Vascular Plants in Surtsey 1969

By
STURLA FRIDRIKSSON,* ÁGÚST H. BJARNASON and BJARTMAR SVEINBJÖRNSSON
* Agricultural Research Institute, Reykjavík, Iceland.

During the summer 1969, sixty three vascular plants were found in Surtsey. They were of four species:

Minuartia peploides syn. *Honckenya peploides*	52 plants
Elymus arenarius	5 plants
Cochlearia officinalis	4 plants
Cakile maritima syn. *Cakile edentula*	2 plants

As described in previous reports (Fridriksson and Johnsen 1968, Fridriksson 1970) the plants were marked with a stake bearing a number, and their positions plotted on an aerial photograph. A detailed topographic map had been prepared of Surtsey in 1969, (Norrman 1970). To that was added the coordinant system previosuly used, with checkers 100 m^2, identified numerically and alphabetically. On the map all the vascular plants found in 1969 were plotted as well as the area of mosses (Fig. 1).

As the individual plants were discovered records were made of their stage of growth and their progress of development followed during the summer. All plants, their location and remarks on over-wintering and development are listed in table I.

Of the colonizing species *Minuartia peploides* is obviously the most aggressive and persistent invader. Of the 52 plants recorded 23 are known to have survived from the previous year. A few other individual plants are, also, suspected to be earlier colonists. This is, however, not definite as their marking stakes had disappeared during the previous winter.

As indicated on the map the plants are primarily colonizing the northern shore and the "old" lava of the eastern side of the island.

On the quadrats B-13 and B-14 a group of *Minuartia* plants were growing among drifted seaweed. This location is at the edge of the lagoon, which has been filled up by sand during the last winters. The high fertility of the soil may to some extent stimulate the growth in this drifting zone.

On the eastern part of the island the old lava (Lava I) is gradually becoming covered with drifting sand. At that location most of the *Minuartia* plants were in their second year. Two of the plants were growing on the southeastern coast on a sand bank and the edge of the lava cliff. As the extensive breakdown of the cliffs will probably continue these plants will consequently be lost.

Of the two *Cakile maritima* plants recorded one was growing with the *Minuartia* plants among the drifted seaweed and the other in quadrat C-12 in a loose and dry sand. The latter plant developed 49 flower buds whereas the former was the only plant on Surtsey forming mature flowers during the summer 1969.

Of the five *Elymus arenarius* plants recorded, two could possibly have overwintered from 1968. One plant in quadrat K-17 had developed from a stolon caught under a nob of lava presumably after having survived the dispersal by ocean.

Of *Cochlearia officinalis* four plants were growing around a plastic barrel filled with rainwater. These plants had obviosuly been carried as seed by birds which were attracted by the water of the barrel, this being the only source of fresh water on the island. It was noted that the plants were growing out of bird droppings in association with some green algae, which gave color to the surfcae of the soil.

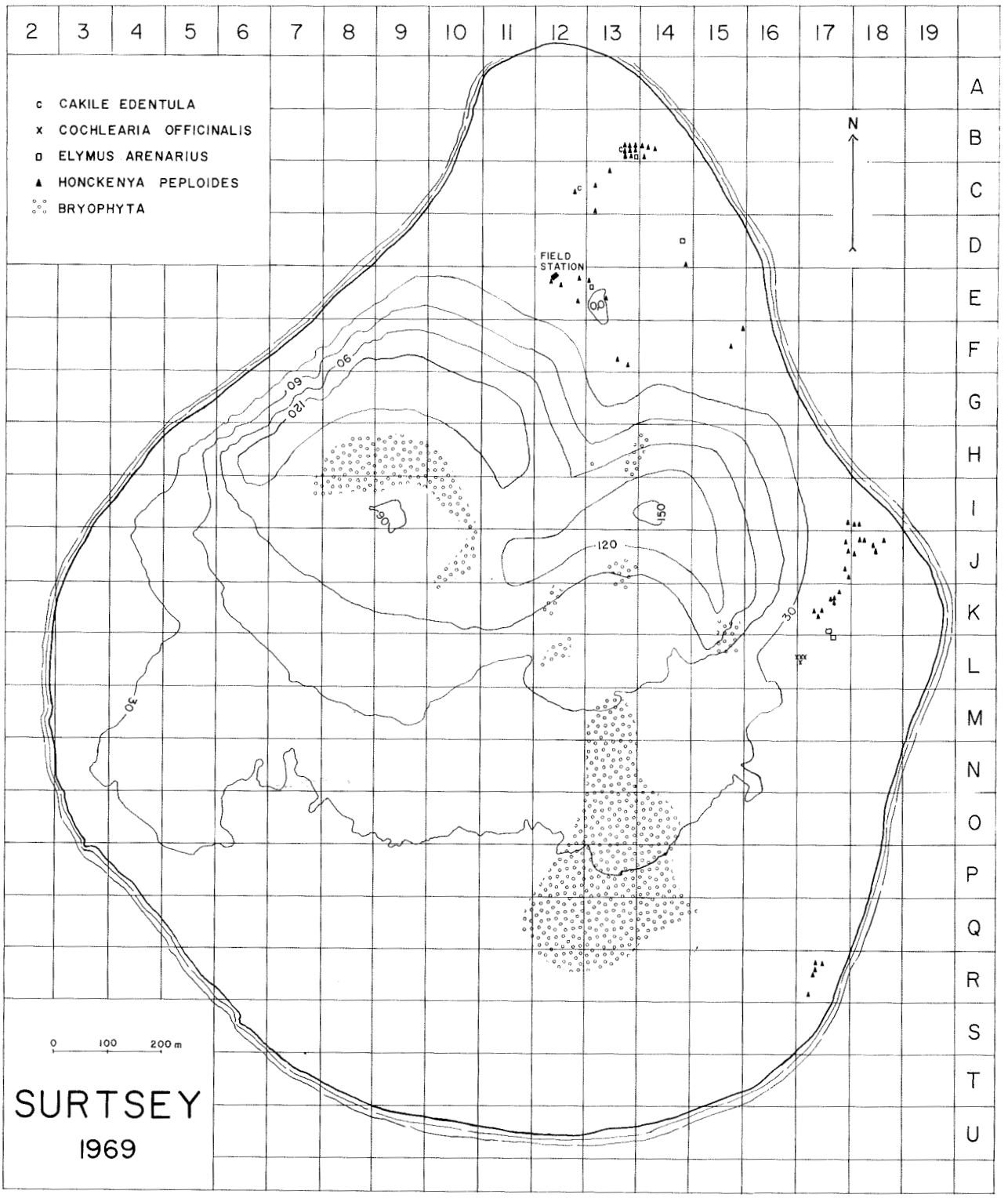

Fig. 1. A map of Surtsey showing the location of plants found on the island in 1969.

TABLE I
Vascular Plants on Surtsey in 1969

NO:		Location	Plants from 1968	Max. height in cm	Number of branches	Number of leaves	Number of flowerbuds
1	*Minuartia peploides*	E12	×	5.5	9	119	..
2	*Caklie maritima* ssp *isl.*	C12	..	3	2	10	49
3	*Minuartia peploides*	C13	..	½	1	10	..
4	*Elymus arenarius*	B13	..	17	..	3	..
5	*Cakile maritima* ssp *isl.*	B13	..	..	1	7	9
6	*Minuartia peploieds*	B13	..	4	1	11	..
7	*Minuartia peploides*	B13	..	1	1	7	..
8	*Minuartia peploides*	B13	..	½	1	2	..
9	*Minuartia peploides*	B13	..	½	1	2	..
10	*Minuartia peploides*	B13	..	3	1	12	..
11	*Minuartia peploides*	B13	..	½	1	10	..
12	*Minuartia peploides*	B13	..	3	4	26	..
13	*Minuartia peploides*	B14	..	½	1	2	..
14	*Minuartia peploides*	B14	..	1	1	10	..
15	*Minuartia peploides*	B14	..	½	1	8	..
16	*Minuartia peploides*	B13	..	1	1	10	..
17	*Minuartia peploides*	B14	..	3	1	18	..
18	*Minuartia peploides*	C13	..	1.5	1	12	..
19	*Minuartia peploides*	D14	..	5	5	16	..
20	*Minuartia peploides*	E13	×	3.5	1	14	..
21	*Minuartia peploides*	C13	..	½	1	8	..
22	*Minuartia peploides*	J18	×	5	1	31	..
23	*Minuartia peploides*	J18	×	5	1	30	..
24	*Minuartia peploides*	J18	×	1.5	1	14	..
25	*Minuartia peploides*	J18	×	1.5	2	38	..
26	*Minuartia peploides*	I18	×	7.5	3	78	..
27	*Minuartia peploides*	J17	×	½	1	10	..
28	*Minuartia peploides*	F15	×	1	2	22	..
29	*Minuartia peploides*	J17	×	1.5	2	18	..
30	*Minuartia peploides*	J18	×	4	1	30	..
31	*Minuartia peploides*	J18	×	3	1	24	..
32	*Minuartia peploides*	J17	×	2	1	20	..
33	*Minuartia peploides*	K17	×	4	2	40	..
34	*Minuartia peploides*	K17	×	3.5	3	22	..
35	*Minuartia peploides*	K17	×	2	2	30	..
36	*Minuartia peploides*	K18	×	5	4	32	..
37	*Elymus arenarius*	K17	?	15	..	3	..
38	*Minuartia peploides*	R17	×	4	5	46	..
39	*Minuartia peploides*	R17	×	1.5	1	14	..
40	*Minuartia peploides*	R17	×	1	1	10	..
41	*Minuartia peploides*	R17	×	2	2	34	..
42	*Minuartia peploides*	E12	..	½	1	8	..
43	*Minuartia peploides*	C12	..	1.5	1	10	..
44	*Minuartia peploides*	E13	..	1.5	1	14	..
45	*Minuartia peploides*	E12	..	1.5	1	8	..
46	*Elymus arenarius*	E13	..	20	..	3	..
47	*Cochlearia officinalis*	L16	..	..	..	..	..
48	*Minuartia peploides*	F13	×	7	7	140	..
49	*Cochlearia officinalis*	L16	..	..	..	..	..
50	*Minuartia peploides*	J18	..	3	1	20	..
51	*Minuartia peploides*	K17	..	1	2	34	..
52	*Elymus arenarius*	K17	..	5	..	2	..
53	*Minuartia peploides*	I17	..	½	1	8	..
54	*Minuartia peploides*	I18	..	1	1	4	..
55	*Minuartia peploides*	K17	..	½	1	10	..
56	*Minuartia peploides*	K17	..	1	..	8	..
57	*Minuartia peploides*	E12	..	1.5	1	8	..
58	*Minuartia peploides*	R18	..	4	3	42	..
59	*Cochlearia officinalis*	L16	..	..	..	..	..
60	*Cochlearia officinalis*	L16	..	..	..	..	..
61	*Minuartia peploides*	F13	..	..	..	..	..
62	*Minuartia peploides*	F13	..	..	..	..	..
63	*Elymus arenarius*	D14	..	..	..	..	..

All the species recorded have previously been found growing on Surtsey except *Cochlearia officinalis*. These are all common to the coast of Iceland and have been carried to Surtsey by ocean dispersal except the *Cochlearia* plants which most likely were brought by birds.

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