



Silk Cocoons, Silk Skein and Embroidered Silk Panel

Sericulture, or silk farming, is the cultivation of silkworms to produce silk. Although there are several commercial species of silkworms, *Bombyx mori* (the caterpillar of the domesticated silk moth) is the most widely used and intensively studied silkworm.

The ancient Chinese unearthed the silkworm's secret and were the first to spin the silkworm's threads into cloth. They kept this covert, top-secret operation, from the rest of the world by imposing the death sentence upon those who smuggled the worm or its eggs out of China. Eventually, however, the secret was out, and silkworms are now farmed for their silk, in China and elsewhere in hospitable climates around the world. Cultivating silkworms is a tedious, labor-intensive, time-consuming process, a process which prominently figures into the price of silk.

Stages of production

The stages of production are as follows:

1. The silk moth lays thousands of eggs.
2. The silk moth eggs hatch to form larvae or caterpillars, known as silkworms.
3. The silkworms feed on mulberry leaves.
4. Having grown for about one month, the silkworm extrudes a silk fiber and forms a net to hold itself.
5. It swings its head from side to side in a figure '8' distributing the saliva that will form silk.
6. The silk solidifies when it contacts the air.
7. The silkworm spins the filament to completely enclose itself in a cocoon in about two or three days. A silk cocoon is made of one single thread of raw silk that ranges from 1,000 to more than 3,000 feet in length. The amount of usable quality silk in each cocoon is small. As a result, about 2500 - 3000 silkworms are required to produce a pound of raw silk.

8. The intact cocoons are boiled, killing the silkworm pupa. (If the pupa is allowed to live, it spends three weeks in the cocoon, then emerge as a moth to mate and lay eggs. The eggs hatch into worms in a few weeks, and the cycle continues.)
9. The silk is obtained by brushing the undamaged cocoon to find the outside end of the filament.
10. The silk filaments are then wound on a reel. One cocoon contains approximately 1,000 yards of silk filament. The silk at this stage is known as raw silk. It requires 200 pounds of mulberry leaves to produce 1 pound of raw silk.

Silk Skein

The cocoon is brushed to locate the end of the fiber filament, which is threaded through a porcelain eyelet, and the filament is reeled onto a wheel. As each filament is nearly finished being reeled, a new filament is twisted onto it, thereby forming one long, continuous thread. Sericin contributes to the adhesion of the fibers to each other. The end product, the raw silk filaments, are reeled into skeins. These skeins are packaged into bundles weighing 5-10 pounds, called books. The books are further packaged into bales of 133 pounds and transported to manufacturing centers. The silk skeins are spun into threads. One thread comprises up to 48 individual silk filaments.