

PRODUCTION IN A BIG LEATHER FACTORY

Look at the pictures in this chapter and try to see the differences between making goods at home and manufacturing them in a big factory.

You saw how an artisan works. A brass-smith and his family worked at home and managed all the necessary elements from buying raw material, making utensils and selling them to the trader in market. A beedi making family also worked at home but under the contract system. In contrast to this, in the factory system, workers get together to work at a factory which may be far away from their homes. The work in a factory is organised quite differently.

In this chapter you will learn about the people who work in a factory and about those who own it and also about how work is

organised in it. Lots of things that you use every day are made in factories. In this lesson we shall read about a large factory so that you can see the difference between working in a factory and other kinds of work. We will read about small factories in the next chapter.

We set out to see a large leather factory. We caught a tempo to go to the factory which was a little way out of the town. Each of us had to pay five rupees for the fare. We could see the factory's roof from quite far off. When we got off in front of it we saw that the roof belonged to a huge shed and there was another equally large shed behind it.

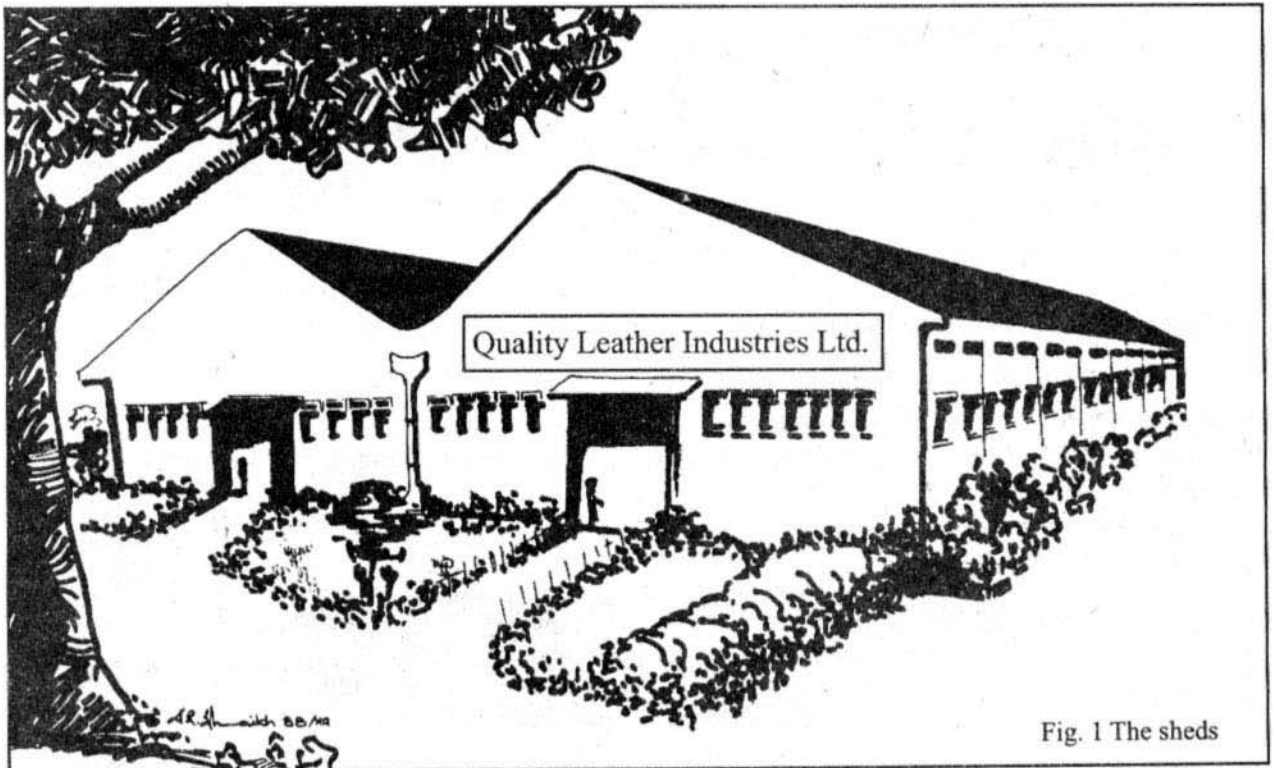


Fig. 1 The sheds



Fig. 2 Inside the leather factory shed

A guard let us in through a big gate. He sat in a small room next to the gate and asked us to fill in forms for a 'gate pass'. He said to us, "Please take care of your gate passes. Ask the person whom you are going to meet to sign them. And make it a point to return the passes to me when you are leaving."

- **Why do you think gate passes are issued to visitors of a factory?**

This factory makes leather. It takes the hides of dead cows, buffaloes, goats, sheep, etc. and 'tans' it. Raw hides decay within a couple of days, but tanned hides never go bad. What we think of as leather is actually an animal hide that has been preserved by tanning. Come let us see the process of tanning hides.

As we entered one of these sheds we saw that it was made up of one vast room, with a very high roof. Along one wall were many large drums which were slowly rotating. There were piles of hides on either side of the shed.

In one corner workers were preparing hides for tanning. They were rubbing salt into the hides. The hides were then being sorted into different heaps according to their size. The sorted heaps are called 'batches'

because the processing of all the hides of a batch is done together.

- **Compare the above picture with that on page 102. What differences do you observe in the ways of working?**

PROCESS OF LEATHER TANNING

Raw hides have to pass through five steps to become finished leather.

1. Cleaning: The raw hides were soaked in a tank of soap water. There was a wooden paddle in the tank (like the inside of a washing machine). We peeped into the tank and saw that the paddle was turning the hides around.

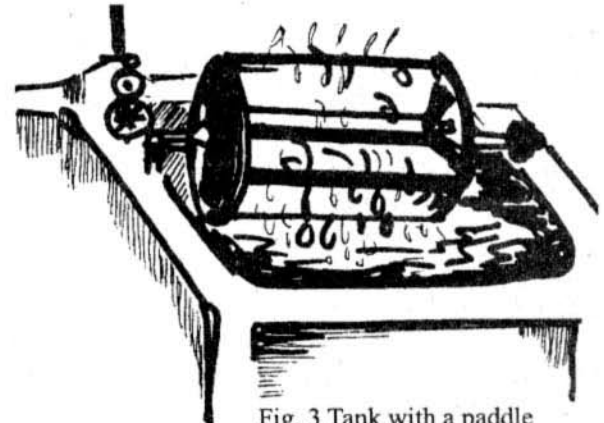


Fig. 3 Tank with a paddle



Fig. 4 The hair-removing machine

2. Removing the Hair on the Hides: A paste of chemicals like lime and sodium sulphide was applied on top of each hide. These chemicals loosened the hair on them, which could then be easily removed by a machine.

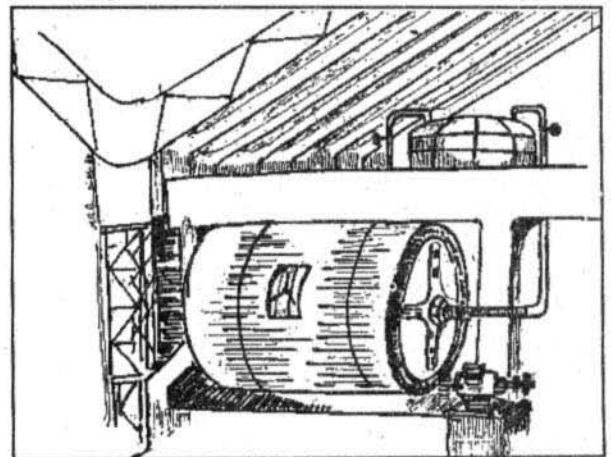
We saw (figure 4) a worker place a hide whose hair had to be removed between the two rollers of a machine. When the machine was switched on, the two rollers came closer and began to turn. One of the rollers had a sharp knife-like edge which cut the hair and threw it on the other side of the machine. Such a machine has to be operated very carefully. You can lose your hand if it comes between the rollers. There were two men working on this machine. The one who was running it was called the 'operator' and the other was his 'helper'. Some hair may remain on the hides even after they have passed through this machine. To remove these as well as any bits of flesh that may be sticking to the hides they are soaked in a tank of lime solution for about 15 hours. At the end of that the hides are clean enough for further processing.

3. Neutralising the Lime: The effect of lime is neutralized by washing the hides in an acid solution. This, too, is done in tanks with paddles.

4. Tanning: Now we came in front of big, horizontal drums. The cleaned raw hides had been put into these drums. To them were added several chemicals which acted on the hides. The drums rotated slowly so that the hides could absorb the chemicals evenly.

A supervisor standing there said to us, "There are two ways of tanning leather. The older way is called vegetable tanning. This is done with the bark of the babul or the seeds of the harra, etc. Now we can also do this

Fig. 5 Horizontal drums used for tanning



• Did you see machines being used by the bidi makers or brass-smiths? Explain what difference the use of machines can make.

with the help of synthetic chemicals and this method is called chrome tanning. That is what we do in this factory. The process of tanning is carried out in two steps. First the hides are soaked in a dilute acid. Then they are tanned in a solution of chromium sulphate. That is why this process is also called chrome tanning. Tanned leather can remain good and strong for many years and does not rot."

We went towards a drum which was rotating slowly. It had a small open door on its side. When the mouth of the door turned to face the ground, fully tanned hides would drop out. Two workers were gathering the leather and placing it on benches.

5. Softening the Leather: The leather was soaked in different types of oils in these rotating drums once again to make it soft and flexible.

- A lot of people work in factories. Does each worker do the entire process of tanning each hide all by himself or herself? If not, then how is the work organised? Explain.
- What are the machines and tools used by the workers in this factory?
- What are the differences between the processes of making beads and tanning leather?

WORKING ON BATCHES

When reached the end of the row of drums we found ourselves facing an open gate. Then a truck arrived. "Batch numbers 5125, 5126 and 5127 are to be loaded," said the supervisor to the workers. The workers began to load the tanned leather kept on the benches onto the truck.

"What is a batch number?" we asked. The supervisor replied, "You saw that before the hides were washed they had been sorted into heaps according to their sizes. Each heap passes through all the processes. All the hides

of a heap go through the different processes together, i.e. they would be washed, tanned etc. at the same time. This heap is called a batch and every batch is given a number. Each batch has about 200-300 hides."

What is the advantage of producing goods in batches? For one thing, it is easier to divide and speed up work. It is possible to process different batches of hides simultaneously. While one batch is being put through the softening process another batch can be put through the tanning process and at the same time yet another batch of hides could be getting cleaned.

This factory has 16 tanks. If all the tanks were used to clean the hides then the work of removing hair from them would come to a stop. So some tanks are used for removing the hair, some are used for cleaning the hides and at the same time the others are used to neutralise the lime.

For example, as soon as one batch of hides is cleaned in a tank, another takes its place. The first batch goes over to the hair removing machine. By the time the first batch has passed through this machine, the second batch is ready to come to it. The first batch is then put into the tank of lime water. In this way all the machines are continually in use and the work progresses systematically.

- Think about this: Why is it that a batch contains 200 to 300 hides and not just 5 or 6 hides?
- If any one machine breaks down then what effect will that have on the process of production?

Continuous Production in Three Shifts

This factory runs all 24 hours. People work in 3 shifts of eight hours each. The workers of the first shift come at 7:30 AM and work till 4 PM. In between they have a lunch break at 12. At 4 in the evening the workers of the first shift go home and the second shift takes over, working till 12 at night. They take a break at 7:30 PM for

dinner. At 12 o'clock the shift changes again and the third shift of workers takes over. The third shift is called the "night shift".

Whenever there is a change of shifts or a break for meals a siren is sounded. A worker does not always work in the same shift. Sometimes a worker may work in the first or morning shift and two weeks later he may start working in the afternoon or night shift. In this way his work would be rotated in all three shifts. The first shift is called the 'main shift' as most of the factory's employees work in this shift. In any big factory which carries on its work all day and all night, the work is always split into such shifts.

- Why should a factory need to be run for all 24 hours of the day? What would happen if it did not do so?
- Why don't beedi makers or brass-smiths work for just 8 hours in a day like in the factory?
- The shift of each worker changes after 15 days. What effect would this have on their health?

Raw Material

Where does the factory's raw material come from? And where does the finished product go?

You have seen the entire process by which leather is tanned in this factory. You can see from the diagram below where the raw material comes from and where the finished

product goes.

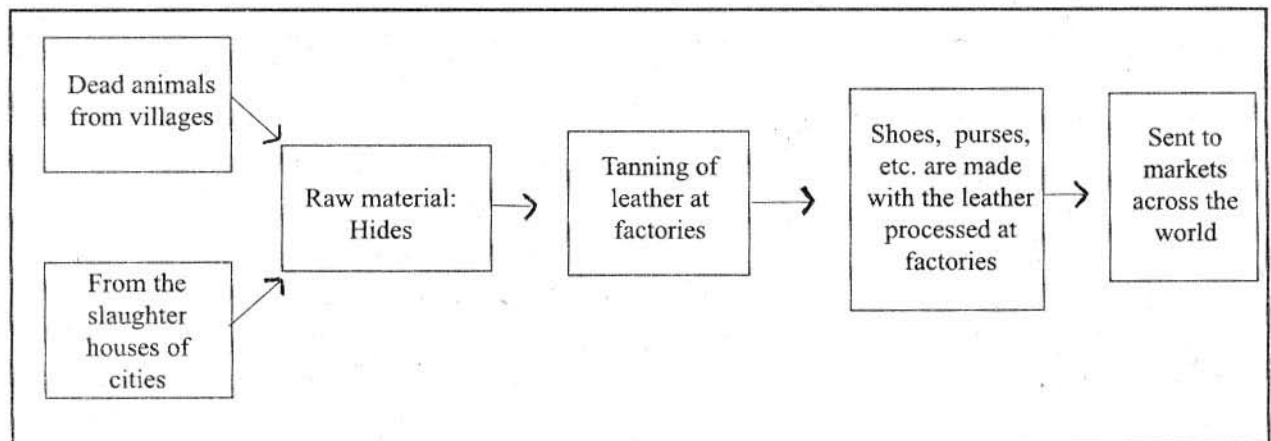
The major places for the leather business in India are Kanpur, Kolkata, Chennai and Mumbai. A large number of traders come to these cities to buy and sell all kinds of leather and leather goods. These are also exported to other countries.

Earnings of Factory Workers

"What salary do you get?" we asked the supervisor with some hesitation. He smiled and replied, "Rs 6000 per month. I have been working in this factory for ten years." He had understood that we wanted to know how much the people working in this factory earned. He started telling us more without our having to ask him.

"Temporary labourers (badli) are paid at the rate of Rs 60 per day. When there is no work for them to do they are not hired. That is why they are paid on a daily basis and not kept on a salary. All the helpers, the sweepers, the people who carry the hides from one place to another are temporary workers. In some factories temporary workers are hired through the labour exchange.

"A permanent worker gets between Rs 3000 to Rs 4000 per month. All the machine operators are permanent workers. Supervisors like me make Rs 5000 - Rs 7000 per month. Those who have more experience are paid more. The permanent workers and supervisors also get additional benefits like provident fund, bonus, holidays, etc.



“Then there are the managers and the officers. Our factory’s most senior officer gets Rs 40,000 per month. He also gets perks like a free house, a car, free tickets to go home on vacations, etc.”

The Owner of the Factory

We asked, “How much does the owner get?” The supervisor replied, “This factory does not have any one owner. Some people got together to form a company which owns this factory. These people appoint managers and engineers who are the people who actually run the factory. The officers and the workers are paid salaries, but not the owners. The owners share amongst themselves whatever is left after paying the wages and the other costs of running this factory. That is, they get all the profit from the factory. They also have to bear the loss, if any.”

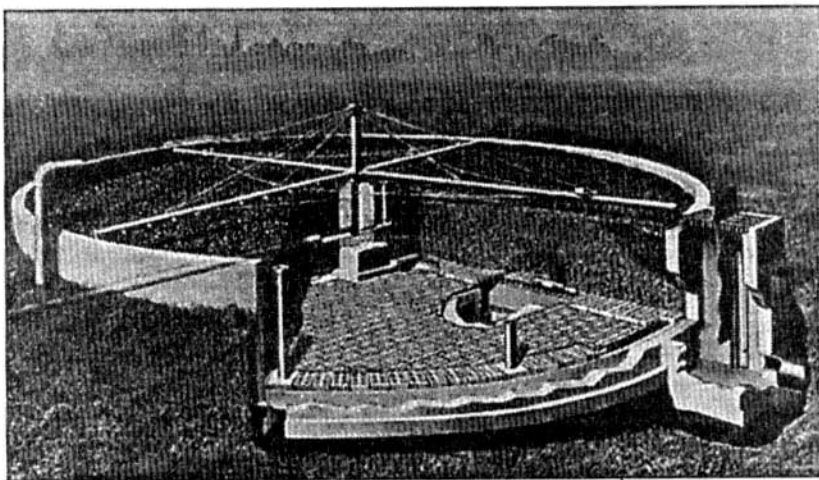


Fig. 6 A filtration plant to filter effluents

Many factories simply poured this dirty water down the drain. Usually this dirty water goes into the nearby river. In Kanpur and Agra, the leather factories even poured this waste straight into the Ganga and the Yamuna. This polluted (made dirty and filthy) these rivers. People who bathe in this water or drink it catch many diseases. Even the fish of these rivers die.

- *What is the difference between a temporary and a permanent worker in a factory?*
- *What is the difference in the way factory workers and bidi makers are paid for their work?*

It is not just leather making factories that pollute rivers. A large number of factories that throw out water with chemicals in it pollute the nearby rivers and streams. That is why the government has made a law that these factories have to clean their water before they release it outside the campus.

CHEMICAL POLLUTION

There was a strong stench behind the factory. We saw a tank filled with dark coloured water. It was being stirred with a long paddle. We learnt that this was the dirty water from the factory and it was being cleaned here.

This water had been used for washing leather, for making lime water, acid solution, tanning, etc. It had many different kinds of chemicals in it - lime, sulphuric acid, sodium sulphide, chromium sulphate, etc. This factory uses up 22 lakh litres of water in just one day. That was more water than that used by fifty villages around it.

In the leather factory which we were visiting, the dirty water is first sent to a pool where some chemicals like alum are mixed in it. Then air is blown from the bottom of the pool. This makes some of the polluting chemicals rise up and come to the surface, from where they are removed. Then this water is poured into a tank with a paddle like the one which we had seen. Air is pumped into it and the water is kept moving with the help of the paddle. Over time the water gets cleansed of some chemicals. These two steps do clean the water, but not fully.

Now we had seen the entire factory. We asked the supervisor to sign our gate passes. We returned the passes to the gatekeeper and

came out of the factory. All the things that we had learnt about the factory were still spinning around in our heads.

THE PROCESS OF PRODUCTION IN LARGE FACTORIES

Factories have the capacity to produce large quantities of goods. The factory that we saw tans the hides of 7000 animals every day. Here machines and synthetic chemicals are made use of. And even bigger factories exist.

To keep big factories going it is necessary to organize work in a certain way. You read that the leather factory had to be run for 24 hours to make sure that its machines were fully

made use of and did not stand idle. That was why three shifts of workers were kept going. The work was so distributed that no machine or worker was ever kept unoccupied. When one's work on a batch was over, it was handed over to a second, and from the second to a third and so on. The sequence continued without break. Officials like managers and engineers were appointed to look after the factory. They were the people who ran it on a daily basis and planned and organised the work. A lot of money is required to build such factories. The factory we visited cost Rs 10 crores (1000 lakhs).

• *If beedi making were to be done in a big factory what changes would take place? Explain.*

EXERCISE

- Correct only the wrong sentences
 - Factory workers do not work for more than 4-5 hours.
 - Leather is treated with lime after it is tanned.
 - The raw material for this factory comes from other factories.
 - The problem of pollution in this factory is because of the use of water.
- Temporary, machine, operator, chemical, synthetic, water, batch, helper, permanent, production, supervisor, pollution, process - you discussed these words with your teacher. Now make sentences with them. Write a sentence about each of these words on your own and not from the chapter.
- Explain the process of tanning leather in your own words.
- What is the advantage of making batches of hides?
- What are the differences between production at home and production in a factory?
- In any factory the work is divided up and done in a sequence. Did you see this in a big leather factory? Explain.
- In a certain factory the removal of hair is done by hand. And yet, the speed of leather production does not slow down. Explain how this can be possible.
- Why do factories need to work in shifts?
- Suppose some people want to get together and set up a sugar factory. Explain what they would need to do.
- Suppose there is a big chemical factory near your village or town. It is letting out its polluted water into a nearby *nullah* from which it goes into a river. A lot of acid is used in this factory, which is causing a lot of harm. Write a letter to the head of the pollution board of your district describing the pollution and the damage caused by it.