

## INTRODUCTION

Cochineal is the name of a red dyestuff consisting of the dried pulverized female bodies of the scale insect Dactylopius coccus. The insect is found on several species of cactus, particularly on the nopal, and can be found in tropical and subtropical America. Cochineal dye can produce shades of scarlet, red, orange, and purple. It has been in use as a coloring agent for at least three thousand years.

In 1990 I learned of this scale insect, which produces a scarlet dye, as the result of an effort to select a topic for a paper required for a course in Global Agriculture. This was in keeping with my course of study in Environmental Archaeology. I decided to write my paper on cochineal dye, because it had been used in prehistoric times by the indigenous peoples of Mexico and South America. Also, it had been extensively grown in the Oaxaca Valley of Mexico by the Zapotec Indians, as a most lucrative export crop for the Spanish. By the time the paper was written, my research produced a double handful of articles on the subject. As a result of this investigation, my interest was sparked, but like most topics pursued in the effort to acquire a degree, enthusiasm soon dwindled after my paper was presented.

It was by chance that I discussed cochineal with Dr. Martha Reese, one of Baylor's anthropology professors who was familiar with the red dye and who has conducted economic research in the Oaxaca Valley. She was to be in Oaxaca, Mexico, doing further research during the summer months and, should I happen to be there during that same period of time, would be available to assist me in exploring the use of cochineal in this location. Dr. Reese had assured me that this insect was still being grown and used, at least on a small scale, in the Oaxaca Valley.

The summer of 1990 I traveled to Oaxaca, determined to learn what I could about the small insect which has made a big impact on primitive culture. In Oaxaca I discovered cochineal in the weaving galleries of Oaxaca City, the weaving town of Teotitlan del Valle, the Instituto Tecnológico Agropecuario de Oaxaca, where efforts were being made to increase the production of cochineal by modern methods, and lastly in the small village of San Pedro Martir. In San Pedro Martir the insect that produced cochineal dye was growing on hundreds of cactus pads hanging in rows in small greenhouses. Because of my fruitful experience in Oaxaca, I decided to use cochineal as the topic for my thesis.

It seems the history of cochineal is like a never-ending treasure hunt which takes one back several thousand years to the Pre-Inca dyed textiles found in burial sites in the arid coastal regions of Peru, and forward to the modern spectrophotometric analysis of these dyes. The investigation of cochineal leads one to the everyday life of the Pre-Columbian Aztecs, Mixtecs, and Zapotecs of Mexico, and to the Oaxaca Valley and the vast fields of cochineal-laden cacti. From here one is taken to the markets and dyeing shops of Europe, which were supplied by the cochineal-filled Spanish ships arriving from the New World. One proceeds to Peru, Guatemala, Haiti, Java, Australia, Algeria, Spain, and the Canary Islands with the expansion of the cochineal industry. One is then taken along the Chihuahua trade route, leading from Mexico City to northern Mexico and New Mexico, to the weavers who used this dye. One finally comes to modern times, where this red dye is found being used in food, laboratory stains, cosmetics, and medicine. This historical treasure hunt begins in Peru, and returns full circle to modern-day Peru, where tons of cochineal are still gathered by the Indians and exported to America.

Through the field of environmental archaeology, the investigation of cochineal has led to the analysis of Pre-Inca textiles and the dyes they contain, especially cochineal. While my main interest is archaeology and the scientific tests which are conducted to reveal the historical unknown in cultural remains, I feel my thesis would be incomplete without

attempting to expose the reader to the long, varied, and wondrous history of cochineal. As seen by my lengthy bibliography, which is by no means exhaustive, many scholars have written about the red dye cochineal. I do not attempt to masquerade as an expert, but in presenting my thesis I endeavor to add to the existing literature my personal experience, research, and understanding.