

The dye was introduced into Europe from Mexico, where it had been in use long before the entrance of the Spaniards in the year 1518, and where it formed one of the staple tributes to the crown for certain districts. In 1523 Cortes received instructions from the Spanish court to procure it in as large quantities as possible. It appears not to have been known in Italy so late as the year 1548, though the art of dyeing then flourished there. Cornelius van Drebbel, at Alkmaar, first employed cochineal for the production of scarlet in 1650. Until about 1725 the belief was very prevalent that cochineal was the seed of a plant, but Dr Martin Lister in 1672 conjectured it to be a kind of kermes, and in 1703 Antony van Leeuwenhoek ascertained its true nature by aid of the microscope. Since its introduction cochineal has supplanted kermes (*Coccus ilicis*) over the greater part of Europe.

The male of the cochineal insect is half the size of the female, and, unlike it, is devoid of nutritive apparatus; it has long white wings, and a body of a deep red colour, terminated by two diverging setae. The female is apterous, and has a dark-brown plano-convex body; it is found in the proportion of 150 to 200 to one of the male insect. The dead body of the mother insect serves as a protection for the eggs until they are hatched. Cochineal is now furnished not only by Mexico and Peru, but also by Algiers and southern Spain. It is collected thrice in the seven months of the season. The insects are carefully brushed from the branches of the cactus into bags, and are then killed by immersion in hot water, or by exposure to the sun, steam, or the heat of an oven—much of the variety of appearance in the commercial article being caused by the mode of treatment. The dried insect has the form of irregular, fluted and concave grains, of which about 70,000 go to a pound. Cochineal has a musty and bitterish taste. There are two principal varieties—*silver cochineal*, which has a greyish-red colour, and the furrows of the body covered with a white bloom or fine down; and *black cochineal*, which is of a dark reddish brown, and destitute of bloom. *Granilla* is an inferior kind, gathered from uncultivated plants. The best crop is the first of the season, which consists of the unimpregnated females; the later crops contain an admixture of young insects and skins, which contain proportionally little colouring matter.

The black variety of cochineal is sometimes sold for silver cochineal by shaking it with powdered talc or heavy-spar; but these adulterations can be readily detected by means of a lens. The duty in the United Kingdom on imported cochineal was repealed in 1845.

Cochineal owes its tinctorial power to the presence of a substance termed cochinealin or carminic acid,  $C_{17}H_{18}O_{10}$ , which may be prepared from the aqueous decoction of cochineal. Cochineal also contains a fat and wax; cochineal wax or coccerin,  $C_{30}H_{60}(C_{31}H_{61}O_3)_2$ , may be extracted by benzene, the fat is a glyceryl myristate  $C_3H_5(C_{14}H_{27}O_2)_3$ .

**COCHINEAL**, a natural dye-stuff used for the production of scarlet, crimson, orange and other tints, and for the preparation of lake and carmine. It consists of the females of *Coccus cacti*, an insect of the family *Coccidae* of the order *Hemiptera*, which feeds upon various species of the *Cactaceae*, more especially the nopal plant, *Opuntia coccinellifera*, a native of Mexico and Peru.