

Chapter 3: Fibre to Fabric

- FIBERS: these are thread like structures which can have plant or animal origin and can be spun into yarns.
- Animal fibers:
 - A. Wool
 - The source of wool is animals like sheep, goat, yak which have hair on their bodies.
 - These hairs keep the body of these animals warm.
 - Sheep hair is called fleece.
 - Fleece is made up of coarse beard hair, and fine soft under-hair close to the skin.
 - The soft under hair is used to make wool.
 - Selective breeding: This is a process of selecting parents so that the offspring can inherit selected set of special characters.

I. Animals which are a source of wool:

Animals	Breed	Quality of fibric	States where it is found
Sheep	Lohi	Good quality wool	Rajasthan, Punjab
	Rampur bushair	Brown fleece	Uttar Pradesh, Himachal Pradesh
	Nali	Carpet wool	Rajasthan, Haryana, Punjab
	Bakharwal	For making woolen shawls	Jammu and Kashmir
	Marwari	Coarse wool	Gujarat
	Patanwadi	For hosiery	Gujarat
Yak			Tibet and Ladakh
Goats	Angora Goats	Soft and can be woven into Pashmina shawls	Jammu and Kashmir
Camels	Llama and Alpaca		South America

- Fiber to wool:
 - 1.) Sheep are reared for their fleece. After cutting the hair, the wool is processed into wool
 - 2.) *Rearing and breeding of sheep:*
 - Sheep's feed mainly on grass and leaves in fields, lawns etc. is known as grazing.

- Breeders and rearers also use a mixture of pulses, corn, jowar, oil cakes and minerals.
- In winter season sheep are fed on leaves, grain and dry fodder.
- After the growth of thick hair, the hair is shaved off for getting wool and processed further.

➤ **PROCESSING FIBERS INTO WOOL:**

- Wool has many applications as it is used to make sweaters, weaving shawls etc.
- Steps in processing:
 - Step 1: Shearing: the process of shaving off a thin layer skin along with the hair is known as shearing. Hot climate is suitable for this process as there is no requirement of a hairy coat to protect themselves from the harsh cold weather. The woolen hairs are processed to yarn.
 - Step 2: The sheared skin is washed to remove any dirt which is stuck to the hair. This is called scouring
 - Step 3: Sorting: The hairy skin is processed in factories where it is sorted on the basis of its texture. It is a risky job as sorters can get infected by *anthrax*, which is the cause of a fatal blood disease called sorter's disease
 - Step 4: In this step burs, the smaller fibers are separated from the hair. The fibers are scoured and dried again. Now wool is ready to be spun into fibers.
 - Step 5: After the fibers are created, they are dyed in various colors.
 - Step 6: The colored threads are straightened and rolled, spun into yarns. Longer fibers are used to make sweaters. On the other hand, smaller fibers are spun into woolen cloths.

B. Silk:

- Silk fibers have animal origin.
- **Sericulture:** It is a practice of culturing silkworms for obtaining silk fibers for commercial purpose. Sericulture has been a long running occupation in India for obtaining silk on commercial scale.
- **Life history of silk moth:**
 - 1) There are different stages in the life cycle of a silk worm.
 - 2) Eggs: the female moth lays eggs on mulberry leaves.
 - 3) Larvae: the young caterpillar's which hatch out of the eggs are called as larvae.
 - 4) Pupa: In this stage of life the larvae grow in size. In the initial stage, the pupa starts to weave the 1st fibers of the cocoon and spins the net from side to side.
 - 5) The larvae secrete fibers by moving its head. The silkworm fiber is composed of protein which hardens when it comes in contact with air which is then called the silk fiber.
 - 6) Once the cocoon is spun completely around the larvae it is called the pupa.
 - 7) Silk threads are obtained from the cocoon and then are processed into silk cloth
 - 8) Silk fiber has good tensile strength, it is soft to touch.

➤ **Types of silks:**

- 1.) Different types of silk fibers can be distinguished on the basis of their texture like coarse, smooth, shiny, etc.
- 2.) Moths of different types can be used to prepare different silk threads like *tassar* silk, mulberry silk, *eris* silk, *mooga* silk, *kos* silk, etc.
- 3.) Mulberry silk moth is very common and produces silk which is soft, lustrous, elastic and can be dyed easily.

➤ **Journey from cocoon to silk threads:**

- 1) Culturing silkworms:
 - a) The female moth lays large number of eggs.
 - b) These eggs are stored on paper or cloth until they are sold to silkworm farmers.
 - c) The farmers store the egg in optimum temperature and humidity.
 - d) the eggs are kept at a suitable temperature to help them hatch at the time when the mulberry trees have fresh leaves.
 - e) The larvae feed on these leaves and increase in size to a very large extent.
 - f) The caterpillars are kept on bamboo trays for 25 to 30 days where they feed on mulberry leaves.
 - g) After this period the larvae starts spinning the cocoon around itself
- 2) Processing silk:
 - a) The cocoons are collected to get the silk fibers.
 - b) They are either exposed to the sun, boiled or subjected to steam which helps in separation of the silk threads.

Reeling: It is a process in which threads are collected from the cocoon to use it as silk. Special reeling machines are being used for unwinding the threads from the cocoon. After reeling the threads are spun into silk threads. The threads are then used to weave silk fabric.