Chapter 22 The Cool Temperate Western Margin (British Type) Climate

Distribution

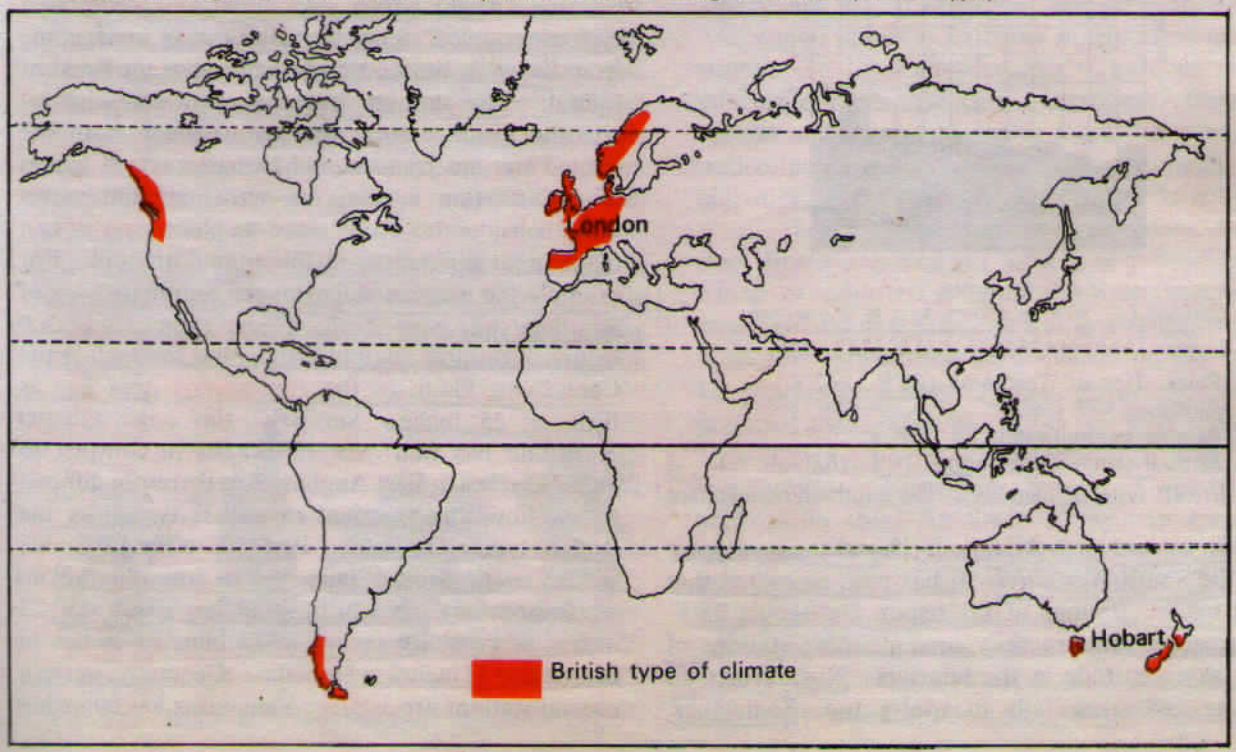
The cool temperate western margins are under the permanent influence of the Westerlies all round the year. They are also regions of much cyclonic activity, typical of Britain, and are thus said to experience the British type of climate. From Britain, the climatic belt stretches far inland into the lowlands of North-West Europe, including such regions as northern and western France, Belgium, the Netherlands, Denmark, western Norway and also north-western Iberia. There is so much oceanic influence on both the temperature and the precipitation that the climate is also referred to as the North-West European Maritime Climate. In North America, the high Rockies prevent the on-shore Westerlies from penetrating far inland and the British type of climate is confined mainly to the coastlands of British Columbia.

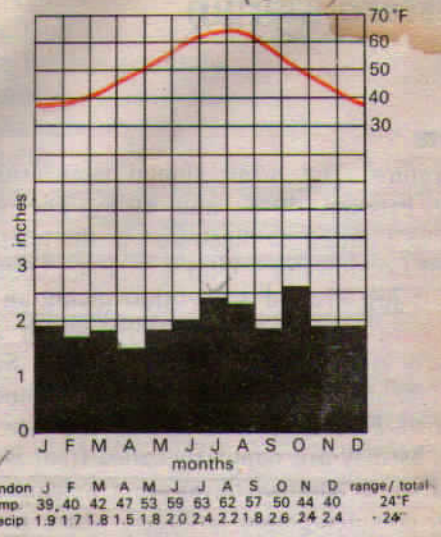
In the southern hemisphere, the climate is experienced in southern Chile, Tasmania and most parts of New Zealand, particularly in South Island. The surrounding large expanses of water have increased the maritime nature of the climate here (Fig. 147).

Climate

Temperature. The mean annual temperatures are usually between 40°F. and 60°F. The warmest month in London as illustrated in the temperature graph of London Fig. 148(a) is 63°F. and the coldest month is just around 40°F., thus giving an annual temperature range of only 24°F., which is comparatively small for its latitude (51°N.) Summers are, in fact, never very warm. Monthly temperatures of over 65°F. even in mid-summer are rare. 'Heat waves', as they are popularly called (that is a short spell of warm summer days) are a welcome feature in such cool temperate latitudes, where people do not often see enough of the sun. The climate is ideal for maximum comfort and *mental alertness*. People can work for long hours without feeling drowsy and lethargic as they do in the tropics. There appears to be some direct relationship between climate and Man's output of work. It is no wonder that the cool temperate regions are some of the most advanced parts of the world. Winters are abnormally mild, and no stations actually record mean January temperatures below freezing-point in north-western Europe. This is attributable to the warming effect

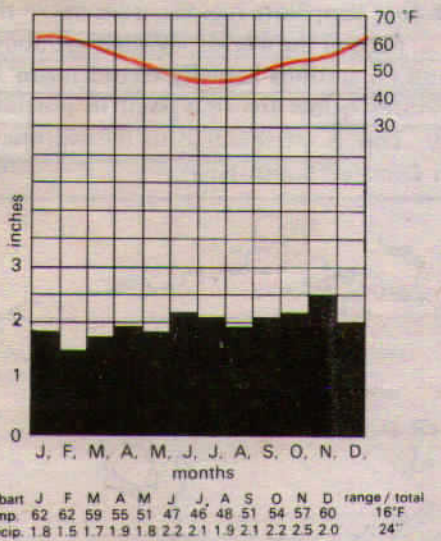
Fig. 147 Regions with Cool Temperate Western Margin Climate (British type).





Place: London, British Isles (51°N., 0°W.)
Altitude: 18 feet
Annual precipitation: 24 inches
Annual temperature range: 24°F. (63°–39°F.)

Fig. 148 (a) British type of climate in the northern hemisphere.



Place: Hobart, Tasmania (43°S., 147°E.)
Altitude: 177 feet
Annual precipitation: 24 inches
Annual temperature range: 16°F. (62°–46°F.)

(b) British type of climate in the southern hemisphere.

of the warm North Atlantic Drift and the prevalence of the South-Westerlies. It has been estimated that the marine stations of the region are almost 25°F. warmer in January than corresponding stations of the same latitude in the interiors. Night frosts do occur and snow falls in winter too. Sometimes, unusual cold spells, caused by the invasion of cold polar continental air from the interiors, may hit the western margins for a number of weeks. The climate of the maritime regions as a whole may be described as equable with moderately warm summers and fairly mild winters.

It is quite apparent from Fig. 148(b) of Hobart, Tasmania that the British type of climate in the southern hemisphere is even more equable. Lack of continental land masses in Tasmania, New Zealand and southern Chile means that extremes of temperature are not likely at all. Hobart has mid-summer temperatures of not more than 62°F. while its coldest month in July (winter in the southern hemisphere) is barely below 46°F. The annual temperature range is reduced to only 16°F., which is unusual for the middle latitudes. This is in fact, the average figure for all the maritime stations in the southern continents where insularity overrides all other factors. The annual ranges of other southerly stations are Dunedin 15°F., Christchurch 18°F., Valdivia 14°F. and Punta Arenas 17°F (the last two stations are in southern Chile). The oceanic influences not only keep the winters very mild but also keep the summers cool. Some geographers have described these southerly islands as 'the favoured isles' which has much truth in it.

Precipitation. The British type of climate has adequate rainfall throughout the year with a tendency towards a slight winter or autumn maximum from cyclonic sources. Since the rain-bearing winds come from the west, the western margins have the heaviest rainfall. The amount decreases eastwards with increasing distance from the sea. Though both the quoted stations London and Hobart have 24 inches of precipitation a year, the actual amount varies quite considerably from place to place. Relief can make great differences in the annual amount. For example the western slopes of the Southern Alps of South Island, New Zealand have as much as 200 inches of rainfall (mainly orographic rain) while the Canterbury Plain, in the rain-shadow area has as little as 25 inches. Similarly, the Lake District of Britain has well over 100 inches in contrast to only 24 inches in East Anglia. It is therefore difficult to say how much annual rainfall is typical of the British type of climate. Perhaps, a useful guide would be to confine ourselves to lowland regions which normally have 20 to 40 inches a year e.g. 23 inches in Paris, 28 inches in Dublin, 33 inches in Seattle and 37 inches in Dunedin. Generally, western coastal stations are wetter. Vancouver has 60 inches

of rain, Bergen 84 inches and Valdivia 105 inches. They are exceeded in the annual amount only by the highland stations as mentioned earlier.

The seasons. As in other temperate regions there are four distinct *seasons* in the British climate type. Light snowfalls can be expected in the winter months normally only of short duration because of the comparatively mild weather. But over the highlands such as the Scandinavian Mountains and the American Rockies, snowfall is heavy and feeds the mountain glaciers that move down the valleys. Winter is the season of cloudy skies, foggy and misty mornings, and many rainy days from the passing depressions. Out at sea, gales are frequent and can be dangerous to shipping. Spring is the driest and the most refreshing season when people emerge from the depressing winter to see everything becoming green again. This is followed by the long, sunny summer. Sun-bathers, picnickers and sightseers are out in the open to enjoy themselves. With the roar of gusty winds and the fall of 'golden' leaves, autumn is ushered in, and the cycle repeats itself. This type of climate with its four distinct seasons is something that is conspicuously absent in the tropics.

Natural Vegetation

The natural vegetation of this climatic type is deciduous forest. The trees shed their leaves in the cold season. This is an adaptation for protecting themselves against the winter snow and frost. Shedding begins in autumn, the 'fall' season, during which the leaves fall and are scattered by the winds. The golden-brown leaves and the 'naked' branches present a very interesting scene. When they are in leaf the deciduous trees have typical rounded outlines with thick trunks and out-spreading branches that yield valuable temperate hardwood (Fig. 149). Some of the more common species include oak, elm, ash, birch, beech, poplar, and hornbeam. In the wetter areas grow willows, alder and aspen. Elsewhere are found other species, e.g. chestnut, sycamore, maple, and lime.

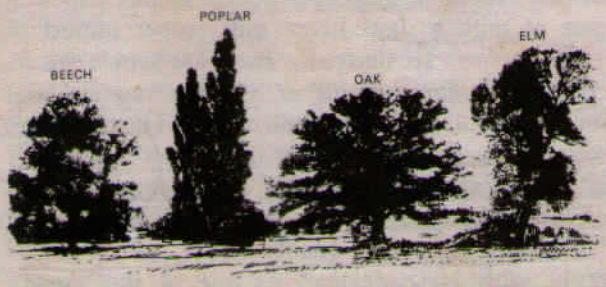


Fig. 149 Some deciduous trees

Unlike the equatorial forests, the deciduous trees occur in pure stands and have greater lumbering value from the commercial point of view. The open nature of the forests with sparse undergrowth is useful in logging operations. Easy penetration means much cost can be saved in the movement of the logs. The deciduous hardwoods are excellent for both fuel and industrial purposes. In Tasmania, the temperate eucalypts are also extensively felled for the lumbering industry. Higher up the mountains in the Scandinavian highlands, the Rockies, southern Andes and the Southern Alps of New Zealand, the deciduous trees are generally replaced by the conifers which can survive a higher altitude, a lower temperature and poorer soils.

Economic Development

A very large part of the deciduous woodlands have been cleared for fuel, timber or agriculture. The dense population necessitates the removal of the lowland forests, particularly for the plough. In Britain there is only 4 per cent of the original forest left. A large range of cereals, fruits and root crops are raised, mainly for home consumption rather than for export. North-West Europe, which includes some of the most crowded parts of the globe, has little surplus for export. It is, in fact, a net importer of food-crops, especially wheat from almost all parts of the wheatlands for bread-making and other food items. The region differs from many others in its unprecedented industrial advancement. The countries are concerned in the production of machinery, chemicals, textiles and other manufactured articles rather than agriculture, fishing or lumbering, though these activities are well represented in some of the countries. Fishing is particularly important in Britain, Norway and British Columbia. Since the manufacturing aspect of industrial geography will be dealt with in much greater detail in Chapter 27, we shall deal here with the agricultural development of the region.

1. Market gardening. Though market gardening is practised throughout the world wherever there is a large urban population, nowhere else is it so highly specialized as in North-West Europe. Several factors account for this. All the north-western European countries (Britain, France, West Germany, Benelux and Denmark) are highly industrialized and have high population densities. There are more towns and cities than in other continents despite its small size. It is understandable that the demand for fresh vegetables, green salads, eggs, meat, milk and fruits

will be tremendous. The city dwellers, the factory workers and the civil servants who make up the bulk of the urban population consume large quantities of fresh provisions daily and these must be provided by local farmers if *freshness* of the produce is to be ensured.

In north-western Europe *intensive market gardening* is carried out in many specialized areas e.g. the Vales of York and Evesham in the United Kingdom where climatic, soil and other factors best suit this form of agriculture. Farms are normally small, located near large cities or industrial areas. Soils, whether silty, loamy or podzolic, are carefully maintained at a high degree of fertility. Very selective fertilizers are applied depending on the type of crops in cultivation. Farming is carried out intensively, aiming at high yield and maximum cash returns. As the crops are perishable, a good network of transport is indispensable. The produce such as lettuces, cabbages, cauliflowers, tomatoes, onions, peas and fruits are seldom shipped but conveyed by high-speed conveyances such as trucks or vans. Perhaps a more appropriate term to use is truck farming, which is commonly used in the United States.

In a few instances warmer weather or better soils, as in south-west England (Devon and Cornwall), can also induce farmers to take to market gardening despite their remoteness from the more populated districts. Early vegetables, early potatoes and tomatoes reach London from the Canary Islands, the Channel Islands, and from Brittany, in north-west France. Similarly, bulbs and flowers from the polderlands of the Netherlands and eggs, bacon and other dairy products from Denmark are sent to most of the major industrial centres of Europe in almost perfect condition for household consumption. The horticultural industry in the Netherlands is so highly specialized that Dutch tulips and bulbs are flown by the K.L.M. (Dutch Airlines) to Rome, Paris, Zurich, and London. In Australia, high-speed boats ply across the Bass Strait daily from Tasmania to rush vegetables, tomatoes, apples and beans to most of the large cities in mainland Australia. It is no wonder the Australians nicknamed Tasmania the 'garden state'.

2. Mixed farming. Throughout Britain and north-western Europe, farmers practise both arable farming (cultivation of crops on ploughed land) and pastoral farming (keeping animals on grass meadows). Crops may be raised for cash sales or as fodder for cattle or sheep. The proportion of crops and animals in the farm at any time depends to a great extent on the type of *soil*, the *price* of the cereals and the *demand* for animals and animal products. The farmers also plant a few fruit trees (apples, pears, plums), rear pigs, keep poultry, mainly for eggs, and even have bees for honey. There is such a great variety in the farms that the term mixed farming is most aptly applied.

Amongst the cereals, wheat is the most extensively grown, almost entirely for home consumption because of the very dense population in north-western Europe. At one time, some of the European countries (France, Denmark and the Netherlands) used to be wheat exporters, but the keen competition from the new wheat-lands of the New World forced most of the farmers to divert their interest to other more profitable uses of their land such as market gardening, dairying or an intensive form of mixed farming. With the rise of industry, more arable farms are being devoured by factories and wheat is now a net import item in Europe.

The next most important cereal raised in the mixed farm is barley. The better quality barley is sold to the breweries for beer-making or whisky distilling and is raised preferably in the drier areas. *Malting barley* is thus grown in south-eastern Britain near the hop-growing area (hops are also used for beer) where rainfall is less than 30 inches. On heavy soils or wetter regions, barley is grown mainly as an animal fodder, sometimes mixed with oats as 'dredge corn'. Both are raised in crop rotations with a leguminous crop (beans or clover) and a root crop (turnips or beet sugar).

The most important animals kept in the mixed farm are cattle. North-western Europe was originally the home of many world renowned cattle breeds, e.g. Guernsey, Ayrshire and Friesian, which are first class dairy cattle for milk production. The countries bordering the North Sea (Britain, Denmark, the Netherlands) are some of the most advanced dairying countries where cattle are kept on a scientific and intensive basis. Europeans drink more milk than anybody else except the New Zealanders. In the United Kingdom, a person drinks almost a pint of milk a day! From milk, other important dairy products are derived. These are *butter, cheese, cream, and skimmed milk or casein*, a raw material for making plastics, paper and drugs. The temperate western margin type of climate is almost ideal for intensive dairying. Cheese is a specialized product of the Netherlands, from Edam and Gouda. From Denmark comes high-quality butter, of which she ranks with New Zealand as one of the world's greatest exporters. In Devon and Cornwall clotted

An English farm. Notice the well-wooded countryside *Central Office of Information London*

cream is made, which is less perishable than fresh milk. It can be sent over longer journeys without being contaminated. The Swiss have also made excellent use of their alpine pastures for keeping dairy cattle. Fresh milk is converted into various forms of condensed or evaporated milk, and exported around the world for baby-feeding, confectionery, ice-cream and chocolate making.

Besides dairying, some cattle are kept as beef cattle, e.g. the Hereford and Aberdeen Angus, but their numbers are very small in comparison with those of Argentina or Australia, where meat production is the primary concern. The high rate of beef consumption in Europe (about 40 lb. a year per head of population in the United Kingdom) necessitates large imports of frozen and chilled beef. In the mixed farms in Europe, farmers keep cattle also with a view of enriching their fields with the *animal dung*. The pigs and poultry act as scavengers that feed on the left-overs from root-crops and dairy processes. In this way, Denmark is able to export large quantities of *bacon* from pigs that are fed on the *skimmed milk*, a by-product of butter-making. Fresh chickens' eggs from the farms and more recently, from large poultry yards also form part of the export products of Denmark. Sheep are kept both for wool and mutton. In British Columbia, mixed farming is restricted only to the most favoured parts of the Western lowlands, the region being so mountainous and thickly forested.

3. Sheep rearing. This is well developed in some parts of the British type of climate. Britain is the home of some of the best known sheep breeds, e.g. Leicesters, Lincolns and Southdowns which are dual-purpose, noted for mutton as well as wool. With the

A sheep station near Hawkes Bay, New Zealand *N.Z. High Commission Malaysia*

greater pressure exerted on land by increased urbanization, industrialization and agriculture, sheep rearing is being pushed further and further into the less favoured areas. The principal sheep areas are on foothills, well-drained uplands, chalk and limestone scarplands, and the light, sandy coasts. In Britain, the major sheep areas are the Pennines, (Swaledale breeds) Scottish Highlands (the Blackface), the Southern Uplands (Cheviot), the Welsh Mountains (Black Welsh) and the scarplands of south-eastern England (Romney Marsh). Britain was once an exporter of wool and her woollen textiles industry began with local Pennine wool, but today with a greater population and a more intensive use of her better agricultural land, she has neither surplus wool nor mutton for export. She has become instead an important exporter of British pedigree animals to the newer sheep lands of the world. This is equally true of other north-western European sheep areas, in which industrialization has effectively altered the pattern of land use.

In the southern hemisphere, sheep rearing is the chief occupation of New Zealand, with its greatest concentration in the Canterbury Plain. It has been estimated that for every New Zealander there are 20 sheep. Many factors have led to this unprecedented growth during the past century including extensive meadows, a mild temperate climate, well-drained level ground, scientific animal breeding, and last, but most vital, the development of refrigeration, which enables frozen or chilled Canterbury lamb and Corriedale mutton to reach every corner of the globe. Though New Zealand has only 4 per cent of the world's sheep population, it accounts for two-thirds of the world's mutton exports, and one sixth of world wool exports. In Tasmania and southern Chile, sheep

rearing has always been a predominant occupation with surplus sheep products for the international trade.

4. Other agricultural activities. Apart from market gardening and mixed farming which have been singled out for greater individual treatment, the British type of climate also supports a number of other important crops. Amongst the food crops, potatoes feature prominently in the domestic economy of the cool temperate regions. It is the staple food in supplementing wheat or bread for millions of people. In terms of starch, it yields far more food than any cereals and can be cultivated over a wide range of climatic and soil types. But normally a cooler and more northerly latitude is preferred because the crop will be less prone to the attack of 'blight', a virus disease that is particularly infectious in warm and humid countries. Since the introduction of the crop by the Spanish conquerors from the Andean states of Peru and Bolivia in the sixteenth century, potato-growing has spread far and wide in Europe. Today almost two-thirds of the world's annual production of potatoes comes from Europe, of which Poland, Germany, France and United Kingdom are the major producers. Besides its principal use as a substitute for bread, large quantities of potatoes are also consumed as animal fodder and as a source of industrial alcohol.

Another interesting crop that is found almost exclusively in north-western Europe (including European U.S.S.R.) and parts of U.S.A. is beet sugar. The need for such a crop was greatly felt during the Napoleonic Wars around 1800 when military blockades caused a scarcity of sugar. High prices of imported tropical sugar (from cane sugar) drove many governments of the temperate lands to think seriously about the vital importance of securing a certain amount of self-sufficiency in their sugar requirements. The first beet sugar factory in Europe was established in 1801. Farmers were given subsidies (aids or allowances) to induce them to devote at least part of their farm to the crop. Since then beet-sugar has become an integral part of many European farms. It is grown either on special beet farms for cash sales or in conjunction with cereals in crop rotation. The beet is crushed for sugar and the green tops are used as animal fodder. The crop thrives best in the warmer and drier east of Britain and in mainland Europe. The highest sugar yield is obtained when the autumn is both dry and sunny. Attempts to grow the crop in the colder north or the wetter west have so far been rather unsuccessful, except in some sheltered localities. In Britain most of the beet-sugar factories are located in the Fens and East Anglia.

QUESTIONS AND EXERCISES

1. The following statements attempt to describe a type of climate.

'.....Westerlies come all the year round .....there is a tendency towards an autumn or winter maximum of rainfall.....light snow falls in winter.....ports are never frozen.....but frosts do occur on cold nights.....the seasons are very distinct..... and the climate is very favourable for maximum human output..... '.

(a) Name the type of climate that it describes.

(b) Locate with the aid of a sketch map a region where such a type of climate is best represented.

(c) Explain why such a type of climate is ideal for human habitation.

2. Describe and explain with the aid of sketch maps the essential differences between the various climatic types found within the cool temperate zone.

3. (a) What are the characteristic features of temperate deciduous forests?

(b) Name the various species of deciduous forests and account for some of their industrial uses.

(c) Explain why there is comparatively little of the original forest left.

4. Write a geographical account of any *three* of the following economic activities.

(a) mixed farming
(b) beet sugar cultivation
(c) cool temperate orchard farming
(d) sheep rearing
(e) woollen textile industry

5. Give an explanatory account of any *two* of the following.

(a) The Netherlands is a major exporter of butter and cheese.

(b) Sheep outnumber the population of New Zealand by 20:1.

(c) No country produces and exports more wool than Australia.

(d) Market-gardening is a product of urbanization.