

**Silk-culture.** The series of operations in silk-culture is as follows:—

1. The insect, the *Bombyx mori*, deposits eggs smaller than a grain of mustard-seed.

2. Each egg hatches into a caterpillar less than one quarter of an inch long, acquiring a new skin as often as the old one becomes too small; four of these molts or renewals take place, at the end of which the worm is three inches long.

3. The full-grown worm, ceasing to eat, begins to expel the silk from two orifices in the head.

4. The silk, at first a glutinous gum, hardens into a thread or fiber, which the insect winds into a hollow ball around itself. This is the cocoon.

5. The body of the worm gradually lessens in bulk, while the cocoon becomes gradually larger as the silk is withdrawn from the body of the worm.

6. The cocoon being finished, the worm changes into a chrysalis.

7. In two or three weeks the chrysalis becomes a moth and eats out of its prison.

8. The moths of the respective sexes provide for a new generation of eggs, which are deposited, and then the parents die.

The silk-worm will flourish, with care, in moderately temperate climates, though tropical and subtropical regions are its peculiar habitat. The extreme east of Asia, — China and Japan, — which have a climate differing but little from that of the Southern United States, appear to be more favorable to the development of the insect than any other part of the world; at least, it seems to require less care there, though they are grown in great perfection in Italy and Southern France. There seems no reason, apart from the higher cost of labor, why our own country should not be able to produce all the raw-silk required for its own consumption. Previous to the Revolutionary War, large quantities were raised in Georgia; and during the *Morus multicaulis* mania of some thirty-five years ago, silk of unsurpassed quality, and fabrics therefrom which compared favorably with the products of foreign looms, were produced.

The worm, however, not being able to endure great atmospheric changes, requires, in our climate, careful attention. Its eggs, also, to prevent premature hatching, must be carefully kept in a cool place during the summer season.

When first hatched, which is done by exposing the eggs to a sufficient warmth, the young worms, then scarce one quarter of an inch long, are placed in contact with the food, mulberry-leaves generally, which is to form their future subsistence. The white mulberry (*Morus alba*) is largely used in Southern Europe, and it is claimed by some to produce a stronger, though coarser silk than that derived from worms fed on the *Morus multicaulis* (many-stemmed) or paper-mulberry, which is the favorite in China, and which was at one time very extensively planted in this country. The worm, however, can subsist on other leaves.

A writer in a French scientific periodical states that by feeding silk-worms on vine-leaves he has obtained cocoons of a magnificent red, and, by feeding them on lettuce, others of a very deep emerald green. Another silk-grower has obtained cocoons of a beautiful yellow, others of a fine green, and others again of violet, by feeding the silk-worms on lettuce or on white nettle. He says that the silk-worms must be fed on mulberry-leaves when young, and supplied with the vine, lettuce, or nettle leaves during the last twenty days of the larva stage of their life.

However this may be, the fact in practical silk-worm raising is that the worm, when placed on the leaves, eats continuously, with the exception of intervals when it lies by to molt, until it attains its full size, about three inches in length; it then selects a place about the frame where it is reared, in which to spin its cocoon. When the cocoon is spun it is necessary to kill the contained insect before it develops into a moth, reserving a certain proportion to lay the eggs which are to form a future supply.

This is done by baking at a low heat.

The filaments are then reeled off as described under **SILK-REEL**, and the various processes necessary for the completion of the fabric, whatever it may be, are proceeded with in the manner treated of under **SILK-MANUFACTURE**. See Figuiers' "Insect World," pp. 214 - 250.

The cocoons are divided into nine qualities by the French.

1. *Good cocoons*; free from blemishes and well shaped.
2. *Calcined cocoons*; having worms which died after completing their work.
3. *Cocalons*; somewhat loose in texture.
4. *Choquettes*; having worms which died before finishing their work.
5. *Dupions*; double cocoons, difficult to detach.
6. *Soufflons*; loose cocoons, difficult to unwind.
7. *Pointed cocoons*; with a damaged point at which the thread breaks.
8. *Perforated cocoons*; at which the moth has escaped.
9. *Bad choquettes*; the silk spotted, rotten, blackish.