

their hold of the leaf, and hang by it for about fifteen days more, when the female is in the second change. About this time the chrysalis hatches and the male makes its appearance as stated; and, almost immediately after impregnating the female, falls off the leaf and dies. When the smallest quantity of rain occurs about this period, the males are washed off before the females are impregnated, and the insect is barren.

"In from eighty to ninety days, according to the nature of the weather, the cochineal insect attains its full growth in Amatitlan, and commences to breed. It is then left upon the leaf long enough to produce a sufficient quantity of young insects for the second crop, which attach themselves to the same leaves, and in the same manner as the first; and the full-grown insect is removed by touching it with a small piece of cane, and offered for sale in flat baskets, each containing about 12 lbs. weight of the insect. The greater part of the crop is sent, as before stated, to Old Guatemala for the purpose of seeding the cochineal estates there. This process is nearly identical with that of the October seeding in Amatitlan, already described, only that a larger quantity of the insects are allowed to attach themselves to the leaves, and some parties attach the mother cochineal in small pieces of reed, instead of bark or cloth.

"In Old Guatemala all the cochineal estates are seeded but once in the year, from the beginning of the month of January to the middle of February, but as the climate there is considerably colder than in Amatitlan, the insect does not attain its full size, so as to be fit for gathering in less than a hundred days after it has attached itself to the plant; and as the rainy season often commences in the beginning of May, a great part of the crop is frequently lost by being washed off by the rains before it is fit for gathering. In Amatitlan the second crop is ready for getting in eighty days after the first has been gathered, and is therefore always got in before the rains commence, which certainly gives it great advantages over Old Guatemala; but the second crop is always much smaller grained and worth considerably less than the first. Labour is always much dearer in Amatitlan than Old Guatemala, and an estate of equal extent costs at least twice as much to keep it in order; the wages in the former place being $2\frac{1}{2}$ to 3 reals (equal to from 1s. 3d. to 1s. 6d.) per day, and in the latter $1\frac{1}{2}$ reals (equal to 9d.). Besides this, the cactus and cochineal insect have a number of enemies in Amatitlan which do not exist in Old Guatemala. The principal injury to the former is sustained from a species of large ant, called *sempope*, which eats all the young shoots of the cactus, so as to prevent its increasing. The nests of this insect are very large, and sometimes extend to a depth of twenty feet in the ground, along which they run for some fifteen or twenty yards; and the insects are often so numerous that, if let alone, they will entirely destroy a cochineal estate. The natives have no means of destroying them, except digging them out of the ground; and though I discovered a means of poisoning them, by pouring into their holes water into which a small quantity of corrosive sublimate had been dissolved, I do not suppose that the discovery will generally be made use of by the inhabitants, who are too stupid and ignorant to understand anything not palpable to the eye.

"The principal enemies of the cochineal insect are three sorts of caterpillars, called by the natives *guisanos* (worms); the most common resembles an ordinary caterpillar, and is produced from the egg of a small fly, in shape like a wasp, but without a sting. These are sometimes so numerous that two or three may be seen on each leaf of the cactus, and, if not speedily taken off, will in a month, the period of their existence, eat up nearly all the cochineal insects. Another sort spins a web, with which they entangle the insect and destroy it; and the third, called '*anguilla*' (the eel), which is by far the most destructive, moves over the leaf like an earth-worm, eating all the insects, when small, with surprising rapidity, and, transferring itself to another leaf, proceeds as before. Luckily, this last-mentioned species only makes its appearance in some years, and is never nearly so numerous as the first named. No means have yet been found of destroying these caterpillars, except employing people to pick them off, which is done at so much for every twenty grubs, according to their abundance or scarcity, the price being seldom under what is equivalent to a halfpenny for each twenty, or above one penny for that number. Still, when the grubs are very numerous, it is sometimes necessary to abandon the crop of cochineal, which is not worth the expense of picking off the caterpillars; this, of course, is, however, a rare occurrence, and never happens to the whole of an estate of any size.

"With all its objections, cochineal growing has certainly been more profitable in Amatitlan than in Old Guatemala, or in any other place yet discovered. Nearly all the cultivators in Amatitlan are well off, and many who were without means a few years ago are now rich for Central America, having a fortune of from ten to thirty thousand dollars; while nearly all who have attempted the cultivation in Old Guatemala have been ruined, and very few have realised any money. Still, the supposed fatality of the