



# Murder by the loch

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# Forensic science

-Criminology is based on scientific knowledge to rebuild the acts which have taken place.

## **Criminalistic process:**

-Protection of the crime scene.

1° Survey of signs.

-Observation of the crime scene.  
laboratory.

2° Providing evidence to the

-Attachment of the crime scene.

3° Chain of survey.

expert report.

4° Preparation of the

# Case

- Mrs. Ward was found dead inside her car, around Ross Priory. She had been shot in the head.
- Her husband, Gordon Ward was also hurt.
- The crime was told to the police by a witness.



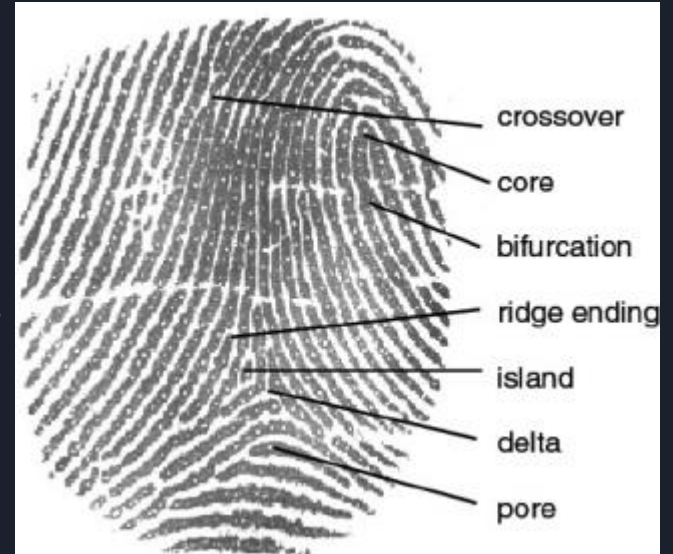
# Gathered and analysed evidences

- Fingerprints
- Bullet shell
- Soil analysis
- Plastics
- Hairs and fibers
- Blood
- Drugs



# Fingerprints

- Each one belongs to a person
- Contrast different bifurcations and comparison points
- Pellets of iodine- Always in the extractor hood
- Fingerprint belongs to Mr. Ward



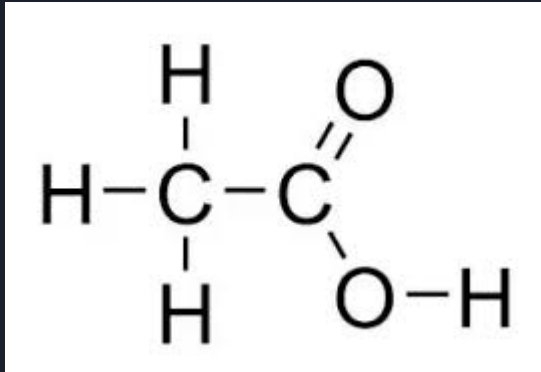
SUBLIMATION





# Bullet shell

- By pouring 30ml of hydrogen peroxide at 3% and 21ml of acetic acid into a recipient which contains the bullet shell, we are able to see the fingerprint
- However, we were not able to reveal any fingerprint as the bullet destroyed.



THE BRASS IS MADE OF AN ALLOY OF COPPER AND ZINC





# Soil analysis

ANALYSED SOILS	ORIGIN	GRAMS (g)	INCREASE OF VOLUME(ml)	DENSITY (g/ml)	RELATIVE ERROR (%)
Soil from tyre	Unknown	15,24 g	9 ml	1,69 g/ml	
Soil 1	Jetty of Ross Priory	52,99 g	21,5 ml	2,465 g/ml	45,9%
Soil 2	Claddochside Farm	34,04 g	28,9 ml	1,18 g/ml	30,18%
Soil 3	Lagganbeg Park	61,64 g	27 ml	2,28 g/ml	34,91%
Soil 4	Portnellan Farm	59,7 g	22,9 ml	2,61 g/ml	54,44%
Soil 5	Loch Lomond	59,56 g	22 ml	2,71 g/ml	60,36%

# Plastics

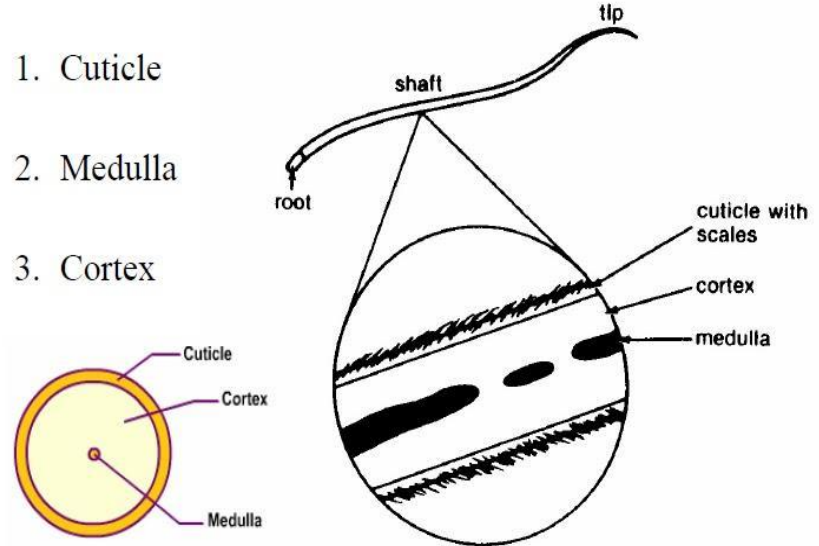
PLASTICS ANALYSIS	WEIGHT	INCREASE OF VOLUME	DENSITY	FLOTABILITY	RELATIVE ERROR
Pattern specimen	0,39g	0,4ml	0,975 g/ml	NO	
Vinyl Polychloride	0,45g	0,4ml	1,125 g/ml	NO	15,39%
Polystyrene	0,44g	0,4ml	1,1 g/ml	NO	12,82%
Polyethylene	0,37g	0,4ml	0,925 g/ml	YES	5,13%
Polypropylene	0,40g	0,4ml	1 g/ml	YES	2,56%

# Hairs and fibers

- A clothe with hair and fibers was found. After looking at it with the microscope, we found out that the evidence was human male hair

- The shaft is the part most observed by Forensic Scientists and it is composed of 3 layers

1. Cuticle
2. Medulla
3. Cortex



# Blood

The test was carried out by making a mixture of 0.3g of "Luminol", 3.5ml of hydrogen peroxide and the blood taken.

In this process, the blood is poured in the Luminol and if it shines in the dark, it is verified that it is blood.



# Drugs

Three different reagents:

-Mandelin: 0.1 g of  $\text{NH}_4\text{VO}_3$  plus 10 ml of concentrated sulfuric acid.

-Marquis: 0.25ml of formalin reagent plus 10 ml of concentrated sulfuric acid.

-Scott: 0.5 g of cobalt thiocyanate (II) plus 0.25 ml of distilled water.





# Conclusions

- THE FINGERPRINTS BELONG TO GORDON
- THE SOIL FOUND IN THE TIRES COMES FROM CLADDOCHSIDE FARM
- PLASTIC MADE OF POLYSTYRENE
- PRESENCE OF HUMAN BLOOD AND HAIRS, WE ALSO FOUND FIBERS
- DRUG FOUND IS ASPIRIN



Thank you for your attention