

Chapter 3

Fibre to Fabric

Types of Fibres

Clothing is one of our basic needs and we have learned that clothes are made up of fibres. There are two types of fibres:

◆ Natural Fibre:

The fibers which are obtained directly from plants or animals are called natural fibers. For example, cotton is a natural fiber. There are two types of natural fibres:

(a) Plant fibres: Plant fibres are obtained from plants such as cotton, jute, flex. etc.

(b) Animal fibres: Animal fibres such as wool and silk are obtained from animals.

◆ Synthetic Fibre:

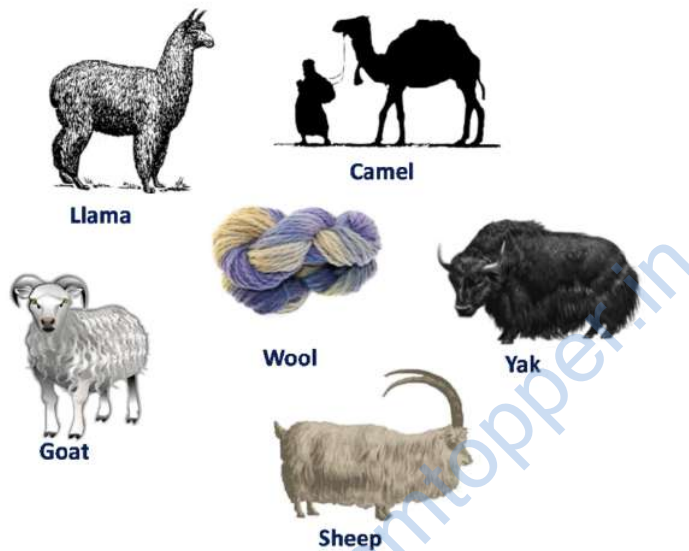
Synthetic fibers are fibers that are made by humans through chemical synthesis. For example, nylon is a synthetic fiber. Synthetic fiber is also called man-made fiber.

Animal Fibres- Wool and Silk

- Wool is obtained from the hair of animals like sheep, yak, goats, etc.
- Animals like sheep, goats, yak, etc have hairs present on the surface of their skin.
- Hairs present on their body traps the air. This trapped air being a poor conductor of heat prevents the flow of heat from their body to the cold surroundings and also prevents cold air from the surroundings to the body. That is way, wool is commonly used to make woolen clothes.

- **Selective Breeding:** This process of selecting parents for obtaining special characters in their offspring, such as soft under hair in sheep, is termed 'selective breeding'. The main purpose of selective breeding is to obtain fine and soft hair by selecting parents with desired properties.

◆ Animals that yield wool:



Yak wool is common in Tibet and Ladakh. Angora wool is obtained from angora goats, that is commonly found in hilly areas of Jammu and Kashmir. The soft goat hair is extracted in Kashmir to make fine shawls, called Pashmina shawl. Camel is also used to extract wool in Gujarat. Llama and Alpaca, found in South America, also yield wool.

★ **Question:** Name the place where the goat with soft hairs are found.

Answer: Yak wool is common in Tibet and Ladakh part of India. Kashmiri goats are having soft fur on their body. It is woven into fine shawls called Pashmina shawls. Therefore, the correct answer is Kashmir.

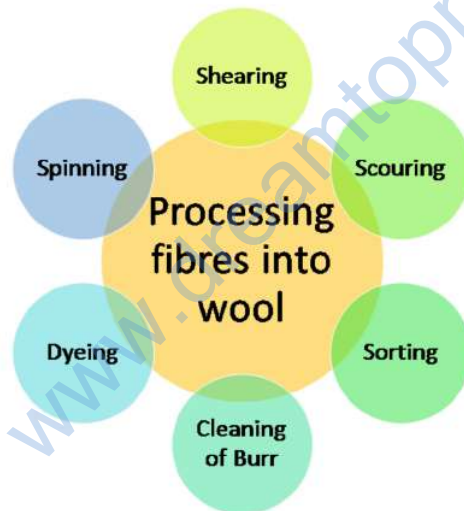
Processing Fibres into Wool

◆ Rearing:

The process of keeping, feeding, breeding, and medical care of useful animals is called the rearing of animals. Sheep are reared all over India in order to acquire wool from them. Some of the famous breeds of sheep are shown in the table below:

S.No	Name of breed	Quality of wool	State where found
1.	Lohi	Good quality wool	Rajasthan, Punjab
2.	Rampur bushair	Brown fleece	Uttar Pradesh, Himachal Pradesh
3.	Nali	Carpet wool	Rajasthan, Haryana, Punjab
4.	Bakharwal	For woolen shawls	Jammu and Kashmir
5.	Marwari	Coarse wool	Gujarat
6.	Patanwadi	For hosiery	Gujarat

◆ Processing fibres into wool:



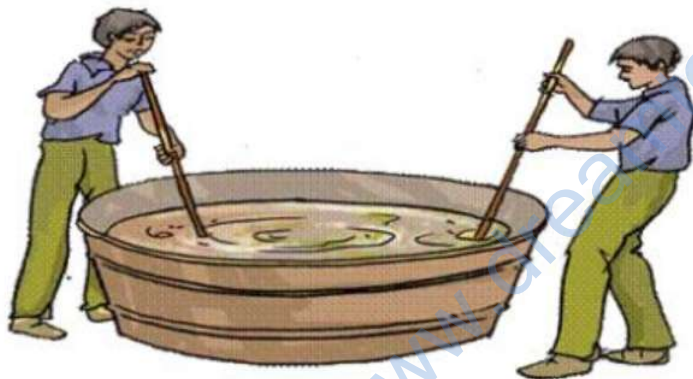
Step 1: Shearing

Shearing is the process in which hairs, along with a thin layer of skin are removed from the body of the animal as shown in the figure given below how man is removing hairs from sheep's body.



Step 2: ***Scouring***

Scouring is the process in which hairs are thoroughly washed in tanks filled with soapy water to remove dust and dirt as shown in the figure given below.



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Step 3: ***Sorting***

After shearing and sorting are done, the hairy skin is sent to a factory where hairs of different textures are separated.

Step 4: ***Cleaning of Burrs***

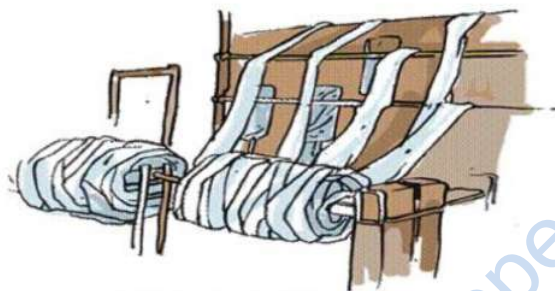
Burr is the small fluffy fibers that are taken out of the hairs.

Step 5: ***Dyeing***

It is the process of coloring fibers that are obtained from the hairy skin of animals because fibers have the only color like white, brown, and black only.

Step 6: ***Spinning***

Spinning is the process of making yarn from fibers. In the given figure with the help of a machine, fibers are straightened, combed, and rolled into yarn. The longer fibers are made into wool for sweaters and shorter fibers are spun and woven into woolen clothes.



SPINNING (PC NCERT)

★ **Occupational Hazard:**

In some countries, the workers have to face risks of getting diseases sometimes death. These are called occupational hazards. Sorter's disease is an occupational hazard associated with the production of wool. The people who sort the wool can get infected by bacteria called Anthrax. The bacterium infects the blood of the person which can lead to fatal death.

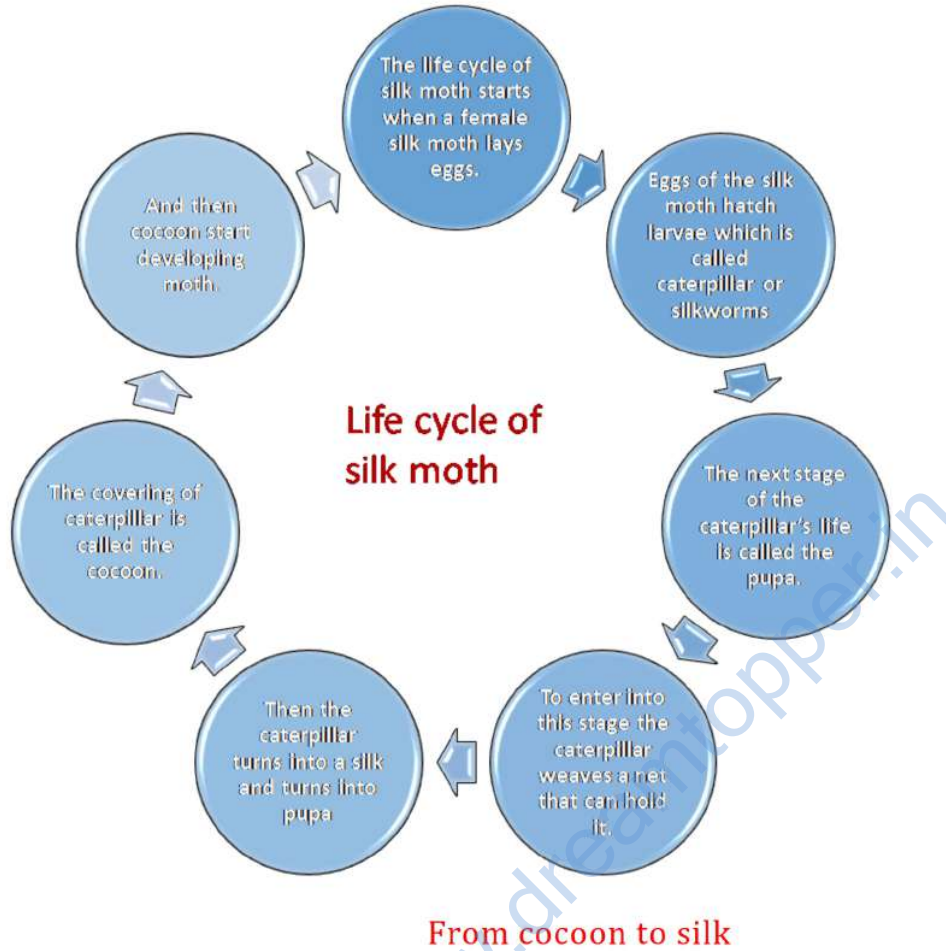
Silk

- Silk fibres are animal fibres. Silkworms spin the silk fibres. It is a strong, lustrous, soft and fine fibre made up of protein.

- ***Sericulture:***

It is the process of rearing silkworms for extracting silk is called sericulture. The thread of silk is obtained from the cocoon of the silk moth.

Life history of silk moth:



Reeling of Silk: The process of taking out threads from the cocoon for use as silk is called reeling the silk. It is using special machines, which unwind the threads of silk from the cocoon.



- The eggs by female silkworm are stored carefully under hygienic and suitable conditions of temperature and humidity. These eggs are provided suitable warmth for hatching. This is called incubation.
- The larvae thus hatched are fed on freshly chopped mulberry leaves.
- The larvae or caterpillars eat continuously for almost six weeks and grow in size. Then they stop feeding and are ready to spin their cocoons.
- These are then shifted to bamboo chambers where they spin the cocoons in one continuous thread on the twigs provided to them.
- The cocoons are then kept under the sun or boiled or exposed to steam. This kills the insect inside them.
- The silk fibres separated out. The fibres from several cocoons are reeled off together to make a strong thread. This is called the reeling of silk.