

## 12.

# Miscellaneous contributions

## Ymiskt

*Selected and edited by Søren Ødum*

In August 1982 The Nordic Arboretum Committee, founded 1972, held its annual meeting in Tórshavn. The Plantation Committee of the Faroe Islands arranged a seminar and excursions at that occasion, and a total of 30 foresters, horticulturists and botanists from all Nordic countries, Scotland, and Shetland participated. A main purpose was to discuss the results of tree-planting in the Faroe Isles in comparison with experiences from other coastal areas in the North Atlantic and to consider further experimental work and cooperation. Some of the following contributions were subsequently published or sent to the organizers.

**Roger Lines** (Forestry Commission, Roslin, Scotland, UK): “Since 1949 The Forestry Commission has carried out experimental tree-planting on particularly treeless areas towards the N and NW of Scotland. The plantations are of various age, established since 1949 on mainly deep peat or poor gravelly soil. The potential tree-line towards the NW is situated at approx. 300 m altitude.

On Orkney, where the good soil is cultivated, plantations have been established on poor sheep-grazed soils since 1954. Same situation on Isle of Skye. *Pinus contorta* var. *contorta* and *Picea sitchensis* are the main species, also at Stornoway, where the soil is very poor and strong winds an important factor.

On the Isle of Mull is the basic rock basalt like in the Faroe Isles. Experiments with fertilizing have shown that analysis elucidating lack of phosphorus should be made on needles (leaves) rather than on soil. Normally three times as much P is needed as indicated by soil analyses.

The provenance-trials in *Pinus contorta* at Roslin might serve as a valuable guidance for choice of origins for the Faroe Islands. *P. contorta* var. *latifolia* will be of no value. Of main interest will obviously be the coastal *P. contorta* var. *contorta* north of 60°N. *P. sylvestris* from W-Scotland should be tried. Important to select the best adaptable *Picea sitchensis* origins. *P. sitchensis* x *engelmannii* from the Skeena River region, B.C., might be of interest. *Abies procera* is the best *Abies* in Scotland. *A. grandis* is fastgrowing, but not wind-resistant. *A. amabilis* should be tried. In *Larix leptolepis* there is obviously only minor variation among origins.”

Roger Lines’ report from his visit to the Faroe plantations in Scottish Forestry, Vol. 41(2): 102–113: “Forestry in The Faroe Isles”, concludes (quoted):

“One must first admire the tenacity of Faroese foresters and their Danish advisors who have had such a hard struggle against high winds, salt spray, lack of summer warmth and in many places poor soil conditions. Sheep are a constant

menace and all plantations must be securely fenced. Some of the earliest trials failed because farm animals gained access while they were still at a critical stage.

C. E. Flensburg from the Danish Heath Society must be given the credit for selecting Washington Coastal seed origins of *Pinus contorta* in the 1920s (growing here 15°N of its native origin) as the best choice for a pioneer species. These have been astonishingly successful. Under these conditions early growth of these sources is too slow for it to suffer badly from basal sweep (Lines, 1980) and, though its stem form is poor, it nevertheless has created healthy forests with some trees up to 17 m tall and with a diameter of 46 cm at breast height. I saw little evidence of snow damage to the crowns, which has ruled out this seed origin for large scale use in Scotland. Sitka spruce, which grows at latitudes similar to the Faroes in Alaska, is more demanding nutritionally, as shown by its best development on fertile ground at Hoydalar and its poorer showing elsewhere.

The recent trials with a range of species from South America and New Zealand organised by Søren Ødum are of great interest, especially in relation to the experiments planted in Britain in 1979 with *Nothofagus obliqua* (Mirb.) Blume and *N. procera* seed origins and later trials with other *Nothofagus* species.

Lack of warmth in summer leads to incomplete hardening of terminal shoots and buds, which then suffer die-back over winter (Ødum, 1979). Sarvas (1966) found that *Pinus sylvestris* at its northern limit at 70°N in Finland required a temperature-sum of 600 degree-days above 5°C. This would be exceeded easily at Tórshavn and the excellent growth of species such as *Abies grandis*, whose range ends at 50°N on the coast of British Columbia and even the Californian *Chamaecyparis lawsoniana*, suggest that accumulated temperature is not the main limiting factor. Maritime climates tend to have much more variable temperature fluctuations and unseasonal frosts. These and the accompanying blasting winds are one of the major restrictions to growth in the Faroes.

The growth of Sitka spruce in a climate not unlike parts of Alaska is poorer than I expected. The lack of really hard frosts during the winter no doubt allows *Elatobium* to survive and then increase rapidly in the spring, just as it does on Lewis in the Outer Hebrides (Carter, 1972). Over a 30 years period the lowest temperature recorded at Hoyvík was -10.4°C and the average minimum temperature for February is a mere -5°C. These data may be compared with lowest temperatures of -24.2°C and average minimum for February of -8.2°C for Copenhagen (a typical Continental meteorological station). Another possible cause of the relatively poor growth of Sitka spruce may be the basaltic soil parent material. Parts of the island of Mull, where the soils have a basaltic parent material, have shown nutritional problems requiring above normal applications of phosphate to obtain reasonable growth of Sitka spruce."

**Jim Henderson**, Shetland (University of Aberdeen), Scotland, UK.: "The first plantation in Shetland was established by a private person on private ground in 1904 with *Pinus sylvestris*, *Acer pseudoplatanus*, and *Larix decidua* as the main species. This plantation was later extended with use of a broad variety of broad-

leaved and conifers even *Fagus* and *Araucaria*. Not only problems with cool summers, salt, wind exposure, and sheep like in the Faroe Isles, but also with ponies and wild rabbits.

Since 1945 particularly planting of *Picea sitchensis*, partly with help from school children. Planting of shelterbelts is an important task. Trees for shelterbelts are delivered to farmers”.

**Hákon Bjarnason**, Iceland (former director of Skógrækt Ríkisins): “The native birch-forest and the vegetation cover as such was reduced to approx. 20% due to activities of man and to sheep-grazing after landnam, particularly in the 18th century. First plantation (*Pinus mugo*) at Þingvalla 1902–04. In subcontinental E-Iceland (Hallormsstaður) *Larix sibirica* of NW-origin is producing 7 m<sup>3</sup>/ha, while *Picea sitchensis*, northern origins (Homer best) is the main species in the oceanic SW together with *Pinus contorta*. *Lupinus nootkatensis* is an important pioneer species, preventing erosion and improving soil conditions.”

Hákon Bjarnason has after the 1982-seminar in Tórshavn compared conditions for tree growth in S-Iceland and the Faroe Isles:

“By looking at the meteorological data from three localities in the Faroe Islands and three stations in the middle of southern Iceland we find them quite similar. The monthly average temperature during the growing season, June – September, is almost the same. But the sum of the averages for April – October is slightly higher in the Faroes and indicates a longer growing season.

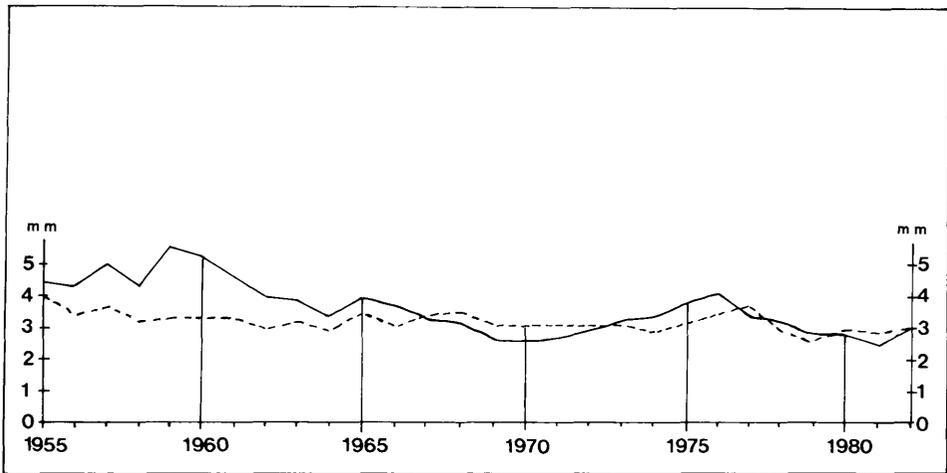
The precipitation is somewhat higher at two of the Icelandic stations than in the Faroes, but the difference can hardly be of importance. The humidity is probably higher in the Faroes than in southern Iceland. Table 1.

One point regarding the climate in southern Iceland should be added. During late winter and early spring strong north-easterly winds often prevail. Then there are usually night frosts but sunny days. If the soil is frozen at the same time the needles on conifers are often damaged. Deciduous trees are seldom injured by these events.

The soils in the Faroes and Iceland are both of basaltic origin although the physical structure is different. The soils in the southern region of Iceland are loess formations, and even the bogs have a high percentage of airborne materials. The soils have usually a low clay content and often a deep ground-water level, which can retard young trees, especially in periods of drought.

I am not able to discuss the potentials of the Faroese soils, but there is one thing in common with the Faroes and Iceland, which is obvious to everybody who enters the forest enclosures. That is the luxurious vegetation which grows up within a few years when grazing and trampling are excluded. And the plant species to be found are mostly the same in the Faroes and Iceland.

The following tree species which according to Søren Ødums article in *Holarctic Ecology 2.*, Kbh. 1979, thrive well in the Faroes: *Acer pseudoplatanus*, *Ulmus glabra*, *Populus trichocarpa*, *Alnus sinuata*, *Sorbus aucuparia*, *S. intermedia*, and *Laburnum* sp. are all successful in the southern regions in Iceland. These species



12.1. Vídd á viðingum á 5 trøum av Hallormsstøðum í Íslandi (brotin strika) og 10 trøum úr Føroyum (heil strika) frá tíðarskeiðnum 1955–80.

The width of annual rings of 5 trees from Hallormsstaðir, Iceland (dotted line) and 10 trees from the Faroe Islands (full line) from the period 1955–80.

have all produced seed and selfsown seedlings are often found with the enclosures. *Fraxinus excelsior* from Leksvik in Norway grows remarkably well in sheltered places and fertile soil.

Several conifers of different species and provenances are now planted with good results such as *Picea sitchensis*, *P. engelmanni*, *P. glauca*, *Pinus contorta*, *P. mugo*, and *P. mugo var. rostrata*, *Abies lasiocarpa*, *Tsuga mertensiana*. All have produced ripe seeds except the last one, which is still too young. Several other species have been planted in this region. Some are promising, other disappointing.

Three years ago Tróndur Leivsson and Leivur Hansen sent me cores from 10 trees of *Pinus contorta*, planted at different localities in the Faroes, most of them between 1930–1935. I compared them with 5 cores from *P. contorta* of Skagway provenance, planted in 1940 at Hallormsstad. Fig. 12.1. The figure shows the width of the annual rings from 1955 to 1980. Except for a few years the rings show almost the same growth, which is close to 4 mm per annum. It might be of interest to gather more core samples in the Faroes and compare them with Icelandic ones.

From what has been mentioned above one can conclude that all tree species which thrive in southern Iceland will also thrive in the Faroes. The Faroese are able to use the results of Icelandic experience. In the future they should be able to obtain tree seed from Iceland when the species there begin to produce seed regularly.

Icelanders can use Faroese experience in some cases although there are several tree species from the southern hemisphere which are unlikely to succeed in Iceland. However it is possible that later generations of some of these species might yield seed after natural selection, which could sprout and grow in Iceland.”

Table 1. The data are from: *Foreløbig oversigt over klimaet på Færøerne. Det danske Meteorologiske Institut. Meddelelser nr. 20, 1969, and from meteorologic tables in: Skogsagen og dens udvikling af Hákon Bjarnason. Meddelelser fra Det norske Skogforsøksvesen nr. 84, 1967.*

Station:	Højde over ha- vet m. (Altitude)	Jan.	Feb.	Mar.	Apr.	Maj	Jun.	Jul.	Aug.	Sep.	Okt.	Nov.	Dec.	M	SH.	Summa	
<b>Færøerne:</b>																	
Hoyvík	20	3.9	3.7	4.6	5.4	7.3	9.2	11.0	11.1	10.0	7.9	6.1	5.0	7.1	10.3	61.9	
Sandur	5	4.1	3.8	4.4	5.2	7.6	9.4	11.2	11.4	10.0	7.3	6.1	5.2	7.1	10.5	62.1	
Sunnba	90	3.5	3.6	4.9	5.5	7.6	8.5	9.9	10.1	9.5	7.8	6.8	4.8	6.8	9.3	58.0	
<b>Island:</b>																	
Sámstaðir	90	-0.3	-0.2	1.7	3.3	7.7	9.9	11.6	10.9	8.5	4.8	2.4	0.8	5.1	10.2	56.7	
Vík í Mýrdal	20	1.2	1.2	2.6	3.9	6.9	9.5	11.3	11.0	9.0	5.6	3.7	2.3	5.7	10.2	57.2	
Kirkjubæarklaustur	30	-0.4	-0.3	1.4	3.4	6.8	9.6	11.6	10.9	8.6	4.9	2.4	0.7	5.0	10.1	55.8	
<b>Månedlig nedbør i mm: (Precipitation in mm)</b>																	
<b>Færøerne:</b>																	
Hoyvík		149	136	114	106	67	74	80	96	132	157	156	168			Total 1434	
Sandur		131	129	95	73	61	60	76	84	83	132	123	134			1181	
Sunnba		78	58	50	57	43	46	56	82	83	102	93	107			834	
<b>Island:</b>																	
Sámstaðir		110	96	95	71	53	56	57	93	105	134	114	107			1103	
Vík í Mýrdal		182	159	164	171	143	167	169	188	237	238	212	226			2256	
Kirkjubæarklaustur		147	112	135	110	105	127	123	156	175	188	174	170			1725	
<b>Månedlig middeltemperatur i °C. Average temp. per month in °C</b>		<b>M: Årets middeltemperatur. M: Average temp. of the year</b>						<b>SH: Middeltal juni-sept. SH: Average temp. June-Sept.</b>									

Det var i 1947. Året efter at skovrider S. A. Christensen (Det danske Hedeselskab) havde overtaget opgaven som konsulent for Færøernes plantagenævn. S. A. Christensens interesse for sagen var formidabel og hans iver smittende. – Via det islandske skovselskab fik han frø og andet plantemateriale hjem fra Alaska, og vi fik det hele overladt til opformering.

Det var indledningen til en ny tid. Nok kendte vi til skovbrugets proveniensproblemer og læplantningens begyndende forsøg på at fremskaffe rigtigt udgangsmateriale til plantning på den jyske vestkyst. Jeg blev helt optaget af det problem, det var, at fremskaffe og afprøve velegnede træarter og provenienser til et så specielt udsat sted som Færøerne, men det var først i 1968, da jeg blev inviteret til Færøerne af Plantagenævnet for at bl.a. ved selvsyn at erfare, hvordan vore planter trivedes, det rigtig gik op for mig, hvor store problemerne var: Stærk vind, jordens store humusindhold, dræningsproblemer, temperaturen og endelig fårene.

Det var meget vigtigt først og fremmest at fremskaffe plantemateriale fra områder, hvis klimaforhold lignede Færøernes, og jeg vænnede mig til automatisk at registrere plante- og frøtilbud fra sådanne steder.

Det var en stor dag, da vi på Centralplanteskolen modtog frø af *Pinus contorta* og *Alnus sinuata*, som Leivur Hansen, den daglige leder af tilplantningsarbejdet, Tórshavn, havde høstet i Tórshavn. Disse træarter havde vist deres evne til at gro og udvikle sig på Færøerne. 3 år efter kunne vi sende planter, stammende fra færøsk frøindsamling, tilbage til »oprindelseslandet«.

Fra 1947 til 1970 modtog vi plantebestillinger fra de enkelte kunder via Leivur Hansen, og planterne blev pakket særskilt til hver enkelt kunde i store samlede forsendelser. Det var til stort besvær, både for os og for Leivur. Det blev derfor vedtaget, at vi i fremtiden fra Leivur Hansen skulle modtage samlede ordrer, og det blev ofte op til 50.000 planter, som vi så leverede samlet, pakket i containere, fyldt op i Ålborg, og som via fragtbåde kom frem til Tórshavn. Leivur Hansen har fortalt om, hvordan en sending planter blev modtaget: Næsten en folkefest, et marked, hvor 1.000 eller flere mennesker mødte op.

At de færøske haver ofte kan fremvise et utal af buske, træer, stauder og frugtbuske skyldes ikke Hedeselskabets virke alene. Gennem årene har danske planteskoler leveret anseelige antal planter til beboere på alle øerne, og mange af planterne groede, blot der var læ og ingen får. At en mangfoldighed af plantesoarter og -arter er afprøvet fremgår alene af de plantninger ved Statshospitalet og Seminariet i Tórshavn, der blev udført af et dansk havearkitektfirma: Der blev plantet ca. 200 sorter/arter af buske og træer samt ca. 120 stauder.

De slægter og arter Centralplanteskolen især leverede var følgende: *Pinus contorta*, *Picea sitchensis*, *Abies alba*, *Pinus mugo* var. *rostrata*, *Alnus sinuata*, *Alnus glutinosa*, *Betula pubescens*, *Betula verrucosa*, *Populus trichocarpa* 'Hastata', *Rosa rugosa*, *Sorbus aria*, *Sorbus intermedia*, *Salix* spp., *Spiraea douglasii*, *Spiraea vanhouttei*, *Rhododendron*, *Weigela*, *Symphoricarpos*, *Syringa*, *Ribes* samt frugtbuske.

Vi byggede faktisk videre på de erfaringer, der var gjort, idet vi bl.a. føjede et nyt element til: Planternes herkomst. Kunne vi finde noget bedre indenfor samme plantearart? Kunne vi anvende *Pinus contorta* fra Alaska, *Acer platanoides* fra Norge, kunne *Hippophaé rhamnoides* bruges, hvis vi afprøvede vore mange indsamlinger? Vi udplantede småfrøhaver og moderplantekvarterer, kun beregnet til Færøerne: *Alnus sinuata*, *Populus trichocarpa* var. *hastata*, *Ribes* spp. m.fl.

De jævnlige besøg af Leivur Hansen og vor indbyrdes korrespondance var i høj grad medvirkende til at stimulere min interesse for plantning på Færøerne, men uden mine besøg på Færøerne, tror jeg ikke det havde nedfældet sig så stærkt i min bevidsthed.

Det er godt at tænke tilbage på!

*Abstract:* The Central Nursery of The Danish Heath Society covered 100 ha and delivery in single days of the peak season 50,000–100,000 plants to the society's own plantations and to private customers. It was therefore a rather special situation when the Faroe Islands in 1947 started ordering small amounts of species and origins. Together with S. A. Christensen, who from that time acted as a forestry consultant for the Faroe Isles, a search for suitable species and provenances was initiated, and a cooperation with Iceland was established. The importance of the right choice of plant material became very obvious to me, when I in 1968 visited the islands (I. Nyholm: Færøerne, en uforglemmelig oplevelse. – Hedeselsk. Tidsskr. 1970, 14 & 15). It was not least fascinating for the first time to produce *Pinus contorta* and *Alnus sinuata* from seed harvested from selected trees on the Faroe Isles by Leivur Hansen. In some years the nursery delivered up to 50,000 plants for use in the plantations and gardens. Seed orchards and clone-collections were established for production of plants particularly for the Faroe Isles of e.g. *Alnus sinuata*, *Populus trichocarpa* 'Hastata', and *Ribes* spp."

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