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## Sample Chapters of This Booklet

### World Climatic Types

#### Chapter in detail:

| <b>World Climatic Types</b> |                               |                                                                                                                                                        |                                                                                                                          |                                                                                                  |
|-----------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <i>Climatic Zone</i>        | <i>Latitude (Approximate)</i> | <i>Climatic Type</i>                                                                                                                                   | <i>Rainfall Regime (with approx. total)</i>                                                                              | <i>Natural Vegetation</i>                                                                        |
| Equatorial Zone             | 0°-10°N and S                 | 1. Hot, wet equatorial                                                                                                                                 | Rainfall all year round : 80 inches                                                                                      | Equatorial rain forests                                                                          |
| Hot Zone                    | 10°-30°N and S                | 2. a) Tropical Monsoon<br>b) Tropical Marine<br>3. Sudan Type<br><br>4. Desert: a) Saharan type<br>b) Mid-latitude type                                | Heavy summer rain: 80 inches<br>Much summer rain: 70 inches<br>Rain mainly in summer: 30 inches<br>Little rain: 5 inches | Monsoon forests<br><br>Savanna (tropical grassland)<br>Desert vegetation and scrub               |
| Warm Temperate Zone         | 30°-40°N & S                  | 5. Western Margin (Mediterranean type)<br>6. Central Continental (Steppe type)<br>7. Eastern Margin:<br>a) China type<br>b) Gulf type<br>c) Natal type | Winter rain: 35 inches<br>Light summer rain: 20 inches<br>Heavier summer rain : 20 inches                                | Mediterranean forests and shrub<br>Steppe or temperate grassland<br>Warm, wet forests and bamboo |
| Cool Temperate Zone         | 45°-65°N & S                  | 8. Western Margin (British type)<br>9. Central Continental (Siberian type)<br>10. Eastern Margin (Laurentian type)                                     | More rain in autumn & winter : 30 inches<br>Light summer rain: 25 inches<br>Moderate summer rain : 40 inches             | Deciduous forests<br>Evergreen coniferous forests<br>Mixed forests (coniferous and deciduous)    |
| Cold Zone                   | 65°-90° N & S                 | 11. Arctic or Polar                                                                                                                                    | Very light summer rain : 10 inches                                                                                       | Tundra, mosses, lichens                                                                          |
| Alpine Zone                 |                               | 12. Mountain climate                                                                                                                                   | Heavy rainfall (variable)                                                                                                | Alpine pastures, conifers, fern, snow                                                            |

## The Hot, Wet Equatorial Climate (Af)

### Distribution

- It is found between 5° and 10° north and south of the equator.
- It is dominantly found in the lowlands of the Amazon, the Congo, Malaysia and the East Indies.

### Climate

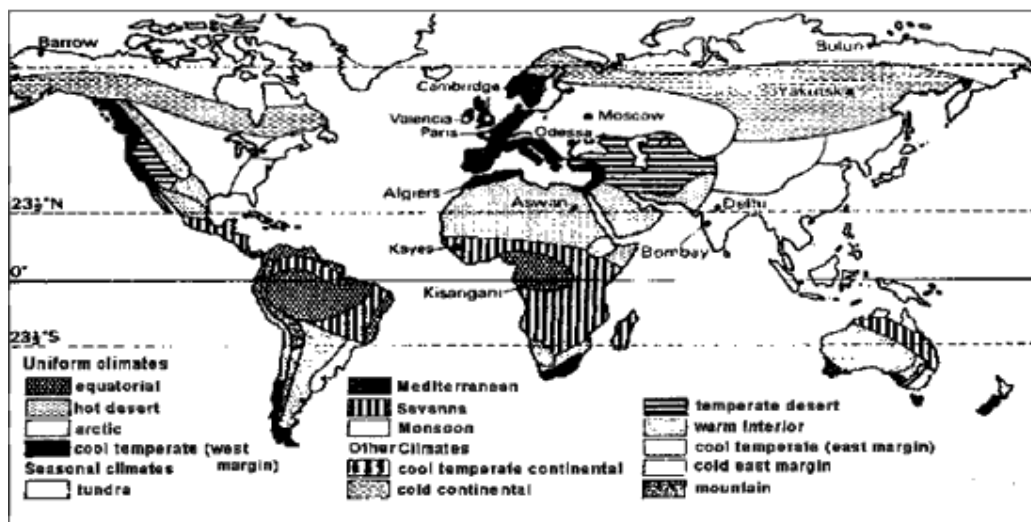
- There is great uniformity of temperature throughout the year.
- The mean monthly temperatures are always around 24 to 27°C, with very little variation.
- There is no winter.
- The diurnal and annual range of temperature is small.
- Precipitation is heavy between 60 inches and 10 inches, and well distributed throughout the year.

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- The double rainfall peaks, coinciding with the equinoxes are a characteristics feature of it.

## Natural Vegetation

- It support a luxuriant type of vegetation – the tropical rain forest.
- Amazon tropical rain forest is known as Selvas.
- It comprises a multitude of evergreen trees that yield tropical hardwood, e.g. mahogany, ebony, greenheart, cabinet wood. And dyewoods.
- Lianas, epiphytic and parasitic plants are also found.
- Trees of single species are very scarce in such vegetation.

## Economy

- The equatorial regions are generally sparsely populated.
- In the forests, most primitive people live as hunters and collectors and the more advanced ones practice shifting cultivation.
- Some plantation crops are also practiced like natural rubber, cocoa, etc.

## The Tropical Monsoon & Tropical Marine Climates (Am)

### Distribution

- It is found in the zones between 5° and 30 ° and 30° latitudes on either side of the equator.
- It is best developed in the Indian sub-continent, Burma, Thailand, Laos, Cambodia, parts of Vietnam and South China and northern Australia.
- Tropical Marine climate is found in Central America, West Indies, the Philippines, parts of East Africa, Madagascar, the Guyana coast and eastern Brazil.

### Climate

- Though mean annual temperature is fairly high but summer and winter seasons are sharply differentiated due to northward and southward movement of the sun.
- Average temperature of warm dry summer months ranges between 27°C and 32°C.
- Most of their annual rainfall occurs through cyclonic and orographic types of rains.

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- The average annual rainfall is around 150 cm but there are much variations in the temporal and spatial distribution.
- Most of the annual monsoonal rainfall is received through moisture laden South-West monsoon winds.

## Natural Vegetation

- Trees are normally deciduous.
- The forest are open and less luxuriant.
- Most of the forests yield valuable timber like teak. Other kinds of timber are sal, acacia and eucalyptus.

## Economy

People are mainly engaged in agriculture.

Agri-crops are rice, cane sugar, jute, etc.

## The Savanna or Sudan climate

### Distribution

- It is located between 5°-20° latitudes on either side of the equator.
- It is transitional type of climate found between the equatorial forests and the semiarid and subtropical humid climate.
- The most characteristic areas of savanna climate include the Llanos of Orinoco valley, the Campos of Brazil, hilly areas of central America, southern Zaire, etc.

### Climate

- The Savanna climate is characterized by distinct wet and dry seasons.
- Mean high temperature throughout the year is between 24°C and 27° C.
- The annual range of temperature is between 3°C and 8°C.
- The extreme diurnal range of temperature is a characteristic of Sudan type of climate.
- The average annual rainfall ranges between 100 cm and 150 cm.

### Natural Vegetation

- It is characterized by tall grass and short trees.
- Trees are deciduous and hard.
- Grass is tall and coarse like elephant grass.
- Scrubland is well represented by a number of species in Australia like mallee, mulga, Spinifex grass, etc.

### Economy

- Many tribes live within the Savanna lands.
- Some tribes live as pastoralists like the Masai and other as settled cultivators like the Hausa of northern Nigeria.

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- However, agriculture is not much developed.

## The Hot Desert and Mid-latitude Desert Climates

### Distribution

- Deserts are regions of scanty rainfall which may be hot like the hot deserts of the Saharan type or temperate as are the mid-latitude deserts like the Gobi.
- The major hot deserts of the world are located on the western coasts of continents between latitudes 15° and 30°N and S.
- They include the Sahara Desert, the largest single stretch of desert, which is 3,200 miles from east to west and at least 1,000 miles wide.
- The next biggest desert is the Great Australian Desert which covers almost half of the continent.
- The other hot deserts are the Arabian Desert, Iranian Desert. Thar Desert, Kalahari and Namib Deserts.
- In North America, the desert extends from Mexico to USA and is called by different names at different places, e.g. the Mohave Sonoran, Californian and Mexican Deserts.
- In South America, the Atacama or Peruvian Desert is the driest of all deserts with less than 0.5 inches of rainfall annually.
- The Patagonian Desert is more due to its rainshadow position on the leeward side of the lofty Andes than to continentality.

### Climate

- The hot deserts lie astride the Horse Latitudes or the Sub Tropical High Pressure Belts where the air is descending, a condition least favourable for precipitation of any kind to take place.
- The relative humidity is extremely low, decreasing from 60 per cent in coastal districts to less than 30 per cent in the desert interiors.
- Rain normally occurs as violent thunderstorms of the convectional type.
- The deserts are some of the hottest spots on earth and have high temperatures throughout the year.
- There is no cold season in the hot deserts and the average summer temperature is around 86°F.
- The highest shade temperature recorded is 136°F on the 13 September 1922 at Al Azizia, 25 miles south of Tripoli, Libya, in the Sahara.
- The annual range is 44°F.
- The diurnal range of temperature in the deserts is very great.

### Natural Vegetation

- All deserts have some form of vegetation such as grass, scrub, herbs, weeds, roots or bulbs.
- The predominant vegetation of both hot and mid-latitude deserts is xerophytic or droughtresistant scrub.
- This includes the bulbous cacti, thorny bushes, long-rooted wiry grasses and scattered dwarf acacias.
- Plants that exist in deserts have highly specialized means of adapting themselves to the arid environment.

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- Most desert shrubs have long roots and are well spaced out to gather moisture, and search for ground water.
- Plants have few or no leaves and the foliage is either waxy, leathery, hairy or needle-shaped to reduce the loss of water through transpiration.

## Economy

- Despite its inhospitality, the desert has always been peopled by different groups of inhabitants.
- Some, like the Egyptians have attained a high level of civilization, others like the Bedouin Arabs have fared quite well with their flocks of sheep, goats, camels and horses.
- The Bushmen of the Kalahari and the Bindibu of Australia remain so primitive in their mode of living that they barely survive.
- Of the primitive tribes, the Bushmen and the Bindibu are the best known. Both the tribes are nomadic hunters and food gatherers, growing no crops and domesticating no animals. The Bushmen roam the Kalahari Desert.
- The Bindibu or Aborigines of Australia live in very much the same way as the Bushmen.
- They domesticate the dingo, a wild dog that assists them in tracking down kangaroos, rabbits and birds.
- They live in wurlies, simple shelters made of branches and tufts and grass.
- The Bedouin of Arabia ride on horses and live in tents; the Tuaregs of the Sahara and camel riders and dwell in grass zeriba, while the Gobi Mongols ride on horses to herd their yaks and live in portable yurts (a kind of tent).
- The Bedouin are the best examples of a desert group who have fared well as nomadic herdsmen.
- The lure of mineral wealth has attracted many immigrants into the desert.
- It was gold that brought immigrants scrambling into the Great Australian Desert.
- Some of them like Kalgoorlie and Coolgardie have become towns of considerable size.
- In the Kalahari Desert, the discovery of diamonds and copper has brought many white men to the 'thirst land' as it is called.
- Even in the most arid Atacama, in northern Chile, large mining camps have been established for the mining of caliche (cemented gravels) from which sodium nitrate, a valuable fertilizer, is extracted and exported to all parts of the world. Besides nitrates, coppers is also mined.
- Chuquicamata is the world's largest copper town.
- In the deserts of North America, silver is mined in Mexico, uranium in Utah and copper in Nevada.
- In recent years, the discovery of oil in many parts of the Saharan and Arabian Deserts has transformed this forgotten part of the globe.

## Mediterranean Climate

### Distribution

- A Mediterranean climate is one that resembles the climate of the lands in the Mediterranean Basin.
- This climate type prevails in much of California, in parts of Western and South Australia, in south western South Africa and in parts of central Chile.
- The climate is characterized by hot, dry summers and cool, wet winters.

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- Mediterranean climate zones are associated with the five large subtropical high pressure cells of the oceans, the Azores High, South Atlantic High, North Pacific High, South Pacific High, and Indian Ocean High.

## Climate

- All regions with Mediterranean climates have relatively mild winters, but summer temperatures are variable depending on the region. For instance, Athens, Greece experiences rather high temperatures in the summer (48.0 °C has been measured in Eleusina), whereas San Francisco has cool, mild summers due to the upwelling of cold subsurface waters along the coast.
- Since all regions with a Mediterranean climate are near large bodies of water, temperatures are generally moderate with a comparatively small range of temperatures between the winter low and summer high.
- In the winter, the temperatures range from mild to very warm, depending on distance from the open ocean, elevation and latitude.
- During summer, regions of Mediterranean climate are dominated by subtropical high pressure cells causing no or little rainfall.
- During winter the polar jet stream and associated periodic storms reach into the lower latitudes of the Mediterranean zones, bringing rain, with snow at higher elevations.
- As a result, areas with this climate receive almost all of their yearly rainfall during the winter season, and may go the summer without having any significant precipitation.

## Natural Vegetation

- Mediterranean vegetation includes the following:
- Evergreen trees such as cork oak and eucalyptus, jarrah and karri (in Australia).
- Evergreen coniferous trees are pines, firs, cedars and cypresses.
- Bushes such as myrtle, rosemary, lavender, arbutus, thyme and laurel.
- Scrubs are Maguis in southern France, Macchia in Italy, Chaparral in California, mallee in Australia and Garigue.

## Economy

- Earlier the Mediterranean shore-lands were once the cradle of world civilization.
- Nowadays, the area is important for fruit cultivation, cereal growing, wine-making and agricultural industries as well as engineering and mining.
- The Mediterranean lands are also known as the world's orchard lands.
- A wide range of citrus fruits such as oranges, lemons, limes, citrons and grapefruit are grown.
- Of the Mediterranean oranges, perhaps, the best known are the Sunkist oranges of California, exported for table consumption and for making orange squash. The Seville oranges of Spain are small but very sweet and are particularly suitable for making marmalade. The Jaffa oranges of Israel are equally delicious and are specially grown for export.
- The Mediterranean lands account for 70% of the world's exports of citrus fruits.
- Cereals are also grown in the Mediterranean lands. Wheat is the leading food crop. The wheat grown is mainly hard, winter wheat. It is mostly used in making food products such as macaroni, spaghetti and vermicelli. Barely is the next most popular cereal.
- Viticulture is widely followed in the Mediterranean lands.

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## The Temperate Continental (Steppe) Climate

### Distribution

- Bordering the deserts, away from the Mediterranean regions and in the interiors of continents are the temperate grasslands.
- In the northern hemisphere, the grasslands are far more extensive and are entirely continental.
- In Eurasia, they are called the Steppes.
- There are isolated sections in the Pustaz of Hungary and the plains of Manchuria.
- In North America, the grasslands are also quite extensive and are called prairies.
- In the case of the Pampas of Argentina and Uruguay, the grasslands extend right to the sea and enjoy much maritime influence.
- In South Africa, the grasslands are sandwiched between the Drakensberg and the Kalahari Desert, and are further subdivided into the more tropical Bush-veld in the north, and the more temperate High Veld in the South.

### Climate

- Their climate is continental with extremes of temperature.
- Summers are very warm.
- Winters are very cold in the continental steppes of Eurasia.
- In contrast, the steppe type of climate in the southern hemisphere is never severe.
- The annual range of temperature is great, a direct result of continentality.
- In its continental position, the annual precipitation of the Steppe Climate can be expected to be light.
- The average rainfall may be taken as about 20 inches, but this again varies according to location from 10 inches to 30 inches.

### Natural Vegetation

- The term 'steppe vegetation' geographically refers to the scanty vegetation of the sub-arid lands of continental Eurasia.
- Their greatest difference from the tropical savanna is that they are practically treeless and the grasses are much shorter.
- Where the rainfall is moderate, above 20 inches, the grasses are tall, fresh and nutritious and the better described as long prairie grass.
- Where the rainfall is light (less than 20 inches) or unreliable, or the soil is poor, as in the continental interiors of Asia, the short steppe type of grass prevails.
- The steppe grass can lie dormant throughout the prolonged drought.
- The appearance of the temperate grasslands varies with seasons.
- In spring, the grass begins to appear green, fresh and blooming with small, colourful flowers.

### Economy

- The temperate grasslands were once the home of grazing animals; wild horses in the Asiatic Steppes, swift-footed bison in the Prairies and untamed buffaloes in the Pampas.
- Even as recently, as the last century, these grasslands were dominated by nomadic and semi-nomadic peoples like the Krihiz of the Astiatic Steppes.

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- The grasslands have been ploughed up for extensive, mechanized wheat cultivation and are now the 'granaries of the world'. Besides wheat, maize is increasingly cultivated in the warmer and wetter areas. The tufted grasses have been replaced by the more nutritious Lucerne or alfalfa grass.

## The China Type Climate

### Distribution

- This type of climate is found on the eastern margins of continents in warm temperate latitudes, just outside the tropics.
- It is, in fact, the climate of most part of China a modified form of monsoonal climate. It is thus also called the (Temperate Monsoon) or China Type of climate.
- It is sometimes referred to as the Gulf type of climate.
- In the southern hemisphere, this kind of climate is experienced along the warm temperate eastern coastlands of all the three continents: in New South Wales with its eucalyptus forests; in Natal where cane sugar thrives; and in the maize belt of the Parana- Paraguay- Uruguay basin.

### Climate

- The Warm Temperate Eastern Margin Climate is typified by a warm moist summer and a cool, dry winter.
- The mean monthly temperature varies between 40°F and 78°F and is strongly modified by maritime influence.
- The relative humidity is a little high in midsummer when the heat becomes oppressive and can be very trying to the white settlers, e.g. in Natal.
- Rainfall is more than moderate, anything from 25 inches to 60 inches. The Warm Temperate Eastern Margin Climate supports a wide range of crops.
- Important feature is the fairly uniform distribution of rainfall throughout the year.
- Rain comes either from convectional sources or as orographic rain in summer or from depressions in prolonged showers in winter.
- Local storms, e.g. typhoons and hurricanes, also occur.

### Natural Vegetation

- The eastern margins of warm temperate latitude have a much heavier rainfall than either the western or the continental interiors and thus have a luxuriant vegetation.
- The lowlands, carry both evergreen broadleaved forests and deciduous trees quite similar to those of the tropical monsoon forests.
- On the highlands, are various species of conifers such as pines and cypresses which are important softwoods?
- Conditions are well suited to a rich variety of plant life including grass, ferns, lianas, bamboos, palms and forests.
- The well distributed rainfall all the year round makes the regions look green at all times.
- In eastern Australia the most important are eucalyptus trees.
- From the forests of south-eastern Brazil, eastern Paraguay, north- eastern Argentina come valuable warm temperate timbers such as the Parana pine and the quebracho (axebreaker) and wild yerba mate trees, from which the leaves are gathered for making Paraguay.

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- In Natal, the warm Mozambique current encourages heavy precipitation along the coast and many species of palm tree thrive.
- The highlands yield extensive forests of chestnuts, ironwood and black woods.
- The forests of China and southern Japan also have considerable economic value and include oak, camphor, camellia and magnolia.
- The Gulf states of USA have lowland deciduous forests.

## Economy

- The warm temperate eastern margins are the most productive parts of the middle latitudes.
- Rice, tea and mulberries are extensively grown in monsoon China.
- Elsewhere are found other products of economic importance, e.g. cane sugar in Natal, coffee and maize in South America and dairying in New South Wales and Victoria.
- The Chinese peasants raise 'wet padi' or 'swamp rice' in flooded fields.
- Farming is usually on a subsistence basis.
- Agriculture in the Gulf states of America differs from that of monsoon China.
- The most important crops are corn, cotton and tobacco.
- The chief food crop raised is. In fact, corn or maize.
- Of the cash crops grown in the Gulf States, none is comparable with cotton.
- The Gulf type of climate is undoubtedly the best for cotton growing.
- Its long, hot growing season with 200 days frost free and a moderately high the temperature of about 75°F permits the crop to grow slowly and mature within six months.
- The Sea Island cotton grown in the Islands off the coast of Georgia and South Carolina is longstapled and is the best in the world.
- Another interesting crop closely associated with the Gulf type of climate is tobacco,
- The humid atmosphere, the warmth and the well-drained soils of the Gulf states, enable tobacco to be successfully cultivated in many of the eastern states of USA.

## The Cool Temperate Western Margin Climate

### Distribution

- The cool temperate western margins are under the permanent influence of the Westerlies all round the all round the year.
- 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 northwestern 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 the southern hemisphere, the climate is experienced in southern Chile, Tasmania and most parts of New Zealand, particularly in South Island.

### Climate

- The mean annual temperatures are usually between 40°F and 60°F.
- The warmest month is 63°F and the coldest month is just around 40°F, thus giving an annual temperature range of only 24°F.
- Summers are, in fact, never very warm.
- The climate is ideal for maximum comfort and mental alertness.
- Winters are abnormally mild.

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- 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.

## Natural Vegetation

- The natural vegetation of this climate type is deciduous forest.
- 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.
- The deciduous hardwoods are excellent for both fuel and industrial purposes.
- In Tasmania, the temperate eucalypts are also extensively felled for the lumbering industry.

## Economy

- A very large part of the deciduous woodlands have been cleared for fuel, timber of agriculture.
- Fishing is particularly important in Britain, Norway and British Columbia.
- Though market gardening is practiced throughout the world wherever there is large urban population, nowhere else is it so highly specialized as in North-West Europe.
- 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.
- It is no wonder the Australians nicknamed Tasmania the 'garden state'.
- Throughout Britain and northwestern Europe, farmers practice both arable farming and pastoral farming.
- Amongst the cereals, wheat is the most extensive grown.
- The next most important cereal raised in the mixed farm is barely.
- The most important animals kept in the mixed farm are cattle. North-western Europe was originally the home of many world renowned cattle breeds.
- Britain is the home of some of the best known sheep breeds, e.g. Leicesters, Lincolns and Southdown's.
- In the southern hemisphere, sheep rearing is the chief occupation of New Zealand, with its greatest concentration in the Canterbury Plain.

## The Cool Temperate Continental Climate

### Distribution

- The Cool Temperate Continental (Siberian) Climate is experienced only in the northern hemisphere where the continents within the high latitudes have a broad east-west spread.
- On its pole ward side, it merges into the Arctic tundra of Canada and Eurasia at around the Arctic Circle.
- South wards, the climate becomes less severe and fades into the temperate Steppe climate.

### Climate

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- The climate of the Siberian type is characterized by a bitterly cold winter of long duration, and a cool brief summer.
- Spring and autumn are merely brief transitional periods.
- The isotherm of 50°F for the warmest month forms the pole ward boundary of the Siberian climate and the winter months are always below freezing.
- An annual range of 54°F is common in the Siberian type of climate.
- The extremes of temperature are so great in Siberia that it is often referred to as the 'cold pole of the earth'.
- Some of the lowest temperature in the world are recorded in Verkhoyansk.
- The interiors of the Eurasian continent are so remote from maritime influence that annual precipitation cannot be high.
- Generally speaking, a total of 15 to 25 inches is typical of the annual precipitation of this sub- Arctic type of climate.
- It is quite well distributed throughout the year, with a summer maximum from convectional rain.
- In winter the precipitation is in the form of snow.

## Natural Vegetation

- No other trees are so well adapted as the conifers to withstand such as inhospitable environment as the Siberian type of climate.
- The coniferous forest belts of Eurasia and North America are the richest sources of softwood.
- The world's greatest softwood producers are USSR, USA, Canada and the Fenoscandian countries.
- There are four major species in the coniferous forests.
- Pine, e.g. white pine, red pine, Scots pine, Jack pine, lodge pole pine.
- Fir, e.g. Douglas fir and balsam fir,
- Spruce.
- Larch.

## Economy

- The coniferous forest regions of the northern hemisphere are comparatively little developed.
- The various species of pine, fir larch and spruce are felled and transported to the saw- mills for the extraction of temperate soft-woods.
- There is little agriculture as few crops can survive in the sub-Arctic climate of these northerly lands.
- Only in the more sheltered valleys and the land bordering the steppes are some cereals (barley, oats, rye) and root crops (potatoes) raised for local needs.
- Many of the Samoyeds and Yakuts of Siberia, and some Canadians are engaged in hunting, trapping and fishing.

## The Cool Temperate Eastern Margin

### Distribution

- The Cool Temperate Eastern Margin (Laurentian) Climate is an intermediate type of climate between the British and the Siberian type of climate.

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- It has features of both the maritime and the continental climates.
- Laurentian type of climate is found only in two regions. One is north-eastern North America, including eastern Canada, north-east USA. This may be referred to as the North American region. The other region is the eastern coastlands of Asia, including eastern Siberia, North China, Manchuria, Korea and northern Japan. It may be referred to as the Asiatic region.
- In the southern hemisphere, this climatic type is absent because only a small section of the southern continents extends south of the latitude of 40°S.
- The only possible location is in eastern Patagonia, south of Bahia Blanca to Terra del Fuego.

## Climate

- The Laurentian type of climate has cold, dry winters and warm, wet summers.
- Winter temperatures may be well below freezing-point and snow falls to quite a depth.
- Summers are as warm, as the tropics (70°- 80°F).
- Though rain falls throughout the year, there is a distinct summer maximum from the easterly winds from the oceans.
- Of the annual precipitation of 30 to 60 inches, two-thirds come in the summer.

## Natural vegetation

- The predominant vegetation of the Laurentian type of climate is cool temperate forest.
- Generally the forest tends to be coniferous north of the 50°N parallel of latitude.
- In the Asiatic region, the coniferous forests are, in fact, a continuation of the great coniferous belt of the taiga.
- South of latitude 50°N, the coniferous forests give way to deciduous forests. Oak, beech, maple and birch are the principal trees.

## Economy

- Lumbering and its associated timber, paper and pulp industries are the most important economic undertaking.
- Lumbering has always been a major occupation of this sparsely populated part of eastern Asia and timber is a leading export item.
- Agriculture is less important in view of the severity of the winter and its long duration.
- Potatoes thrive over large areas of the podzolized soils, while hardy cereals like oats and barley can be sown and successfully harvested before the onset of the cold winter.
- A number of other interesting crops are produced in the Asiatic region such as soya beans groundnuts, sesame, rape seeds, tung oil and mulberry.
- In the North American region, arable farming is not carried out on a sizable scale, except in the more favoured localities.
- Farmers are engaged in dairy farming, hay cultivation and in mild maritime areas, fruit growing.

## The Arctic or Polar Climate

### Distribution

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- The polar type of climate and vegetation is found mainly north of the Arctic Circle in the northern hemisphere.
- The ice-caps are confined to Greenland and to the highlands of these high-latitude regions, where the ground is permanently snowcovered.
- The lowlands, with a few months ice-free, have tundra vegetation.

## **Climate**

- The polar climate is characterized by a very low mean annual temperature and its warmest month in June seldom rises to more than 50°F.
- Winters are long and very severe, summers are cool and brief.
- At the North Pole, there are six months without light in winter.
- The ground remains solidly frozen for all but four months, inaccessible to plants. Frost occurs at any time and blizzards, reaching a velocity of 130 miles an hour are not infrequent.
- Precipitation is mainly in the form of snow, falling in winter.
- Snowfall varies with locality.
- Convectional rainfall is generally absent because of the low rate of evaporation and the lack of moisture in the cold polar air.

## **Natural Vegetation**

- In such an adverse environment as the tundra, few plants survive.
- The greatest inhibiting factor is the region's deficiency in heat.
- There are no trees in the tundra.
- Such an environment can support only the lowest form of vegetation, mosses, lichens and sedges.

## **Economy**


- Human activities of the tundra are largely confined to the coast.
- The few people who live in the tundra live a semi-nomadic life.
- In Greenland, northern Canada and Alaska live the Eskimos.
- They used to live as hunters, fishers and food gatherers.
- During winter they live in compact igloos and in summer when they move out to hunt they pitch portable tents of skins by the side of stream.
- Their food is derived from fish, seals, walruses and polar bears.
- In the Eurasian tundra are other nomadic tribes such as the Lapps of northern Finland and Scandinavia, the Samoyeds of Siberia, Yakuts, Koryaks and Chuckchi of northeastern Asia.

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