

Have you ever noticed fuzzy or cottony looking material around the spines of some of our prickly pear cactus?



Well, it turns out that the material you were looking at covers and protects an amazing and quite useful scale insect, which produces a product that you are likely using everyday. “What?” you ask “A bug product I use every day?”

The insect is called a Cochineal.



Day-after-day Cochineal insects go about their lives under their cottony tent. The females are quite small at about 5 mm. and are oval and wingless. The males are even smaller, have

wings, and have very short life spans. The female gives birth to nymphs, both male and female.

The cochineal insect feeds by sticking its long proboscis (probe) into the cactus and sucking out nutrients. This remarkable insect produces a waxy white substance (not unlike when a spider produces a web) that results in the fuzzy cottony material that you see on the cactus.



The insects disperse by having the nymph's spin a bit of that cotton like material, and letting the wind carry it and the nymph away to colonize a new cactus



How does this little insect relate to you? Well, the Cochineal's claim to fame is that within its body it produces quantities of something called carminic acid. From this acid comes one of the world's greatest dyes.

Time now for a little history:

When the Spaniards arrived in the New World they were surprised and pleased to find a deep crimson and purple dye



being used by the indigenous peoples (Aztec, Mayans, and others). These dyes were brighter and longer lasting than anything available in Europe and the Old World. Indians were creating this dye from harvested Cochineal insects, in a process that concentrated the very colorful carminic acid.

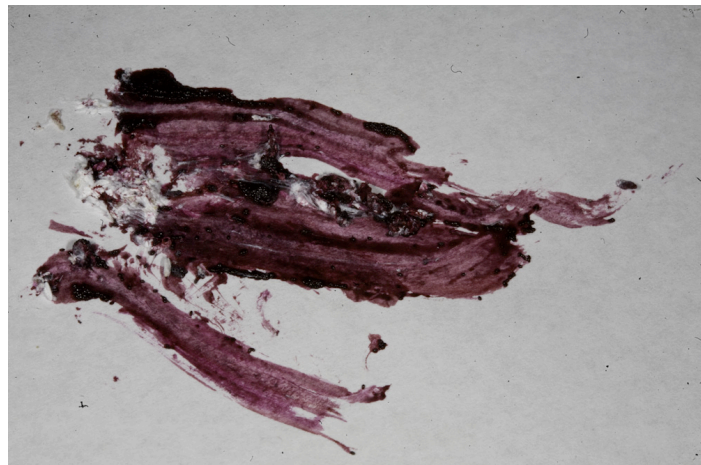
The Spanish, using the Indian's knowledge and expertise, exported enormous quantities of the dye to Europe and the rest of the world, and for over 200 years maintained a monopoly on the crimson and purple dye industry.

Spain prospered as the dye quickly became the second most important export from Latin America to Europe (second only to gold).

Carminic acid's primary function in the Cochineal seems to be to protect the insect from ants and other predators.

In the 1870's artificial dyes were developed (from coal tar) and in a very short time the Cochineal business virtually died. Use of Cochineal dye became largely restricted to Indian folk art and cultural products.

Things eventually turned once again, as the artificial dyes were discovered to have problems (remember the carcinogen scare with red dye #2?). The search for a dye replacement landed squarely back on the



Cochineal.

So once again Cochineal returned to popular use under the trade names of carmine, carminic acid, E120, and Coccus Cacti. Cochineal products have very few side effects and are now found in food, drinks, cosmetics and pharmaceuticals. You likely use at least one of these products every day.

There are varying opinions as to the damage Cochineal populations can do to a cactus. If the damage to the prickly pears appears minimal (normally the case), it's best to leave the cactus and the Cochineal alone. However, now you can enjoy their history and share this little known knowledge with other desert dwellers!