

Fig. 2. Rocks, stones and pebbles broken from the escarpment

escarpment of the plateau is also rocky and uneven. Here there is only a thin layer of sandy soil mixed with stones. We had also seen a similar landscape in Pahavadi. Indeed, it is difficult to imagine any crop growing on such soils!

These rocky parts of the plateau have a distinct look. They are usually covered with trees, bushes and grass.

On the flat plain lands of the plateau - away from the slopes and escarpment - one finds black, clayey soil. This fine-grained black soil is brought along with water and deposited on the plain land. Underneath the soil there are black rocks, which also break down to form fine black soil. This soil is very fertile. If irrigation is available, this soil can yield two crops in a year.

- *In Figure 1, where would you find the following types of soil? Choose the correct answer.*

*(Rocky soil / black soil / no soil)*

*At 'A' \_\_\_\_\_ is found.*

*At 'B' \_\_\_\_\_ is found.*

*At 'C' \_\_\_\_\_ is found.*

- *Write down three differences between a plateau and a plain.*
- *Where would you find more flat land - on plains, on the hills or on a plateau?*

## BALAMPUR - VILLAGE ON THE FOOT OF THE ESCARPMENT

### Terrain of Balampur

Balampur is a village situated below the escarpment of the Bhopal plateau. One can reach Balampur by getting off the road to Vidisha on to a kutchha road. This village is situated on the foot of the escarpment. In Figure 2, you can see the huge rocks and broken stones of the escarpment above the village.

During the rainy season, rivulets swell with water and carry pebbles and sand down the escarpment and deposit them on the fields near the slopes.

- *How will this affect the soil - will it make the soil more fertile?*

At some distance from the escarpment, on the flat lands of the village, there is clayey black soil.

Let us now have a look at how the people of this village on the plateau carry out agriculture on these soils.

### Tanks and Bandhs

Look at Balampur village in fig. 3. Try and identify the roads, wells, houses, tanks and *bandhs* in the picture. A few streams flowing down the escarpment can also be seen. A *bandh* has been raised across the stream. The water of the stream collects upstream of the embankment and forms a tank.

- *In fig. 3, how many tanks and bandhs can be seen? On the flat plains of Kotgaon, tanks were not made in this way. Compared to Balampur, why is it more difficult to make tanks in Kotgaon?*

One of the advantages of these tanks is that rain water can be collected in them and used for irrigation. They have another advantage as well. They prevent the soil from getting eroded and also prevent pebbles and stones from

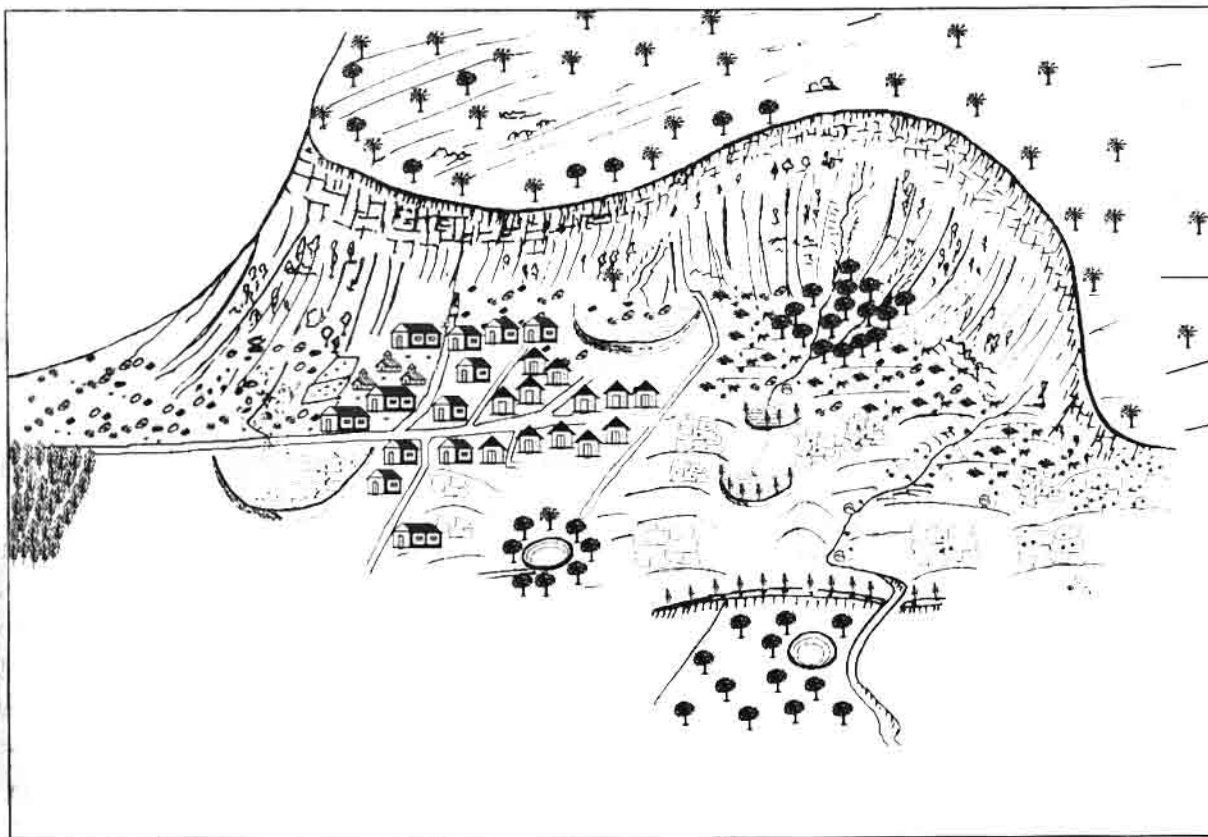


Fig. 3. Balampur village and its fields

spreading on the fields. You know that pebbles, sand and stones from the plateau flow along with the rivers and streams and get spread on the fields. There is also a possibility of swift flowing streams washing away the soil on the fields near the escarpment. Due to the bandh, pebbles and sand collect in the tank and the soil from the fields is saved from being washed away.

A cultivator of Balampur has built a small bandh on his land and has thus created a tank. The bandh helps to collect rain water and allows the water to seep into the soil. Pebbles and stones are also prevented from spreading on his field. Soil erosion, is too, prevented. fig. 3 shows this *bandh* on the field. In this way, peasants have used the terrain of the land to their advantage to water their fields.

- *In the land adjacent to the escarpment, the streams spread \_\_\_\_\_ and \_\_\_\_\_ flows down along with the stream. (soil, pebbles and stones)*
- *Tanks have been made \_\_\_\_\_ the escarpment. (above, below, in the middle of)*

- *To make tanks \_\_\_\_\_ (bandhs were constructed, soil was dug)*
- *Because of water collected in the bandh, the \_\_\_\_\_ remains moist, one gets water for \_\_\_\_\_ and \_\_\_\_\_ do not spread on the fields. (irrigation, soil, pebbles and stones)*
- *In fig. 3, mark 'x' on land where there are slopes and rocky fields and 'y' where clayey soil is available.*

### Wells

You have just read how undulating lands can be irrigated by constructing bandhs. However, such tanks can irrigate only a part of the village lands.

The farmers of Balampur have dug wells to irrigate more land. Wells for irrigation have been dug only in recent years though some had been used in the past for drinking water.

Beneath the layer of soil there is hard rock. It has to be blown apart with the help of explosives. Even after boring through the rock, one does not always find water. Ground water occurs in the cracks in the rocks. If these water

bearing cracks open into the well then water springs out. Often, however deep one may dig, such cracks may not open into the well and there may not be enough water to irrigate. In order to ensure that the cracks filled with ground water open into the well people dig wells with a large diameter. Water is available at a depth of 30-40 feet. Digging such a deep and wide well in hard rock is both difficult and expensive.

According to the farmers of Balampur, there are only 4 to 5 wells in the village which can be used for irrigation. One well irrigates about 4 to 6 acres of land. You can see how difficult it is to irrigate lands in the plateau villages. Villages situated in the Narmada plains have so much water that they can irrigate large tracts of land. However, only a small part of the lands in the villages on the plateau can be irrigated

There is another method of irrigation on the plateau - the tube well. But at the moment this method is not widespread in Balampur.

• **Why is it difficult to irrigate fields in Balampur? Choose the right answer from the following:**

- *This region does not receive much rainfall.*
  - *One cannot construct dams and tanks in this region.*
  - *It is difficult to dig wells in this region.*
  - *One cannot dig tube wells in this region.*
  - *People of this area are very poor.*
- **What are the similarities in the difficulties in irrigation faced in Pahavadi and Balampur?**

## AGRICULTURE

You have read above that the soil of Balampur is fertile in some areas and rocky in others. You have also seen that in this area, little irrigation is possible. Come, let us now see how cultivation is carried out in such a region.

• **Can you guess whether agriculture would be better in Balampur or Pahavadi?**

### Rabi Crops

The principal crops grown on the Bhopal-Vidisha plateau are *rabi* crops. In Balampur, too, most of the land is under winter crops. gram, other *dals* and wheat are among the *rabi* crops sown here.

As there is little irrigation possible, the moisture left in the soil after the monsoon is utilised for growing crops. Peasants cannot irrigate the land much, but they try to keep the soil fertile by rotating the crops. Every year they grow different crops in the same field. They grow gram and wheat alternately every year. Do you know why crop rotation is practiced? If only one crop like wheat is grown, the fertility of the soil decreases. If gram and other pulses are grown, nutrients accumulate around the roots and make the soil fertile.

### Kharif Crops

Balampur receives sufficient rainfall. Yet peasants do not grow *kharif* (monsoon) crops. Why? According to the peasants, the black clayey soil absorbs a lot of water. If maize and *jowar* are planted in monsoon, their roots start rotting and the yield is poor. So *kharif* crops like maize and *jowar* are sown only on sandy soils or sloping lands which do not have the black clayey soil. However, no crops are raised on the black soil in the *kharif* season.

There is another reason for sowing fewer *kharif* crops. If the peasants of Balampur sow crops in the rainy season, then there will be no moisture left in the soil to grow *rabi* crops like wheat and gram.

Some farmers who have facilities for irrigation grow *kharif* crops like soyabean and *jowar* on their lands. They first harvest the *kharif* crops and then irrigate the land. Then they sow *rabi* crops like wheat and gram. If facilities for irrigation are available, the peasants of Balampur can grow two crops in a year and increase their production.



• **Choose the right answer -**

- *Most crops in Balampur are grown during (summer / winter / monsoon).*
- *How are most of the crops grown in Balampur (with the help of irrigation / with rain water / with the help of soil moisture).*
- *What kind of soil do you find in Balampur - (black clayey soil / sandy soil / alluvial soil).*
- *In black soil, water is (absorbed / not absorbed)*

• **Fill in the blanks -**

- *In rainy season \_\_\_\_\_ and \_\_\_\_\_ crops are not sown on clayey soil because \_\_\_\_\_*
- *Monsoon crops are sown on land that is \_\_\_\_\_.*

### Animal Husbandry

Like Kotgaon, Balampur has a shortage of pastures. In the nearby forest, trees are being planted, so animals cannot be taken there for grazing. Only hay is available as fodder, and this, too, is not sufficient. Generally, the villagers rear animals only for working in the fields and for milk for their domestic needs.

### DEFORESTATION AND AFFORESTATION

When there are difficulties in agriculture, the importance of other means of livelihood increases. On the rocky slopes of the plateau agriculture cannot be practiced, but people derive benefits from the forests covering such areas.

According to the elders of Balampur, 25 years ago, there were dense forests and grasslands covering the plateau and escarpment above the village. Sambar, chital, bears, leopards, tigers, etc. were found here. People used to come here from Bhopal to hunt. Villagers also used to hunt animals. They also used to gather various things available in the forests and sell them.

Gradually, the trees were cut down. Now most of the forests have been cut down and people only go there to pick tendu leaves and twigs for making small baskets. In Balampur there are two families of bamboo-workers who still make baskets. But they cannot bring bamboo from the forest. They have to buy bamboo from the market in Bhopal.

### Plantation

Trees are being planted near Balampur in the forests which were earlier destroyed (Fig. 4). For this purpose, a government nursery has been set up in the village. Here saplings for timber, fruit trees and bamboo are being grown. During the monsoon when trees are being planted, about 100 to 300 people of the village get employment. In other seasons, too, about 25 to 30 people find employment in the nursery.

One farmer has planted trees on the rocky part of his land situated below the escarpment, so that he can profit by selling timber etc. Can you identify the plantation in fig. 3?

- ***What are the benefits obtained by the people of Balampur from the forests and the nursery?***

### Houses of Balampur

The older houses of Balampur are made of timber. In fig. 5, notice where wood has been used in the construction. Tiles are placed over a framework of wood and bamboo. These tiles

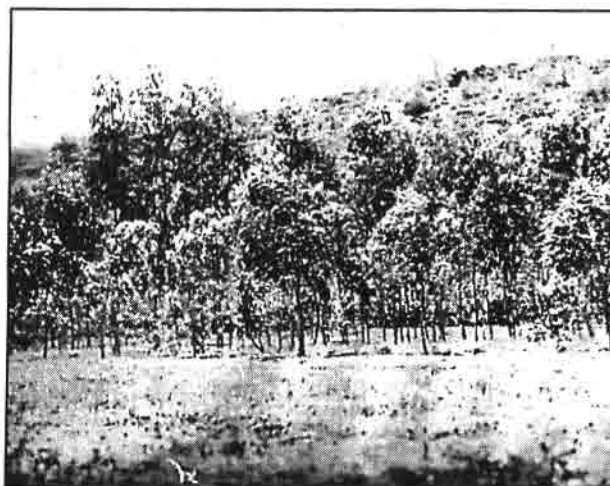


Fig. 4. Afforestation in Balampur

are made by the potters or the house-owners themselves. The walls are built of stone and cemented with clay. The flooring is also of stones because stone is easily available locally. In some houses the roofs, too, are made of stone slabs.

This was the practice in older times when there was no restriction on collecting wood and bamboo from the nearby forest. Houses are still being made in Balampur, but out of what? Figure 6 shows a house being built. Walls are made of stone and on top of the walls stone beams have been placed.

According to the residents of Balampur, the stones for making the walls are obtained by quarrying stone slabs from the escarpment of the plateau. See how the people of this region benefit from the escarpment of the plateau! But long slabs of stone are not available here. These come from the quarries of Raisen and Vidisha. Some families in Balampur also make a living by making grinding stones and other items out of the escarpment rock.

## ROADS AND MARKETS

Balampur is situated on the road between Bhopal and Vidisha. There is a small railway station called Sukhi Sewaniya on the line between these two places. From this station one has to travel 7 kilometres to reach Balampur. Before the railway lines were laid, people must have had a tough time trying to reach the town! Under such conditions, selling vegetables and carrying home things brought from the market must have been very difficult.



Fig. 5. Tiles atop wooden beams

Thirty five years ago, an unmetalled road was constructed, on which bullock carts started travelling. But it was still difficult for trucks and buses to commute. Now, proper metalled roads have been constructed. How do peasants gain from this? The market in Bhopal is very big and it also has a large vegetable market. Those peasants who have vegetables to sell, travel to Bhopal to sell their them. If they want to sell only a few vegetables and buy a few necessities, they go to nearby Diwanganj which is on the road to Vidisha.

You had read that roads travel in four directions from Kotgaon. Near Balampur there is only one road and railway line. The settlement of Balampur is connected only in two directions - on the south with Bhopal and on the north with Vidisha. If you stand there and look towards the east and west, you will see only high escarpments, rocks and slopes, bushes and small trees. There are also some small settlements to the east and west, but nature has made it very difficult to construct roads to traverse this uneven terrain.



Fig. 6. Stone beams being laid for the roof of a new house

## EXERCISES

1. Under which sub-titles of this chapter can the answers to these questions be found? Match the following -
  - a) How are the roofs of the houses in Balampur constructed - *Tanks and bandhs*
  - b) Besides cultivation, what else do the people of Balampur do - *Terrain of Balampur*
  - c) Where on a plateau would you find pebbles mixed with the soil - *Deforestation and Afforestation*
  - d) Where would you find forests on a plateau - *Houses of Balampur*
2. What do you see in Fig. 3? Describe the scene in 5 or 6 sentences.
3. What are the difficulties faced by the peasants of Balampur in trying to grow two crops in a year? Why are these difficulties not present in Kotgaon?
4. Why is it difficult and expensive for villagers to dig wells in Balampur?
5. Quite a few residents of Balampur make their houses with stones instead of using timber, bricks and tiles. Why?
6. What are the physical barriers on the east and west of Balampur?
7. What are the differences between the houses of Kotgaon and Balampur?
8. What are the similarities between the villages of Balampur and Pahavadi in the following matters:
  - Physical features
  - Soil
  - Wells
  - Tanks and bandhs
9. Mention three advantages which the people of Balampur obtain from the escarpment of the plateau.
10. Describe the problems in building roads and railway lines on the plateau.