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#### THE MARINE ALGAL VEGETATION OF LUNDY

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In spite of the excellent work of G. F. Tregelles (1935, 1937) and of Professor and Mrs L. A. Harvey (anon 1948) (Harvey 1950, 1952), the marine vegetation of Lundy is poorly known, particularly as regards the sublittoral. This is hardly surprising, considering the difficulties of access to the shores from the land, other than at a few restricted localities. However the relatively isolated position of Lundy makes its marine flora of particular interest for comparison with, for instance, the much better known floras of the Scillies and of the Isle of Man, and the neighbouring coasts of the Devon and Welsh mainland. It is also important that its present flora should be known in some detail, so that subsequent changes due to introductions or possibly to pollution factors may be noted.

Accordingly the authors of this account, accompanied by a team of 5 members of the Northern Polytechnic Sub-aqua Club, spent the week 2nd-9th August, 1969, in Lundy, sampling the algal vegetation. Intertidal collections were made at The Gates, and on the upper shore at Jenny's Cove and below Friars Garden, but most material was obtained by diving. The vegetation was completely removed from 1 sq. metre sample of areas of recorded depth and habitat conditions, and the material examined in detail ashore, the major species being measured for size, weight and numbers of individuals. In this way the vegetation of a transect 72 metres long was plotted north of Rat Island. Samples were also taken from near Brazen Ward (to a depth of 80 ft.), Gull Rock and Gannet's Rock, (a depth of 135 ft.). Material was also collected outside the sample areas at the above sites and also at Lametry Bay and off Goat Island. A heavy swell made conditions difficult along the south and west coasts, and hence no quantitative work could be done there during this survey.

#### FOOTNOTES

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Earlier published records were collated, together with the unpublished lists compiled by Dr M. E. Gilham in 1954 (comparing vegetation at the Gates with that of Brazen Ward), showing that in all a total of some 200 marine algal species had previously been recorded from Lundy. However many of these records (perhaps about 10%) are extremely dubious or refer to taxa no longer recognised as species, and it is not always clear whether the algae were found actually growing or as drift specimens. Examination of our collections is still in progress, and many of the more critical taxa have still to be identified. A more detailed account will be published elsewhere, and we hope to carry out further similar investigations in July, 1970, but several important discoveries have already been made. The waters around Lundy are exceptionally clear, and even the deepest collections show good algal cover wherever there is a suitably firm substrate. Laminarian forests are well-developed and extensive, and include the southern species *Laminaria ochroleuca*. This is at present the most northerly records of the species in Britain. Although elsewhere it may occur intertidally at low water of spring tides, here it is apparently always sublittoral, but individual plants were well-developed. *Grateloupia dichotoma* has a rather similar distribution pattern in Britain, and was likewise found sublittorally (north of Goat Island), though only as one small group of plants on a stone. Again this is the most northerly British record of the species. *Corynophloea crispa* is another interesting new record. This small epiphyte, found only on *Chondrus crispus*, had previously been recorded in Britain only from Cumbrae and Alderney, and had not been noted in this country for more than fifty years, yet was abundant on its host in the shallow sublittoral at both Brazen Ward and Gannets' Rock. The occurrence of a saxicolous population of *Polysiphonia lanosa* (normally a semiparasite on *Ascophyllum* or on *Fucus vesiculosus*) at high water neap tide level north of Rat Island was also an interesting discovery. To date some 188 spp. have been recorded from the collections made during this one week, 45 of which appear not to have been previously recorded from Lundy. As might be expected, many of these are of species of normally sublittoral habit, e.g. *Arthrocladia villosa*, *Sporochnus pedunculatus*, *Taonia atomaria*, *Bonnemaisonia asparagoides*, *Halarachnion ligulatum*, *Meredithia microphylla* and *Scinaia furcellata*, but several of the new records of species occurring intertidally were also of interest, e.g. *Bifurcaria bifurcata*, *Gymnogongrus norvegicus* and *Grateloupia filicina* (all frequent to abundant in a few pools south of The Gates), *Codium vermilara* (to which previous records of the closely similar *C. tomentosum* may well refer), and *Colpomenia peregrina* (an immigrant species which by now has spread right round the British Isles).

It would not have been possible to carry out this investigation without the close cooperation and assistance of the staff of Bristol Channel Divers Ltd. and the disciplined and highly trained divers of the Northern Polytechnic Sub-aqua Club, who carried out much of the more laborious and physical taxing sampling work. We are also deeply grateful for financial assistance given by our respective institutions, and above all by the National Environment Research Council. We all enjoyed our work in Lundy, and look forward to continuing it in the summer of 1970, when we shall hope for equally good working conditions and equally interesting discoveries.

The depths given refer to actual depth of water at the time of the dive, and have not yet been corrected to a standard such as Chart Datum. Dr. D. E. Girvine

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