

# SURTSEY RESEARCH PROGRESS REPORT

## X



THE SURTSEY RESEARCH SOCIETY · REYKJAVÍK 1992

# SURTSEY RESEARCH PROGRESS REPORT

X



THE SURTSEY RESEARCH SOCIETY  
REYKJAVÍK, 1992



SURTSEYJARFÉLAGIÐ – The Surtsey Research Society  
P.O. Box 352, Reykjavík, Iceland – Telefax 620815

# Index

	PAGE
1. INTRODUCTION	
by Steingrímur Hermannsson .....	5
2. BIOLOGY .....	7
2.1 Soil Respiration on the Volcanic Island Surtsey, Iceland in 1987 in Relation to Vegetation	
by Borgthór Magnússon .....	9
2.2 Vascular plants on Surtsey 1981–1990	
by Sturla Fridriksson .....	17
2.3 Observations on Seals on Surtsey in The Period 1980–1989	
by Erlingur Hauksson .....	31
2.4 Studies of the Subtidal Fauna of Surtsey in 1980 to 1987 and Changes in Subtidal Fauna from 1964 to 1987	
by Erlingur Hauksson .....	33
3. GEOLOGY AND GEOPHYSICS .....	43
3.1 The Submarine Morphology of Surtsey Volcanic Group	
by John O. Norrman and Ulf Erlingsson .....	45
3.2 Remote sensing studies of the geomorphology of Surtsey 1987–1991	
by James B. Garvin and Richard S. Williams JR .....	57
3.3 Encrustations from Lava Caves in Surtsey, Iceland. A Preliminary Report	
by Sveinn P. Jakobsson, Sigurdur S. Jónsson and Erik Leonardsen .....	73
3.4 Shallow Structures beneath Heimaey and Surtsey from Local Gravity Data	
by B.R. Cameron, F.S. Cranmer and G.R. Foulger .....	79
3.5 Earth Science Bibliography of the Surtsey (1963–1967) and Heimaey (1973) Er- uptions, and their Eruptive Products	
by Sveinn P. Jakobsson .....	93

## INTRODUCTION

The crew on the fishing boat off the south shore of Iceland that peaceful morning on the 14th of November 1963 did not know what was happening when the sea started bubbling. When the column rose they were in no doubt. This was a submarine eruption, the birth of an island, a new land.

The island was given the name Surtsey which in Icelandic means the island of Surtur, who according to old Icelandic belief is the giant who keeps the subterranean fires burning.

The eruption immediately caught the interest of Icelandic and foreign scientists. That led to the formation of the Surtsey Research Committee, later Society, for the purpose of coordinating the scientific work on the island and publishing reports. The island was soon declared a protected national monument. The Society has been entrusted with its management.

This is the tenth progress report published by the Society. They appeared frequently to start with, even yearly when the development of the island was more rapid and the scientific work was intense. Now Surtsey's development has become more settled and the changes slower and accordingly the reports appear with longer intervals. The ninth report was published in 1982.

As for the previous five reports, the scientists Adalsteinn Sigurdsson, marine biology, Eythor Einarsson, botany, and Sveinn P. Jakobsson, geology, have been in charge of the edition of this report. Without such voluntary work this report would not have been published. Guttormur Sigbjarnarson of the Icelandic Natural History Society has managed the publication of the present report.

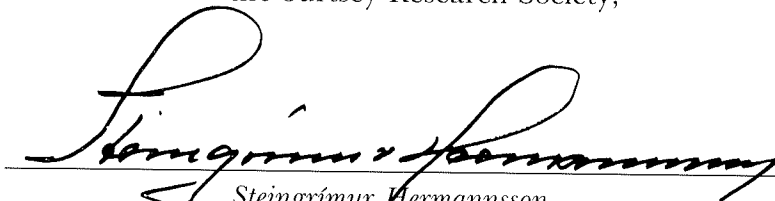
In order to facilitate the scientific work on Surtsey a house was erected there in 1966. This was made possible by a contribution by late Prof. Paul G. Bauer. The house was named Pálsbær (the house of Paul). It served the scientific community well for years but became a victim of geomorphological changes of the island. In 1985 a new house was built at a more settled and stable site. The widow of Prof. Paul S. Bauer, Winifred, contributed generously to its construction. For that we are indeed grateful. The new house has been given the name Pálsbær II.

As acknowledged in earlier reports the scientific work on Surtsey enjoyed for years financial support from several sources. In later years it has mostly been financed by the Icelandic Government and institutions in Iceland and abroad from where scientists have come to work on Surtsey. The Icelandic Coastguard has continued giving valuable assistance primarily through transportation to and from the island. That is highly appreciated.

Next year Surtsey will be 30 years of age. During those years numerous scientists representing most disciplines of natural sciences pertaining to such a development have worked on Surtsey. The papers and reports on Surtsey published in scientific journals and magazines all over the world are counted in hundreds. A bibliography of geological papers is to be found in this report.

Surtsey has added to man's knowledge of the Earth and will hopefully continue doing so. That is certainly needed if man is to succeed in reversing deterioration and even destruction of his environment, so vital for his own existence.

For the Surtsey Research Society,



Steingrímur Hermannsson,  
chairman