

CONFIDENTIAL

The Birthday Murders

By Olivia Roederer

Setting:

Cameron and Nika have been dating for 2 years. They do not socialize much with other people as they feel their relationship is enough to keep each other's company. Therefore, they spend all of their time with each other. Recently, Cameron has made a new friend named Sophie while he was at the supermarket while shopping for baking goods. Sophie noticed Cameron was trying to find a good flour to buy, so she recommended a couple different brands to him.

Suspects:

Sophie:

Nika:

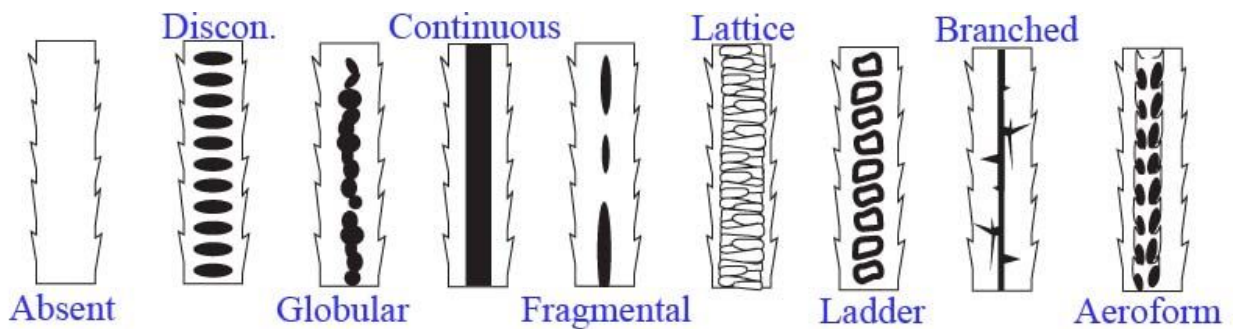
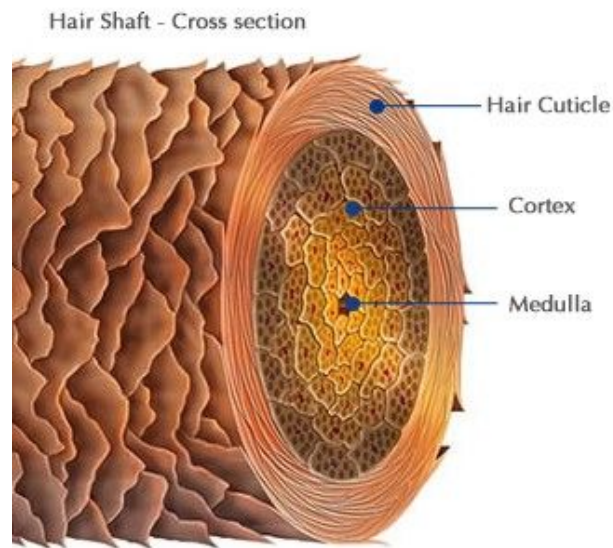
Cameron:

X:

Evidence Key:

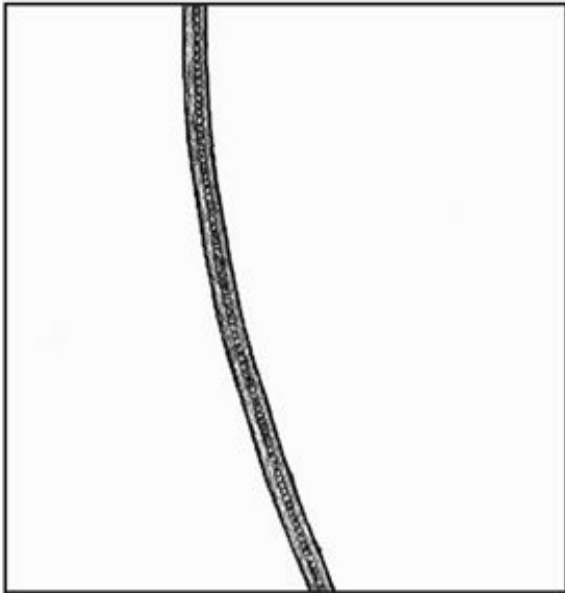
Animal/Human Hair Strands:

Most hair follicles are made up from the structure below

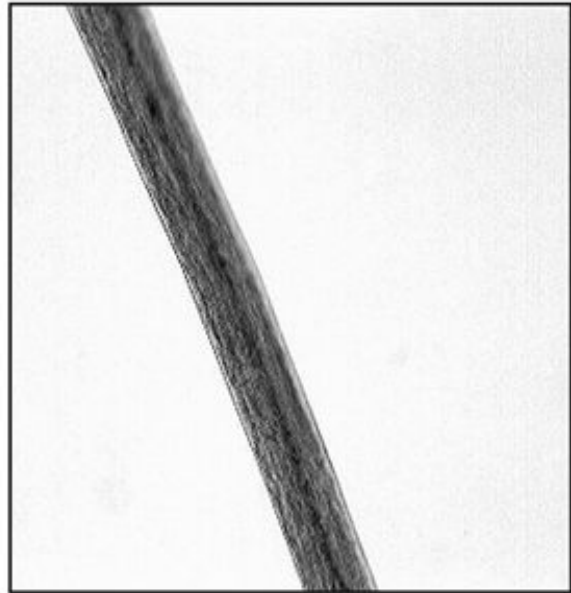


Human Hairs: Under a microscope, human hairs usually have a thin (less than $\frac{1}{3}$ of the hair's diameter) or an absent medulla region.

Animal Hairs: Animal hairs usually have thick medulla (more than 1/2 of the hair's diameter).



Animal Hair. Note the thick medulla (core).



Human Hair. Note the absence of a medulla.

Human hairs normally have either no present medulla or continuous/intermittent medulla present. On the other hand, most animal furs have distinct medulla patterns that are visibly different in shape, pattern and size.



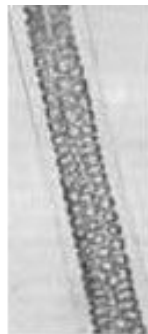
Human



Dog



Deer



Rabbit



Cat



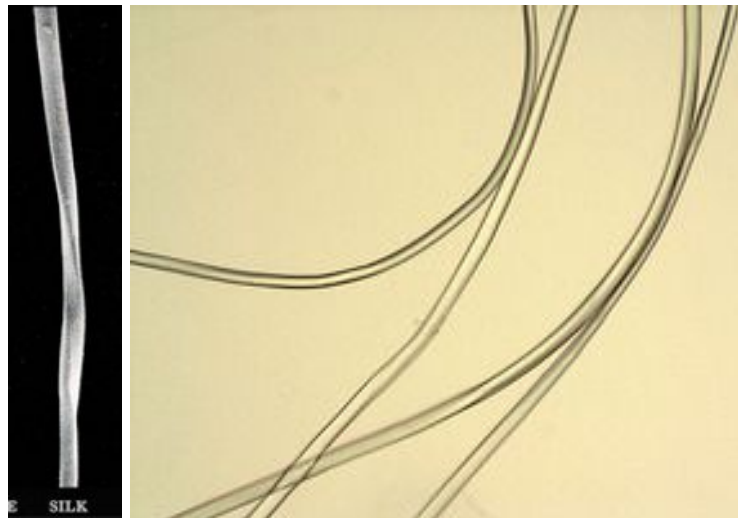
Mouse

Fibers: Fibers are normally strands found commonly from ones sweater, jacket, blanket etc. There are natural fibers which like animal hair and common plant fibers like cotton, flax and sisal. Manufacturers typically mix natural fibers like cotton with synthetic ingredients like nylon, polyester or rayon to create items like your shirt or sweater. **SYNTHETIC FIBERS NEVER CONTAIN A HAIR CUTICLE, CORTEX OR MEDULLA.**

Manufactured fibers under a microscope:

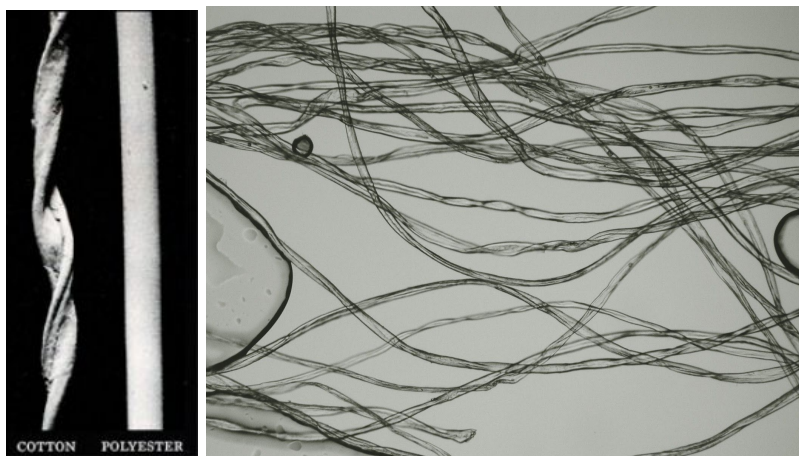


Silk under microscope:



- Very transparent
- Straight structure
- No medulla
- No cortex

Cotton under microscope:

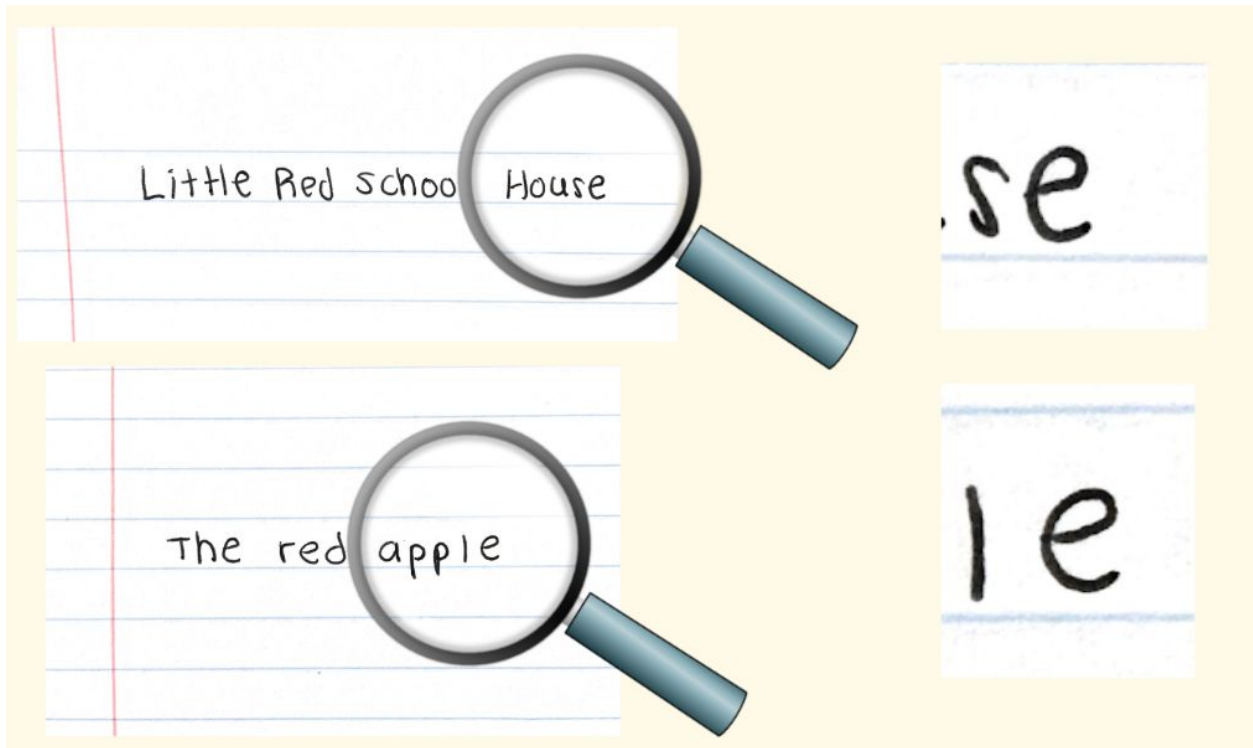


- Transparent
- Straight/wavy structures

- No medula
- No cortex

Linguistics: Linguistics pay close attention to spelling of certain words and phrases, their positioning in a sentence and the overall grammatical pattern a suspect's sentences may follow.

Example:



- “E” same size, shape
- “E” curves around edges
- Same ink pen used

Suspects handwriting:

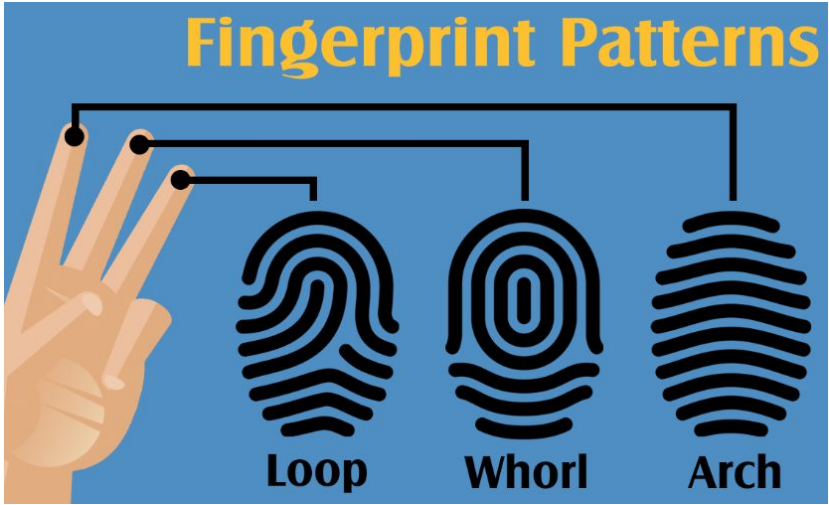
Sophie:

Nika:

Cameron:

X:

Fingerprints: Fingerprints are unique and no one contains the same one. They follow 3 distinct patterns-listed below.



Whorl (W)

Arch (A)

Loop (L)

Suspects Fingerprints:

Sophie:

Nika:

Cameron:

X:

Toxicology: Toxicology tests can be done to identify an unknown chemical substance. A common test that can be done is called a flame test.

