

## BOOK REVIEW

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### A Review of: The Detection of Human Remains

**REFERENCE:** Killam, Edward. *The Detection of Human Remains*. Charles C Thomas, Springfield, Illinois, 1990, 263 pp.

A number of well-publicized buried body cases (Cummins Prison Farm in Arkansas-1968; Texas Homosexual Murders of Dean Corll-1973; and the John Wayne Gacy bodies under the house in Des Plaines, Illinois-1978) have pointed to the need for organized efforts in finding and excavating buried human remains. Burial recovery should not be relegated to convicts or other untrained personnel but should be conducted scientifically by the forensic science team. The forensic anthropologist/archaeologist is a key member of this team. This is a theme of Edward W. Killam's reference book, *The Detection of Human Remains*, which provides a summary of the problems involved in the detection of buried bodies and describes the techniques which can be utilized for their recovery.

This volume is a must for the libraries of Coroner and Law Enforcement agencies. Buried bodies are not a frequent problem, even for a large agency, and often the personnel responsible for the recovery task have never had personal experience with the techniques available to them. This volume stresses the need for data gathering and planning prior to the field recovery; the appendix provides useful check lists and organizational charts. The majority of the book is devoted to a discussion of the actual techniques which can be utilized in order that the investigator can select the methods appropriate to the situation and select the order of their use. Non-intrusive methods should always be utilized before one resorts to intrusive methods which involve some destruction of the evidence. The available non-intrusive methods include: foot search methods, use of air-scent (cadaver) dogs, aerial photography, gravity surveying, magnetic surveying, electrical self-potential surveying (SP), electrical resistivity surveying, electromagnetic surveying (EM), use of metal detectors, seismic refraction, and ground-penetrating radar (GPR). If these methods fail to detect the remains, the investigator can utilize probing techniques. Gas vapor detectors can be used for recent burials, and coring techniques can provide samples in which soil stratigraphy can be studied or trace evidence of the body itself. Killam cautions that heavy equipment, which invariably involves the destruction of surface and subsurface evidence, should be used only as a last resort. This is excellent advice; more than one agency has been too quick to resort to the use of a backhoe, only to discover the crucial evidence was destroyed in the recovery process.

The highly technical section of the book discussing the geophysical prospecting methods (Chapters 5 and 6) has been examined by Professor Robert R. Unterberger (Department of Geophysics, Texas A & M University). Dr. Unterberger is a specialist in the use of ground-penetrating radar (GPR) in the detection of buried bodies. He notes that several errors do occur in this section. For example, magnetometers cannot be used during a magnetic storm (see p. 80) contrary to the statement in the book "Since the magnetic field of the earth does not change with weather, all magnetometers can be used at any time of the year (p. 80)." On page 92 (line 1), "mho meters" should read "siemen per meter." The unit "mho" is not acceptable by the international system of units. On page 104, line 5 should read, "The depth of penetration is also an inverse function of frequency." On page 121, there is a misunderstanding concerning the "normal angle." In the third paragraph on page 127, "ESU" should be deleted from the sentence dealing with hard rock. "200 mHz" should be corrected to read "200 MHz." On page 128 (third paragraph) the sentence should be corrected to read, "Earth penetrating radars usually operate at frequencies from 5MHz to 1,000 MHz." Figure 6.22 on page 129 shows GSSI equipment. Finally, on page 132 (third paragraph) available instruments are sensitive to one-hundredth of a gamma, not one-tenth.

Not only are scientific methods discussed, but the final chapter is on parapsychological methods ("dowsing" or the use of psychics). Killam states that there is no scientific support for these methods but that the investigator needs to be aware of them in order to help analyze the "tips" that may come to the agency and to help prevent the victimization of the family. He holds the position that at times the use of such measures may be justified to convince the family and the public that everything possible is being done to locate the decedent.

A major limitation of the volume lies in the lack of applications and actual cases in which the techniques have been utilized. Do these techniques actually work? I would like to see Fig. 8.5 (p 162), showing an oblique aerial photograph, replaced by an oblique aerial photograph actually showing evidence relating to human remains. How successful have agencies been in locating bodies by the various methods? We are not given this information, and the impression is left that the author may not have utilized all of these techniques in actual cases. Certain comments lead me to suspect that the author may be lacking in practical application. He states (p 8) . . . "there is little difference between searching for a

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Angeles, Orange County Sheriff-Coroner; Coroner, San Bernardino County; Coroner, Riverside County.

buried body versus a surface body." Having spent the last twenty years searching for human remains in Southern California, I heartily disagree. Furthermore, the experienced investigator rarely, if ever, expects immediate success (p 18). No investigator need be embarrassed if the gravesite is not found. Buried bodies are extremely difficult to find and even given the wide variety of available search techniques, success is not guaranteed. Second, third, fourth recovery attempts are to be expected, and no apology need be given to anyone.

Killam's approach to the actual foot search is somewhat idealistic. He states (p 24), "Before the search begins, searchers must be properly trained on what to look for and how to comply with search procedures so that every area is thoroughly and efficiently covered." In fact, no single training session can ensure such results. Searchers with some experience and open minds may be able to spot important evidence that a "recently programmed searcher" may overlook. Success in finding the body is not always a matter of efficiency but may depend on the investigator's analysis, keen observation, and insight into naturalistic principles regarding the human body and the environment. Killam stresses the use of systematic search procedures, providing examples of the strip (or line) search, interlocking line search, and grid search. He states (p 31) "Any search pattern is better than the "mill around" methods in which unsupervised searchers flit from one likely looking area to

another without coordination." I have used the mill around method successfully for twenty years in Southern California with experienced and semi-experienced volunteer anthropology students and professional colleagues. Experienced searchers may not need tight supervision; adherence to a tightly organized search plan may stifle creative thought patterns which relate to the detection of remains. For example, the discovery of tell-tale human bones in a wood rat nest may lead to the detection of a nearby shallow grave. The organized searcher walking in his/her straight line may walk right past the nest with its hidden treasures, not understanding the behavior patterns of the wood rat. One searcher can easily overlook evidence that another may spot. The crucial evidence may be subtle, and perception may depend upon the angle of approach. I recommend a system in which multiple searchers cover an area in a variety of directions. Often this amounts to milling-around.

Forensic scientists are indebted to Killam for his presentation of these recovery methods in a single volume. I predict that this book will be a great help to forensic personnel as they plan for the recovery of buried bodies. The bibliography provides useful sources for additional research. It is my hope that a second edition will eventually be produced which corrects the technical errors mentioned above and which expands to include case studies which will help the investigating agency in the evaluation of the available techniques.