

**COCCINELLA**, in zoology, a genus of insects, of the coleoptera order. The antennæ are fulclavated, and truncated; the polypi are shaped like a hart; the body is of a hemispherical figure; the breast and elytra are marginated; and the belly is plain. The species are forty-nine, mostly distinguishable by the number and colour of the spots on their wings, and the plants upon which they live.—The coccinella cacti, a native of the warmer parts of America, is the famous cochineal animal, so highly valued in every part of the world for the incomparable beauty of its red colour, which it equally communicates to wool, silk, linen, and cotton. It is bred on a plant known in Oaxaca in New Spain, and all those parts where it abounds, by the name of nopal, or nopalleca, the Indian fig-tree, which, except in the difference of the foliage, resembles the tunos, so common in the kingdom of Andalusia; the leaf of the tuna being broad, flat and prickly, and that of the nopal, oblong, with several eminences;

eminences; and instead of spines has a fine smooth membrane, of a permanent and lively green.

The method of planting the nopal is by making rows of holes about half a yard deep, and about two yards distant from one another. In each of these holes is placed one or two leaves of the nopal, in a flat position, and then covered with earth. This leaf soon after shoots up into a single stem, which during its growth divides into several branches, and these successively produce fresh leaves, the largest being nearest to the stem, which is full of knots, as are also the branches, and from these the leaves have their origin. The usual height of this plant is about three yards, which it seldom exceeds. The season when the nopal displays all its beauty and vigour, is like that of other plants, from the spring to the autumn, which at Oaxaca and other parts of North America is at the same time as in Spain. Its blossom is small, of a bright red, and in the shape of a bud; from the centre of which proceeds the tuna, a name given to its fruit; and as this increases the blossom fades, till at length it falls. When the tuna, or fig, is ripe, the outward skin becomes white; but the pulp is so fully impregnated with a deep red, that it tinges the urine of those who eat it of a blood colour, a circumstance attended with no small uneasiness to those who are unacquainted with this particular. Few fruits, however, are either more wholesome or pleasant.

The ground where the nopal is intended to be planted, must be carefully cleansed from all kinds of weeds, as they drain the soil of those juices which the nopal requires. Also after the cochineal is taken from the plant, which is never done till the insects are arrived at perfection, all the superfluous leaves are plucked off, that they may be succeeded by others the following year. For it must be observed, that the cochineal which are bred on young plants thrive much better, and are of a finer quality, than those produced on such as have stood some years.

The cochineal was formerly imagined to be a fruit or seed of some particular plant; an error which probably arose from an ignorance of the manner in which it is propagated; but at present every one is convinced of its being an insect, agreeably to its name, signifying a wood-louse, which generally breeds in damp places, especially in gardens. These insects, by rolling themselves up, form a little ball something less than a pea, and in some places are known by the name of Baquilas de San Anton, *i. e.* St Anthony's little cows: and such is the figure of the cochineal, except that it has not the faculty of rolling itself up; and its magnitude, when at its full growth, does not exceed that of a tick, common in dogs and other animals.

These insects breed and are nourished on the nopals, where their eggs are placed among the leaves; the juice of the plant, which is their sole nourishment, becomes converted into their substance; when, instead of being thin and watery, and, to all outward appearance, of little or no use, is rendered a most beautiful crimson colour. The plant is in May or June in its most vigorous state, and at this most favourable season the eggs

are deposited: and in the short space of two months from an animalcule, the insect grows up to the size above-mentioned; but its infant state is exposed to a variety of dangers; the violent blasts of the north wind sweep away the eggs from the foliage of the plant; and, what is equally fatal to their tender constitutions, showers, fogs, and frosts, often attack them, and destroy the leaves, leaving the careful cultivator this only resource, namely, that of making fires at certain distances, and filling the air with smoke, which frequently preserves them from the fatal effects of the inclemency of the weather.

The breeding of cochineal is also greatly obstructed by birds of differed kinds, which are very fond of these insects; and the same danger is to be apprehended from the worms, &c. which are found among the plantations of nopals: so that unless constant care be taken to fright the birds away from the plantation, and to clear the ground of those various kinds of vermin, which multiply so fast in it, the owner will be greatly disappointed in his expectations.

When the insects are at their full growth, they are gathered and put into pots of earthen ware; but great attention is requisite to prevent them from getting out, as, in that case, great numbers of them would be lost; though there is no danger of it, where they are at liberty on the nopal leaves, those being their natural habitation; and where they enjoy a plenty of delicious food; for, though they often remove from one leaf to another, they never quit the plant; nor is it uncommon to see the leaves entirely covered with them, especially when they are arrived at maturity. When they have been confined some time in these pots, they are killed and put in bags. The Indians have three different methods of killing these insects, one by hot water, another by fire, and a third by the rays of the sun: and to these are owing the several gradations of the colour, which in some is dark, and in others bright; but all require a certain degree of heat. Those therefore who use hot water are very careful to give it the requisite heat, and that the quantity of water be proportioned to the number of insects. The method of killing the creatures by fire is to put them on shovels into an oven moderately heated for that intention; the fine quality of the cochineal depending on its not being over dried at the time of killing the insects: and it must be owned, that among the several ways made use of to destroy this valuable creature, that of the rays of the sun seems to bid fairest for performing it in the most perfect manner.

Besides the precaution requisite in killing the cochineal, in order to preserve its quality, it is equally necessary to know when it is in a proper state for being removed from the leaves of the nopal; but as experience only can teach the cultivator this necessary criterion, no fixed rule can be laid down. Accordingly in those provinces where the cultivation of these insects is chiefly carried on, those gathered by Indians of one village differ from those gathered in another; and even those gathered by one person in the same village, are often different from those gathered by another; every individual adhering to his own method.

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The cochineal insect may, in some circumstances, be compared to the silk worm, particularly in the manner of depositing its eggs. The insects destined for this particular are taken at a proper time of their growth, and put into a box well closed, and lined with a coarse cloth that none of them be lost: and in this confinement they lay their eggs and die. The box is kept close shut till the time of placing the eggs on the nopal, when, if any motion is perceived, it is a sufficient indication that the animalcule has life, tho' the egg is so minute as hardly to be perceived; and this is the seed placed on the foliage of the nopal, and the quantity contained in the shell of a hen's egg is sufficient for covering a whole plant. It is remarkable that this insect does not, or at least in any visible manner, injure the plant, but extracts its nourishment from the most succulent juice, which it sucks by means of its proboscis through the fine teguments of the leaves.

The principal countries where the cochineal insects are bred, are Oaxaca, Flascala, Chulula, Nueva Galicia, and Chiapa, in the kingdom of New Spain; and Hambato, Loja, and Tucuman in Peru: but it is only in Oaxaca, that they are gathered in large quantities, and form a branch of commerce, the cultivation of these little creatures being there the chief employment of the Indians.