



### E17 Collect the Bugs - Pretty Please!

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After attending this presentation, attendees will learn the importance of insect collection from the death scene, the detrimental aspects of not collecting the evidence, and the major benefits the collection of insect evidence can make in the outcome of the case.

This presentation will impact the forensic science community by providing officers of the court with understanding of why and how the entomological evidence is necessary and must be collected as with any of the other forensic science tools requiring its retrieval.

Insect evidence is primarily used to determine the postmortem interval (PMI) and may also answer other questions such as location of death, presence of drugs, and the identity of the victim if the body has been removed. The use for PMI determination has been available for over a century, but has only come into common application over the past two decades internationally where it has been used in hundreds of case investigations. With this increased use, appearances by forensic entomologist experts have been increasingly beneficial to the courts. This is because the insects are going to be present in nearly every homicide, suicide, or natural death when the victim is outdoors and commonly even where there is some type of barrier such as when the victim is indoors, in a car trunk, or buried. Equally important is the absence of insect, because this situation may only be explained by very specific condition or circumstances. Thus, it is the forensic entomologist who can connect elements of the case investigation between the victim, a suspect, and a specific time and location by using an unbiased quantitative scientific methodology independent of other forensic sciences involved in the case investigation. Initially, the entomological evidence can be used to focus in on a suspect that has been generated by the detectives, but equally or even more importantly, it is the forensic entomological expert who will be a key witness at the time of trial to either illuminate or eliminate other elements of evidence whether it be testimonial or physical.

However, even with this increased usage, many jurisdictions across the country are unwilling to recognize or are still ignorant of the importance afforded by ubiquitous entomological evidence, resulting in the failure to collect forensically important insect specimens. It is unclear whether this decline is due to the economic environment at this particular time, from lack of funding for training, or the perception that expert analysis is cost prohibitive. If only the investigators would have collected the insect evidence which was present, we could have had the means to answer some of the most important questions of the case (e.g., time since death and those individuals related to the death). Consequently, a very solid and reliable position would have resulted to support either the prosecution or defense and a resolution found.

Several examples of how cases could have been argued differently for either side will be used to demonstrate these frustrating situations (for

the forensic entomologist) and how conclusions could have yielded significantly different outcomes for the courts. To further highlight the importance of collection of entomological evidence, cases where insect evidence was brought into the case later and an immediate resolution to the case was then rendered will be presented. Also, even if the insect evidence was collected, elements of the analysis and conclusions may be erroneously determined by not seeking the most qualified forensic entomological experts available. These proper qualifications include: degrees (PhD) in entomology and forensic entomology; internship with a qualified and practicing forensic entomologist; extensive research in carrion insect (those specific insects which only feed on dead vertebrate animal soft tissue) study; several years of case and trial experience; presentation of case and research at regional, national or international meetings; a recognized publication record in peer reviewed journals and book chapters relating to forensic entomology in the forensic literature. In addition, case examples will be used to demonstrate shortcomings in analysis and major mistakes committed in the final conclusions resulting in justice not being attained.

It is ultimately the attorneys and judges who are responsible for using all the tools available at their disposal for finding the truth of a case. Why are these professionals not demanding the use of this unbiased quantitative tool at their disposal to help find the truth? Please collect the bugs!

**Forensic Entomology Expert, Insect Collection, Maggots**