4. Climatic Regions

Use your brain power !

Have you ever thought why there is difference in the skin colour of various peoples in the world? Why all the people in the world do not eat same food? Why there is a variety in clothing pattern and types too? Even our houses are different. How come flora and fauna are restricted to particular region? Why different fruits are found in different places?

Geographical explanation

As you know, there are five spheres namely atmosphere, lithosphere, hydrosphere, biosphere and magnetosphere. You have studied about them in earlier classes. Out of these, atmosphere is the one which is actually related with climate and weather. The climate of any region is decided by detailed study and observation for longer period of time such as 30 years. These observations give us an idea about the trends in the weather and its elements. Multiple occurrences of any phenomena of weather with consistency help us to decide the climate of the region. The climate of a place is responsible for the variety in so many factors including our food, our occupations, our houses, our clothes and many activities.

Can you tell ?

Make a list of the human activities you think that are not influenced by climatic elements. Let us see how far you can proceed.

Geographical explanation

Climate directly or indirectly influence not only our physiology but all human activities. Climate has enormous influence on the pedological processes. Climate and soils in a region determine the land cover condition of the region. Its effect on the vegetal growth in the region is obvious. Agriculture, that determines the food habits of the population in a region, is greatly influenced by the climate.

Classification of Climate and identifying Climatic Regions (Natural Regions) :

During the second half of the 19th century and early 20th century, when geographers debated the concept of region and regionalization, climate got primacy over any other criteria for defining the macro regions of the world. There have been many attempts to define macro-regions of the world on the basis of climatic conditions. We will divide these regions on the basis of latitudinal locations. Let us look at each region in detail. Refer to the given map in fig. 4.1 simultaneously. Locate the places on the map. You are advised to use an atlas too.

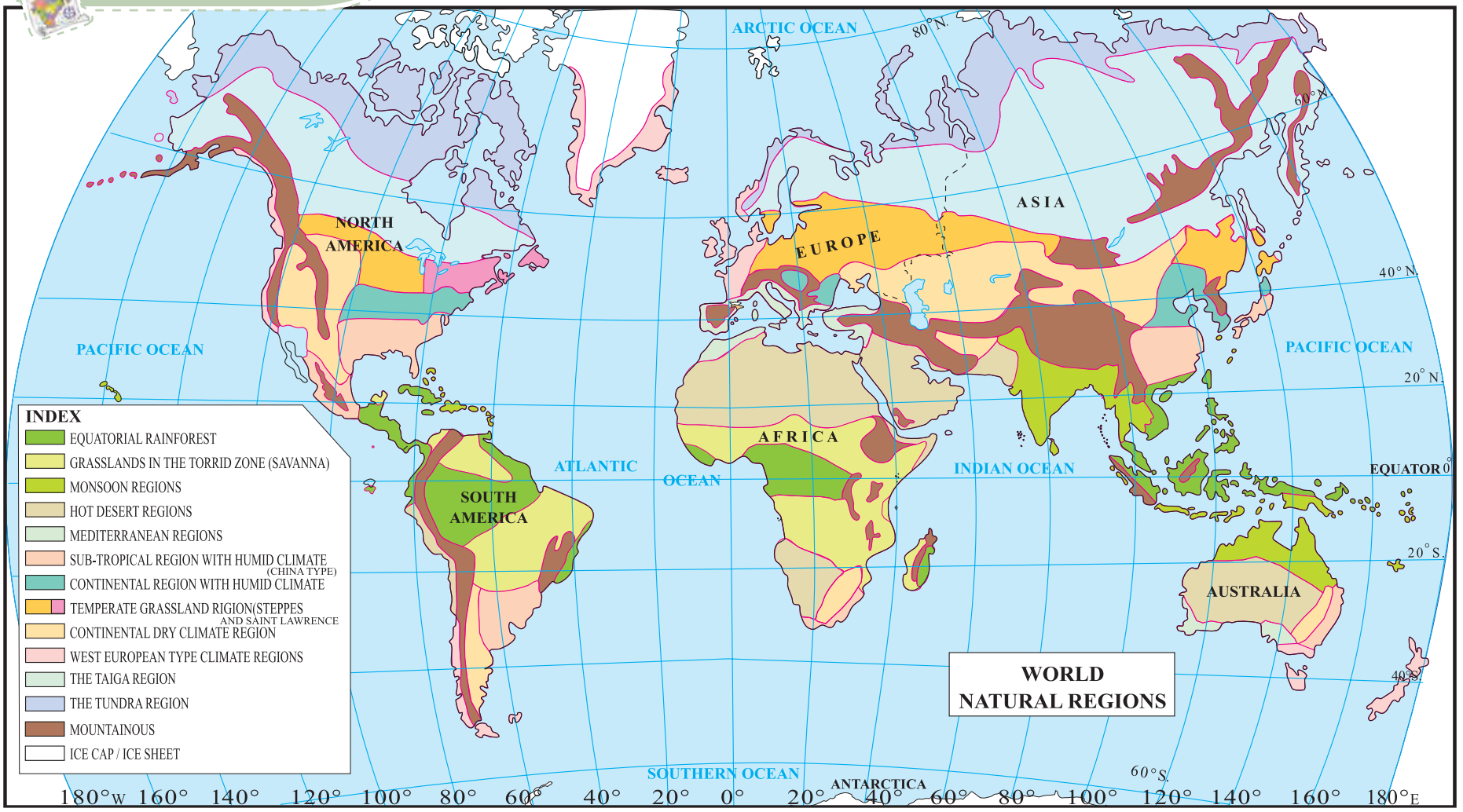
Find out !

Use Internet or reference books to find out about the attempts at classification of climates.

Do you know ?

Why do we call the Climatic Regions also as “Natural Regions”?

A natural region is a basic geographic unit. Usually it is a region which is distinguished by its common natural features of geography, geology, and climate. From the ecological point of view, the naturally occurring flora and fauna of the region are likely to be influenced by its geographical and geological factors, such as soil and water availability, in a significant manner. Thus most natural regions are homogeneous ecosystems.


ARCTIC OCEAN
80° N.
60° N.
40° N.
20° N.
EQUATOR 0°
20° S.
40° S.
60° S.
NORTH AMERICA
EUROPE
ASIA
AFRICA
SOUTH AMERICA
AUSTRALIA
PACIFIC OCEAN
PACIFIC OCEAN
ATLANTIC OCEAN
INDIAN OCEAN
SOUTHERN OCEAN
ANTARCTICA
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EQUATORIAL RAINFOREST
GRASSLANDS IN THE TORRID ZONE (SAVANNA)
MONSOON REGIONS
HOT DESERT REGIONS
MEDITERRANEAN REGIONS
SUB-TROPICAL REGION WITH HUMID CLIMATE (CHINA TYPE)
CONTINENTAL REGION WITH HUMID CLIMATE
TEMPERATE GRASSLAND RIGION(STEPPES AND SAINT LAWRENCE
CONTINENTAL DRY CLIMATE REGION
WEST EUROPEAN TYPE CLIMATE REGIONS
THE TAIGA REGION
THE TUNDRA REGION
MOUNTAINOUS
ICE CAP / ICE SHEET
WORLD NATURAL REGIONS
180°W 160° 140° 120° 100° 80° 60° 40° 20° 0° 20° 40° 60° 80° 100° 120° 140° 160° 180°E

Fig. 4.1

A) Low-latitude regions : 1) Equatorial Rainforests

Can you tell?

Read the graphs fig. 4.2 a) and b) and answer the following questions. Locate the places on the map:

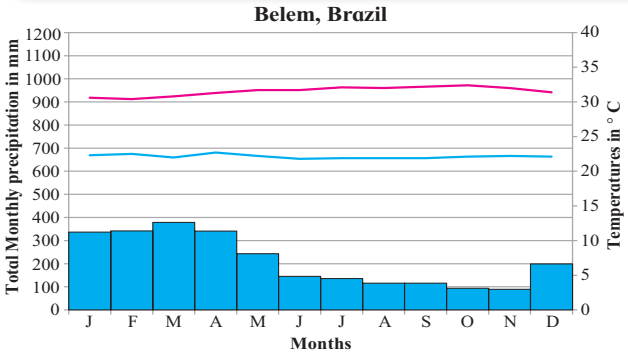

Fig. 4.2 (a)

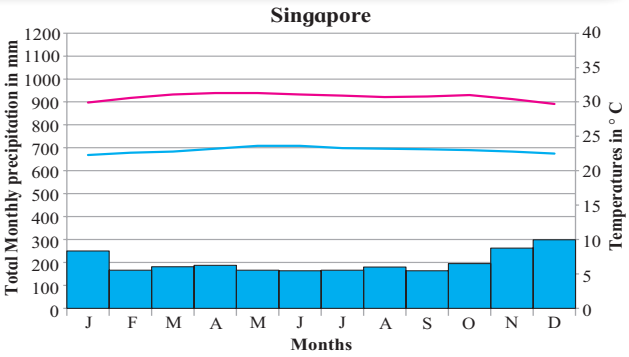

Fig. 4.2 (b)

1) In which months there is no rainfall?
2) In which month is the temperature highest?
3) In which month is the temperature lowest?
4) What could be the factors which influence the climate of these places?
5) Write a concluding statement about the climate of both the places based on the questions above.

Geographical explanation

Temperatures are almost the same throughout the year in this region. As this region is located within 5° to 10° of the equator, the noon rays of the Sun are always close to being directly overhead. Days and nights are almost of equal length and amount of insolation remains nearly constant throughout the year. In other words, the concept of summer and winter as being hot and cold seasons do not exist in these parts. The ITCZ (Inter-Tropical Convergence Zone) is an area of low pressure in equatorial regions. This is where the northeast and southeast Trade winds converge. They move north or south with the apparent movement of the Sun. Heavy precipitation is associated with warm, humid air of the doldrums, the unstable conditions along the ITCZ and the low pressure areas. Due to convectional currents, moist air rises, condenses and results in heavy rain almost daily. Although no season can be called dry, during some months it may rain only for 15 or 20 days.

Geographical distribution	Climatic Characteristics	Related features
• 0° to 10° in both the hemispheres. • Amazon Basin, Congo basin, east coast of Central America, Madagascar, Malaysia, Indonesia, Philippines and Papua New Guinea	• Constant high temperatures, average around 27° C; • Heavy convectional precipitation 2500 to 3000 mm evenly distributed over the year, heavy; • High amount of cloud cover and humidity	• Rainforests, dense three layered vegetation, huge tall hardwood trees, climbing and jumping animals, reptiles, large biodiversity • Iron rich soils, chemical weathering effective than physical • Tribes inhabit the dense forests

Use your brain power!

1) What would be the annual range of temperature in this region?
2) Where is this type of climate found in India?

A) Low-latitude regions : 2) Tropical Monsoon Climate

Can you tell?

Read the graphs fig. 4.3 a) and b) and answer the following questions. Locate the places on the map:

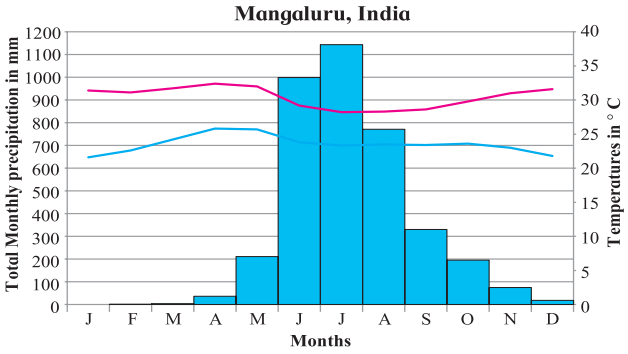

Fig. 4.3 (a)

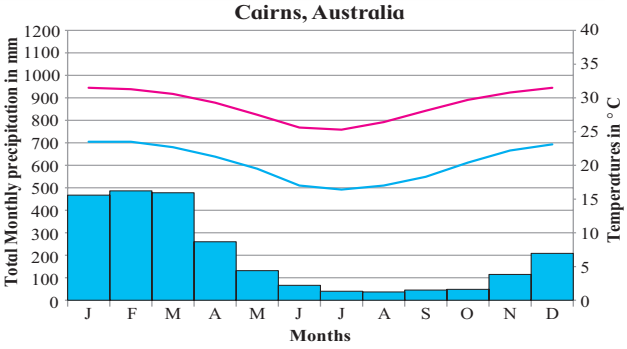

Fig. 4.3 (b)

1) Name the months of highest and lowest rainfall. What is difference between the values of rainfall?
2) Name the months of the highest and the lowest temperatures.
3) Are the months of rainfall same in both the places? If not, why?
4) What could be the factors which influence the climate of these places?
5) What difference do you find in the graphs in fig. 4.2 and these?
6) Write a concluding statement about the climate of both the places.

Geographical explanation

The climate here has distinct seasons. It has a short dry season unlike the rainforests. The annual range of temperature is higher than that of the rainforest. This type of climate occurs due to seasonal winds called the monsoon. The differential heating and cooling of land and water creates low pressure on the land while the sea experiences high pressure. This is strongly related to shifting of the ITCZ. During the summer the ITCZ moves north to the latitudes of 20°-25°. Several months later, the moisture laden summer monsoon is replaced by dry north-east monsoon. By this time, the ITCZ has shifted to the southern hemisphere. In northern hemisphere, the winds move from sea to land bringing moisture along with them in summers. In southern hemisphere same conditions prevail when there are winters in the northern hemisphere. In summers, their direction is south-westerly while in winters, it is north-easterly.

Geographical distribution	Climatic Characteristics	Related features
• Within 10° to 30° N and S in coastal areas of SW India and SE Asia, SW Africa, NE and SE Brazil, northern parts of Australia, parts of Japan	• Summer temperature around 27° to 32° C, winter temperature 15° to 24° C • Rainfall, 250 to 2500 mm one or more month with less than 6cm of rainfall, excessively wet during rainy season, orographic rainfall (India) • High annual range of temperature, • Summer onshore and winter offshore wind movement related to shifting ITCZ and changing pressures over large landmasses	• Spectrum of biodiversity narrows down as compared to tropical rainforest, ranges from jungle to thorn forest in drier boundaries • Large hooved leaf eaters and large carnivores like tigers • Iron rich soils in high rainfall zones • Paddy rice agriculture

Use your brain power!

1) Comment upon the type of weathering which will occur in this region.

A) Low-latitude regions : 3) Tropical Savannah type of climate

Can you tell?

Read the graphs fig. 4.4 a) and b) and answer the following questions. Locate the places on the map:

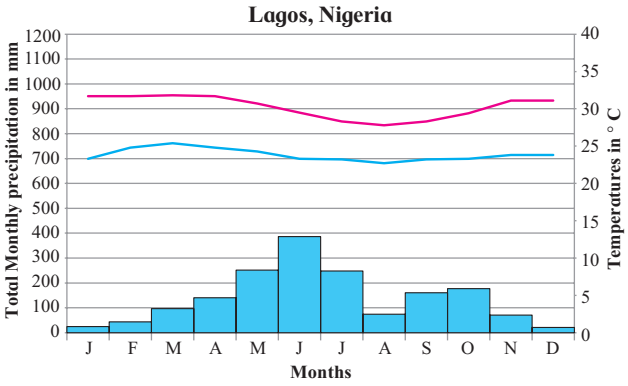

Fig. 4.4 (a)

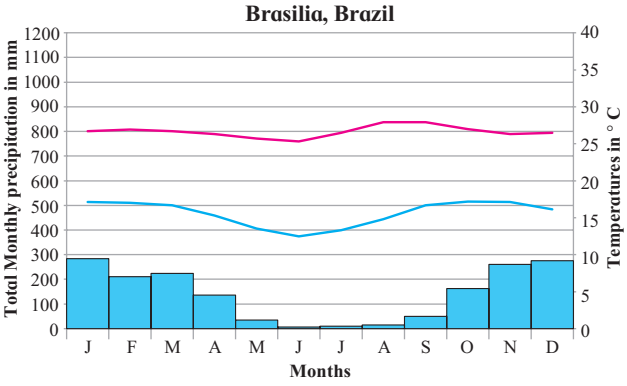

Fig. 4.4 (b)

1) In which months is there no rainfall?
2) In which month is the temperature highest?
3) In which month is the temperature lowest?
4) Are the months of rainfall same in both the places? If not, why?
5) What could be the factors which influence the climate of these places?
6) What difference do you find in the previous and these graphs?
7) Write a concluding statement about the climate of both the places.

Geographical explanation

The Sun's rays at noon are never far from overhead, the insolation is maximum and temperatures are constantly high here. As the latitudinal wind and pressure belts shift with the direct angle of the Sun, these regions are under the influence of ITCZ for part of the year and sub-tropical highs for the other part. If you see the map, you will find these areas are peripheral to the rainforests. See table for details.

Geographical distribution	Climatic Characteristics	Related features
• Between 10 to 20° latitudes N and S • In India parts of the peninsular plateau and rain-shadow zone in Maharashtra, Telangana and Karnataka; parts of Mizoram • Borders around Congo, south-central Africa, llanos of Venezuela, Campos of Brazil etc.	• Distinct wet summers and dry winters, summer temperatures around 35°C, winter temperatures around 24°C • Rainfall averaging 250-1000 mm, Alternating ITCZ and subtropical highs and Easterlies	• Tall and thick grass (Elephant grass), with scattered drought-resistant trees, broad towards the apex, scrub, • Grazing more common, large herbivores, carnivores and scavengers • Herding and animal husbandry occupations

Use your brain power!

1) Which agricultural crops are produced here?
2) Why are longitudes not given in geographical distribution?

A) Low-latitude regions : 4) Tropical Deserts or Arid type of climate

Can you tell ?

Read the graphs fig. 4.5 a) and b) and answer the following questions. Locate the places on the map:

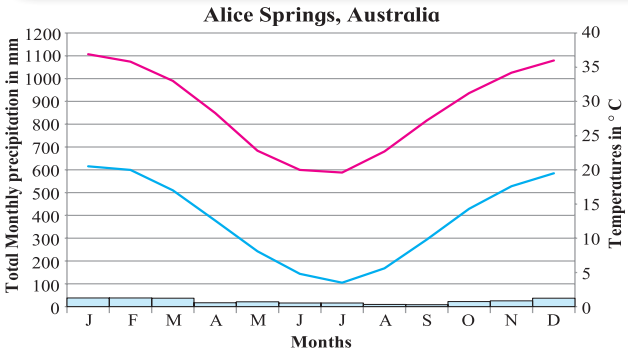

Fig. 4.5 (a)

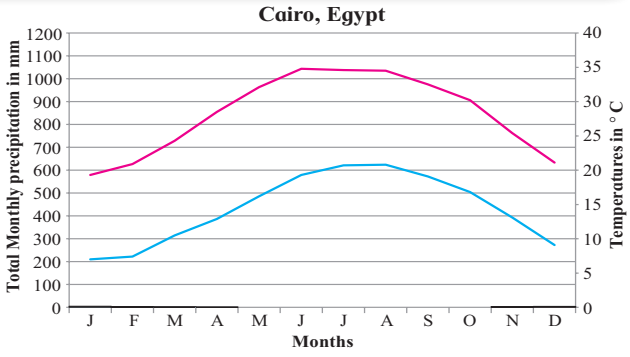

Fig. 4.5 (b)

1) Name the months of highest and lowest rainfall. What is the difference between the values of rainfall?
2) Name the months of highest and lowest temperatures.
3) Are the months of rainfall same in both the places? If not, why?
4) What could be the factors which influence the climate of this places?
5) What difference do you find in the previous and these graphs?
6) Write a concluding statement about the climate of both the places.

Geographical explanation

The concentration of deserts near both the tropics is because of the sub tropical high pressure belts. This makes the air here dry. Location in the interior of the continents far from oceanic moisture can also lead to formation of deserts. The vast cold deserts of Asia and Great Basin of western USA are examples. Location on the leeward side of the high mountains giving little or no access to moisture-laden winds can also cause deserts. Patagonia Desert of Argentina and arid lands of China are formed due to such rain-shadow conditions. The presence of off-shore cold water due to cold currents can cause deserts near the coast. The Benguela current has given rise to the Kalahari Desert and Humboldt to the Atacama Desert. Winds which pass over these cold waters reach the land with low temperatures. They become warm, as they pass over the land, become dry and make them arid.

Geographical distribution	Climatic Characteristics	Related features
• Usually between 20° to 30° latitudes in both hemispheres; Western coasts of all continents, large parts of Gujarat, Rajasthan and south west Haryana, Iran, interior parts of Asia, coastal Chile, Peru, south-west Africa, interior Mexico, Baja California, North Africa, Namibia and parts of US.	• Summer temperatures around 30° to 45° C, winter temperature around 20° to 25° C, highest diurnal range, highest day-time temperatures • Precipitation less than 200 mm • Low or no humidity • Windy conditions, descending, diverging circulation of subtropical highs • Continental location, rain-shadow conditions	• Xerophytic vegetation • Usually small, nocturnal burrowing animals • Badaun (Sahara), Bushmen (Kalahari), Aborigines (Australia) • Saline soils • Agriculture practised near oases

Use your brain power !

1) Comment upon the rate of weathering in this climate.

B) Mid-latitude regions : 1) Mediterranean Climate:

Can you tell ?

Read the graphs fig. 4.6 a) and b) and answer the following questions. Locate the places on the map:

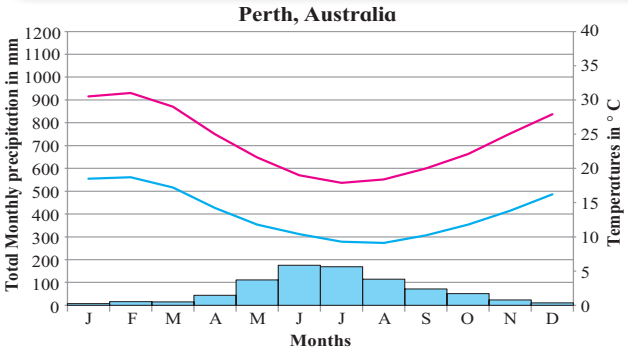

Fig. 4.6 (a)

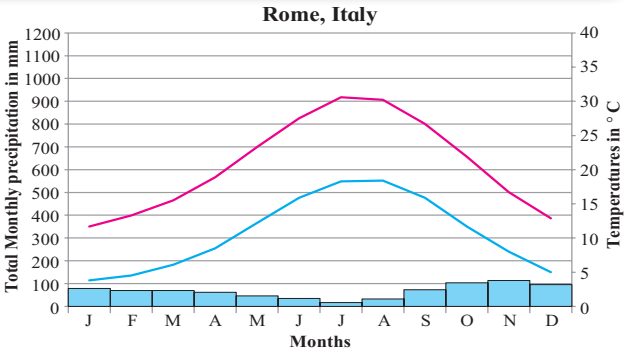

Fig. 4.6 (b)

1) Name the months of highest rainfall.
2) Name the months of lowest temperatures.
3) Are the answers to 1 and 2 same?
4) Are the months of rainfall same in both the places? If not, why?
5) What could be the factors which influence the climate of this places?
6) What difference do you find in the previous and these graphs?
7) Write a concluding statement about the climate of both the places.

Geographical explanation

In Mediterranean regions, the summers are long, warm and dry whereas winters are mild and wet. They are different from low-latitudinal climates in that the latter have high temperatures throughout the year while the former have a moderate climate. Rainfall in winter is a characteristic of this region. Subtropical high pressure in summer and westerly wind movement in winter dominate this climate.

Geographical distribution	Climatic Characteristics	Related features
• Western coastal location between 30° to 40° N and S • Central California, borders of Mediterranean Sea, Cape Town (South Africa), Southern and SW Australia, central part of Chile	• Mild, moist winters, temperature around 10° to 14° C, warm, dry summers, temperature around 21° to 27° C quite sunny, high summer diurnal temperature range • 500 to 1000 mm winter rainfall • Foggy coasts • Alternation between subtropical highs in summer and Westerlies in winter.	• Typically scrub, but also forests, leaves are evergreen, hard, thick, leathery, and usually small • coniferous vegetation in higher altitudes, grass in areas of low rainfall • Winter-sown grains, olives, grapes, vegetables, citrus fruits, animal husbandry • Favorable climate leads to development of tourism and cinema industrie (particularly California)

Use your brain power !

1) Why do people in Europe use olive oil for cooking?

B) Mid-latitude regions : 2) China type climate or humid sub tropical climate

Can you tell?

Read the graphs fig. 4.7 a) and b) and answer the following questions. Locate the places on the map:

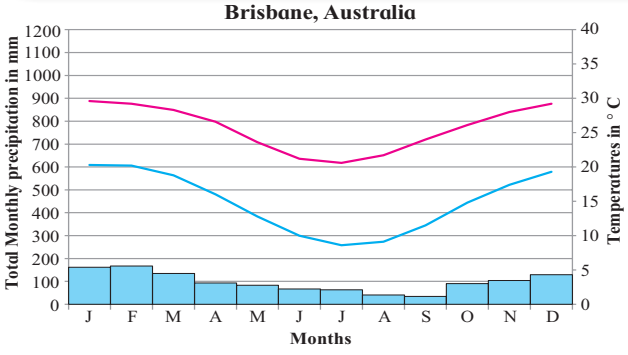

Fig. 4.7 (a)

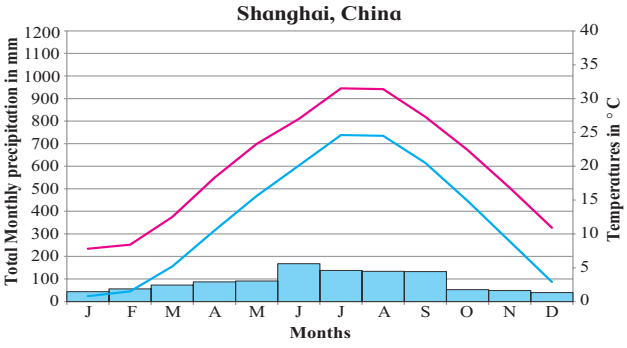

Fig. 4.7 (b)

1) Name the months of highest and lowest rainfall.
2) Name the months of highest and lowest temperatures. Relate them with rainfall months.
3) Are the months of rainfall same in both the places? If not, why?
4) What could be the factors which influence the climate of this places?
5) What difference do you find in the previous and these graphs?
6) Write a concluding statement about the climate of both the places.

Geographical explanation

The major difference between Mediterranean and China type is that the Mediterranean is found on the western margins of the continents while China type is found in eastern parts almost in the same latitudes. You will find that rainfall is occurring throughout the year. Both the regions receive winter moisture from cyclonic storms but in summers, China type receives rainfall from convectional showers. They are subject to tropical storms.

Geographical distribution	Climatic Characteristics	Related features
• East coast location between 20° and 40° N and S • SE USA, SE South America, coastal SE South Africa, eastern Australia, eastern Asia from through South China to southern Japan, Easter island in Chile	• Warmest months above 10° C, coldest between 0° C and 18° C • High humidity, hot summers like tropics • Frost in winter • Generally year round precipitation between 600 to 2500 mm decreasing inland • Humid onshore air movement in summer, cyclonic storms in winter	• Mixed forests, some grasslands, pines in higher altitudes. • Rice, wheat, corn, cotton, tobacco, sugarcane, citrus fruits.

Use your brain power!

1) What factors make this region agriculturally productive?

B) Mid-latitude regions : 3) Marine West European type climate

Can you tell ?

Read the graphs fig. 4.8 a) and b) and answer the following questions. Locate the places on the map:

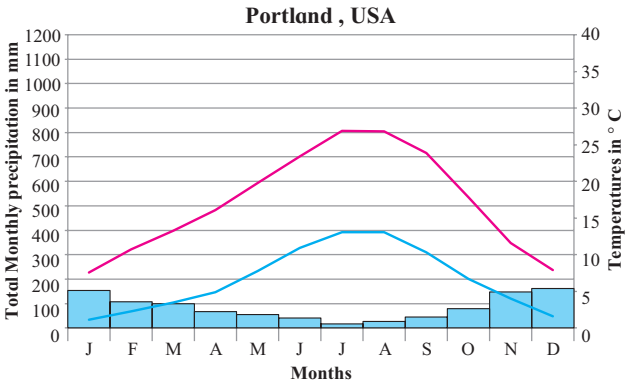

Fig. 4.8 (a)

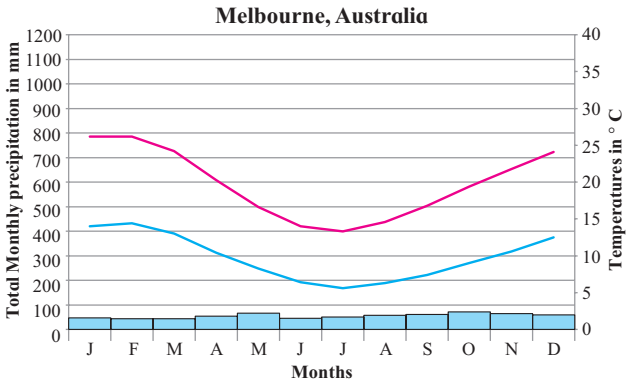

Fig. 4.8 (b)

1) In which months do you find temperature is the lowest?
2) In which months is the precipitation the lowest?
3) What are the highest values of precipitation?
4) Name the months with no precipitation at all.
5) Write a concluding paragraph about this climatic regions.

Geographical explanation

Considering the latitudes, proximity to the sea and prevailing onshore winds make this climate temperate. Annual temperature ranges are relatively small. Winters are mild because of warm ocean currents. For example, the North Atlantic drifts brings warm tropical waters to the European Coastal area.

Geographical distribution	Climatic Characteristics	Related features
• Located in western parts of continents from 45° to 65° N and S. Western coastal USA and Canada, southern Alaska, southern Chile, SE Australia, New Zealand and Western Europe	• Mild to cool summer, temperatures around 20° C • Winter temperature around 5° C • Precipitation year round around 500 to 2500 mm • Heavy cloud cover, high humidity • Drizzle, fog, frost • West coast location under the influence of Westerlies, effect of warm ocean currents in coastal areas.	• Year round short green grass, trees shed leaves during winter, coniferous forest • Wheat, rye, pasture and grazing animals • Coastal fisheries

Use your brain power !

1) Why does Chile recur frequently in examples of geographical distribution.
2) Why has fishing developed here?

C) High latitudinal regions : 1) Taiga or Sub-Arctic

Can you tell ?

Read the graphs fig. 4.9 a) and b) and answer the following questions. Locate the places on the map:

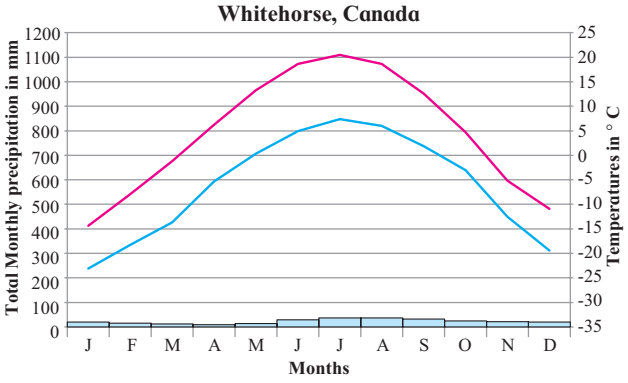

Fig. 4.9 (a)

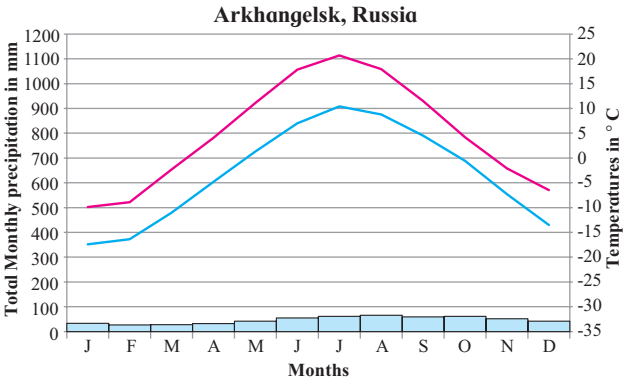

Fig. 4.9 (b)

1) Note the values of the axes. How different are these graphs from the earlier ones?
2) Note the highest and the lowest temperatures and their months
3) Note the highest and the lowest rainfall and their months.
4) Why dose not a place from Southern Hemisphere appear here?
5) What factors are responsible for this climate?

Geographical explanation

Latitudinal location plays a great role in the climate. The low temperatures reduce the moisture holding capacity of the air leading to low rainfall. If the locations are away from seas, they are again deprived of moisture. In Southern Hemisphere, few settlements exist and there is no permanent human settlement beyond this region.

Geographical distribution	Climatic Characteristics	Related features
• High-mid latitudes (55° to 65°) • Northern North America from Newfoundland to Alaska, northern Eurasia from Scandinavia through most of Siberia to the Bering Sea and Sea of Okhotsk	• Brief cool summers, temperature around 15° to 20° C, bitterly cold winters, temperature less than 0° C • Year round precipitation around 300 to 500 mm in summers, snowfall in winter • Heavy cloud cover, high humidity, drizzle, fog, frost, cold winters poleward • Westerlies in summer, strong polar anticyclone in winter (Asia) • Continental location	• Northern coniferous forest (Taiga), soft and light wood • Strongly acidic soils, poor drainage • Short growing season, experimental vegetables and root crops • Animals with fur • Hunting and lumbering

Use your brain power !

1) What would be the annual range of temperature in this climate? What could be the occupational activities carried out by humans here?
2) What type of weathering will be prominent here?

C) High-latitude regions : 2) Tundra climate

Can you tell ?

Read the graphs fig. 4.10 a) and b) and answer the following questions. Locate the places on the map:

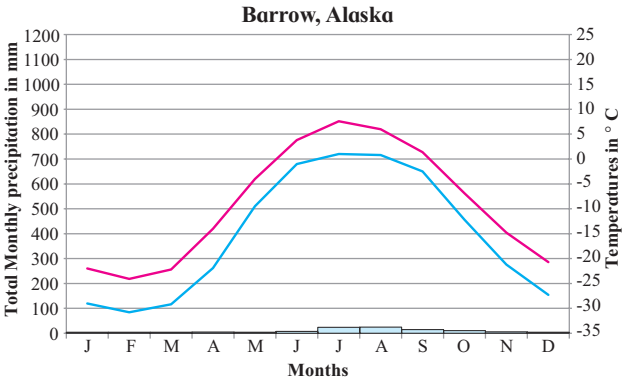

Fig. 4.10 (a)

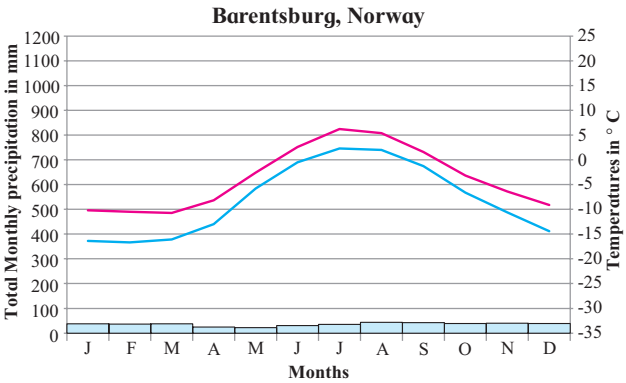

Fig. 4.10 (b)

1) Why is it that both the graphs are from the Northern Hemisphere?
2) Which are the warmest and the coolest months?
3) What is the annual range of temperature?
4) Why does not the duration of day (sometimes more than 24 hours) influence its temperatures or precipitation?

Geographical explanation

When you compare the graphs, you see that the tundra climate is closer to the poles than the Taiga. The temperature ranges in Tundra are large but not larger than the Taiga. Also, you might have noticed that the winter temperatures are not as severe as the Taiga. How is this possible when the tundra is closer to the poles? This is because if you refer to the map and see the location, the Tundra is closer to the sea while Taiga is away from any ocean body. The temperatures are influenced by the maritime location. Though this region experiences daylight for almost 6 months, the day temperatures are not very high. This is because the sun's rays are oblique and little insolation is received.

Geographical distribution	Climatic Characteristics	Related features
• 65° to 90° N, Arctic Ocean borderlands of North America, Greenland and Eurasia, Antarctic, Peninsula, some polar islands	• Summer temperatures around 10° C, winter temperature around -20° to -30° C • Low evaporation • Precipitation around 300 to 500 mm in the form of snow. • Coastal fog, strong winds • Proximity to coasts • Polar anti-cyclones (high pressure belts), near to permafrost	• Tundra vegetation, swamps during melting • Mineral and oil resources • Animal with fur polar bear, seal, walrus • Hunting and fishing • Inuits

Use your brain power !

1) What kinds of mass movement may happen here?

C) High-latitude regions : 3) Ice sheet

Can you tell ?

Read the graphs fig. 4.11 a) and b) and answer the following questions. Locate the places on the map:

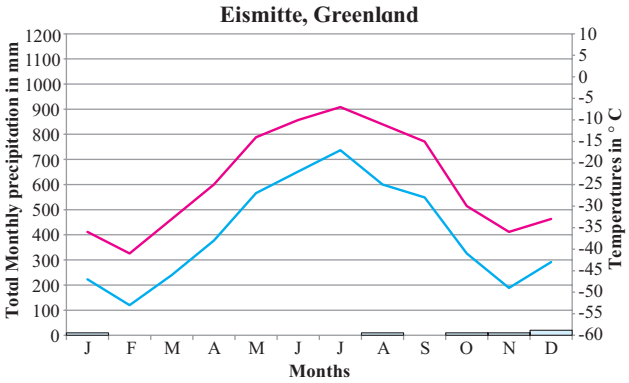

Fig. 4.11 (a)

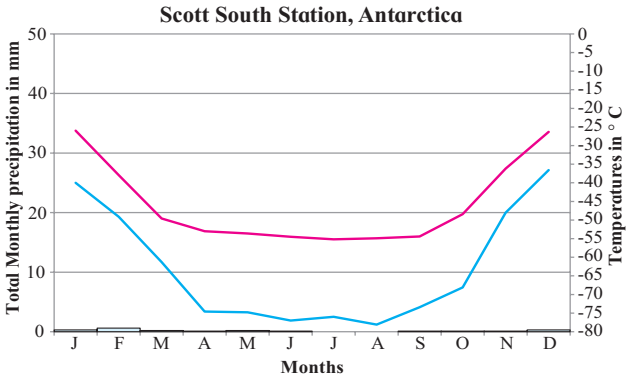

Fig. 4.11 (b)

1) Which are the warmest and the coolest months ?
2) Name the months of highest and lowest rainfall.
3) In what way do you find similarities of this climate with other climate types of high latitudes?
4) What factors influence this type of climate?

Geographical explanation

The ice cap climate occurs over interior Greenland and Antarctica. It covers the area around the Poles in both the hemispheres. This climate is the most severe climate on the earth. As you can see from the graphs, all average monthly temperatures are below zero. The reason for low temperatures is the minimal insolation received in these regions. There is little or no insolation received during half the year. Also, insolation is received at oblique angles and the perpetual snow cover reflects back the heat received. . Polar anti-cyclone winds limit the precipitation. No vegetation can thrive in this climate. Even in summer, the temperature is below freezing point. This area receives very little precipitation.

Geographical distribution	Climatic Characteristics	Related features
• Near the poles in both the hemispheres • Antarctica; interior Greenland; permanently frozen portions of the Arctic Ocean and associated islands	• Warmest month below 0° C • Precipitation exceeds evaporation • All months average below freezing; world's coldest temperature; • Extremely meagre precipitation in the form of snow • Year-round influence of the polar anticyclone; ice cover	• Ice and snow-covered surface; no vegetation • No exposed soils • Only sea life or aquatic birds • scientific exploration

Use your brain power !

1) What kind of activities will bring people from other regions to this climate?
2) What could be the occupations followed here?

D) High-altitude regions : 1) Highland or Mountain type

Can you tell ?

Read the graphs fig. 4.12 a) and b) and answer the following questions. Locate the places on the map:

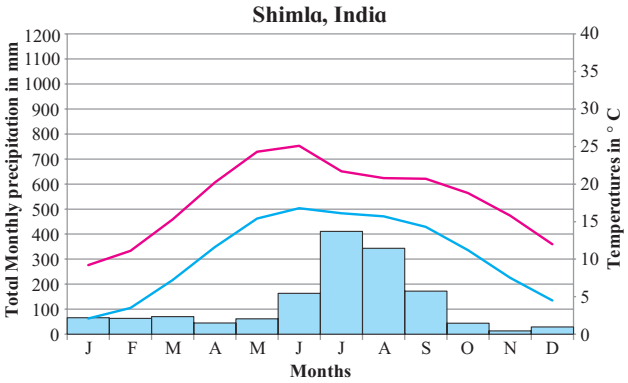

Fig. 4.12 (a)

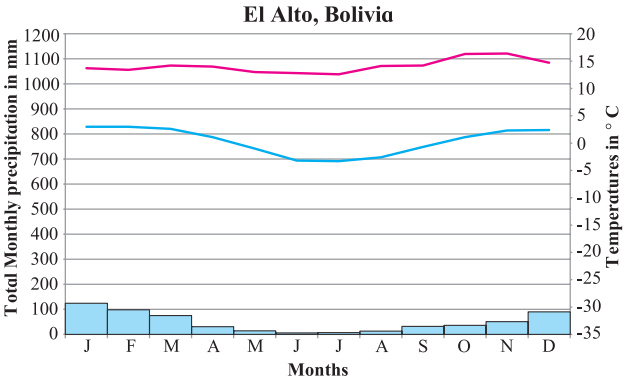

Fig. 4.12 (b)

1) Which are the warmest and the coolest months ?
2) Name the months of highest and lowest precipitation.
3) In what way do you find similarities of this climate with other climate types of high latitudes?
4) Why are the axes showing temperatures different in both the graphs?
5) What factors influence this type of climate?

Geographical explanation

Highland climates are governed by topography. In high mountains, large changes in mean temperatures occur over short distances. Types of precipitation, its amount and intensity also vary across highlands. Temperature decreases with increasing altitude. A vertical zone of climatic types with increasing elevation in the mountain environment is found.

Geographical distribution	Climatic Characteristics	Related features
• Distributed widely over Earth particularly concentrated in higher reaches of mountains in Asia, central Europe, western North and South America.	• Climate depends on altitude, location on leeward or windward side, orographic rainfall, snowfall in higher reaches	• Coniferous in higher reaches, tropical decidous to evergreen, in lower reaches, laterite soils, grazing and pastures, terrace cultivation, tourism

Use your brain power !

1) What type of human activities will develop in this region?
2) In what ways might high latitudes be different from high altitudes?

Exercise

Q. 1) Write the names of climatic regions according to the factors that dominate their characteristics :

Latitudinal location	Winds and wind systems	Proximity to sea	Continental location	Altitude

Q. 2) Choose the correct alternative :

1) Monsoon region

a)
- annual average temperature around 27° C
- >2500 mm annual precipitation
- Indonesia
- Hard-wood evergreen trees

b)
- Average temperature in Summers around 35° C
- < 2500 mm annual rainfall
- South East Asia
- Hard wood deciduous trees

c)
- Temperatures in summer around 35° C
- 1000 mm annual rainfall
- Continental part of Indian peninsula
- Tall and thick grass

d)
- Average temperatures in summer around 27° C
- 1000 mm rainfall in winter
- South Africa
- Hard–wooded, waxy, evergreen forests

2) The region with high diurnal range of temperature :

a) Tropical rainforests

b) Tropical grasslands

c) Tropical desert regions

d) Tropical Monsoon regions

3) Lumbering flourished as an occupation from the Newfoundland to Alaska in North America because :

a) Tundra Climatic Region

b) Taiga Climatic Region

c) West European Climatic Region

d) China-type climatic region

4) The main reason behind the months of precipitation in the graphs of Monsoon climatic regions being different is :

a) ITCZ b) orographic rainfall

c) hemispheres are different

d) apparent movement of the sun

Q. 3) Give geographical reasons :

1) In Monsoon climate region, rainfall occurs in specific season.

2) Taiga region is not found in Southern Hemisphere.

3) The diurnal range of temperature is more in desert areas.

4) There is no concept of season in equatorial regions.

5) The Savannah region is prone to droughts

6) Though Mussoorie and Dehradun are located on the same latitude , why is their climate different?

Q. 4) Differentiate between :

1) Rainforests and Savannah Climatic Regions

2) Taiga and Tundra regions

3) Monsoon and Mediterranean Regions

Q. 5) Answer in detail :

1) Explain, with examples, the effect of latitude on a place's climate.

2) Explain, with examples, how winds affect the climate of a place.

3) Russia is larger than Chile in area but does not experience climatic diversity as Chile. Explain.

4) Explain the factors affecting climate of a place giving examples.

Q. 6) On a world map, show the following areas :

1) Savannah climatic region in Africa

2) Highland climatic region in India

3) Chile and Russia

4) Ice cap climatic region

5) Desert climatic region

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