

Forensic Science

*The Search For
Hidden Truths*



Meet Inspector Beaudeau...

He would like to introduce
you to the world of forensic
science.



Follow me . . .





So, what's a
forensic scientist?

A forensic scientist studies and analyzes physical evidence used in criminal court cases.



Many accused criminals are found either innocent or guilty based on the strength of evidence that a forensic scientist provides.



Forensic Scientists can specialize in a variety of different areas:

- Studying blood for presence of drugs, alcohol, or toxins
- Performing DNA analysis on hair & body fluids
- Examining documents to determine if forgery occurred

- Matching fingerprints
- Identifying type of firearm or tool used in a crime
- Determining results of polygraph tests

What personal attributes are desirable in a good forensic scientist?



- Detail-oriented & organized

(it may be that *one* small detail that leads to the accused being found either innocent or guilty)

- Patient & thorough

(must perform variety of time-consuming / comprehensive tests on evidence)

- Proficient in science & math

(these concepts are the backbone of forensic science)

- Skilled at research & writing

(need to prepare reports based on findings)

- Excellent communicator

(explain & are cross-examined about findings)

- Curious and creative-minded

(looking at situation in different ways is necessary for solving crimes)



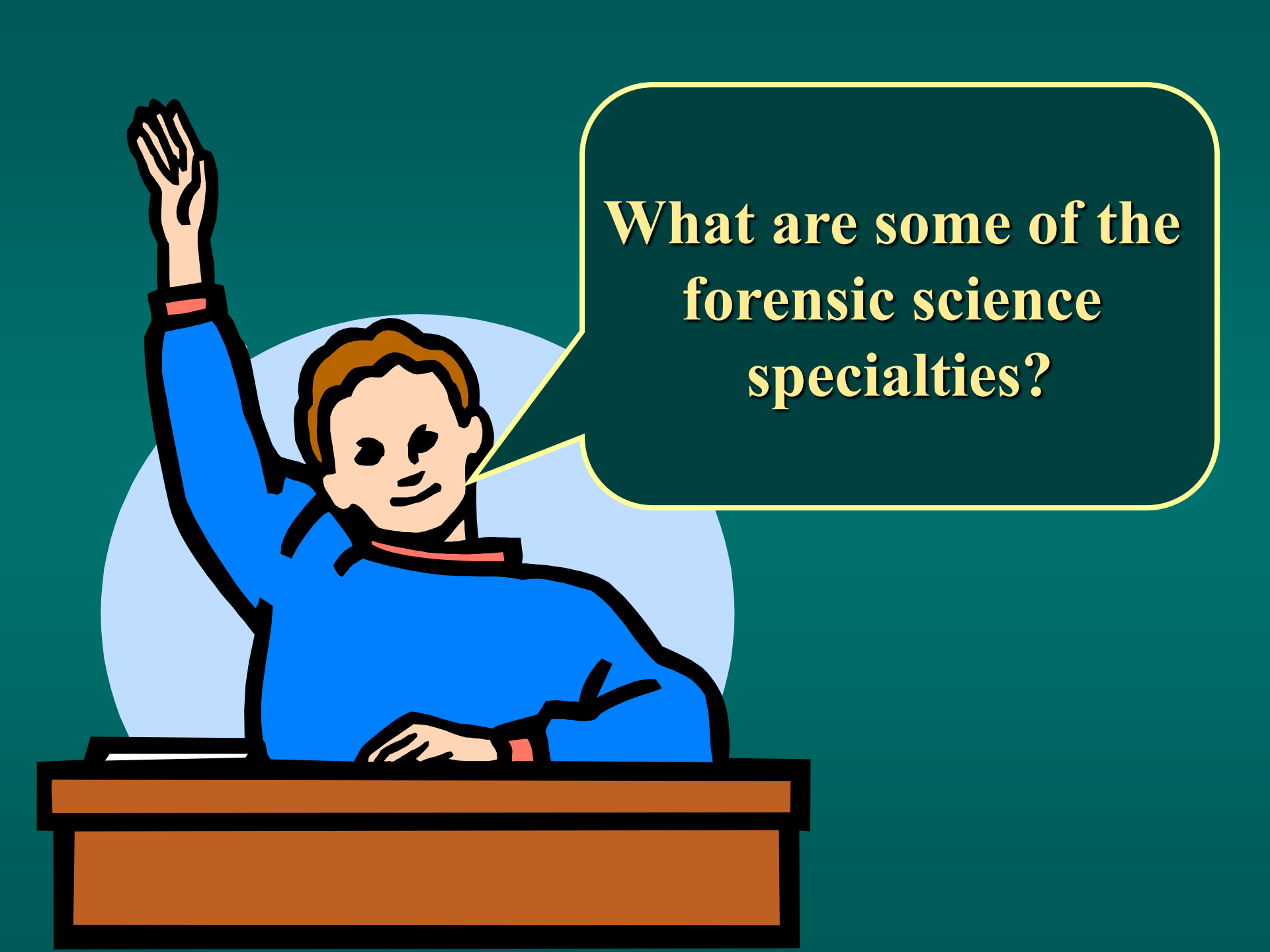
The inspector's partner wants you to know some the job advantages of forensic scientists.

- **You have a high level of responsibility**
- **Every case is unique**
- **You get to implement & validate new techniques**
- **You're not confined to an office space**



There are also some disadvantages.

- **Some cases are gruesome and distressing**
- **Number of cases varies, so its difficult to control work load**
- **You have to go to court & spend time waiting to testify**
- **Journalists may call at your home**



**What are some of the
forensic science
specialties?**

Forensic Pathologist

A medical doctor who performs autopsies to determine cause of death.



Forensic Psychologist

Evaluates and treats patients in context of legal issues.



Forensic Anthropologist

Identifies and reconstructs bones;
determines gender, age, & cause of death.



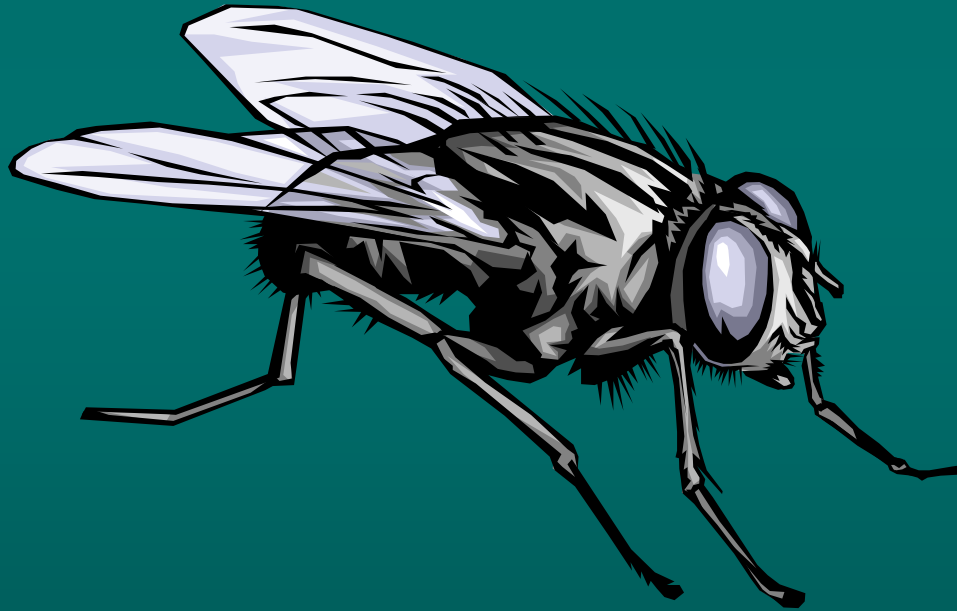
Criminalist

Analyzes, compares, identifies, & interprets physical evidence at crime scenes.



Forensic Entomologist

Uses insects that inhabit decomposing bodies to determine time of death.



Forensic Engineer

Investigates & reports on accidents or structural failures that may have criminal implications.



Forensic Odontologist (Dentist)

Helps identify bodies by looking at their teeth.



Forensic Nurse



Provides treatment for crime victims. They are especially needed in emergency rooms to gather and package criminal evidence.

Forensic Toxicologist

Analyses alcohol, drugs, & poisons in body fluids for the benefit of the courts.



Wildlife Forensic Scientist

Forensic scientists who track down criminals who harm wild animals.



Here are some forensic science photos--some are from actual crime scenes:



Defense Wounds #1



Defense wounds on the hand of a victim whose assailant was attacking with a knife.

Defense Wound #2



Here is a typical "defense wound" on the forearm of the victim of an assault with a sharp weapon, producing the laceration.

Defense Posture

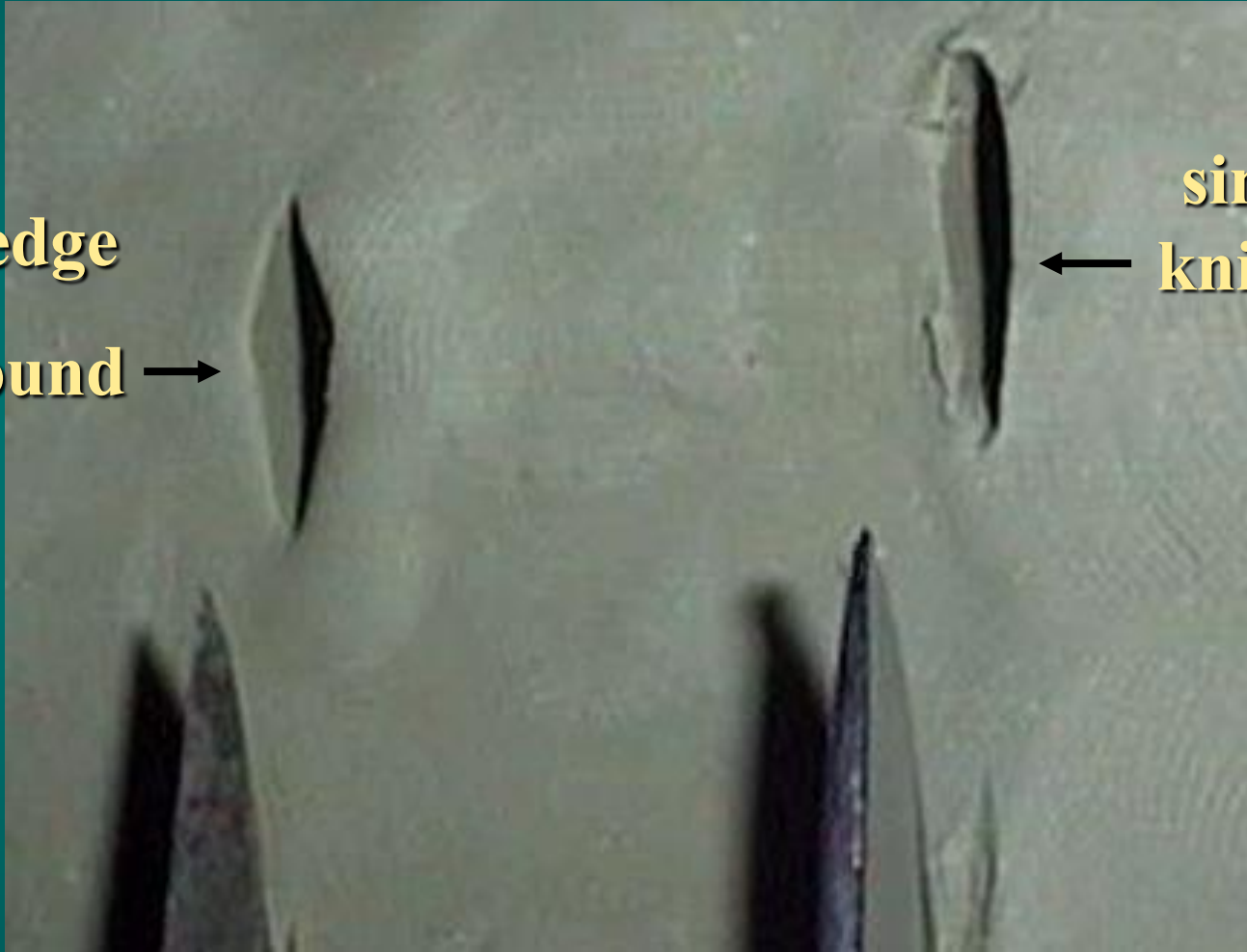
Scene illustrates mechanism for "defense wounds".



Clay Model Used to Demonstrate Knife Wounds

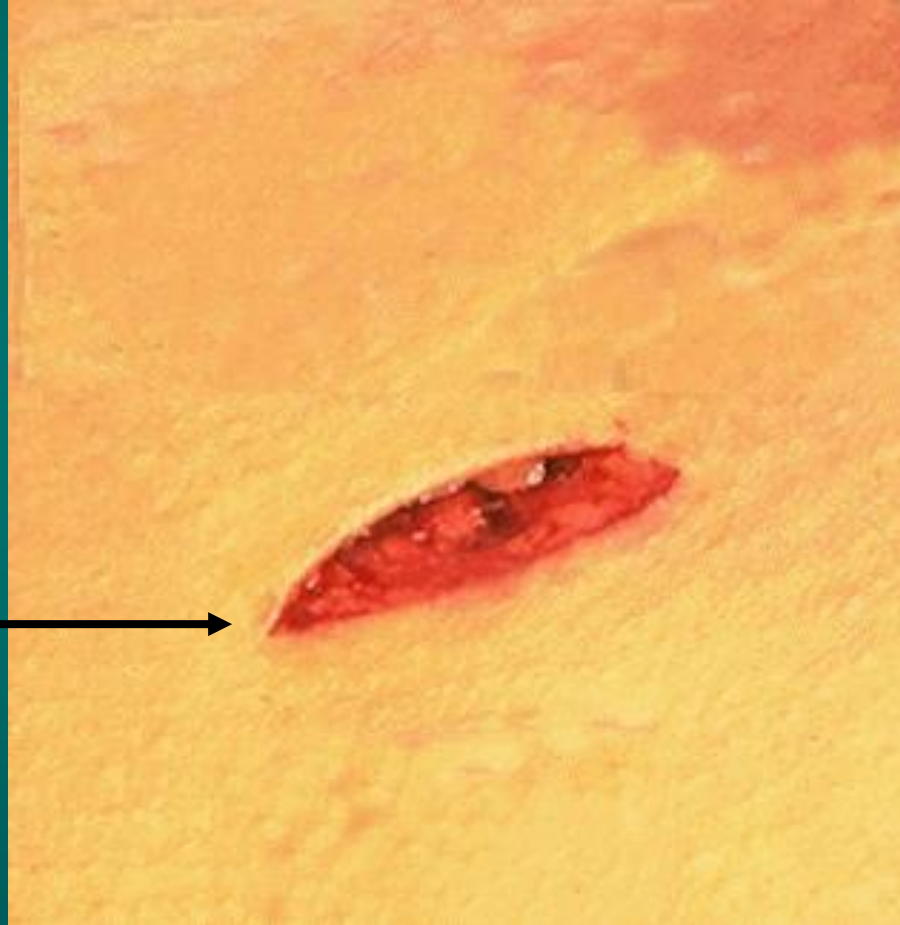
double edge

knife wound →



← single edge
knife wound

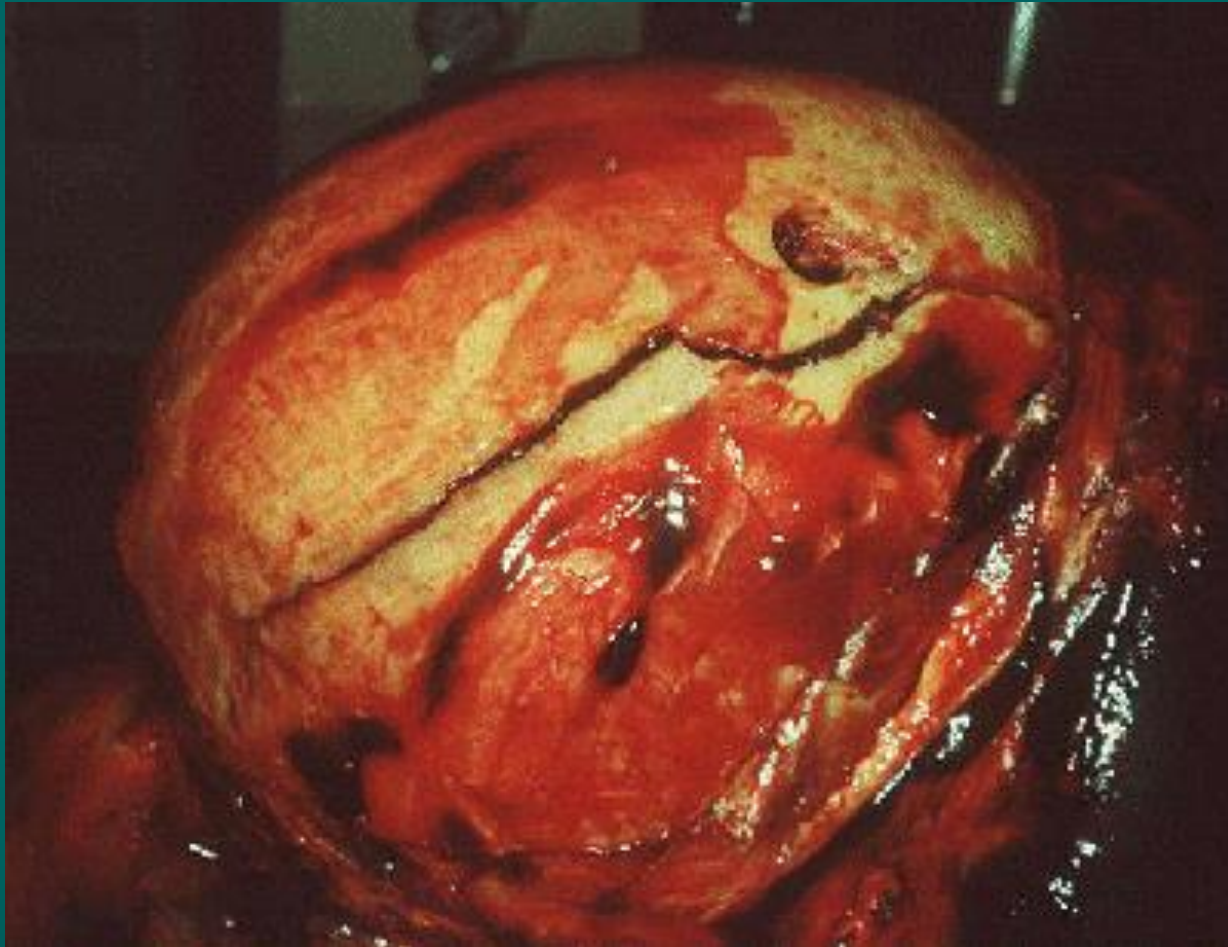
Stab Wound: Single Edge Blade



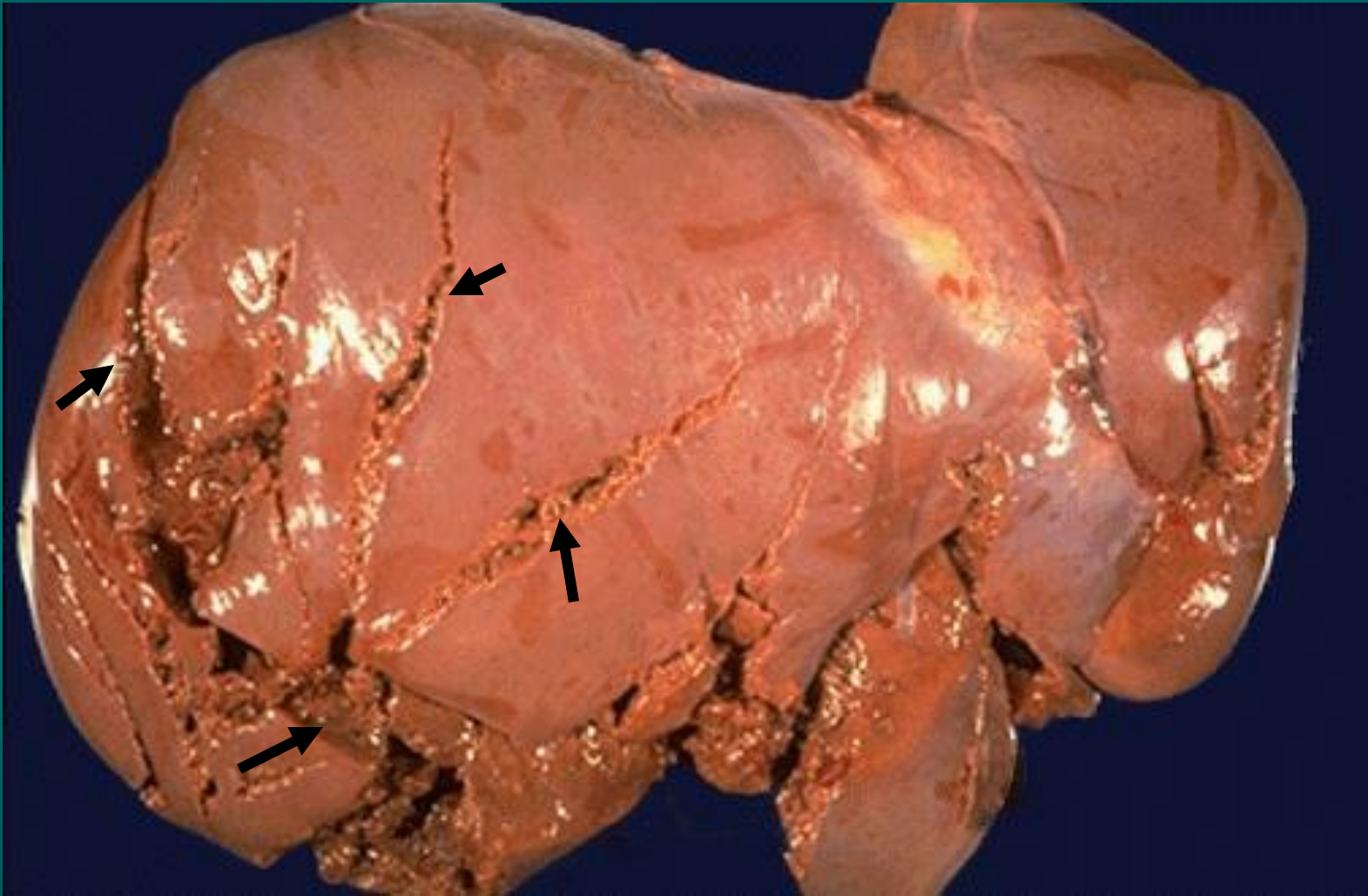
Sharp edge
of blade



Deadly blow to head that resulted in fractured skull and bleeding.

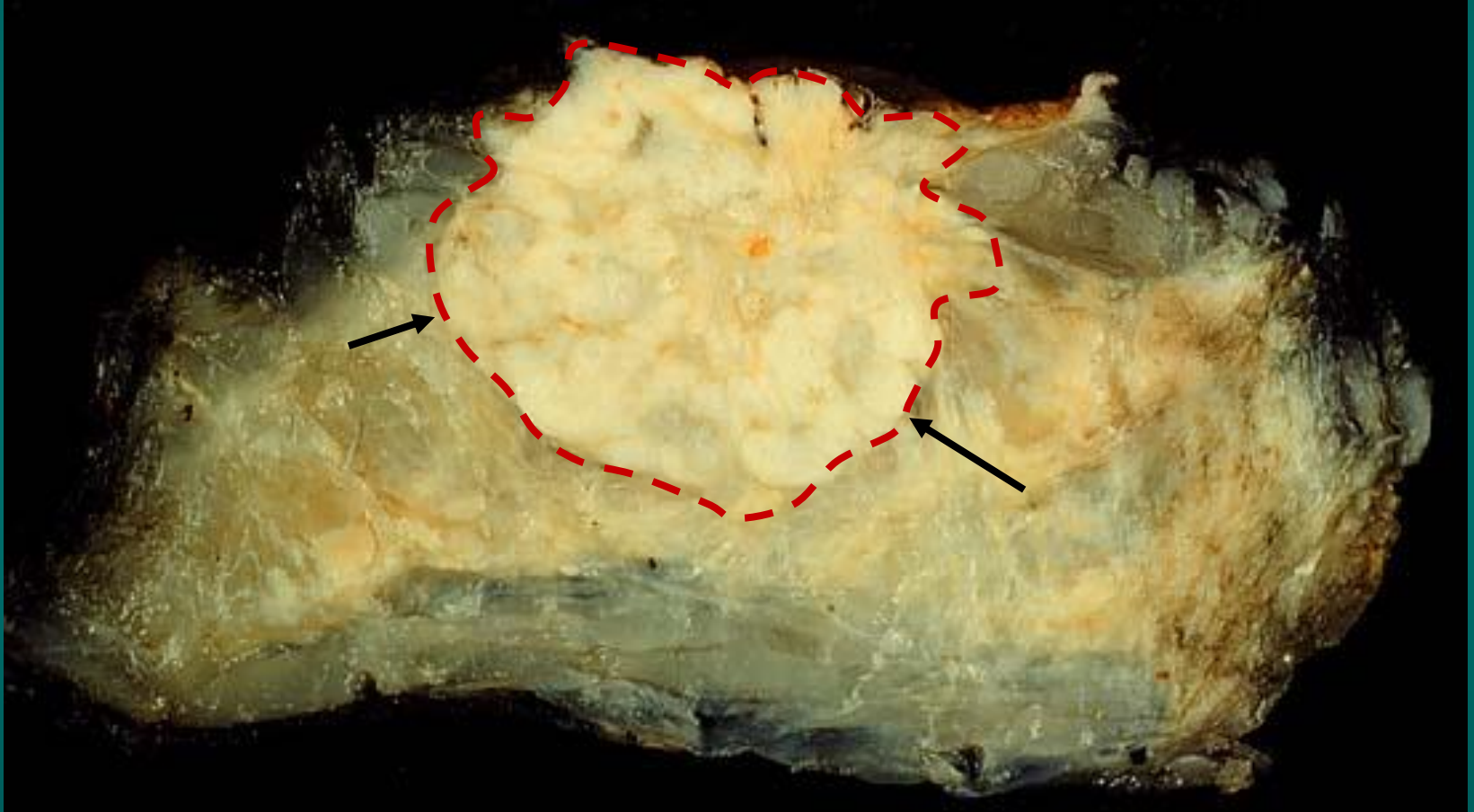


Fractured Liver: Blunt Force Injury



Natural Death:

*Infiltrating Ductal Carcinoma of the Breast





***Pathologist's
photo of embryo
(ectopic
pregnancy)**

Forensic Pathologist's Tools of the Trade

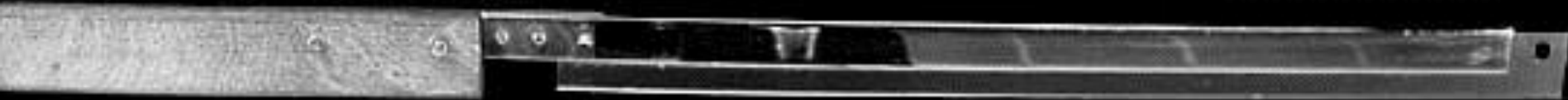


More autopsy tools...



hammer with hook

breadknife



Stryker Saw: good for cutting into skull



Digital Imagery Reconstruction:

Use of computer superimposes photo of skull with outer skin.



Facial reconstruction technique used by forensic artists.



Some forensic scientists participate in high profile cases and become famous.

Meet Dr. Henry Lee--one of the world's most renowned forensic pathologists.



**The Inspector
hopes you
enjoyed learning
about the world
of forensic
science.**

