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Photographing a Case with Skeletal Remains

Gary Knight

What is different about this type of case?

This Case IS Different

- The photographs are going to be studied by many more experts than a normal case
- The photographs might be used for many more years
- Small nuances in the photographs can reveal a lot to some experts

Let’s Start With Some Basics

- The camera is a tool and using it should be second nature
- Learn the controls and what they do
- Keep the camera instruction manual close so you can refer to it

What Should be in a Good Camera Outfit?

- Good quality DSLR – point and shoots have many limitations and should only be used when nothing else is available – different sensors
- At least two lenses – wide angle and macro
- Strong flash unit – crime scene work is in tough environments
- Tripod – not just for night work but also for close ups

Before Starting, Check Your Camera Settings

- Mode selection – P, S, A, M
- Shutter speed 1/focal length of lens
- Is WB correct?
- Use flash even in sunlight to fill in shadow areas
- Will the f/stop you have give you a good depth of field?

Where to Start?

- Like any well photographed crime scene, start with the overalls
- Show what the area is like. How remote, what are the trees and plant life like? Is this an area that only a few people would know about?
- Again, extra photographs here will help other experts who will come later

Satellite photos are good to help lead you into the scene.

Aerial or Overhead Views

- Use GIS, DOT or Google Earth aerial photographs and maps for illustrating the scene
- Aerials from helicopter if possible

Overhead photos can be shot from a fire dept platform truck, bucket truck, or from on top of an SUV.

A Panoramic Photo is a Good Way to Show a Scene that is Spread Out

Keep to no more than 180 degrees.

Entry Photographs Should Lead You from the Street Into the Scene




The Search Area

- Determine where the search area is. Is there more than one search area?
- Is it important to have overalls showing where the search area is in relation to the earlier photographs?

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Shoot overalls of evidence before anyone enters the scene or starts to remove foliage or brush.

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Tape off or grid your scene.

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Record measurements using precisely located datum points.

Photographs Should be Taken:

- Before the area is cleared of brush
- When evidence flags are placed
- Again after the brush is cleared

Photographs Should Show:

- How brush has grown up around bones or evidence
- Position and location evidence is found
- Relationship of evidence or bones to other evidence in the scene

Overall, Midrange and Close-up

As the crime scene photographs are shot, keep in mind how they will be used in the future.

Both by you and others.

You will be using the photographs to study the case and present it in court.

BUT

Others will study the photographs to make determinations and conclusions.

So You Want them to “Tell a Story”

- You may understand what happened, but thoroughly photographing the scene will give you the photographs you will need later to “tell the story”.
- Your photographs will at some point be used by other experts, such as medical examiners, anthropologists, entomologists or archaeologists to make determinations of what happened
- Think of some of the juries you have had. Think of the complicated and scientific facts you and others will be trying explain and describe to them.
- Make sure you have the photo to do it

To Make the Photo Folder Flow Better

- Don’t jump around from one piece of evidence to another
- Shoot in a continuous fashion so that it is systematic and flows
- The photographs will be used for years. If shot systematically it will be easier to remember why each photograph was shot.

Watch What Gets in the Photographs

- Before the shutter button is pressed, look at what is in the viewfinder. Look from corner to corner.
- Are there any unnecessary items such as officers, notebooks, walkie-talkies or equipment cases?
- If there are items that should not be in the photos, get them out. They are messy and it gives others the opportunity to question the crime scene processing practices.

Don’t Just Collect Evidence with the Camera

- Individual photographs of each piece of evidence by itself alone loses it’s importance without photographs showing it’s relationship to other evidence

Relationships of Evidence to Each Other

What to Photograph as Evidence is Being Collected

- If there is clothing are there any bones still inside the clothing?
- What is the condition of the evidence? Is it weathered, damaged from animals is there any other type of damage?
- The importance of these things may not be known now. As experts study your photographs, these things may help with important determinations.

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If there are bones still in the clothing, make sure they are shown in the photographs.

Photographing a Case with Skeletal Remains

Having a ME or anthropologist lay out the skeleton can be very helpful.

Medical Examiners or Anthropologists on the Scene

- Having a ME on the scene can help in identifying the bones
- Are there any bones missing that you need to continue searching for?
- Bones that are missing may be found away from the immediate scene. This may indicate animal scavenging.
- If fingers or hands are missing, they may have been removed to hinder identification

Cases like these can be hard to solve and may take many years to solve.

So thoroughly photograph the scene NOW!

Let’s take a look at how to properly photograph evidence for comparison.

Latent fingerprints, shoe and tire tracks or any subject to be studied, measured and compared.

Any photograph of a track or latent that you will want compared must have what?

A scale

Shoot all latents as well as shoe and tire tracks with and without a scale. The scale needs to extend from one edge of the photo to the other. This is extremely important when the photo is sized later.

Shooting a Shoe Track or Tire Track

Camera should be perpendicular to the track.

Flash Straight Down on Shoe Track - 90°

Flash Angled to Shoe Track - 45°

Flash Across Shoe Track - 10°

When Shooting Shoe and Tire Tracks

- Shoot keeping the camera directly over the track, but moving the flash to different angles to bring out more detail

During this course you will learn a lot of what can be done if the case has had the evidence collected properly and photographed completely!

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Every Picture Tells a Story

Observation and Documentation

Dr. Billy Oliver

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Discovery of human remains occurs in many forms… fleshed remains, partially decomposed bodies, scattered skeletal remains and subsurface burials are the most common discoveries.

Documenting the Scene

- Establish chain-of-custody
  - Confirms evidence integrity
  - Maintained throughout the recovery process
  - Maintain log-in procedures of ALL personnel at the scene
- Establish an on-site evidence processing station
- Preserve evidence – Do not rush, because scene recovery is by its nature destructive
  - Only one shot at this… consider all actions carefully and apply methods consistently
  - Careful documentation of ALL evidence
  - The act of processing the scene DESTROYS the scene

Documenting the Scene

- Establish a standard numbering system for all evidence
  - Be consistent
- Document
  - Bodies and body parts
  - Skeletal remains
  - Personal effects
  - Physical evidence

Photographing a Case with Skeletal Remains

Application of rigorous scientific methods at crime scenes recovers more detailed information that can strengthen interpretations at the scene, reassessments of the evidence and testimony in court.

Surface Remains

Scavenging alters spatial distribution.

Scattered Remains

Scavenging can obscure, alter or destroy physical evidence.

Processual Interpretation

Skeletal remains may contain trace evidence as well as important entomological information both above and below the ground surface.

Documentation

Recording the Scene…

“the act of processing the scene destroys the scene”

Observation

- Establish a standard numbering system
- Document bodies, body parts, associated evidence and fragments
- Record overall view of scene
- Aerial or elevated view

Viewing the Scene… “every picture tells a story”

- Ground level perspective
- Minimize scene personnel in frames
- Maintain detailed log
- Document with scale

Establishing Control

- Datum reference point
- Directional arrow
- Control samples
- Grid
- Evidence processing station
- Overall view photos

Overall View - Above

Overall View – Oblique Angle

Spatial Distribution

Disarticulation and articulation… "location, location, location"

- Provenience – the recorded context of an artifact in time and space
- Inference – the act of passing from one observation, proposition, statement or judgment considered true to another whose truth rests with the former
- Analogy – if two or more observations agree probability indicates they will agree in other aspects as well
- Association – a relationship between two or more artifacts

Methods and Process

Explanations are only as reliable as the methods employed to remove, record and identify the evidence.

Examine this photograph carefully. What can you observe?

Understanding Intrusive Events

"patterns of similarity and dissimilarity"

What disturbances can you identify from this aerial photograph?

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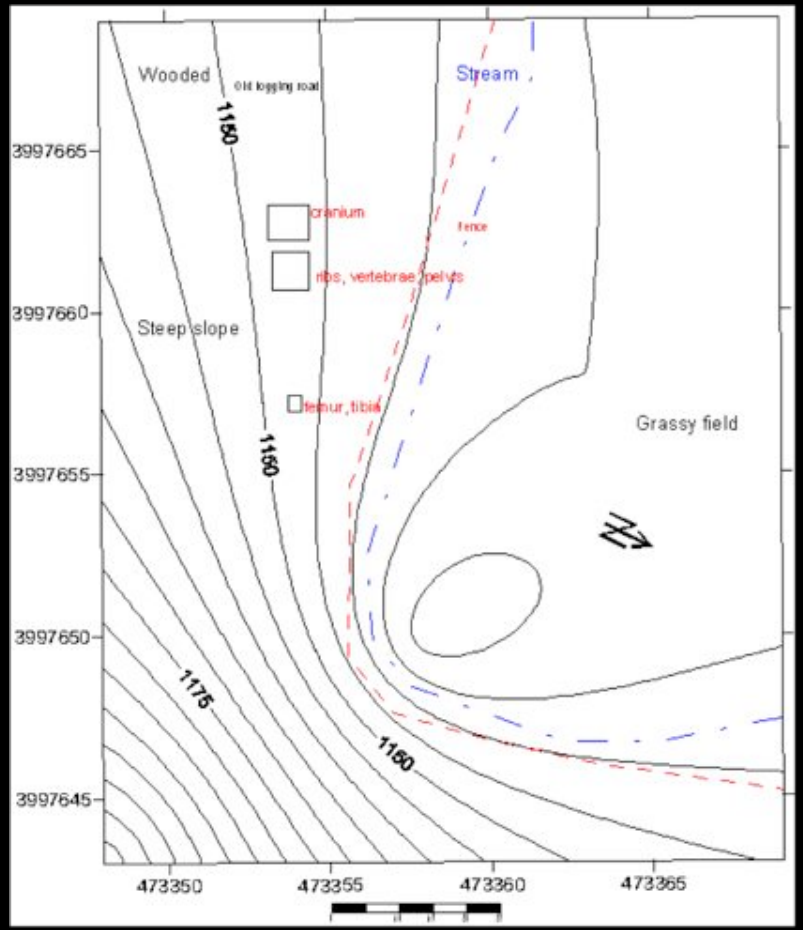
Stratification, Superimposition and Cross-cutting Relationships

Botany Contributes to Interpretation

Photographing a Case with Skeletal Remains



Spatial distribution of remains play a critical role in determining depositional sequences.

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Forensic anthropology contributes detailed information concerning determinations of gender, ancestry and age.

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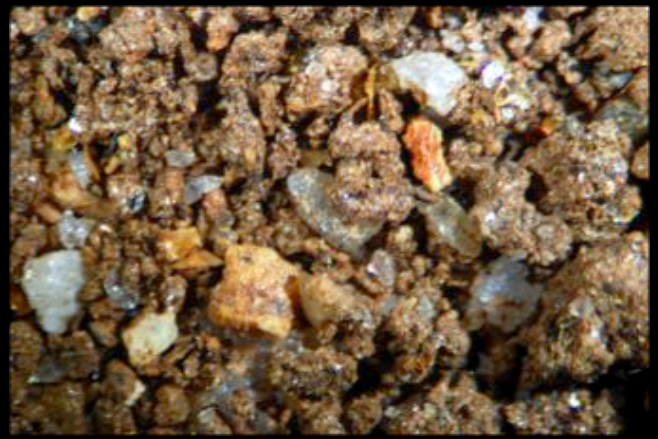
What sciences could be applied to these scenes and why?

Photographing a Case with Skeletal Remains

Identification of contrasting anomalies provides critical information.

Recovering soil and plant samples from disturbed areas

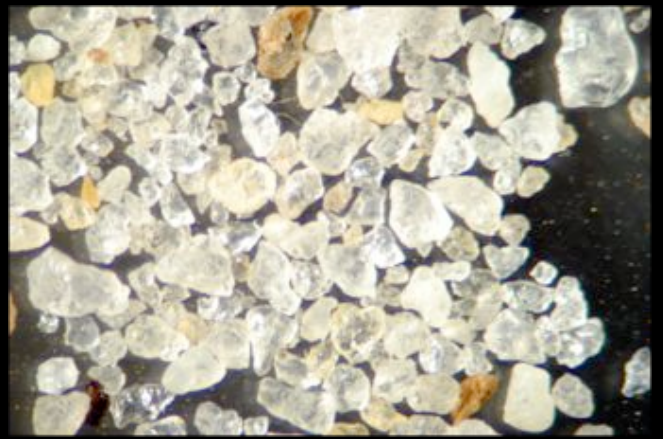


Loam

Clay

Sandy clay loam

Sand



Photographing a Case with Skeletal Remains

What can soil indicate as evidence?

Soil mineralogy and soil chemistry… soil science and geology

More than dirt, more than three simple soil types.

- Soil chemistry
- Soil mineralogy
- Scanning electron microscope (SEM/EDS)
- Infared spectroscopy
- Elemental analysis
- X-ray defraction (XRD)

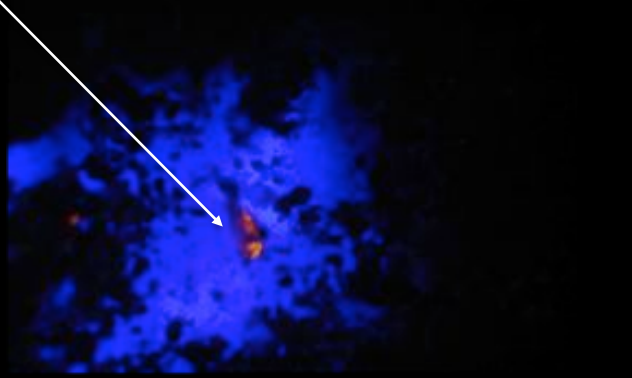
Locard's Principal at Work

"… with contact between two items, there will be an exchange…"

Grain size determinations

Suspect's shoe exhibits embedded minerals and plant material, including white mica.

UV reaction for feldspar



Abandoned Vehicle

Plant remains identified on vehicle and on driver's side floor mat.

Disturbed soil and igneous rock at driveway entrance indicate a source for plant remains and mineral deposits found on the vehicle, the floor mat and the suspect's shoes.

Case Study:

In 2004 a person disappeared from a residence located in a northern Piedmont county of North Carolina. The missing person was thought to have been the victim of foul play. In June 2007 a body was discovered in an adjacent county buried in a shallow grave hidden beneath a debris pile.

When observed as more than a picture, photographs can provide powerful insights into an investigation.

Remember “every picture tells a story…”

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- Pit outline noted and marked
- Unidentified bone extends from soil

Photographing a Case with Skeletal Remains

- Soil coloration and texture differences noted
- Dense, compact root-mass penetrates textiles
- Lack of roots in surrounding pit fill

Photographing a Case with Skeletal Remains

- Watch *in situ* on left wrist
- Root mass

Photographing a Case with Skeletal Remains

- Cranium face down
- Arms extended above head
- Root mass concentration in torso area

Friable soil, not compact.

Photographing a Case with Skeletal Remains

- Maggots, 3rd instar stage, represent an anomaly due to fully skeletonized condition of remains
- Food source necessary to attract flies
- Soil tests indicate presence of adipocere

Photographing a Case with Skeletal Remains

- Pants, socks… no shoes
- One pant leg raised to knee

Photographing a Case with Skeletal Remains

Pants pockets turned out.

Blunt force trauma.

Observations

- Maggots presented an anomaly
- Loose non-compact soils are incongruous
- Root mass concentration in thoracic area; lack of roots in pit
- Loamy soil and adipocere present
- Secondary burial, victim moved and reburied since 2004
- Blunt force trauma to cranium