NATURAL-GEOGRAPHICAL REGIONS OF DENMARK

N. KINGO JACOBSEN

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A division of Denmark into natural-geographical regions has to be based primarily on geomorphology, pedology, and climate. In the northern countries the natural vegetation is normally used as a basis. This does not apply as far as Denmark is concerned with its mainly cultural landscape.

N. Kingo Jacobsen, Professor, dr. phil. Geographical Institute University of Copenhagen, Haraldsgade 68, DK 2100, Copenhagen Ø.

A division of the Northern countries into physiogeographic regions is normally based upon the natural vegetation, this being a resultant of geomorphology, climate, soil, and hydrology. The vegetation is thus a good expression of the environment brought about by these factors provided that we are dealing with a natural landscape. The total area of Denmark is about 43.000 sq.km, hereof the open agricultural area occupies 70% (abt. 30.000 sq.km), forests and afforestations 11% (abt. 4.700 sq.km), moors, heaths, dunes, lakes, and streams 8% (abt. 3.400 sq.km), towns and built-up areas 5% (abt. 2.300 sq.km), recreational areas with holiday houses 550 sq.km, nurseries 200 sq.km (in total abt. 2%), and traffic facilities 2% (abt. 850 sq.km). From these land use figures it appears clearly that Denmark is a cultural landscape. Since the introduction of agriculture c. 3000 B. C. man has interferred radically in many ways in nature. Primarily the forest areas were cleared, and nowadays virgin forest can only be found on a few slopes such as Møns Klint and in some oak scrub on poor soils in western Jutland. Another important intervention in nature has been the drainage work which made bogs, lakes, and moors disappear and with them a number of wild plants. It is therefore meaningsless to try to base regional division of Denmark on the total distribution of plants.

Most species of the wild Danish flora have a distribution which is determined by the present ecological conditions i.e. climate, soil, and geomorphology. Some species prefer the littoral zones, others avoid them such as species attached to markedly acid soils. The climate favours the presence of some northern, som southwestern, and of some southeastern species and further specimens especially found in the regions around Storebælt (The Great Belt) which have a very low precipitation. Also type of soil may delimit some species to certain parts of the country, for example to Sjælland and to the NE-parts of Jutland and follow to a great extent the cretaceous deposits in the surface i.e. where the underground has been mixed up with the moraine cover.

The plants immigrating Denmark in lateglacial time are now only found in the beach regions in the raised part of the country, especially where the cretaceous deposits lie exposed as coastal cliffs such as Hanstholm, Løgstør or Høje Møn, or where the precipitation is especially low as seen along the coast of Storebælt. Also whole vegetation types with their fauna can only be understood in a historical perspective as they are relics from certain, now abandoned agricultural methods. This is due for the heaths, the commons and the meadows formerly used for hay harvest. These types are nowadays on the point of disappearing and can only be preserved as a historical relic by reintroducing the working methods which created them.

According to climatic criteria Denmark can be divided into the following regions, indicated on fig. 1 by a grey tint: SW-Jutland with mild winters, early spring, high precipitation. N-Jutland with less precipitation, colder winters. SE-Denmark with later spring, warm summers and mild authumns, often cold winters. The Storebælt- and the Kattegat-region are both poor in precipitation.

Geomorphologically, a division will be as follows: W-Jutland S and W of the main stationary line for the last glaciation (Würm). SE-Denmark S and E of the Harder ice margin border (the Pommeranian stage). Between the two ice margin lines we find the central Jutland lake region. N-Jutland consists of a mosaic of elements which fall naturally into three regions: Thy, Vendsyssel and Himmerland (including Djursland and the northern N-Sjælland).

According to soil types, a division will be: W-Jutland has predominantly podzol-types, SE-Denmark and Thy have luvisols; central Jutland has podzols and luvisols, Himmerland mainly podzols, apart from the region around Randers and N-Sjælland which are dominated by luvisols. Vendsyssel contains several types with gleysols, podzols, and regosols as the most characteristic types.

I. W-Jutland

Bordered to the N and the E by the largest extension of the last glaciation (Würm). Consists of the old moraines from Riss, outwash plains with meltwater deposits from Würm and marine foreland to the W: marine clay, silt and sandy deposits sedimented by the sea with the rising sea level during postglacial time. The rise of the sea level has also influenced the ground water table, i.e. resulted in large moors and bogs with peat deposits in the shallow areas. Man has changed this landscape to an extent, however, that it now appears as a cultural landscape with quite other physiographic conditions; in the Neolithic, large forest areas were cleared, during the Iron Age the land came under plough and lay exposed to wind erosion, and finally the reclamation of heathland during the last century was followed by draining, excavation of bog iron, and irrigation during the last 50 years. All the coastal areas have been diked, drained (at some places pump stations are established) and cultivated.

As a physiographic landscape unit, Region I appears as an interplay between the elements old moraine, terrace flats (the outwash plains) and meadows (rivers and streams), and somewhere the salt marshes. Climatically this region has more than 200 days' growing season with high precipitation, 6-700 mm annually, with maximum in the summertime, or for the northern coastal regions, in authumn. The precipitation exceeds the potential evapotranspiration, and the probability that the summer deficit of water in the soil is above 100 mm, lies about 50-70%. The region contains the following subregions:

Ia. The coastal region N of Blåvandshuk. Lagoon coast with dunes and protected, old salt-marsh formations. This is the zone characterized by precipitation maximum during the autumn season, and pedologically by regosols. The tree growth is dune plantations with pine. The salt-marsh is treeless.

Ib. The coastal region S of Blåvandshuk. Tidal coast with dunes and large salt-marsh areas along the continental shoreline. Regosols and hydromorphic gley types, marshy soils and fluvisols. The tree growth is dune plantations with pine. The salt-marsh is treeless.

Ic. The W-Jutland main region dominated by sandy soils (podzols) and a level surface. N of a line Ribe-Egtved (Vejle) oak scrub is found, but the tree growth is dominated by spruce plantations and by shelter plantings formerly of pine but nowadays of hawthorn. S of the line the tree growth is represented by Fagus-Ilex.

II. The central Jutland lake highland

Bordered on the W by the greatest extension of the last glaciation (Würm), on the E by the Harder ice margin and on the N by an E-W running line which by and large represents the extension of the Norwegian ice during the Würm-glaciation. It is a very undulated landscape with tunnel valleys and extra marginal valley areas, first and foremost represented by the course of the river Gudenå with its terraces. Furthermore, the surface is influenced by dead ice. Climatically, the region has a high precipitation, 7-800 mm with maximum in summer, the growing period is above 200 days and the probability of soil water deficit of above 100 mm in summer is about 50-70%. Pedologically, luvisols are dominating with podzols in the more sandy areas. The region can be divided into the following subregions:

IIa comprises the E part of the Tinglev outwash plain which was covered by the last glaciation of a short period but long enough to give this landscape its specific character. IIa has many features in commom with Ic. Pedologically, it is dominated by podzols. The tree growth is Fagus-Ilex.

IIb comprises the area from the ice margin line S of Haderslev to W of Vejle, where the ice similarly for a shorter period extended towards the W until present-day's Brørup. Contrary to IIa, this is a landscape of old moraine over which the ice spread. Also IIb can be said to resemble Ic in many features. Pedologically, it is dominated by luvisols. The tree growth is Fagus-Ilex.

IIc constitutes the proper central Jutland landscape, characteristic by its lake highland and the top deposits from the ice margin zone. Here some of the valuable spring areas are found, and hydrologically this region must be said to be an element of great value in the Danish landscapes. Partly mixed forest with oak as predominant tree growth and partly spruce plantations.

III. Thy

Bordered on the S by the greatest extension of the Norwegian ice, i.e. the part of the main stationary line running E-W, from Viborg to Bovbjerg. The E-border is the shallow basins of the fiord Limfjorden, from Løgstør running N, then E of Vejlerne and to Svinkløv.

Climatically this region is of the same westcoast type as Ia with precipitation in autumn, a growing period exceeding 200 days and a 50-70% probability of a soil water deficit above 100 mm during the summer. Geomorphologically the region form a fat moraine clay area in the Limfjord-region, bordered on the W and the N by dunes and in the N part also dominated by lime horsts. Pedologically, luvisols and regosols are found. The area can be divided into the following subregions:

IIIa, the lagoon landscape around Tyborøn (Nissum Bredning), dune bars. The tree growth is dune plantations with pine.

IIIb, the dune landscape from Agger to Hanstholm. Here the dunes are migrating over old moraine. The tree growth is dune plantations with pine.

IIIc, the coastal region from Hanstholm to Svinkløv, with protruding lime horsts as seen in Hanstholm, Bulbjerg

and Svinkløv with intermediate marine forelands. The tree growth is dune plantations with pine.

IIId, Thy, Mors and Salling, rich moraine area, dominated by luvisols, by Limfjorden and its shallow basins; a treeless landscape.

IV. Himmerland — Djursland — N.-Sjælland

The main region is dominated by Himmerland, but extending via Djursland and N-Samsø to N-Sjælland. It represents both the S-border of the Norwegian ice from the N and of the ice coming from Sweden from NE, further the special soil conditions which are seen as a result of the combination of a high-lying lime surface and the characteristic fine-grained sand of glacial-fluvial origin as found in Himmerland. Climatically it is of a type similar to II; pedologically: podzols. Geomorphically, the region represents a moraine landscape, intersected by tunnel valley systems and extramarginal valleys. Both these valley systems have for long stretches been transgraded by the Litorina Sea. The area contains the following sugregions:

IVa, Vesthimmerland has a W-Jutland appearance with its soil types of sand and gravel and gently undulating moraine landscapes. The broad, flat valleys with vast fens are characteristic not least in the coastal zone, where they gradually become immense marine flats. The tree ghrowth is as a whole dominated by Fagus.

IVb, Østhimmerland with its elevated moraine landscapes of high relief. Besides irregularly deposited moraines, the landscape is dominated by deeply cut erosion valleys which split up the land into local units where the valley bottoms are broad. The height differences, e.g. in the Gravlev-valley 70-90 m, have caused streams to crevasse the valley sides and created a kind of false hills, as e.g. seen in Rebild. The tree growth is as a whole dominated by Fagus.

IVc, Djursland. The transition from IVb, Østhimmerland, is constituted by the moraine flats between Mariager and Randers Fjord and the 3-4 km broad tunnel valley landscape Gudenådalen and Grund Fjord to the S, the latter intersecting the whole of Djursland from E to W. The moraine landscape of N-Djursland is of low relief, intersected by erosion valleys with mainly sandy soil. Contrasting to this we find the hilly moraines of S-Djursland, formed by the Harder ice margin zone and seperated from N-Djursland by outwash plains originating from this advance of the ice and by the mentioned meltwater valley which was later transgraded by the Litorina Sea. The course of the coastline of Djursland is determined by prequaternary deposits, Danium Lime, and is of a character like Stevns (IVj). The Helgenæs and Ebeltoft peninsula are examples of the glacial series and include N-Samsø. The tree growth is partly dominated by Fagus and partly by pine plantations.

NATURGEOGRAFISKE REGIONER

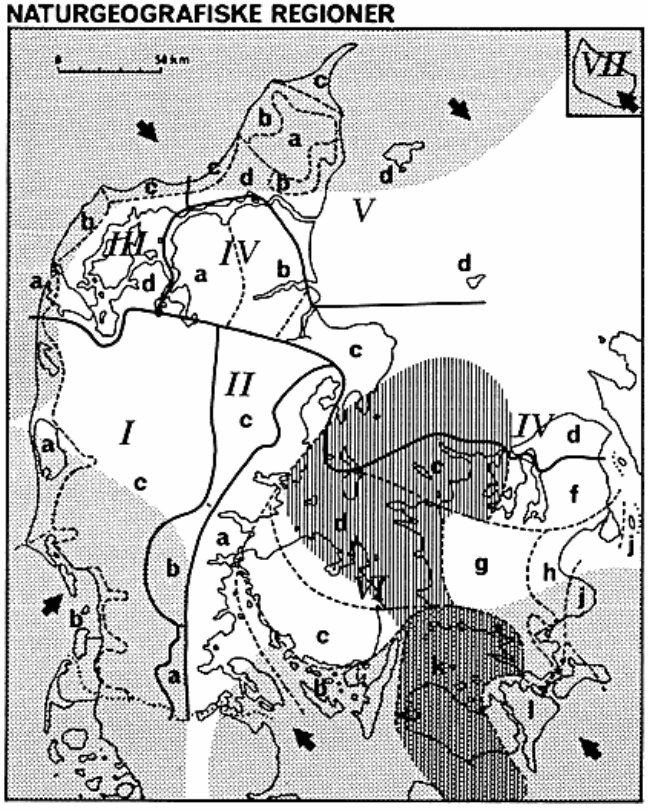

Fig. 1. Natural-geographical regions of Denmark.

IVd, the N-part of Sjælland, N of Hillerød, represents together with Halsnæs a special part of the Sjælland moraine landscape. Large areas are characterized by fine-grained sand and large lagoons transgraded by the Litorina Sea. The N-coast is influenced by sand drift. Luvisols dominate together with podzols. The tree growth is partly dominated by Fagus and partly by pine plantations.

V. Vendsyssel

The N-Jutland landscape contains two main elements, a young moraine landscape and a marine foreland. In Vendsyssel the marine landscape occupies large areas. It was formed by the sea under relatively higher water levels than the present one, and the overall picture is even, gently sloping flats, poor in stones but with mostly well-sorted, fine sand. However, these flats show great variations: beach ridges of sand and gravel, dunes, shallow lakes and raised bogs (Store Vildmose and Lille Vildmose). Besides the mentioned moraine land there are two levels of marine foreland, an elder, high-lying flat from late-glacial time (Yoldia) and a younger one from Litorina. The region is often called Nørrejyske Ø, the N-Jutland Island, and is surrounded by three characteris-

tically shaped types of coasts: 1) a simplified dune coast, hanging on hard, resistent knots or moraine formations from Svinkløv to Hirtshals continuing to Skagen, 2) a simplified E-facing dune and beach ridge coast from Skagen to Mariager Fjord, and 3) a protected fiord coast along Limfjorden, which as a big river connects the western shallow basins from Livø Bredning to Hals at the coast of Kattegat. Pedologically there is a great difference between these single elements, cf. subregions a-d. Climatically the S-part, the subregions V c-d, belongs to the same area as the southernly lying areas. The N-part of Vendsyssel V (a, b, d) is however characterized by cold winters and chilly summers. The growing season is below 200 days. There is a precipitation maximum in summer, and the water balance is positive. The probability of a soil water deficit exceeding 100 mm in the summertime is above 50 and up to 90 per cent. The region can be divided into the following subregions:

Va, the hilly landscapes comprise partly the sandy push moraines, Jyske Ås, and partly the Tolne Bakker with their high relief, a moraine plateau, intersected by valley systems and with plateau remnants seen as false hills. Pedologically, podzols and luvisols in between. The tree growth is dominated by Fagus.

Vb, the high-lying marine flats (Yoldia) form an extensive plateau around the moraine islands, 35-10 m a.s.l.. The plateaus are intersected by valleys in a very characteristic pattern. Pedologically: gley soils. The tree growth is dominated by Alnus, Fagus, and Betula.

Vc, the low marine flats consist of beach-ridge plains, barred foreland and old, raised seafloor. The beach-ridges may lie so densely that they give a level impression, but often they appear with distinct ridges and dips. Pedologically, these soils are gley types. Because of poor drainage, these large flats have in many places changed into bog. The high groundwater impedes percolation, and the old seafloor changes into raised bogs (Store and Lille Vildmose). The islands Læsø and Anholt belong to this region, the first quite naturally, whereas Anholt comprises hilly landscapes (cf. region Va) as well as dune landscapes (cf. Vd). The tree growth is dominated by Alnus, Fagus and Betula.

Vd, the dune areas in Jammerbugten between Svinkløv and Løkken and the Skagens Odde. The latter started as a double tombolo of beach-ridges, the strong, N-running material drift along the W-coast is accumulating sand and gravel to the new foreland which thereby grows further towards the NE. Pedologically: regosols. The tree growth is dominated by Alnus, Fagus, and Betula.

VI. The southeastern region

The southeastern Denmark, S and E of the Harder ice margin line comprises the young Danish moraine landscape with mainly clayey soil and contains a mosaic of

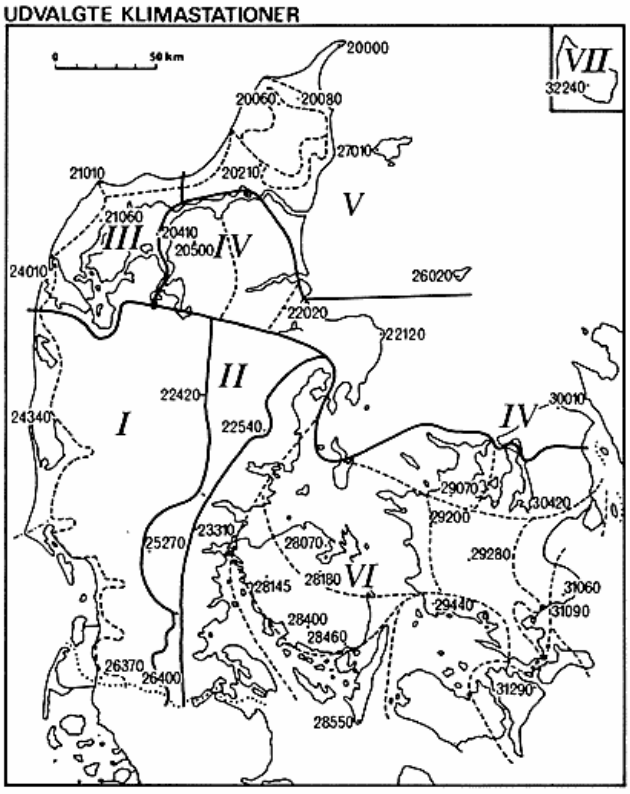

Fig. 2. Meteorological stations selected.

landscape elements which have many features in common. Pedologically: luvisols. Climatologically the region comprises two natural subregions, the Storebælt-region being special because of its lower rate of precipitation and consequent negative water balance. The growing season is everywhere above 200 days. The region can be divided into the following subregions:

VIa, the E-Jutland fiord coast, comprises the area S and E of the Harder ice-margin line. The landscape is dominated by young moraine flats, mostly clayey soil, intersected by a tunnel valley system, mostly at right angles to the ice-margin and thereby also to the main course of the E-Jutland coastline. The valleys here are about 1 km broad with steep sides. The valley floors are irregular and filled with lakes and kettle holes caused by dead ice and the course of glacial meltwater under pressure. The E-Jutland tunnel valleys have been trans-graded after the Continental Period (abt. 6.000 B.C.) by the rising sea which gave the region its most characteristic feature: the E-Jutland fiords. The valley slopes appear eroded by streaming water. A more E-lying terminal moraine area has resulted in a number of tunnel valleys from Kolding via Juelsminde to Odder and a minor outwash plain at Løsning. Climatically, there is a growing

Region		Station	Temperatur °C jan.	apr.	juli	okt.	året	Antal dg. Tmin. <0°	Nedbør mm/år	Fordampning mm. maj/juni/juli	1/5-31/10
Ia	24340	Lyngvig Fyr	0,9	5,9	16,2	9,8	8,2		688	311	
Ib	26370	Højer, Hohenwarte	0,0	6,6	16,4	8,9	8,1	86,1	702	286	468
Ic	24420	Studsgård	-0,4	6,0	16,1	8,1	7,5	104,7	783	282	441
IIa	26400	Store Jyndevad	-0,1	6,4	16,4	8,5	7,9			260	408
IIb	25270	Askov	-0,2	6,1	16,0	8,6	7,7	90,6	791	206	335
IIc	22540	Skanderborg	-0,3	6,0	16,4	8,5	7,7	95,1	637	296	484
IIIa	24010	Thyborøn	1,2	5,9	16,2	9,9	8,3		704		
IIIb,c	21010	Hanstholm Fyr	0,5	5,2	15,5	9,1	7,6	75,7	668		
IIId	20410	Livø	0,0	5,7	16,1	9,0	7,8		618	270[1]	466[1]
IVa	20500	Hornum	-0,5	5,9	16,2	8,1	7,5	100,4	705	229	383
IVb,c	22020	Hald	-0,7	5,7	16,2	7,9	7,3	102,5	722		
IVc	22120	Fornæs Fyr	0,5	5,7	16,7	9,3	8,1		501	272	422
IVd	30010	Nakkehoved Fyr	-0,4	5,7	16,9	8,8	7,8		535		
Va	20060	Hjørring Vandværk	-0,6	5,3	16,2	7,8	7,3		676		
Vb	20080	Sindal	-0,6	5,3	16,2	7,4	7,2				
Vc	20000	Skagen Fyr	0,4	5,3	16,7	9,3	8,0		613		
Vd,1	20210	Tylstrup	-0,5	5,7	16,4	8,0	7,5		637	231	358
Vd,2	27010	Vesterøby, Læsø	-0,1	5,8	17,0	9,0	8,0	82,6	571		
Vd,3	27020	Anholt by	0,4	5,4	17,2	9,7	8,2	65,5	536		
VIa	23310	Brakker (Aagaard)	-0,4	6,0	16,2	8,3	7,6		770	239	374
VIb	28550	Keldsnor Fyr	0,5	5,8	16,8	10,0	8,3		514		
VIc	28145	Årup (Gelsted)	-0,2	6,1	16,4	8,6	7,8	90,2[4]	661	270[2]	435[2]
VId	28180	Blangstedgård	0,1	6,7	16,8	8,8	8,1	89,3	537[5]	233	380
VIe	29200	Søndersted	-0,4	6,2	16,8	8,4	7,8	96,9	585	284[3]	434[3]
VIf	30420	Ledreborg Allé	-0,2	6,4	16,9	8,6	8,0		554	277	470
VIg	29280	Sorø Syd	-0,4	6,6	17,1	8,6	8,0	79,0	639		
VIh	31090	Tågerup							519		
VIj	31060	Tinghøj	-0,1	6,3	17,3	8,8	8,1				
VIk	29440	Tystofte	0,0	6,4	17,0	9,2	8,2	76,4	537	275	454
VIl	31290	Næsgård	0,0	6,4	17,1	9,3	8,2	72,6	629	225	357
VII	32240	Åkirkeby	-0,3	5,1	16,9	8,8	7,6	82,1	673	255	412

[1]) 21060 Sildstrup. [2]) 28460 Svendborg. [3]) 29070 Svinninge. [4]) 28400 Korinth. [5]) 28070 Hofmansgave.

Table 1. Climatic data for the involved regions. Temperature and precipitation data: Meteorological Institute 1931-60. Potential evaporation data: State Experimental Farms for Plant Culture. Stations cfr. fig. 2.

Tabel 1. Klimatiske parametre for de naturgeografiske regioner. Temperaturer og nedbørsmålinger refererer til Meteorologisk Instituts lister over normaler for 1931-60. Frostdøgn: upubliceret materiale fra Meteorologisk Institut, normaler for 1931-60. Fordampning (potentiel): Statens Forsøgsvirksomhed i Plantekultur. Anførte stationsnumre (jfr. fig. 2) er de af Meteorologisk Institut anvendte. Oplysninger indhentet af J. Bjørnevad Jensen.

period of more than 200 days with a positive water balance and a precipitation maximum in summer. There is a 50-70% probability of a soil water deficit exceeding 100 mm in summer. The tree growth is Fagus-Ilex.

VIb, the archipelago of southern Funen. Like region VIa, this is considered a specifically Danish landscape with its many islets of clayey, hilly moraine knots with steep slopes in all directions and where the sea floor relief in combination with a high maximum fetch cause erosion. A drowned moraine landscape of international class. The tree growth is dominated by Acer campestre, and Carpinus with inclusions of Quercus robur, Corylus, and Cornus sanguinea.

VIc, the moraine hilly landscape of S-Funen includes both the Funen Alps N of Faaborg and the region around Kværndrup. Besides we have here the characteristic plateau hills of stratified icelake clay in the region around Vissenbjerg. W of Odense and between Svendborg and Nyborg there are characteristic tunnel valleys together with ridges running SW-NE from the Funen Alps to E of Odense. The tree growth is a mixed forest.

VId, N-Funen contains two landscape types: the large open plains, the outwash plain E of Odense of a sandy character and »Sletten«, another moraine flat between Odense and Bogense, consisting of moraine clay. This region includes naturally S-Samsø and the Sjælland Storebælt coast from Saltbæk Vig to N of Skelskør. The tree growth is a mixed forest.

VIe, Odsherred, represent the glacial series with moraine hills of mainly clayey composition combined with raised seafloor. A Sjælland landscape of a charm of its own and a type which reminds of Thy (IIId) because of its lack of trees and its high relief energy. The scrubs represented are dominated by hawthorn, blackthorn, spindle-tree and wild roses.

VIf, Hornsherred and the southern part of N-Sjælland, a landscape dominated by deadice relief: tunnel valleys, ridges and plateau hills. The tree growth is a mixed forest dominated by Fagus.

VIg, the central hilly Sjælland landscape, created by the

clash between the three glaciers: the central Sjælland, the S-Sjælland and the Storebælt-glacier. The stream Susåen has its source here and runs through this landscape dominated by icelake deposits. It continues through a tunnel valley system embedding two beautiful longlakes Tystrup and Bavelse. The tree growth is a mixed forest dominated by Fagus.

VIh, the moraine flat »Heden« (the heath) in the central depression Køge Bugt and the corresponding one in the Fakse Bugt. The tree growth is a mixed forest dominated by Fagus, in the southern part by Acer campestre.

VIj, large parts of Stevns appear as a level lime surface plateau 0-10 m a.s.l.. This area includes Saltholm. Høje Møen represents the slope morphology in dislocated cliffs of this type. The tree growth is dominated by Acer campestre, and Carpinus with inclusions of Quercus robur, Corylus, and Cornus sanguinea.

VIk, Lolland. This subregion was formed during the last stage of the last glaciation. The region is dominated by clayey bottom moraine and comprises the archipelago of Smålandshavet — a rich area for studies of E-Danish coastal morphology and simultaneously an area of great value for its natural history. The tree growth is dominated by Acer campestre, and Carpinus with inclusions of Quercus robur, Corylus and Cornus sanguinea.

VII, Falster, ice margin landscapes and moraine plateaus of high relief. The tree growth is dominated by Acer campestre, and Carpinus with inclusions of Quercus robur, Corylus and Cornus sanguinea.

VII. Bornholm

The southernmost outpost of the Scandinavian basement complex. In spite of its small extent, the island contains numerous geological formations and fields of interest from a natural historical point of view. The main part of the island consists of parent rock landscapes with joint zones and rocky coasts. The southernmost fourth of the island represents a young moraine landscape on clayey floor and the S-coast around Dueodde is a dune landscape. Climatically Bornholm is specific, its coastal areas having a negative water balance; the growing period exceeds 200 days. Because of its location in the Baltic Sea spring is late and the authumn season longer. Pedologically: luvisols. The tree growth is dominated by coniferous plantations.

RESUME

En inddeling af Norden i naturgeografiske regioner har primært udbredelsen af den naturlige vegetation som grundlag. Vegetationen genspejler resultanten af geomorfologi, klima, jordbund og hydrologi og er således et godt udtryk for det fællespræg, disse faktorer sætter, forudsat at det er et naturlandskab, vi har med at gøre. I Danmark udgør det åbne landbrugsland 70% af arealet (ca. 30.000 km²), skove og plantager 11% (ca. 4.700 km²), heder, moser, klitter, søer og åer 8% af arealet (ca. 3.400 km²), byer og bymæssige bebyggelser 5% (ca. 2.300 km²), sommerhusområder 550 km² og gartnerier 200 km² (tilsammen ca. 2%), trafikanlæg 2% (ca. 850 km²).

Af de netop anførte procenttal for anvendelsen af Danmarks areal fremgår det med al tydelighed, at her har man med et kulturlandskab at gøre. Der er siden agerbrugets indførelse i Danmark ca. 3000 år f.Kr. foretaget flere skelsættende indgreb i Danmarks natur. Primært er skoven ryddet, det er kun på enkelte skrænter som f.eks. Møns Klint, at urskov kan siges at optræde eller i visse vestjyske egekrat på mager jord. Et andet afgørende indgreb på naturen har afvandingen og dræningen været, hvorved moser, søer, vandhuller m.m. er forsvundet og med dem et refugium for en række vilde planter. Det vil således være omsonst at forsøge at udnytte planternes totaludbredelse som grundlag for en regionsinddeling.

De allerfleste arter i den vilde flora har en udbredelse, der er knyttet til udpræget sur jordbund. Klimaet betinger endvidere såvel nogle nordvestlige, sydvestlige som sydøstlige arters tilstedeværelse samt arter, der er knyttet til de nedbørsfattige Storebæltsegne. Jordbunden kan endvidere betinge arters begrænsninger til visse egne af landet, eksempelvis på Sjælland og de nordøstlige områder af Jylland, der i store træk følger kridttidsaflejringernes placering i overfladen, dvs. morænelagets opblanding med undergrunden.

Det er dog først og fremmest stranden, der har været tilflugtsstedet for senglaciale planter fra urskovstiden, men kun i den del af landet, der har hævet sig. Særlig stor er koncentrationen, hvor kridtaflejringer går i dagen i kystklinter som f.eks. Hanstholm, Løgstør eller Høje Møn, eller hvor nedbørsmængden er særlig lav som ved den nordvestsjællandske kyst. Dernæst er det vigtigt at gøre sig klart, hvad tidligere landbrugssystemer har betydet. En del kan således kun forstås i det historiske perspektiv, idet de er relikter fra bestemte, nu opgivne landbrugsmetoder. Dette gælder lyngheden, overdrevene og høsletengene, som alle i dag er ved at forsvinde, og som kun kan opretholdes som kulturhistorisk minde ved at man genindfører de driftsformer, som i sin tid skabte dem.

Kortet fig. 1 viser opdeling af Danmark i syv naturgeografiske regioner. Denne inddeling er baseret på geomorfologi og jordbundsforhold med støtte i klimatiske elementer. Tages der primært hensyn til de klimatiske forhold med støtte i visse træers udbredelse, overlejres denne inddeling af de nordvestlige, sydvestlige og sydøstlige influenser samt af Storebæltregionens nedbørsdeficit, jvfr. de skraverede områder på kortet.

Inddeling af Danmark i naturgeografiske regioner vil efter *klimatiske* forhold give anledning til følgende inddeling: Sydvestjylland, milde vintre, tidligt forår, rigelig nedbør. Nordjylland, mindre nedbør, strengere vintre. Sydøstdanmark, senere forår, varme somre og mildt efterår, ofte strenge vintre. Storebælt- og Kattegatregionen, nedbørsfattig.

Geomorfologisk udskilles først og fremmest Vestjylland syd og vest for hovedopholdslinjen for sidste nedisning (Würm). Dernæst udskilles Sydøstdanmark syd og øst for den harderske israndslinje (det pommerske stadium). Bornholm udskilles naturligt for sig selv. Mellem de to israndslinjer findes den midtjyske søregion. Nordjylland består af en mosaik af elementer, der naturligt samles i tre regioner: Thy, Vendsyssel og Himmerland (incl. Djursland og det nordlige Nordsjælland).

Jordbundsmæssigt kan en tilsvarende inddeling opremses: Vestjylland domineres af podzol-typer, Sydøstdanmark og Thy af luvisol'er, Midtjylland af podzol'er og luvisol'er, Himmerland hovedsagelig af podzol'er, egnen omkring Randers og Nordsjælland dog af luvisol'er. Vendsyssel er en mosaik af mange typer, hvor gleysol'er, podzol'er og regosol'er dominerer.

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