



E36 Recognition of Skin Damage Caused by the Presence of Different Insects on Dead Bodies

*Carolina Nuñez Vázquez, PhD**, Universidad Nacional Autónoma de México, Av. Universidad 3000. Ciudad Universitaria, Mexico City 04510, MEXICO; and *Lorena Valencia Caballero, PhD, Licenciatura en Ciencia Forense, Circuito de la Investigación Científica s/n, Av. Universidad 3000, Facultad de Medicina, Ciudad Universitaria, Distrito Federal 04510, MEXICO*

After attending this presentation, attendees will recognize the characteristics of the damage done to the skin of corpses by the bites of ants and cockroaches.

This presentation will impact the forensic science community by showing how to generate information that helps researchers differentiate bites of ants and cockroaches from burns caused by chemical agents and cigarettes.

There are many forensic cases documented in which the presence and activity of insects that feed on the skin were found, either on living people, as in cases of neglect, or on deceased individuals. In the latter case, researchers often are in conflict because they have trouble determining if the damage present on the cadaver skin was caused by insects or are marks of abrasion, damage by chemicals, or even if they were caused by fire exposure, as in the case of burns made by cigarettes. In most forensic cases in which damage by the insect activity that fed on the dead bodies' skin was reported, the reports are not based on studies, but mostly assume or infer insect damage as the insects were found at the site.

With the goal of creating a better tool for identifying insect bites in such cases, this research was conducted in order to create reference patterns of features left by the bites and activity of ants and cockroaches when they feed on the skin of corpses, and then to distinguish these marks from marks made by other agents.

In the laboratory, the characteristics of the damage caused by the activity and biting of ants and cockroaches on the skin of cadavers was evaluated. The experiment was carried out under controlled conditions in a bioclimatic chamber. A fluctuating average temperature of 20°C was used, with a low temperature of 15°C and a maximum of 25°C, with a light exposure of 12hr-day/12hr-night cycle. Species of ant and cockroach colonies were previously established. Twenty pieces of skin were used, each 5cm x 5cm. Ten pieces were exposed to each insect colony. For each type of acid, 5ml each of sulfuric and hydrochloric acid were added to ten pieces of skin. Six pieces of skin were also placed as a control. In all cases, observations were made and photographs taken at different intervals of time (1hr, 4hr, 1d, 4d, 1wk, 2wk, and 1mo). Subsequently, all results were compared through microscopic, macroscopic, and raking light analysis to define the characteristics of the damage caused to the skin due to bites of each species of insect, against the characteristics presented on injury marks caused by exposure to sulfuric and hydrochloric acid, as well as control pieces. This study shows some features that help to differentiate patterns of some insect bites on the skin of the dead bodies from patterns left by sulfuric and hydrochloric acid.

Dead Bodies, Skin Damage, Insects Bites