg
0316	naeg	0590	bout	0809	tenu	1012	Lecanac	1358	dick	1683	cyan
0318	nits	0592	chal	0814	anci		abie	1362	didu	1692	lich
0322	phac	0594	chloros	0816	vert	1015	dill	1370	erra	1695	micr
0324	rube	0603	deni	0822	Coll auri	1018	ploc	1373	frie	1703	pusi

Grid Ref.

LOCALITY

100 . . 2 . .

Sherkin Island, Co. Cork.

1708	satu	1903	pity	2032	spur	2200	cupu	2392	poly	2595	papu
1710	schr	1905	rubi	2034	veno	2202	demi	2403	umbi	2598	pyre
1713	sinu	1907	samp	2037	Pert	2204	derm	2405	viru	2610	Theloc laur
1718	tere	1910	Parmelia		albe a	2206	gela	2407	Rino atro	2624	Theloprube
1720	trem		acet	2038	cora	2209	hens	2409	bisc	2626	Thelot
1732	I.eptor epid	1912	alpi	2040	amara	2220	scot	2419	exig		lepa
1736	Lich conf	1916	aspe	2046	chiod	2226	thel	2425	luri	2633	Thro epig
1738	pygm	1920	aspe	2048	cocc	2228	tris	2427	oxyd	2643	Toma gela
1744	Lith tess	1924	ctetr	2051	cora	2236	Polyc muac	2430	robo	2649	Toni arom
1750	Loba ampl	1926	cons	2053	dact	2237	Pori ahle	2433	soph	2654	cara
1752	lact	1928	erin	2055	deal	2238	ohio a	2435	subex	2660	coer
1756	pulm	1930	deli	2059	flavic	2239	carp	2439	teic	2664	lobu
1758	scro	1935	eleg	2060	flavida	2240	pers	2446	Rocc fuci	2684	Umbi cyli
1764	Lopa pezi	1936	endo	2064	hemi	2243	guen g	2447	phyc	2687	deus
1766	Mass cam	1937	exas	2066	hyme	2244	curr	2448	Sarcog	2692	hype
1782	Mene tere	1938	furf	2068	lact	2246	luce		clav	2694	polyp
1790	Microg	1940	glab g	2070	leio	2253	lect	2449	priv	2696	polyr
	musc	1941	fulf	2076	micr	2255	lept	2450	regu	2698	prob
1798	Mycob	1946	incu	2078	mono	2260	oliv	2451	simp	2700	pust
	sang	1950	isid	2080	mult	2265	Prot imme	2453	Scle circ	2704	torr
1808	Neph laev	1952	laci	2098	pert	2266	incr	2454	Schi abie	2708	Usne arti
1810	pari	1954	laev	2104	psou	2267	metz	2455	deco	2710	cera
1813	Norm pulc	1955	loxo	2106	pust	2268	mont	2457	Sole cand	2713	exie
1814	Ocel subt	1956	moug	2116	Petr clau	2269	rupe	2459	helo	2714	fili
1815	Ochr ande	1958	omph	2118	Phae dend	2273	Paeu croc	2461	vult	2715	flam
1817	frig	1960	peri	2122	lyel	2275	thou	2464	Solo croc	2716	flor
1821	inve	1962	phys	2124	rami	2276	Psorom	2467	sacc	2718	frag
1824	pass	1964	prol	2126	Phly agel		hypn	2468	spon	2719	fulv
1829	tart	1967	redd	2128	arge	2280	Psorot	2470	Spha frag	2721	g.abres
1831	turn	1969	reti	2129	Phyacia		scha	2472	glob	2722	hirt
1835	yasu	1970	revo		adgl	2309	Pyrenu	2474	mela	2724	rubi
1840	Opeg atra	1972	saxa	2130	adec		nitida n	2488	Squa cras	2730	subf
1845	calc	1974	sinu	2132	aipo	2310	nitidel	2490	lent	2731	subp
1847	cesa	1975	soredian	2135	caes	2312	Raco rupe	2494	Stau caes	2733	Verr aeth
1849	chev	1980	subaur	2138	clem	2316	Rama cali	2498	fiss	2742	aqua
1851	conf	1981	subr	2144	gris	2321	curr	2500	hyme	2747	coer
1857	gyro	1982	subat	2147	lept	2324	ever	2506	rupi	2755	dufo
1859	herb	1984	subc	2151	nigr	2328	fozi	2508	succ	2757	elae

- - - F O L D - - - H E R E - - -

1864	lith	1985	tayl	2154	orbi	2330	faat	2514	Sten pull	2762	glau
1866	lync	1986	tili	2160	pulv	2333	frax f	2516	sept	2765	hoch
1868	moug	1988	tubu	2164	stel	2334	cali	2524	Ster dact	2767	hydr
1870	nive	1992	Parmetiel	2166	tene	2338	obtu	2527	deli	2774	marg
1874	para		asia	2168	tere	2340	poll	2531	evolutum	2776	maur
1876	pers	1996	cora	2170	tribacia	2343	stfi	2538	micr	2780	mer
1878	pros	2004	plum	2171	tribacio	2345	subf	2542	pile	2784	muco
1885	rufe	2009	Parmeliop	2172	wain	2349	Rhiz alpi	2543	saxa	2786	mura
1887	saxa		aleu	2174	Pilo diat	2357	cons	2546	veau	2793	nigr
1888	saxi	2010	ambi	2176	Placid	2359	diat	2550	Stic cana	2799	prom
1889	sore	2012	hype		cuat	2363	gomi	2551	dufo	2812	sphi
1890	vari	2014	Pelt	2178	Placop	2365	geog	2552	fulv	2815	str
1891	vorm		apht a		geli	2369	hoch	2554	limb	2819	viri
1892	viri	2015	vari	2182	Placy	2372	lava	2556	sylv	2843	Xant aure
1893	vulg	2017	cani		flab	2374	leca	2559	Syna symp	2845	cand
1895	zona	2018	coll	2186	nigr	2376	lind	2564	Tele flav	2847	eleg
1896	Pach corn	2019	hori	2191	tant	2379	obsc o	2569	Tham verm	2849	pazi
1899	Pann micr	2023	poly	2193	trem	2380	redu	2573	Thel deci	2851	poly
1901	nebu	2024	prae	2197	Polyb	2382	oede	2583	inca	2854	Xylo abie
1902	pezi	2027	rufe		albi	2388	petr	2591	micr	2864	viti

Additions:-

+ Ramalina incassata
 Verrucaria amphibia
 Caloplaca verruculifera

* COLLECTED ON VARIOUS DATES BETWEEN

Biological Records Centre June 1972 RP9

21.7.75 AND 11.9.75



Note: The number references given here relate solely to the numbering system adopted by Dr Stephen Jury, University of Reading.

— Sherkin Island Marine Station
 Sherkin Island
 County Cork, Ireland

LICHENS

J.R. Akeroyd, C.J. Hora, S.L. Jury. Collected 2/3 Aug. 1986

- 7790 - *Ramalina cuspidata* (Ach.) Nyl. on sand acid rocks
 7791a. - *Parmelia saxatilis* (L.) Ach. bank & acid stone
 7791b. - *P. perlata* (Huds.) Ach. trees & rocks in oceanic areas
 7792 - *Cladonia furcata* (Hudson) Schrader grass-heaths
 7795 - *C. rangiformis* Hoffm. dry heath
 7805 - *C. chlorophaea* (Flörke) Sprengel acid sulphates
 7815 - *Peltigera membranacea* (Ach.) Nyl. on sandy soil
- 7817 - *Cladonia chlorophaea* (Flörke) Sprengel ?
 7844a. - *Parmelia perlata* (Huds.) Ach. trees & rocks in oceanic areas
 7844b. - *Usnea inflata* Delise? (grows on bark, wood or stone)
 7844c. - *Evernia prunostri* (L.) Ach. trees, rarely rocks
 7844d. - *Ramalina farinacea* (L.) Ach. ~~to sand acid rocks~~ bark
 7844e. - *Opogonophora vulgata* (Ach.) Ach. smooth illuminated bark
 7844f. - *Pyrenula macrospora* (Dege.) Coppin ? P. James smooth shaded bark
 7845a. - *Graphis scripta* (L.) Ach. " " "
 7857 - *Anaptychia fusca* (Hudson) Vainio = *A. runcinata* (With.) Laundon
 stone artefacts & nearby trees
 7858 - *Caloplaca festiva* (Ach.) Zwackh. ? = *C. crenularia* (With.) Laundon
 7859 - *Cladonia cervicornis* (Ach.) Flotow. ?
 7860 - *C. chlorophaea* (Flörke) Sprengel acid sulphates
 7861 - *C. furcata* (Hudson) Schrader grass-heaths
 7862 b. - *Candelariella vitellina* (Hoffm.) Mull. Arg. acid & calcareous rocks, walls
 7863 - *Lecidella stabra* (Taylor) Hertel ? Leuckert ?
 7864 - *Parmelia caperata* (L.) Ach. trees & rocks in oceanic areas
 7865 - *P. glabratula* (Lamy) Nyl. ssp. *fuliginosa* (Fr. ex Duby) Laundon ?
 7866 - *P. toxodes* Nyl. ?
 7867 - *P. perlata* (Huds.) Ach. trees & rocks in oceanic areas
 7868b. - *P. sulcata* Taylor Acid stone
 7868a. - *P. ciliaris* Ach. trees & rocks in oceanic areas

- 7869 - Pertusaria pseudocorallina (Liljeblad) Arnold trees
- 7870a - Ramalina siliquosa (Hudson) Ach. hard acid rocks
- 7870b - Teloschistes flavicans (Swartz.) Norman Turgrs & rocks
- 7870c - Usnea cf. inflata Delise ?
- 7870d - Parmelia reticulata Taylor ?
- 7870e - Ramalina subfarinacea (Nyl. ex (rombie) Nyl. trees & acid rocks
- 7875 - Tornaria aromatica (Turner ex Sm.) Massal. calcareous stone (?)
- 7876a - Caloplaca marina (Wedd.) Zahlbr. coastal acid & calcareous rocks of Atlantic
- 7876b - Verrucaria maura Wahlenb. Acid & calcareous rocks of upper littoral zone
- 7877 - Caloplaca thallicole (Wedd.) Du Rietz. acid & calcareous maritime rocks
- 7878 - Lecanora atra (Hudson) Ach. ^{siliquosa} rocks = Tephromela atra (Hudson) Haf.
- 7879 - L. helicopsis (Wahlenb. ex Ach.) Ach. ?
- 7880 - Xanthoria parietina (L.) Th. Fr. bark, wood & stone
- 7881 - Verrucaria maura Wahlenb. Acid & calcareous rocks of upper littoral zone
- 7882 - Ramalina siliquosa (Huds.) Ach. hard acid rocks
- 7883 - Caloplaca festiva (Ach.) Zwackh. = C. crenularia ?
- 7884 - Porpidia crustulata (Ach.) Hertel ? Knoph. ?
- 7886 - Pertusaria pseudocorallina (Liljeblad) Arnold. trees
- 7887 - Ramalina siliquosa (Huds.) Ach. hard acid rocks
- 7888a - Rhizocarpon obscuratum (Ach.) Mass acid rocks
- 7888b - Xanthoria parietina (L.) Th. Fr. bark, wood & stone
- 7895 - Physcia semipinnata (Gmelin) Moberg trees in Atlantic districts
- 7896 - Pyrenula macrospora (Regal) Coppins ? P. James smooth shaded bark
- 7901 - P. macrospora (Regal) Coppins ? P. James "
- 7902 - Lecanora atra (Huds.) Ach. siliceous rocks = Tephromela atra
- 7907 - Sticta fuliginosa (Dickinson) Ach.
- 7914a - Ramalina canariensis Steiner ?
- 7914b - R. calicaris (L.) Fr. ?
- 7915 - Parmelia perlata (Huds.) Ach. trees & rocks in oceanic areas
- 7916a - Lecidella elaeochroma (Ach.) Chazy ?
- 7916b - Physcia tenella (Scop.) G.C. ? bark & stone

Original listing from 1999 without corrections to typographical errors or updates to lichen nomenclature

A list of lichens found by Caroline Kingsnorth on Sherkin in 1999

Anaptychia runcinata
Caloplaca marina
C. thallincola
C. littorea
C. ferruginea
Candelariella medians
Cladonia portentosa
C. furcata
C. ochrochlera
C. subulata
C. coniocraea
C. pyxidata
C. squamosa
C. cervicornis
C. coccifera
C. bellidiflora
C. verticillata
C. polydactyla
Collema auriculatum
Cornicularia aculeata
Diploschistes caespioplumbesn
Graphis scripta
G. elegans
Lecanora actophila
Lepraria incana
Ochrolechia parella
O. tartarea
Parmelia perlata
P. caperlata
P. saxatilis
P. conspersa
P. mongeotii
Peltigera canina
Pertusaria corallina
Physcia adscendens
Porpidia crustulata
Pyrenula macrospora
Ramalina siliquosa
R. cuspidata
Rhizocarpon geographicum
Tephromella atra
Thelotrema lepadinum
Usnea florida
U. subfloridana
Verrucaria maura
V. prominula
Xanthoria perietina
X. aureola

Appendix 7. Composite table of lichen specimens in the SIMS herbarium collected from 1984 to 2017.

Nomenclature follows Smith *et al.*, 2009. The total of 253 specimens includes 143 different lichen species; 108 lichen specimens were identified to species in 2016, representing 83 new additions, and 13 were determined to a lower taxonomic level. Bracketed numbers denote replicates.

Full details of the specimens collected prior to 2016, and those from the current survey are given in Appendices 2 and 3, respectively.

BLS No.	Lichen taxon	Year collected			
34	<i>Acrocordia gemmata</i>				2016
36	<i>Acrocordia salweyi</i>				2016
212	<i>Amandinea punctata</i>				2016
47	<i>Anaptychia runcinata</i>	1984 (2)	1986	1997	2016
49	<i>Anisomeridium polypori</i>				2016
72	<i>Arthonia cinnabarina</i>				2016
69	<i>Arthonia radiata</i>				2016
1542	<i>Arthopyrenia punctiformis</i>				2016
102	<i>Aspicilia caesiocinerea</i>				2016
131	<i>Bacidia arceutina</i>				2016
155	<i>Bacidia laurocerasi</i>				2016
176	<i>Baeomyces rufus</i>				2016
165	<i>Bilimbia sabuletorum</i>				2016 (2)
200	<i>Buellia aethalea</i>				2016 (2)
	<i>Buellia</i> sp.				2016
241	<i>Caloplaca cerina</i> var. <i>cerina</i>				2016 (2)
253	<i>Caloplaca crenularia</i>		1986 (3)		
267	<i>Caloplaca marina</i>		1986		
282	<i>Caloplaca thallincola</i>		1986		
298	<i>Candelariella vitellina</i>		1986		
306	<i>Catillaria chalybeia</i> var. <i>chalybeia</i>				2016
362	<i>Cladonia bellidiflora</i>			1999	
369	<i>Cladonia cervicornis</i> subsp. <i>cervicornis</i>		1986 (2)	1997	2016 (2)
370	<i>Cladonia cervicornis</i> subsp. <i>verticillata</i>			1999	2016
371	<i>Cladonia chlorophaea</i>		1986 (4)		2016
373	<i>Cladonia ciliata</i> var. <i>tenuis</i>				2016
374	<i>Cladonia coccifera</i>			1999	
375	<i>Cladonia coniocraea</i>			1999	
386	<i>Cladonia floerkeana</i>		1986	1999	2016
389	<i>Cladonia furcata</i>		1986 (3)		2016 (2)
407	<i>Cladonia pocillum</i>		1986		
409	<i>Cladonia portentosa</i>		1986		2016 (2)
410	<i>Cladonia pyxidata</i>				2016
359	<i>Cladonia ramulosa</i>				2016
412	<i>Cladonia rangiformis</i>		1986 (2)		2016
2365	<i>Cladonia squamosa</i> var. <i>squamosa</i>		1986		2016
426	<i>Cladonia uncialis</i> subsp. <i>biuncialis</i>				2016
429	<i>Cliostomum griffithii</i>				2016
440	<i>Collema crispum</i> var. <i>crispum</i>				2016 (2)
442	<i>Collema cristatum</i> var. <i>cristatum</i>				2016
463	<i>Collema fuscovirens</i>				2016
460	<i>Collema tenax</i> var. <i>ceranoides</i>				2016
459	<i>Collema tenax</i> var. <i>tenax</i>				2016
1597	<i>Degelia ligulata</i>				2016/17 (3)
484	<i>Dermatocarpon miniatum</i>				2016
490	<i>Dimerella lutea</i>				2016
504	<i>Enterographa crassa</i>				2016
506	<i>Enterographa hutchinsiae</i>				2016
508	<i>Ephebe hispidula</i>				2016
511	<i>Evernia prunastri</i>		1986		
987	<i>Flavoparmelia caperata</i>		1986 (2)	1997	
529	<i>Graphina anguina</i>				2016 (2)
533	<i>Graphis scripta</i>		1986		

534	<i>Gyalecta biformis</i>				2016
558	<i>Heterodermia leucolmela</i>				2016
	<i>Hydropunctaria</i> sp. (awaiting confirmation) – A. Orange				2016
582	<i>Hypogymnia physodes</i>				2016
573	<i>Ionaspis lacustris</i>				2016
1707	<i>Lecania inundata</i>				2016
159	<i>Lecania naegelii</i>				2016
685	<i>Lecanora argentata</i>				2016
635	<i>Lecanora campestris</i>	1986			
655	<i>Lecanora helicopis</i>	1986			
667	<i>Lecanora polytropa</i>				2016
674	<i>Lecanora rupicola</i>	1986			2016
675	<i>Lecanora saligna</i>				2016
783	<i>Lecanora sulphurea</i>				2016
2287	<i>Lecanora zosteriae</i>				2016 (2)
2474	<i>Lecidea grisella</i>				2016
796	<i>Lecidella carpathica</i>				2016
797	<i>Lecidella elaeochroma</i>	1986			2016
802	<i>Lecidella scabra</i>	1986			
820	<i>Lepraria incana</i>			1999 (2)	2016
1629	<i>Lepraria lobificans</i>				2016
839	<i>Leptogium lichenoides</i>				2016 (2)
2530	<i>Leptogium pulvinatum</i>				2016
851	<i>Lichina confinis</i>				2016 (2)
852	<i>Lichina pygmaea</i>	1984			2016
998	<i>Melanelixia fuliginosa</i>	1986			
880	<i>Micarea lignaria</i>				2016 (2)
920	<i>Normandina pulchella</i>				2016 (2)
921	<i>Ochrolechia androgyna</i>				2016
926	<i>Ochrolechia parella</i>			1999	
959	<i>Opegrapha calcarea</i>				2016 (5)
951	<i>Opegrapha lithyrgea</i>				2016
943	<i>Opegrapha vulgata</i>	1986			2016 (2)
1015	<i>Parmelia saxatilis</i>	1986 (2)			
1022	<i>Parmelia sulcata</i>	1986			
989	<i>Parmotrema crinitum</i>	1986			2016
1008	<i>Parmotrema perlatum</i>	1986 (5)	1997	1999	
1012	<i>Parmotrema reticulatum</i>	1986			2016
1047	<i>Peltigera membranacea</i>	1986			2016 (2)
1057	<i>Pertusaria albescens</i> var. <i>corallina</i>				2016
1058	<i>Pertusaria amara</i>				2016
1089	<i>Pertusaria pseudocorallina</i>	1986 (2)			2016
1103	<i>Phaeographis smithii</i>				2016 (2)
1113	<i>Physcia aipolia</i>				2016
1114	<i>Physcia caesia</i>				2016
1118	<i>Physcia leptalea</i>	1986			2016
1120	<i>Physcia tenella</i>	1986			
756	<i>Placynthiella oligotropha</i>				2016
1167	<i>Polysporina simplex</i>				2016
562	<i>Porpidia cinereoatra</i>				2016
564	<i>Porpidia crustulata</i>	1986			2016
568	<i>Porpidia macrocarpa</i> f. <i>macrocarpa</i>				2016 (2)
1211	<i>Pycnothelia papillaria</i>				2016
1221	<i>Pyrenula chlorospila</i>				2016
1224	<i>Pyrenula macrospora</i>	1986 (3)			2016
1231	<i>Ramalina calicaris</i>	1986			
1230	<i>Ramalina canariensis</i>	1986			2016
1232	<i>Ramalina cuspidata</i>	1986			
1234	<i>Ramalina farinacea</i>	1986 (2)		1999	2016
1233	<i>Ramalina lacera</i>				2016

1240	Ramalina siliquosa	1984	1986 (7)	1997	
1241	Ramalina subfarinacea		1986		
1257	Rhizocarpon geographicum				2016
1264	Rhizocarpon lavatum		1986		
1281	Rinodina atrocinerea				2016
1320	Scoliciosporum chlorococcum				2016
1325	Solenopsora holophaea				2016
1326	Solenopsora vulturiensis				2016 (2)
1332	Sphaerophorus fragilis			1999	
1367	Sticta fuliginosa		1986		
1381	Teloschistes flavicans		1986	1997	
630	Tephromela atra		1986 (2)		1999
1415	Toninia aromatica		1986		2016
1469	Usnea cornuta		1986 (3)		
1816	Usnea esperantiana				2016 (2)
1461	Usnea flammea				2016 (2)
1462	Usnea florida			1999	2016
1471	Usnea subfloridana				2016 (2)
977	Vahliella leucophaea				2016
1491	Verrucaria fusconigrescens		1986		
1502	Verrucaria macrostoma f. macrostoma				2016
1504	Verrucaria maura		1986 (2)		
1507	Verrucaria muralis				2016
	Verrucaria sp. (awaiting confirmation) - Holger Thüs				2016
1518	Verrucaria viridula				2016
988	Xanthoparmelia conspersa				2016
990	Xanthoparmelia delisei				2016
1003	Xanthoparmelia loxodes		1986		
1009	Xanthoparmelia pulla				2016
1530	Xanthoria parietina	1984	1986 (2)		

Additional unidentified specimens (12)	
Xanthoparmelia deleseii / pulla	2016
Lecidella cf elaeochroma	2016
?Lecanora gangaleoides	2016
?Pertusaria lactea = Varicellaria lactea	2016
?Porpidia cinereoatra	2016
Verrucaria sp. A	2016
Verrucaria sp. B	2016
?Pertusaria sp.	2016
?Porpidia sp.	2016
Unknown pyrenocarp	2016
Unknown crust A	2016
Unknown crust B	2016