

On the Vegetation of Heimaey, Iceland Preliminary Report

By

STURLA FRIDRIKSSON*, ÁGÚST H. BJARNASON
and BJARTMAR SVEINBJÖRNSSON

* The Agricultural Research Institute, Reykjavík, Iceland

INTRODUCTION

During the summer of 1969 ecological work on the vascular vegetation of Heimaey was started. Trips were made to the island and preliminary ecological studies carried out. In general the vegetation is dominated by grasses and has clearly been influenced by man especially around the town and main roads.

A study on the vegetation of Heimaey was carried out by Baldur Johnsen (1939), who also made some studies on Bjarnarey. Only few observations have been made since. An extensive study was carried out by Fridriksson and Johnsen (1967) on the vascular flora of the outer Westman Islands. A better knowledge of the vegetation of Heimey was considered necessary as a background for evaluating the colonization of plants on Surtsey.

METHOD OF RESEARCH

The observation was mostly sociological and the method used was that of Hult-Sernander-Du Rietz. A quadrat of 1 m² was laid out 5 to 10 times at each locality and the coverage of each plant species indicated by a cover class of 1 to 5 where 5 is the maximum coverage. An average of measurements from the quadrats is then given in the tables with an addition of a frequency number which is the percentage of the quadrats in which the plant species occurs.

By this method two figures are obtained, the average cover class of the quadrats and the frequency; they were then used to classify the communities and societies. Usually the dominating species were used in the classification but notice was also taken of characteristic species.

TOPOGRAPHY AND CLIMATE

The island is of volcanic origin like Surtsey. It is mostly fringed with cliffs but sand beach is found on the isthmus between Stórhöfði in the extreme south and the main island, and on the isthmus between Heimaklettur in the north and the main island.

The climate is typically oceanic warm and moist in comparison to the mainland.

THE PLANT COMMUNITIES

The vegetation can be divided into seven or eight communities: the dry meadowland, the herb slope, the heath, the gravelly flat, the bog, the sand beach, the cliffs and perhaps the puffin colony which seems to be a derivative of the dry meadowland.

The dry meadowland is the most widespread and is divisible into several societies depending upon the dominating grass species. The most frequent are: *Agrostis tenuis*, *Anthoxanthum odoratum*, *Festuca rubra*, *Festuca vivipara*, *Poa pratensis* and *Poa trivialis*.

The heath vegetation is characterized by high coverage of *Salix herbacea* and/or *Empetrum hermafroditum*. There are no sharp boundaries but gradual change into dry meadowland.

The main characteristic of the gravelly flat is the open vegetation with the dominating species rarely occurring outside this community such as: *Armeria maritima*, *Cardaminopsis pe-trea*, *Plantago maritima*, *Silene acaulis* and *Silene maritima*.

The gravelly flat has much in common with the cliffs both in physical factors and plant species but characteristic of the latter are: *Draba*

incana, *Oxyria digyna*, *Polypodium vulgare*, *Sedum rosea* and *Saxifraga caespitosa*.

The sand beach is mostly bare but wisps of *Minuartia peploides*, *Mertensia maritima* and *Cakile maritima* were found scattered above high tide mark. Sand dunes with *Elymus arenarius* were also found higher up.

The puffin colony vegetation has but few species but they grow vigorously because of the manure supplied by the birds. Grasses dominate but most characteristic are: *Stellaria media* and *Rumex acetosa*.

The bog community is very small and is gradually disappearing *Carex Lyngbyei* has the highest productivity.

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References:

- Fridriksson, Sturla and Johnsen, Björn: 1967. The Vascular Flora of the Outer Westman Islands, Greinar IV, 3. Societas Scientiarum Islandica.
- Hylander, Nils: 1955. Företeckning över Nordens växter, I. Kärlväxter. (List of the plants of N.W. Europe, I. Vascular plants.)
- Johnsen, Baldur: 1939: Observations on the vegetation of the Westman Islands. Societas Scientiarum Islandica, Vol. XXII.