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**IN THE CIRCUIT COURT OF THE THIRTEENTH JUDICIAL CIRCUIT  
LASALLE COUNTY, ILLINOIS**

*Eric V. ...*  
CLERK OF THE CIRCUIT COURT  
LASALLE COUNTY, ILLINOIS

PEOPLE OF THE STATE OF ILLINOIS,	)	
	)	
Plaintiff,	)	
	)	
vs.	)	No. 1960-CF-753
	)	
	)	Honorable Judge
	)	Michael C. Jansz, Presiding
CHESTER WEGER,	)	
	)	
Defendant.	)	

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**DEFENDANT'S SUPPLEMENTAL MOTION FOR FORENSIC TESTING  
PURSUANT TO 725 ILCS 5/116-3 AFTER INSPECTION  
OF REMAINING PHYSICAL EVIDENCE**

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**Filing 2 of 2**

**Exhibit 1 – Report of Dr. Christopher Palenick**

**Exhibit 1A – Appendix A**

**Exhibit 1B – Appendix B**

**Exhibit 1C – Appendix C**

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PURSUANT TO 725 ILCS 5/116-3 AFTER INSPECTION  
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**Exhibit 1**

**Report of Dr. Christopher Palenik  
(Microtrace LLC)  
Part 1 of 4**

MT17-0036

## Review of Starved Rock Evidence Condition

**Prepared for:**

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17 August 2021



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## **Task**

1. Conduct a review of the Starved Rock evidence made available to us at the LaSalle County Sheriff's Office.
2. Provide a report in response to the court's request to report on the condition of the evidence and explain which items could be tested and why.<sup>1</sup>

## **Qualifications**

### ***Background***

I have been involved with forensic trace evidence for as long as I can remember. My first experiences, as a child, started with watching of my father in our basement laboratory conducting forensic soil comparisons and microscopical examinations of hair and fibers and listening to forensic scientists from around the world (from among others, Scotland Yard, the Royal Canadian Mounted Police (Canada), and the Bundeskriminalamt (Germany)), talk about cases they were working on as they visited my home or I toured their labs.

I started working on forensic research, publishing my first article on forensic hair analysis when I was twelve, presenting research on forensic paint analysis at a scientific meeting when I was fourteen, and cutting cross sections of the thousands of fiber samples in our fiber reference collection, including several DuPont Orlon samples (a fiber directly relevant to this case) over my high school summers. My experience broadened when I conducted a year-long mentorship at the Internal Revenue Service Forensic Laboratory on the subject of ink chemistry and started to directly observe the handling of evidence and casework. I then carried out an internship at the Bundeskriminalamt, the national German police service's forensic laboratory, where I conducted work on forensic paint analysis. Following my Ph.D., which was conducted on the neutronics of a naturally occurring nuclear reactor, I conducted a postdoctoral fellowship at the FBI research laboratory in Quantico, VA.

Since 2005, I have been practicing as a forensic microscopist at Microtrace, where I have conducted casework on a wide range of materials that include, among others, hair, fibers, soil, polymers, paint, tape, and glass. I have conducted federally funded forensic research as a principal investigator and have published results in peer reviewed journals. I have been invited to speak around the world, including talks at INTERPOL in Lyon, France; and I serve on appointed positions including the National Institute of Justice Sponsored OSAC, responsible for writing and approving United States Forensic Science Standards.

### ***Case Specific Qualifications***

I have analyzed evidence, submitted on behalf of both the prosecution and defense, that is both recent and quite old (going back as far as 1960's), which was in a variety of conditions: sealed and unsealed, mold damaged, waterlogged, aged, largely utilized, and lacking proper identifications. I have discussed and advised clients for both prosecution and defense teams on the potential probative value of such evidence. In many of these instances, we have had the

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<sup>1</sup> IL vs. Weger Status Hearing on 6 July 2021, P 6, L 14-15.

opportunity to demonstrate, through the application of logic, direct observation, and modern scientific analysis, the specific remaining value of such evidence

With regards to questions of evidence value, we have participated in an international round robin on degraded, forensic paint evidence, showing that through microscopical analysis of evidence partially damaged by evidence technicians as a result of poor collection techniques, that it is still possible to obtain full, probative results.

- A full copy of my CV is attached to this as Appendix A.

## Approach

Evidence related to this matter was inspected at the LaSalle County Courthouse for two full days on 15 and 23 June 2021. Images taken during the inspection were reviewed and analyzed in preparation of this report.

In determining the best way to report to the court, various factors have been taken into consideration:

- The sheer amount of evidence. By my count, 313 items/sub-items of evidence have been identified. This far exceeds the 20 February 2004 Illinois State Police Crime Scene Report of Crime Scene Investigator Michael Mogged Memo, which makes it unfeasible to address each item of evidence individually.
- The items have been packaged in a variety of ways that includes (among others): envelopes of evidence, material mounted between two microscope slides, evidence mounted on microscope slides, pill boxes with evidence, and paper folds.
- A given item may have value as both a known and questioned sample. For example, an item of clothing may be considered known, because it was taken from a known source and may serve as the source of known fibers (for example), but other adhering evidence such as soil would be treated as a type of questioned evidence because it is from a presently unknown source.
- The evidence consists of a variety of materials that include (among others): hair, fibers, blood, soil, polymer, glass, fabric, leather, tissue, cordage, wood, clothing, and personal property.
- The inspection to date was specifically limited to photography and non-destructive analysis.<sup>2</sup> Based on this visual inspection, we can get a sense of what types of evidence are present, but it is scientifically impossible to establish every type of evidence that is present in every item of evidence. For instance, only through further analysis can we

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<sup>2</sup> IL vs. Weger Status Hearing on 1 June 2021, P 64 L4-18.



establish the identity of specific items of evidence.

There are, therefore, multiple reasons for which any given items might be tested, some of which cannot be identified until an item of evidence is examined in greater detail. Given the range of questions that a defense team may seek to pursue, that it is not possible to anticipate every possible use for a given item of evidence due to the questions of interest and focus of an analysis inevitably changes as facts emerge through an investigation, it is logically and scientifically impossible at this point to fully address the court's request to explain which items could be tested and why.

Acknowledging that there is no way to fully address the court's request, I have attempted to address the spirit of the court's request by considering the condition of the evidence through several separate perspectives in the hopes of illustrating the general condition of each item of evidence and the general potential for evidentiary significance that remains. To this end, the next sections of the report: (a) provide an overview of the evidence, (b) an evaluation of the evidence by type of packaging, (c) an evaluation of the evidence by the category of trace evidence, and (d) more in depth reviews for specific examples of evidence. Together, it is anticipated that this review will illustrate in both specific and general terms, the extent of preservation.

## **Overview of the Evidence**

Based upon the two days of evidence inspections, my observations during the inspections, approximately 2,500 images taken at the inspections, and a review of these materials, I have generated a Catalog of Evidence made available to us by the LaSalle County Sheriff's office. The various types of evidence observed have been documented, the various sub-items (*e.g.*, slides, envelopes, clothing) have been grouped; various types of evidence observed or indicated have been noted (further examination and analysis will help to refine and expand the types of evidence that are presently indicated). Identifiers have been listed in the catalog, which include exhibit numbers, descriptions, K and Q-numbers. In some cases, only a description, not a number was provided, and in such cases, a new number in the 900 range (9xx) was assigned. Many items had been separated into multiple parts (*e.g.* envelope with material, mounted slides, photomicrographs). To organize and permit related parts to be viewed together, items were assigned a sub-number (*e.g.*, Item 5.1, 5.2). The full Catalog of Evidence has been attached as Appendix B.

The samples were contained within the drawers of a file cabinet that was secured with a chain and lock (Figure 1). Within the cabinet are numerous bags and boxes, such as the one shown in Figures 2 and 3, which consists of various envelopes. Other multi-exhibit bags were sealed, such as the bag from Drawer 3 labeled "Fibers" (Figure 4). There is no evidence that the bag shown in Figure 4 had been opened.

Based upon initial review of the evidence within the cabinet, I have identified 313 unique exhibits. Many of these 313 exhibits consist of numerous sub-exhibits. For example, Item 2, is a head hair sample from Mildred Lindquist (Victim B). This sample, along with many others at the inspection, consisted of numerous sub-items. Among the items related to this exhibit is an envelope containing hair (Figure 5), a pair of taped together microscope slides containing

numerous hairs (Figure 6-8), four permanently mounted microscope slides (Figure 9), and photomicrographs with pictures of hairs from the permanent slide preparations (Figures 10 and 11). Features and observations of interest for this particular item:

- Each of these items are labeled
- All of the items contain the materials expected. For example, hairs are observed in all of the sub-items.
- The permanent slide mounts, taped pair of slides, and envelope are each sealed.
- By all observations, this evidence appears to be in the same condition, same state of being sealed or unsealed as it was at the time of trial.
- The sub-items are self-consistent.

Therefore, all of this evidence remains useful, both as a known sample of the victim's head hair and as a source of questioned materials that may be found within this sample. This particular item is typical of many of the items of evidence that were collected.

## **Evidence by Packaging**

The evidence was generally packaged in the following ways: envelopes, paper folds, taped-together slides, permanently mounted microscope slides, and bulk items. Each category of evidence is discussed in more detail below.

### ***Envelopes***

Envelopes of evidence were observed throughout the filing cabinet. As a review of the Catalog of Evidence will show, the envelopes were generally labeled with a description, identifiers, dates, and initials. Many of the envelopes were sealed.

Approximately 90 known hair standards are contained within sealed envelopes. For example, Figure 12 shows a coin envelope labeled "Robert Murphy" Hair (K18). This envelope was not opened during the inspection but was photographed on a transmitted light base to illustrate that the envelope contains hair.

Other envelopes were not sealed. The condition and contents of each envelope were documented (as possible) and the results are shown in the Catalog of Evidence. The contents of every envelope that contained material and was opened (or was inspected on a transmitted light base) contained material consistent with the labeled description. Other envelopes that were empty appear to have their contents transferred to other sub-items or preparations.

### ***Paper Folds***

Paper folds are a common way to store trace evidence. The paper folds encountered in our inspection showed no signs of disturbance and contained evidence consistent with the expected contents that were consistent with other sub-items of evidence from the same exhibit. For



example, two locks or curls of hair were dug out of sand in the cave (Figure 13). The contents of this envelope contain a paper fold with hairs (Figure 14). The hairs appear exactly as described, as a “lock” or “curl.” This is consistent with evidence lists in the 31 May 1960 laboratory report that describes the samples and their packaging (Figure 15).

#### ***Slides Taped Together with Scribed Labels***

A portion of the same lock/curl of hair sample (Exhibit 7) was also mounted between two microscope slides (Figure 16). These taped together slides show no signs of being opened and are labeled with a scribe that denotes the specific item number (Exhibit 7) (Figure 16). Of particular note is a good amount of hair that could be suitable for either nuclear or mitochondrial DNA as well as other debris such as that circled in Figure 17, which could contain tissue, blood, or another substance entirely. Another portion of the sample is in a still sealed and labeled enveloped as seen in a transmitted light image (Figure 18).

In general, the 59 slides in this format are taped together with red tape and labeled by a scribe (*i.e.*, a diamond tipped pen) or, on occasion with a marker. There is no indication that such evidence is in any condition but that which the original examiners prepared it.

#### ***Mounted Microscope slides***

A total of 45 permanently mounted microscope slides were cataloged. For example, see Figures 9, 19, and 20. These slides are all labeled and, based upon a preliminary examination of the photographs, they contain the materials expected. For example, Figures 9, 19, and 20, contain hair and are from exhibits that are expected to contain hair, something that is generally true for items cataloged in this format. Furthermore, labeled photomicrographs of the actual specimens on many of the microscope slides were collected. These images, which show a portion of each specimen, provide yet another verification of the contents. Figures 10, 11, 21, and 22 show examples of the photomicrographs taken from these preparations. The high-resolution transparencies of these photomicrographs also exist with the evidence.

#### ***Clothing and other items***

Clothing and other property is contained in a range of packaging. Some items were contained within a cloth sack (Figure 23). This includes Chester Weger’s jacket (Figure 24) and much of the clothing and shoes of Lillian Oetting (Victim C) (examples shown in Figure 25-26). Each of these items is labeled. In addition, some items of clothing are packaged individually in envelopes. For example, the two gloves from Mildred Lindquist (Victim B) were packaged in an unsealed envelope (Figure 27-28).

It is notable that these items generally have labels attached directly to them, so there can be no question as to their identity. Such packaging creates issues for the recovery and comparison of certain types of evidence, such as questioned fibers. However, despite some limitations, such items do retain certain evidentiary significance. For example, as a source of known fibers materials, such evidence remains perfectly valid. Also, this evidence contains various dried stains, droplets and deposits that are intimately associated with the object (Figures 29-31).

Ultimately, all of the clothing holds at least some potential evidentiary significance. The value and limitations can only be discussed on a sample and evidence-specific basis, and in some cases, this may require analysis to elucidate the potential strengths and limitations.

## **Evidence by Trace Category**

Since each type of evidence has potential value and limitations, the various categories of evidence identified to date are discussed individually. The types of evidence noted during my review of the inspection photos are noted in the Catalog of Evidence. This is not meant to be an inclusive list; however, it provides some indication of the range of materials observed during this inspection. Investigative approaches for analyzing, identifying and interpreting each type of evidence listed below have developed immensely<sup>3</sup> since they were applied approximately 60 years ago (and also since this evidence was reviewed by CSI Mogged in 2004).

### ***Hair***

Hair represents one of the most useful categories of evidence. A great deal of hair evidence is currently preserved in the form of permanent microscope slides, taped between two microscope slides, in paper folds, and in sealed and unsealed envelopes. For example, Exhibit 18 contains a hair found on the right glove of Lillian Oetting (Victim C) (Figure 32). This hair is preserved between two microscope slides with the inscribed exhibit number (Figure 33) and is consistent with the description in a 1960 chain of custody report (Figure 34).

In general terms, the hair evidence is labeled. The presence of sub-exhibits packaged in different ways permits evidence to be checked for consistency, and all consistency checks that have been possible to evaluate to date check out. For hair evidence, we also have photomicrographs of certain mounted hairs that provide yet another level of verification. Even within the limitations of this inspection, it was possible to note likely follicular material and roots on several of the hair samples. This includes (among others) hair removed from the binoculars (Figure 35) and hair from the hand of Lillian Oetting (Victim C) (Figure 36). The combination of questioned and known hair evidence provides a means by which it will be possible to apply nuclear or mitochondrial DNA analysis to provide direct information about the inclusion or exclusion of certain individuals, something not possible at the time of the original trial and something less developed at the time of CSI Mogged's inspection in 2004.

### ***Biological***

Tissue and blood were noted by prior investigators and observed during my inspection in various items of evidence including clothing and between taped microscope slides. For example, see Figures 17, 29, 35, 36. It is likely that a detailed microscopical inspection of labeled evidence, in particular, the taped microscope slides, will show the presence of other instances of tissue and blood, something that can only be done with further analysis. A DNA expert can provide further discussion on the use of evidence on clothing items that have been in contact with other items.

### ***Fibers***

Fibers, including red Orlon, were studied as much as any other type of evidence. Figures 37-39 show the "red fuzz" that was found in the cave. Note that it is preserved between two taped slides and in a permanent slide mount. These descriptions match up with those listed in a 1960 report (Figure 40). Questioned red fibers were noted in various locations, in the cave (Exhibit

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<sup>3</sup> More detail on each type of evidence can be provided.



12), on Lillian Oetting (Victim C) (Exhibit 14), and on the trail (Exhibit 36). Well preserved samples from each of these locations exist. While numerous red sources were obtained, including Mrs. Murphy's red sweater, which consists of 100% Orlon, it does not appear that a source was ever found. However, there is no indication that all sources of red fibers were analyzed and compared. The entire process of fiber analysis, comparison, and sourcing has developed immensely since the 1960's in terms of analysis methods, instruments, our knowledge of fibers and colorants, and our approach towards interpretation.

### ***Soil***

Soil is present on shoes and clothing (for one example, see Figures 30 and 31) and has been isolated from various items of clothing. It is interesting to note that crime scene photos indicate that at least one victim was dragged (Figure 42). The approach to soil analysis, the analytical instrumentation that is utilized, and the interpretation has developed immensely since the time of the original investigation in the 1960's.

### ***String***

A total of 43 string samples were cataloged. Various questioned string samples are labeled with attached evidence tags that describe their source. For example, Figure 44 shows a questioned sample of string collected from the cave. This evidence is in a suitable condition for use in a comparison.

### ***Unknown Evidence***

On the evidence mounted on or between slides, there is a great deal of additional evidence that cannot be identified through the initial out-of-laboratory inspection. Consider for example, the Green River Murder investigation: this case contained evidence from scores of victims that had been searched, examined, and analyzed at a trace evidence laboratory under optimal conditions. Years later, our laboratory received the same evidence after it had already been inspected, sampled, and analyzed. By looking at the evidence in more detail, Skip Palenik at our laboratory located evidence smaller than that considered by the trace evidence laboratory. Such evidence, which could not be seen with the naked eye, could not even be contemplated as possible evidence until it was looked at our laboratory. Over the years, we have found a great deal of evidence that had been entirely overlooked by prior analyses and have found probative value in evidence that had been already analyzed by another laboratory. Here, we have slides and other items that contain debris of presently unknown potential value. Only through analysis can evidence be located, much less evaluated for its probative value.

## **Prior Evidence Inspections**

Given the immense contrast between my observations and those of the 2004 Mogged investigation, it seems relevant to provide at least a brief review of the 2004 Mogged report. The Mogged report has several shortcomings:

- In the most general terms, the Mogged evaluation is simply incorrect and limited to the point of being meaningless.



- As stated, the 2004 inspection focused only on evidence used at trial. This left the great majority of the evidence out of consideration.
- The Mogged report cites a general unsuitability of the evidence but provides no specific details, a major flaw.
- The Mogged review was conducted by a non-scientist, and as such, was improperly trained to recognize the actual potential of this evidence.
- While the 2004 evidence was reviewed from the perspective of DNA analysis, it is also notable that the capabilities of DNA have advanced immensely in terms of sensitivity and selectivity.
- From the perspective of trace evidence, ample hair, fibers, soil, blood, tissue, unknown materials, and other materials exist in a state that is perfectly suited to further analysis. The presence of multiple sub-items, mounted in multiple ways so the best possible samples can be selected and consistency checks are possible.
- Ultimately, my conclusion could be considered the complete opposite of that stated in the 2004 inspection; however, my conclusion is based upon specifics, which have been pointed out in the figures provided with this report (in general) and are supported specifically in the Catalog of Evidence.

## **Evidence of Initial Interest**

Evidence from eight items has been identified by Chester Weger's attorneys as their initial focus for analysis. Images of these eight items are provided in Appendix C (Evidence of Initial Interest). The earlier discussions regarding packaging and evidence type are entirely applicable to this evidence; however, given the initial interest in these particular items, further discussion is provided.

### ***Item 4 - Hairs from Left Finger of Lillian Oetting (Victim C)***

This evidence was located in the evidence box from Drawer 2 of the filing cabinet and in slide boxes containing permanently mounted microscope slides. The 31 May 1960 Laboratory report states that the evidence was received in white envelopes sealed with Scotch tape (Figure 15). At the time of our 2021 inspection, this evidence was packaged in a white envelope that had once been sealed with tape (Appendix C – Page 1), and there is no indication of any other tape or that the evidence was ever resealed after the 1960 laboratory analysis. This correspondence provides further confirmation of the identity of the evidence, but more importantly, it shows that this envelope was in an unsealed state at the time of the original trial. Thus, if the state of evidence at the time of the original trial was considered suitable for the original prosecution, it should be considered suitable today.

The evidence within this envelope consists of three paper folds, all of which contain hair. The paper folds are folded-up and they entirely contain the hair within. This hair appears to contain a

root (Appendix C – Page 4 – Image P6150453); however, further microscopical analysis would be needed to confirm this. Additionally, in two of the slide boxes were three permanently mounted, labeled microscope slide mounts that contain hair from this exhibit (Appendix C – Pages 13-14). Also present are photomicrographs of the hair (Appendix C – Pages 10-12). Photos of this evidence can be seen in Appendix C pages 1-14.

This hair evidence is all in a form that is suitably identified and preserved for analysis by microscopy, mitochondrial DNA, and/or nuclear DNA.

***Item 5 - Hair from left index finger of brown glove of France Murphy (Victim A)***

This evidence was located in the evidence box from Drawer 2 of the filing cabinet and in slide boxes containing permanently mounted microscope slides. Photos of this evidence can be seen in Appendix C, Pages 14-21. The 31 May 1960 Laboratory report states that the evidence was received in white envelopes sealed with Scotch tape (Figure 15). At the time of our 2021 inspection, this evidence was packaged in a white envelope that had at one time been sealed with tape (Appendix C – Pages 14-15), and there is no indication of any other tape or that the evidence was ever resealed after the 1960 laboratory analysis. This correspondence provides further confirmation of the identity of the evidence, but more importantly, it shows that this envelope was in an unsealed state at the time of the original trial. Thus, if the state of evidence at the time of the original trial was considered suitable for the original prosecution, it should be considered suitable today.

The evidence within this envelope is a hair between two glass microscope slides (Appendix C Pages 15-18). This hair appears to contain a root and follicular material (Appendix C – Page 16 – Image P6150500); however, further microscopical analysis would be needed to confirm this.

In the slide boxes are three permanently mounted, labeled microscope slide mounts with additional hair from this exhibit (Appendix C – Page 20). Also present are photomicrographs of the hairs on the prepared slides (Appendix C – Pages 18-19).

This hair evidence is all in a form that is suitably identified and preserved for analysis by microscopy, mitochondrial DNA, and/or nuclear DNA (based upon the presence of apparent roots and follicular material).

***Item 7 – 2 locks or curls of hair dug out of sand in cave***

This evidence was located in the evidence box from Drawer 2 of the filing cabinet and in slide boxes containing permanently mounted microscope slides. The 31 May 1960 Laboratory report states that the evidence was received in white envelopes sealed with Scotch tape (Figure 15). At the time of our 2021 inspection, this evidence was packaged in a white envelope that had at one time been sealed with tape (Appendix C – Pages 21-22), and there is no indication of any other tape or that the evidence was ever resealed after the 1960 laboratory analysis. This correspondence provides further confirmation of the identity of the evidence, but more importantly, it shows that this envelope was in an unsealed state at the time of the original trial. Thus, if the state of evidence at the time of the original trial was considered suitable for the original prosecution, it should be considered suitable today.



The evidence within this envelope is hair between two, labeled glass microscope slides and a paper fold (Appendix C Page 22 – Image P6150476 and Page 25). Photos of this evidence can be seen in Appendix C pages 21-35. As discussed earlier in this report, the paper fold is neatly folded, labeled, and the hair within is entirely contained (Appendix C – Pages 25-29 and Figures 13 and 14). Similarly, the hair between two glass slides (Appendix C – Pages 23-25 and Figures 16 and 17) is labeled. A closer examination of this slide shows the presence of potential tissue (see Figure 17 and earlier discussion in this report).

Another sealed envelope from this exhibit contains additional hair (see earlier discussion and Figure 18). A transmitted light image of the envelope, which was not opened during the inspection, demonstrates that a curl of hair is present. This is consistent with the descriptions on the original envelope and the 31 May 1960 report (Figure 15).

Additionally, in the slide boxes were four additional, permanently mounted, labeled microscope slide mounts that contain additional hair from this exhibit (Appendix C – Page 20). Also present are photomicrographs of the hairs on the prepared slides (Appendix C – Pages 18-19).

This hair evidence is all in a form that is suitably identified and preserved for analysis by microscopy, mitochondrial DNA, and/or nuclear DNA (based upon the presence of apparent roots and follicular material).

***Item 13 - Left-hand glove collected from France Murphy (Victim A)***

This evidence was located in the evidence box from Drawer 2 of the filing cabinet. The 31 May 1960 Laboratory report states that this item was received in a white envelope sealed with Scotch tape (Figure 40). At the time of our 2021 inspection, this evidence was packaged in a white envelope that had at one time been sealed with tape (Appendix C – Pages 57-58), and there is no indication of any other tape or that the evidence was ever resealed after the 1960 laboratory analysis. This correspondence provides further confirmation of the identity of the evidence, but more importantly, it shows that this envelope was in an unsealed state at the time of the original trial. Thus, if the state of evidence at the time of the original trial was considered suitable for the original prosecution, it should be considered suitable today.

This evidence consists of a glove with a damaged index finger (Appendix C – Pages 59-61). The glove is also identified by a card with a safety pin (Appendix C – Page 58).

This glove is in a form that is suitably identified and preserved for analysis by microscopy, mitochondrial DNA, and/or nuclear DNA (based upon the presence of apparent roots and follicular material).

***Item 18 - Hair taken from the Lillian Oetting's (Victim C) right glove***

This evidence was located in the evidence box from Drawer 2 of the filing cabinet and in slide boxes containing permanently mounted microscope slides. The 31 May 1960 Laboratory report states that the evidence was received in white envelopes sealed with Scotch tape (Figure 34). At the time of our 2021 inspection, this evidence was packaged in a white envelope that had at one time been sealed with tape (Appendix C – Pages 21-22), and there is no indication of any other tape or that the evidence was ever resealed after the 1960 laboratory analysis. This correspondence provides further confirmation of the identity of the evidence, but more

importantly, it shows that this envelope was in an unsealed state at the time of the original trial. Thus, if the state of evidence at the time of the original trial was considered suitable for the original prosecution, it should be considered suitable today.

The evidence within this envelope is a hair between two, labeled glass microscope slides (Appendix C Pages 36-37 and Figure 33). The glass slides are scribed with a label denoting the item number (Appendix C – Page 36 – Image P6150381).

In the slide boxes was one permanently mounted, labeled microscope slide mounts that contain additional hair from this exhibit (Appendix C – Page 38). Also present are photomicrographs of the hairs on the prepared slide (Appendix C – Page 37).

This hair evidence is all in a form that is suitably identified and preserved for analysis by microscopy, mitochondrial DNA, and/or nuclear DNA (based upon the presence of apparent roots and follicular material).

***Item 40 - Empty film carton, sting, cigarette butts, etc.***

This evidence was located in the evidence box from Drawer 2 of the filing cabinet. The 31 May 1960 Laboratory report (pages 4 and 6) states that the evidence was received in white envelopes sealed with Scotch tape (Figure 34). At the time of our 2021 inspection, this evidence was packaged in a white envelope that had at one time been sealed with tape (Appendix C – Pages 38-43), and there is no indication of any other tape or that the evidence was ever resealed after the 1960 laboratory analysis. This correspondence provides further confirmation of the identity of the evidence, but more importantly, it shows that this envelope was in an unsealed state at the time of the original trial. Thus, if the state of evidence at the time of the original trial was considered suitable for the original prosecution, it should be considered suitable today.

An inner envelope (Appendix C – Image P6150630), within the outer envelope, contains the evidence, which consists of a film carton and instructions, a piece of string, four cigarette butts, and a piece of unknown paper (Appendix C – Image P6150632).

The physical evidence is consistent with envelope's descriptions of the evidence. There is no evidence that any of these items were handled in the past 60 years. While the results would need to be considered in the context of the case, and in conjunction with a DNA expert, this evidence is all in a form that is suitably identified and preserved for analysis by microscopy, mitochondrial DNA, and/or nuclear DNA (see following section on People v. Whalen).

***Item 41 - String collected from a cave area***

This evidence was located in the evidence box from Drawer 2 of the filing cabinet. The 31 May 1960 Laboratory report (pages 4 and 6) states that the evidence was received in white envelopes sealed with Scotch tape (Figure 34). At the time of our 2021 inspection, this evidence was packaged in a white envelope that had at one time been sealed with tape (Appendix C – Pages 43-46), and there is no indication of any other tape or that the evidence was ever resealed after the 1960 laboratory analysis. This correspondence provides further confirmation of the identity of the evidence, but more importantly, it shows that this envelope was in an unsealed state at the time of the original trial. Thus, if the state of evidence at the time of the original trial was considered suitable for the original prosecution, it should be considered suitable today.



The physical evidence is consistent with the envelope's descriptions of the evidence. There is no evidence that any of these items were handled in the past 60 years. While the results would need to be considered in the context of the case, and in conjunction with a DNA expert, this evidence is all in a form that is suitably identified and preserved for analysis by microscopy, mitochondrial DNA, and/or nuclear DNA (see following section on People v. Whalen). Furthermore, this evidence could also be formally compared to the wide range of known string samples, which are well identified (see above section on String), using formalized approaches to cordage comparisons that had not been developed at the time of the original laboratory work.

***Item 51 - Hair and string collected from the cave at the scene***

This evidence was located in the evidence box from Drawer 2 of the filing cabinet. The 31 May 1960 Laboratory report states that a great deal of the evidence was received in white envelopes sealed with Scotch tape. At the time of our 2021 inspection, this evidence was packaged in a white envelope that had at one time been sealed with tape (Appendix C – Pages 46-51), and there is no indication of any other tape or that the evidence was ever resealed after the 1960 laboratory analysis. This shows that this envelope was in an unsealed state at the time of the original trial. Thus, if the state of evidence at the time of the original trial was considered suitable for the original prosecution, it should be considered suitable today.

An inner envelope (Appendix C – Page 48 – Image P6150344), within the outer envelope, contains the evidence, which consists of string, possible blood stains, possible blood residue, a fibrous cluster that appears to be hair, and other presently unidentified debris. While the results would need to be considered in the context of the case, and in conjunction with a DNA expert, this evidence is all in a form that is suitably identified and preserved for analysis by microscopy, mitochondrial DNA, and/or nuclear DNA (see following section on People v. Whalen). Furthermore, the string could also be formally compared to the wide range of known string samples, which are well identified (see above section on String), using formalized approaches to cordage comparisons that had not been developed at the time of the original laboratory work.

***Item 927 - Test Tubes***

This evidence was located in a sealed bag labeled “Misc.” that was removed from Drawer 3 of the filing cabinet (Appendix C – Pages 51-52). Within an inner envelope are various items, including three test tubes (Appendix C – Page 53). Each of the three test tubes are closed with a rubber stopper. One of the test tubes has a label on it that says “W.J.H. 3-16-60 A.” Based on all other labels and reports, the A refers to Victim A (France Murphy). The debris in the test tube (Image Appendix C – Page 54 – P6231483) would need to be studied further, but it is consistent with the appearance of fingernail scrapings, which are often stored in test tubes.

This was removed from a sealed bag, and there is no evidence that any of these items were handled in the past 60 years. While the results would need to be considered in the context of the case, and in conjunction with a DNA expert, this evidence is all in a form that is suitably identified and preserved for analysis by microscopy, mitochondrial DNA, and/or nuclear DNA (see following section on People v. Whalen).

## **Precedent**

This section is intended to discuss precedent from a scientific perspective. In my experience, scientific logic and analysis are used weight the evidence for its probative value. In a typical forensic case, the scientist is permitted to go through evidence to find and analyze materials with probative value.

It is a fact that evidence is often encountered with less than perfect preservation or chain of custody. A great number of cases have materials that are unsealed, have broken seals, or have a less than perfect chain-of-custody. To argue that this material has a substantially deficient custody that would disqualify it from further analyses is a) not accurate and b) would set an inappropriate precedent for excluding an immense range of evidence for not only post-conviction cases, but also cold cases and active investigations.

### ***People v. Whalen***

From filing on 30 September 2011, the court ordered that, “Although the knives, after initial testing at the time of trial, had been stored for 15 years in an open box with other evidence and it is possible they were contaminated with the DNA of a person unrelated to the commission of the crime, it is also possible a third person could be identified who committed the crime.”

This decision is consistent with the general goal of any forensic investigation, obtaining as much information as possible, and utilizing science to its full extent and purpose as a forensic tool: to get to the truth.

### ***1963 Case***

In 2012, I was asked to evaluate evidence from a 1963 case, which was submitted by a homicide investigation in a cold case. The evidence was received in an envelope that had, at one time been sealed; however, it had been open for an unknown amount of time. Figure 44 shows a redacted view of the evidence, which shows a remarkable similarity to some of the packaging in the Starved Rock investigation. In this case, the investigative-team raised no issue or concern with the state of the unsealed evidence and the analysis proceeded.

## **Evaluation of Evidence Condition**

While each item of evidence must be considered on its own merits, it is possible to group the evidence based upon the various properties (packaging, type of evidence) observed during the inspection and subsequent review of photos. Various topics related to chain of custody and preservation will be discussed.

### ***Chain of Custody***

The file cabinet and all evidence within is secured by a chain and lock. Therefore, any access would have needed to be provided by opening a lock. Custody of this evidence, in the most literal sense, cannot be questioned, as this specific evidence has been in the possession of LaSalle County since the trial. Strictly speaking, it was never turned over to anyone else via a chain of custody.



### ***Not Substituted***

Reports discussing much of the evidence have been reviewed. The contents of the evidence in the filing cabinet correspond exactly with descriptions in the 1960's era evidence lists.

### ***Not Replaced***

Many of the items exist in the form of multiple sub-items, which permit various aspects of the evidence to be internally evaluated. Based on the inspection and reviews of the images taken, it is possible to verify that contents of clothing, hair, fibers, and other evidence are internally consistent, suggesting that evidence has not been replaced.

### ***Not Altered***

Of particular note, it appears that these envelopes were sealed at the time they were originally collected and packaged. Figure 15 shows an excerpt of a 1960 laboratory report describing the condition of evidence as it was received (*i.e.*, prior to analysis) and states that the evidence in white envelopes was sealed with scotch tape. These white envelopes still exist, and there is no additional tape on them. This indicates that the envelopes were in an unsealed state at the time of the original trial. Thus, if the state of evidence at the time of the original trial was considered suitable for the original prosecution, it should be considered suitable today.

While there are indications that others were permitted to inspect the evidence, there is, however, no formal record of when this occurred, how often it occurred, or what was handled. The only indication of this is in a casual memorandum based on the recollection of a phone call between colleagues.<sup>4</sup> Since there is no formal report that evidence was handled and there is no actual indication of what was handled or not handled, it would seem that since the prosecution was the cause of the exact issue that they claim, the benefit of a doubt should go to the defense.

To this end, one might consider the actual evidence and the people to whom it was shown. First, the evidence was purportedly viewed by the general public. There is no reason to think these inspections were anything but cursory show and tell sessions. As such it seems likely that only the clothing would have been handled. Other evidence remains in sealed bags, in sealed envelopes, on sealed and taped slides, and slides in boxes. Even the box of unsealed envelopes remains in an orderly fashion, which seems unlikely had they been handled by the public.

Second, we were informed during our inspection that representatives from the Will County State's Attorney's Office inspected the evidence in May of this year (despite a protective order being in place from the court). We were informed that that the packages containing most of the envelopes and slides were not opened. This was confirmed by the seals on the various bags within the filing cabinet containing the majority of individual items. If an interested party did not take the time to look at the detailed evidence, it seems less likely that general public would not be interested in going through the majority of this evidence.

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<sup>4</sup> 23 June 2004 Hettel memorandum.



## Conclusion and Recommendations

This evidence is in remarkably good condition and has a great deal of potential probative value. The evidence has been in the custody of LaSalle County since the trial, there is no indication that the evidence has been substituted, tampered with, replaced, or altered in any material aspect. In the positive sense, nearly all evidence cataloged is labeled, the majority of evidence is sealed, the evidence is self-consistent both between sub-items and with 1960's era reports. While there may be select limitations on the value of an occasional item of evidence (*e.g.*, fiber transfers on evidence packaged together), the evidence is in excellent condition for a wide range of forensic analysis.<sup>5</sup> Regardless of the above stated-value of evidence, there are also aspects of evidentiary value in this evidence that can only be established through further analysis. In summary, not only is this evidence is in a condition suitable for further analysis, forensic analyses have advanced to the point where a great deal of new information could be obtained from this evidence. Given the broad range of testing that could be applied to this evidence, my recommendation would be to release this evidence, in its current form, to the defense team for analysis. Should specific questions arise regarding the value of a particular item in a particular analysis, it would be appropriate to scientifically debate the probative nature of that specific result once obtained.

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<sup>5</sup> It is interesting to note that the various laws related to evaluating chain of custody actually point out the value of further analysis but stating that in addition to establishing that evidence “has not been substituted, tampered with, replaced, or altered in any material aspect, the *testing itself may establish the integrity of the physical evidence or biological material.*”

## **List of Appendices**

Appendix A – CV of Dr. Christopher S. Palenik

Appendix B – Catalog of Evidence

Appendix C – Evidence of Initial Interest

## Figures



**Figure 1.** File cabinet as it appeared before at the start of day one of the inspection.



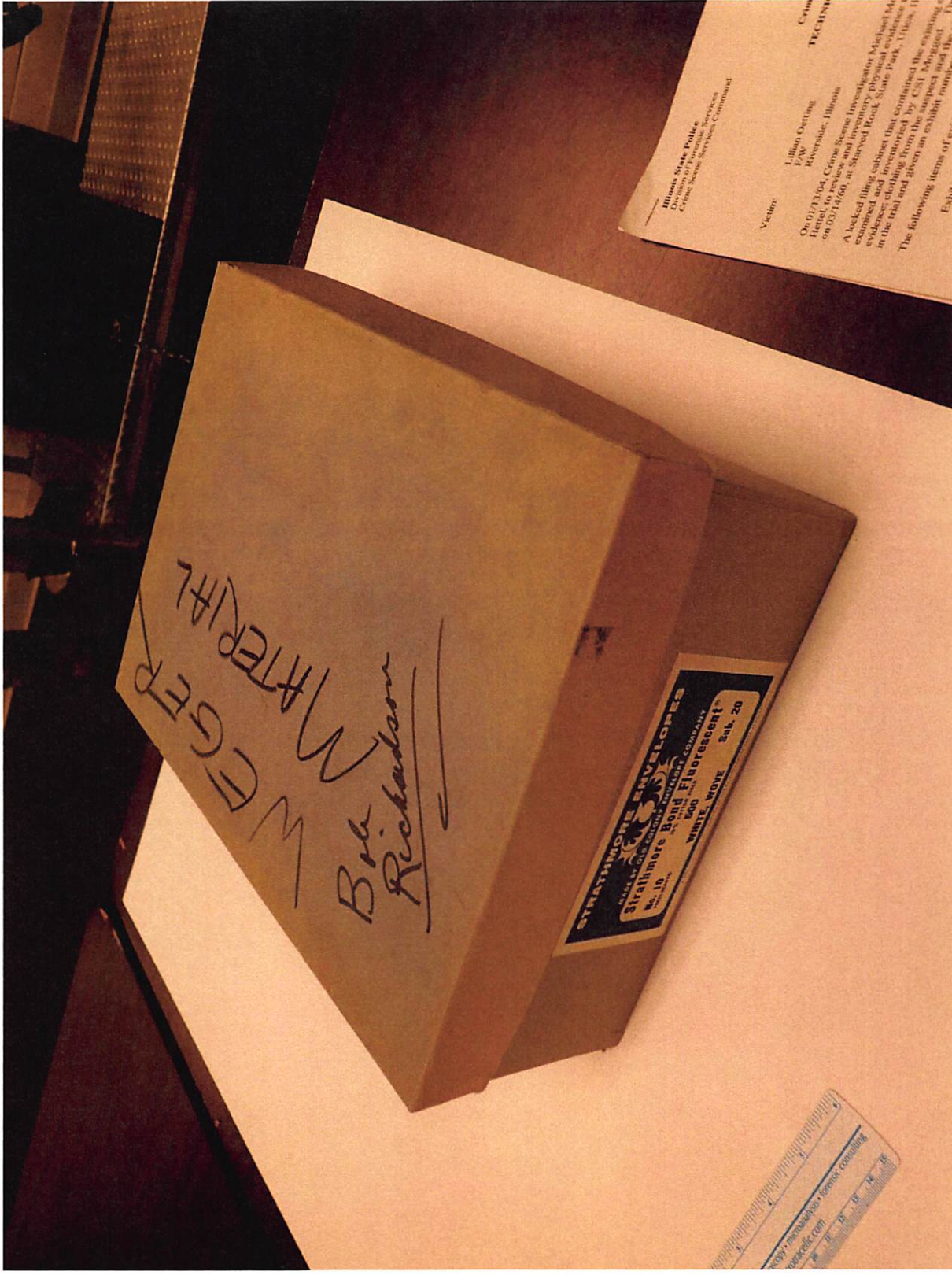


Figure 2. A box containing evidence from Drawer 2.





Figure 3. The contents of the box from Drawer 2 of the cabinet, as observed upon opening it.



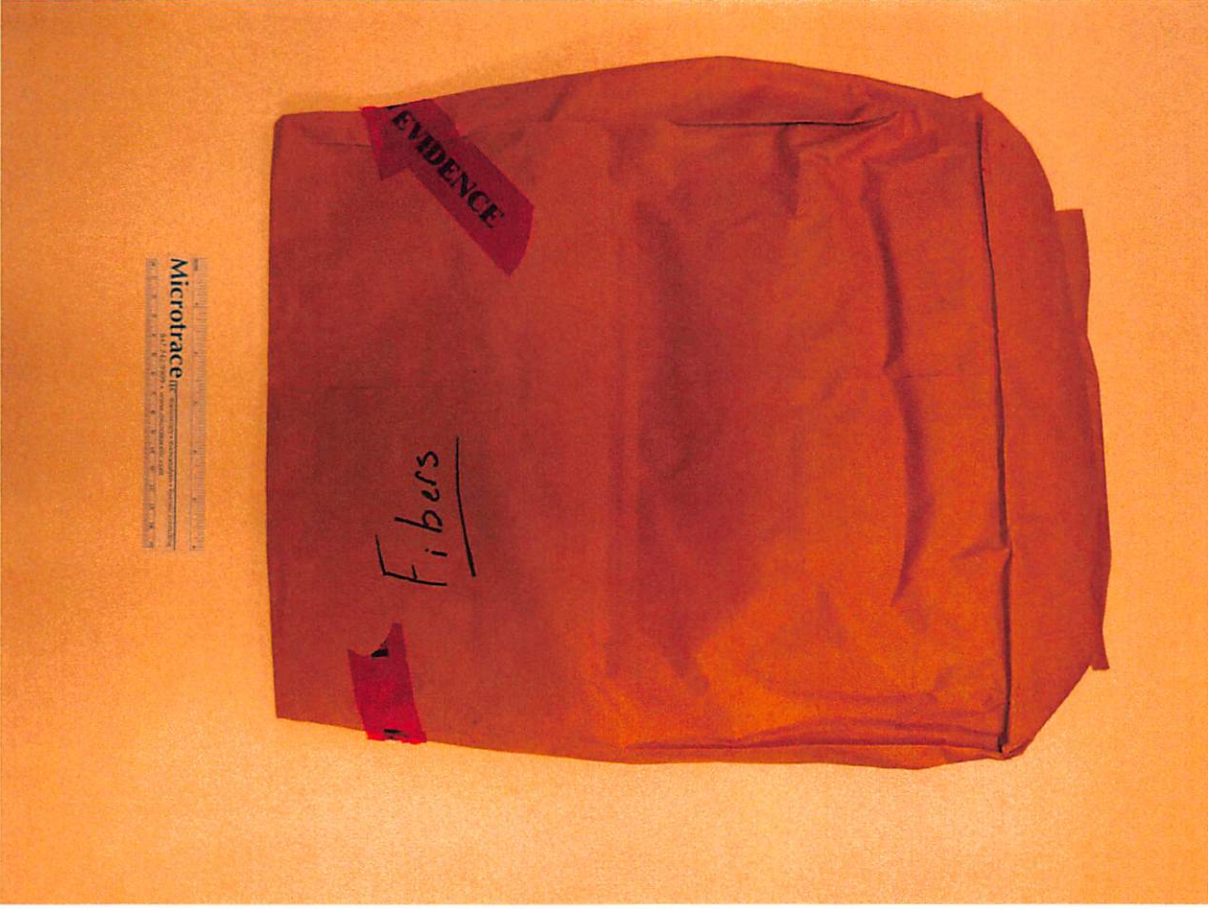


Figure 4. A sealed bag from Drawer 3 of the cabinet, containing multiple individually labeled fiber samples (shown from both sides).



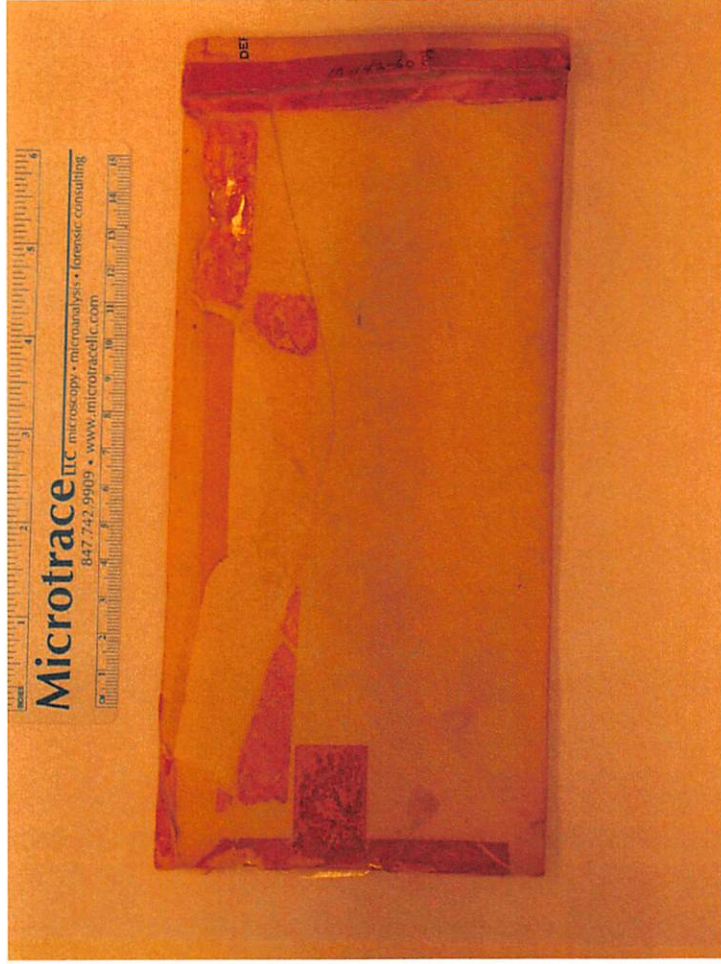
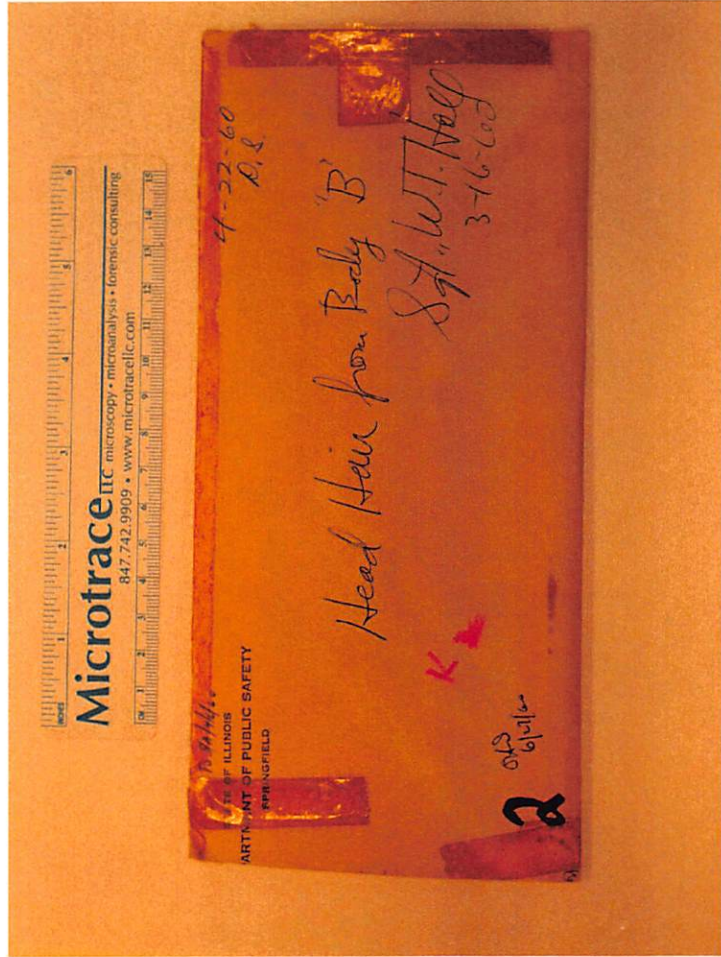


Figure 5. An envelope from the box shown in Figure 3 containing "Item 2" – "Head hair from Body B" (shown from the front and back). Note the presence of hair remaining in this envelope.



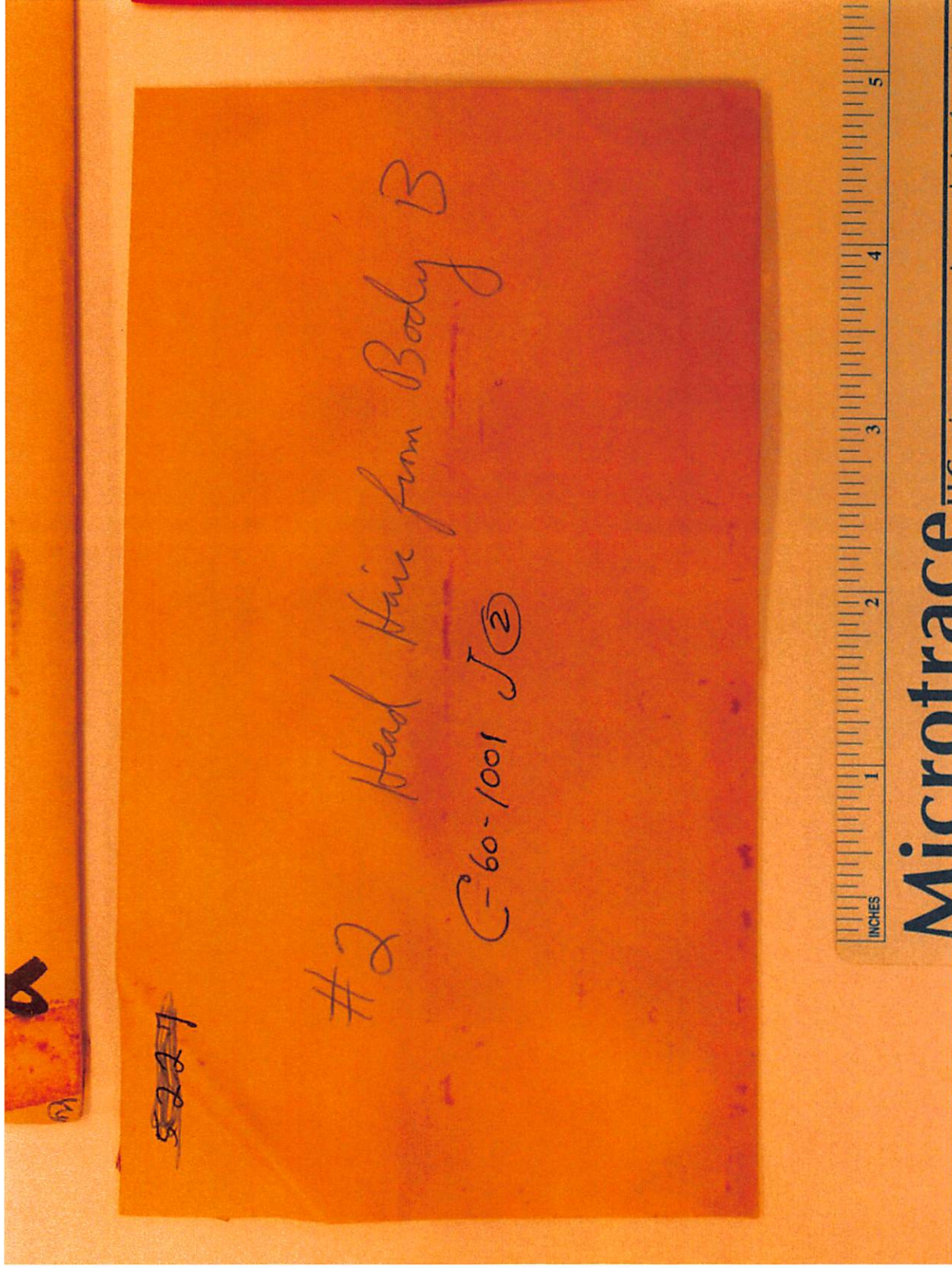


Figure 6. An envelope from the envelope shown in the prior figure "Item 2" – "Head hair from Body B". This was not opened.





Figure 7. Two microscope slides taped together containing hair from "Item 2"





**Figure 8.** A close-up of hair from in the prior sample showing likely follicular material.



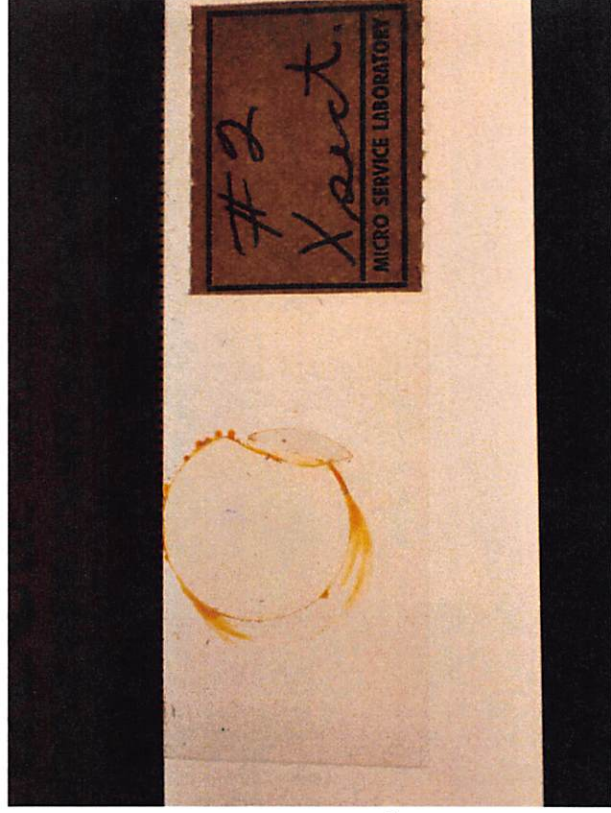
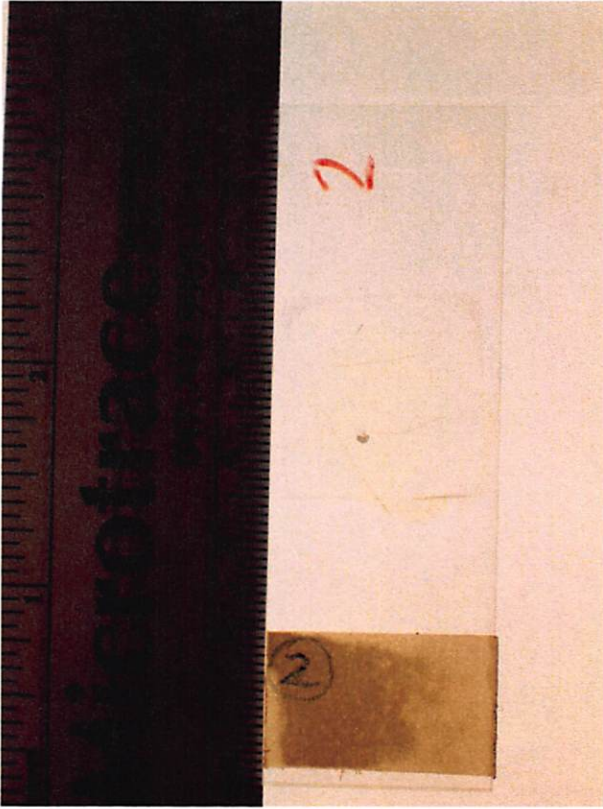


Figure 9. Four different microscope slides, all permanent mounts, all containing hair from "Item 2" – "Head hair from Body B".



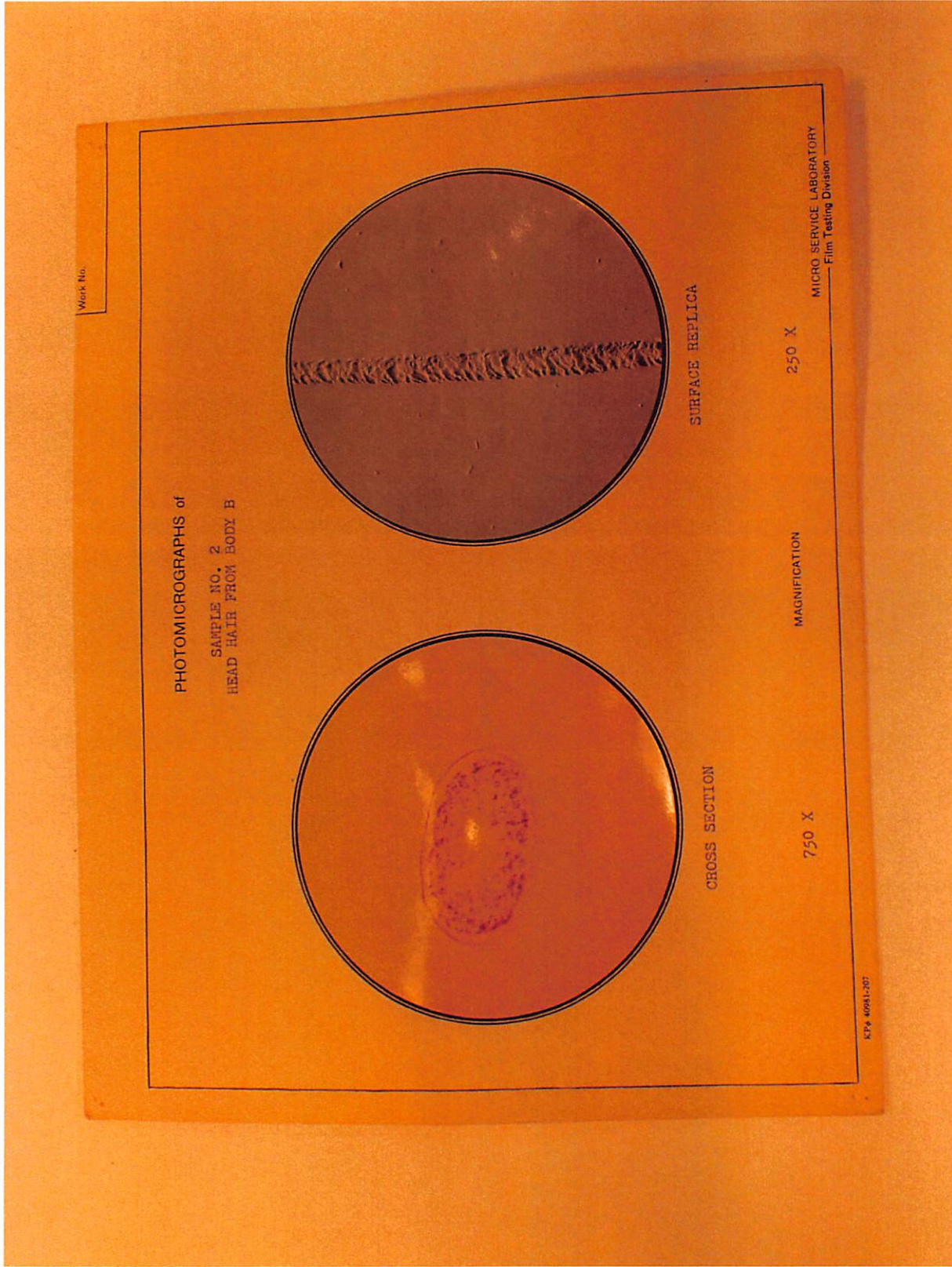


Figure 10. Labeled photomicrographs of a hair from "Item 2" – "Head hair from Body B".



Work No.

PHOTOMICROGRAPHS of  
SAMPLE NO. 2  
HEAD HAIR FROM BODY B  
250 X MAG.



TRANSMITTED ILLUMINATION (5-H)



POLARIZED LIGHT (6-L)

MICRO SERVICE LABORATORY  
Testing Department

KIP4 40943

Figure 11. Labeled photomicrographs of a hair from "Item 2" – "Head hair from Body B".



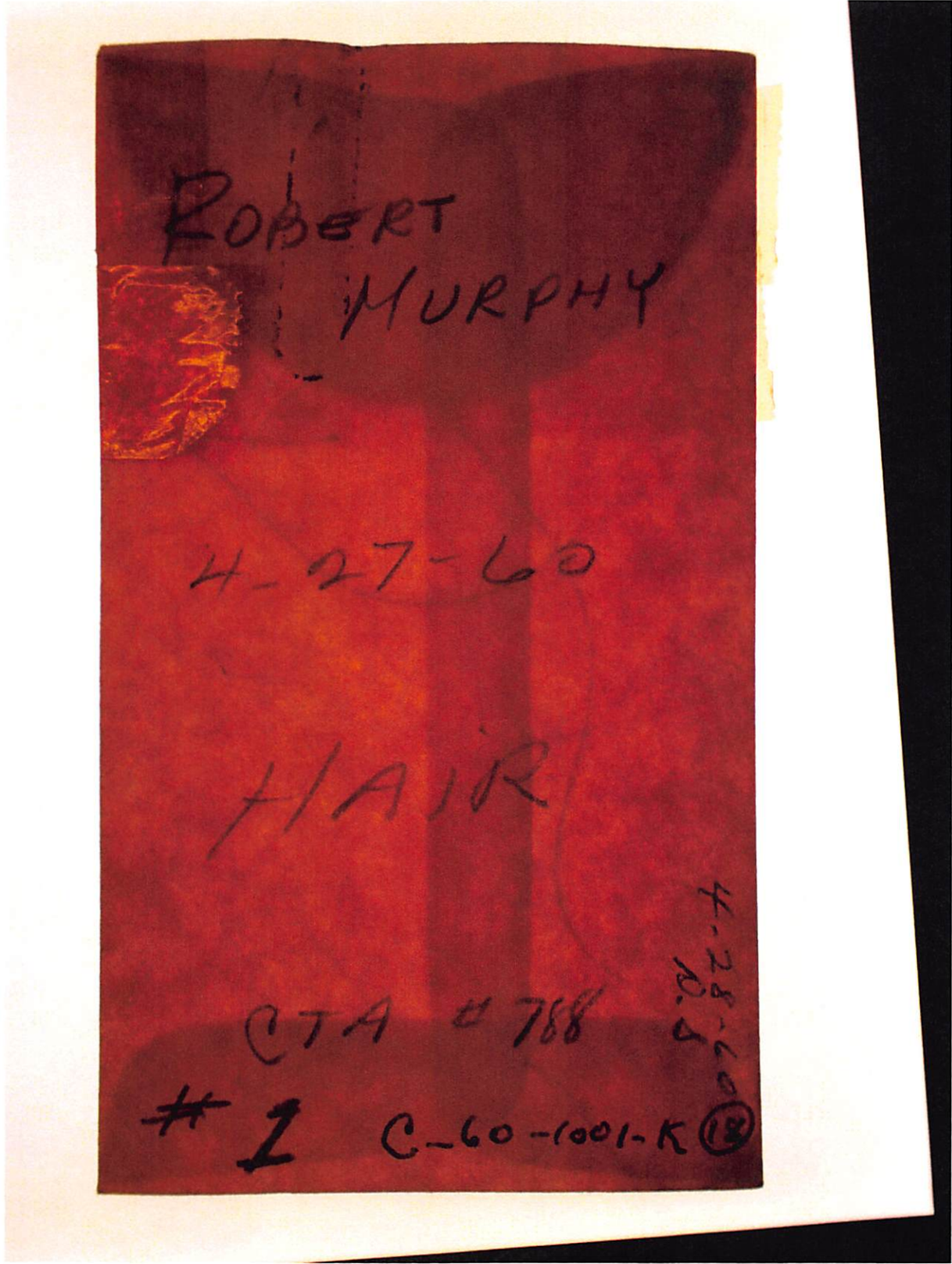


Figure 12. Coin envelope labeled "Robert Murphy" Hair (K18). This envelope was not opened during the inspection but was photographed on a transmitted light based to illustrate that the envelope contains hair.



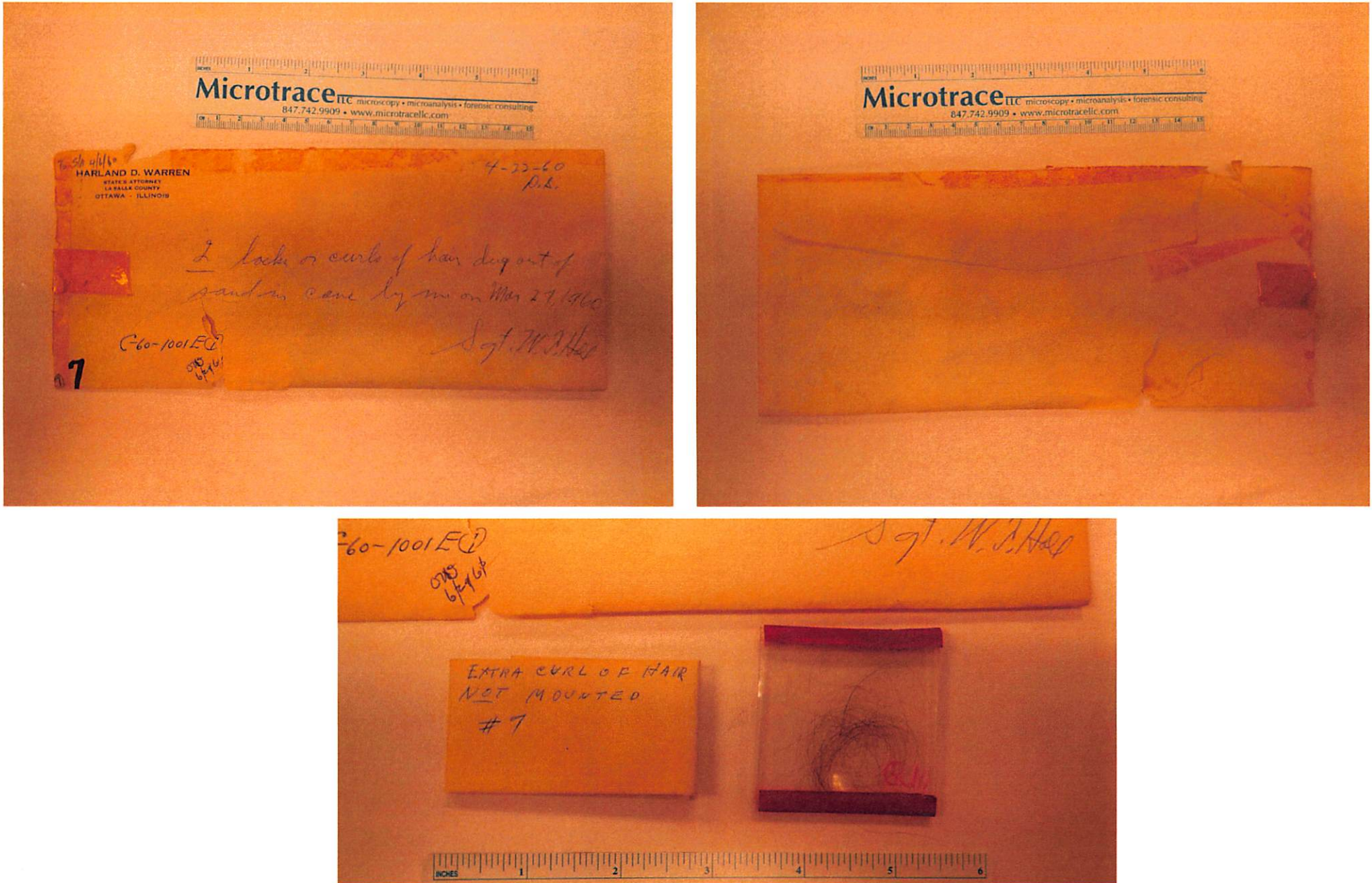


Figure 13. An envelope and its contents from the box shown in Figure 3 containing "2 locks or curls of hair dug out of sand in cave by me (Sgt. W. Hall) on Mar 27, 1960.



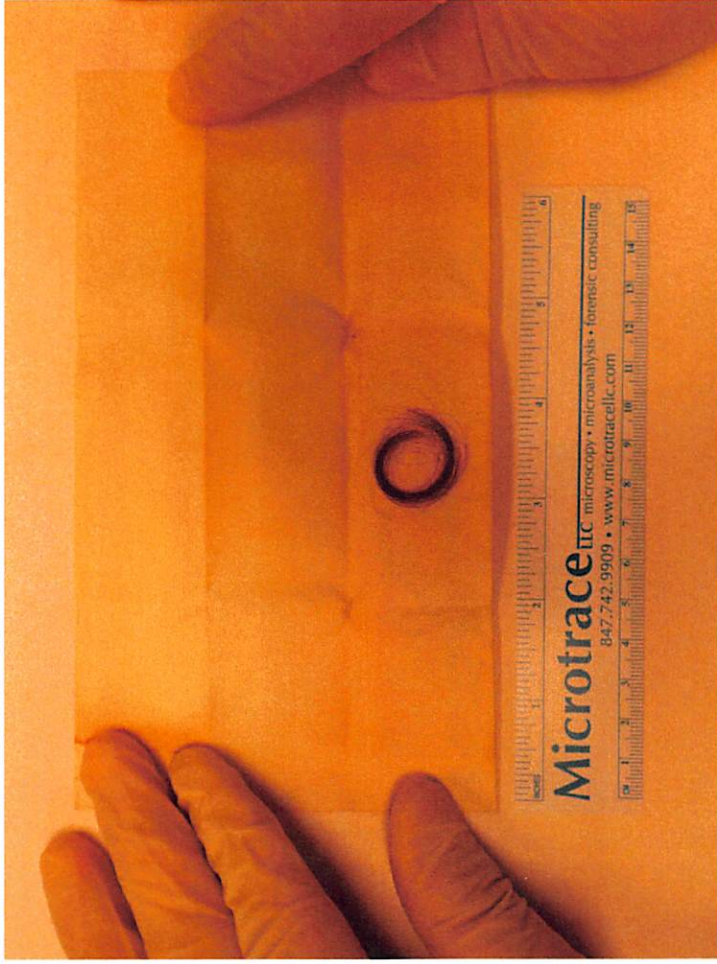
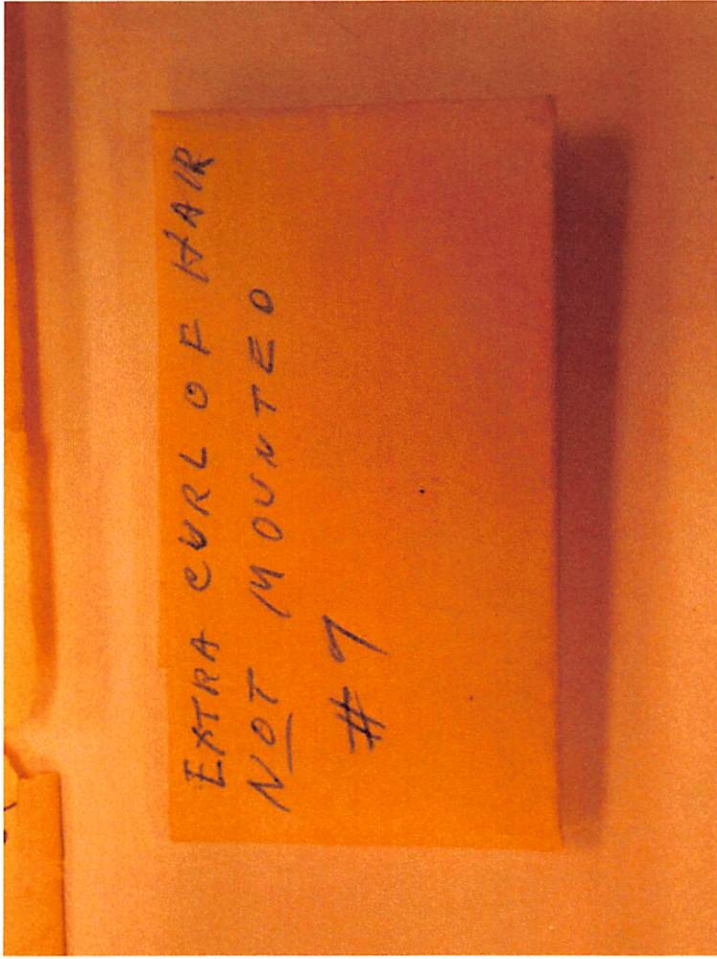


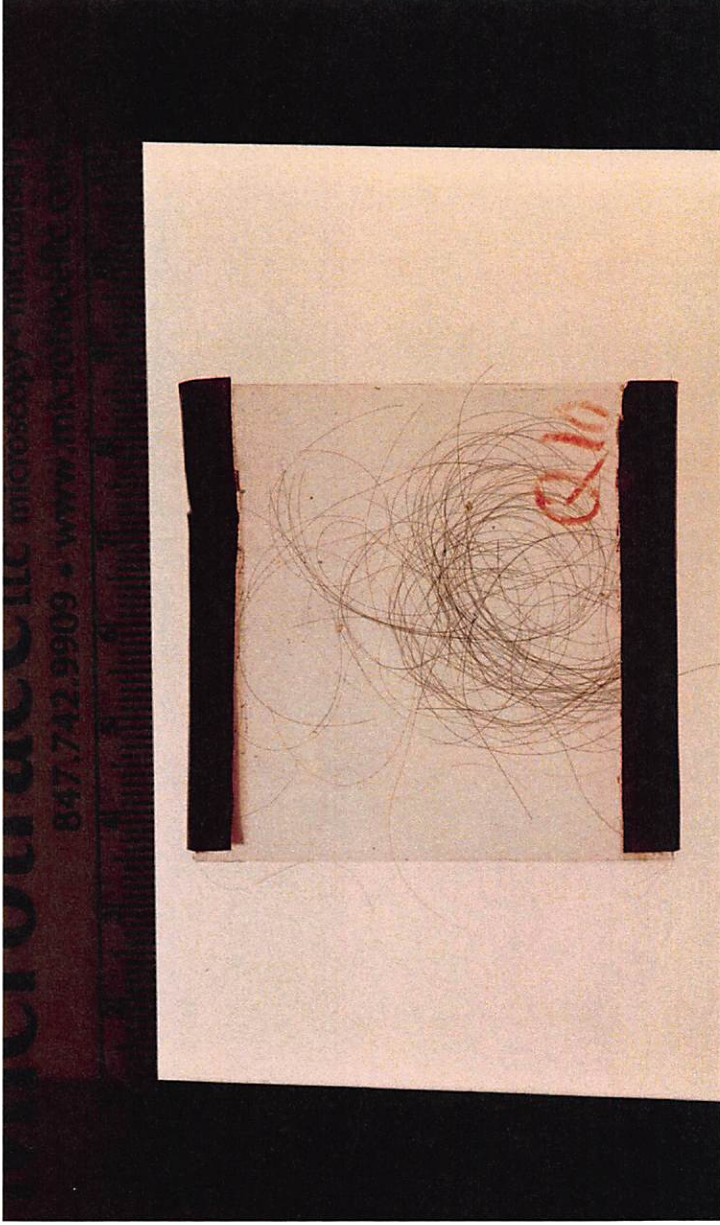
Figure 14. A paperfold and its contents from the envelope containing "hair dug out of sand".

B. An unsealed cardboard box 10½ x 14½ x 5" containing the following evidence. Unless otherwise specified, the evidence was individually contained in 4-1/8 x 9½" scotch tape sealed white envelopes.

1. Sample of head hair from Body 'A'.
2. Sample of head hair from Body 'B'.
3. Sample of head hair from Body 'C'.
4. Sample of hair from finger left hand Body 'C'. ✓
5. Hair from left index finger of brown wool glove of Body 'A'.
6. Two small pieces of bark from head of Body 'C'. ✓
7. Two locks of hair dug out of sand in cave.

Figure 15. A summary of evidence from the 31 May 1960 laboratory report.





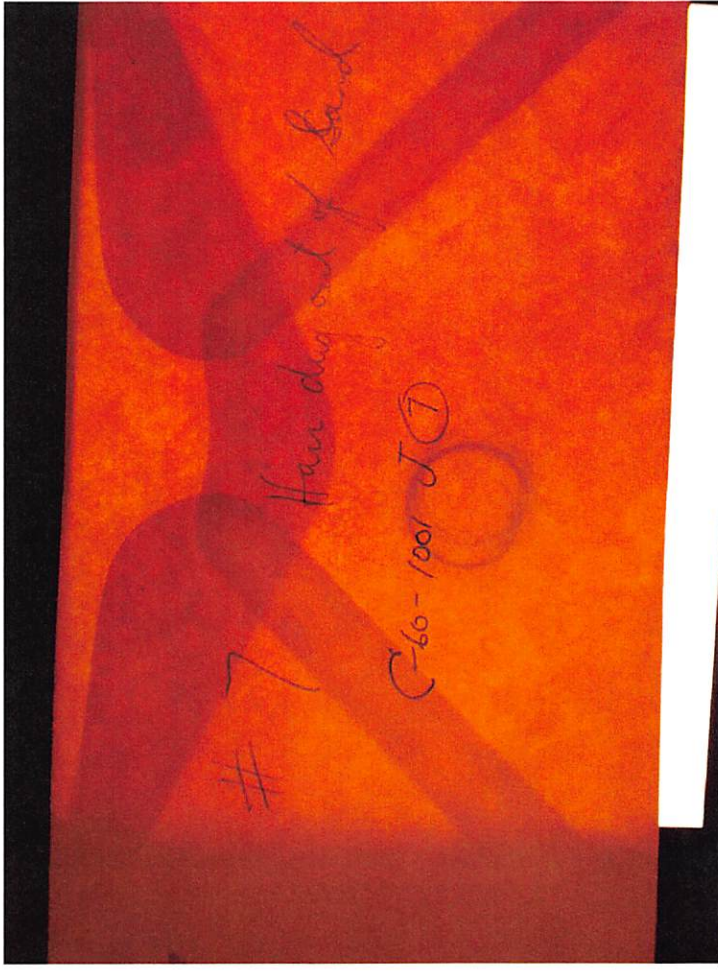
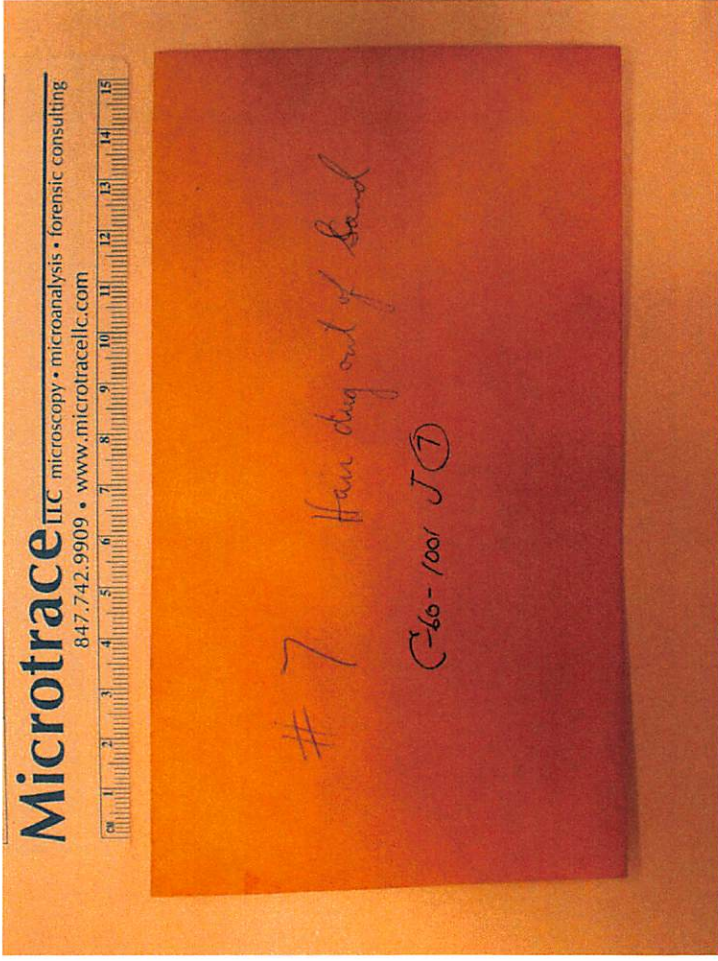
**Figure 16.** A microscope slide from the from the envelope shown in Figure 13 containing a lock of hair. Note the inscribed label on the base of the glass slide (Q10/E7).





**Figure 17.** A close-up from the from the envelope shown in Figure 13 containing a lock of hair. Note the presence of possible skin, blood or paint on this particle. Red circle shows unknown debris in the slide preparation.





**Figure 18.** A coin envelope containing part of the other lock of hair dug out of sand (Exhibit 7). This item was not opened during the inspection but a transmitted light image shows a lock/curl of hair in the envelope, as anticipated.



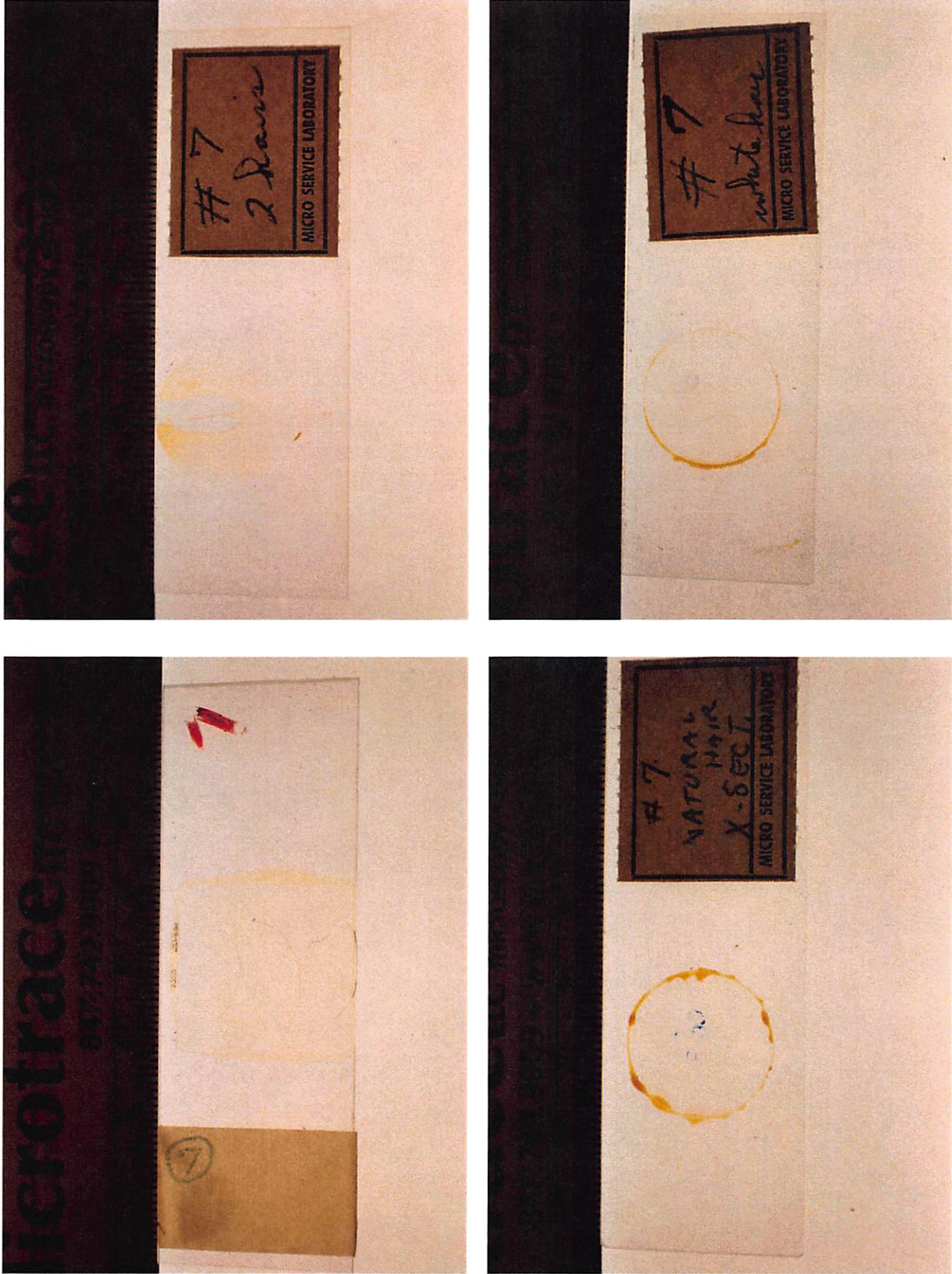


Figure 19. Four different microscope slides, all permanent mounts, all containing hair from Item 7.



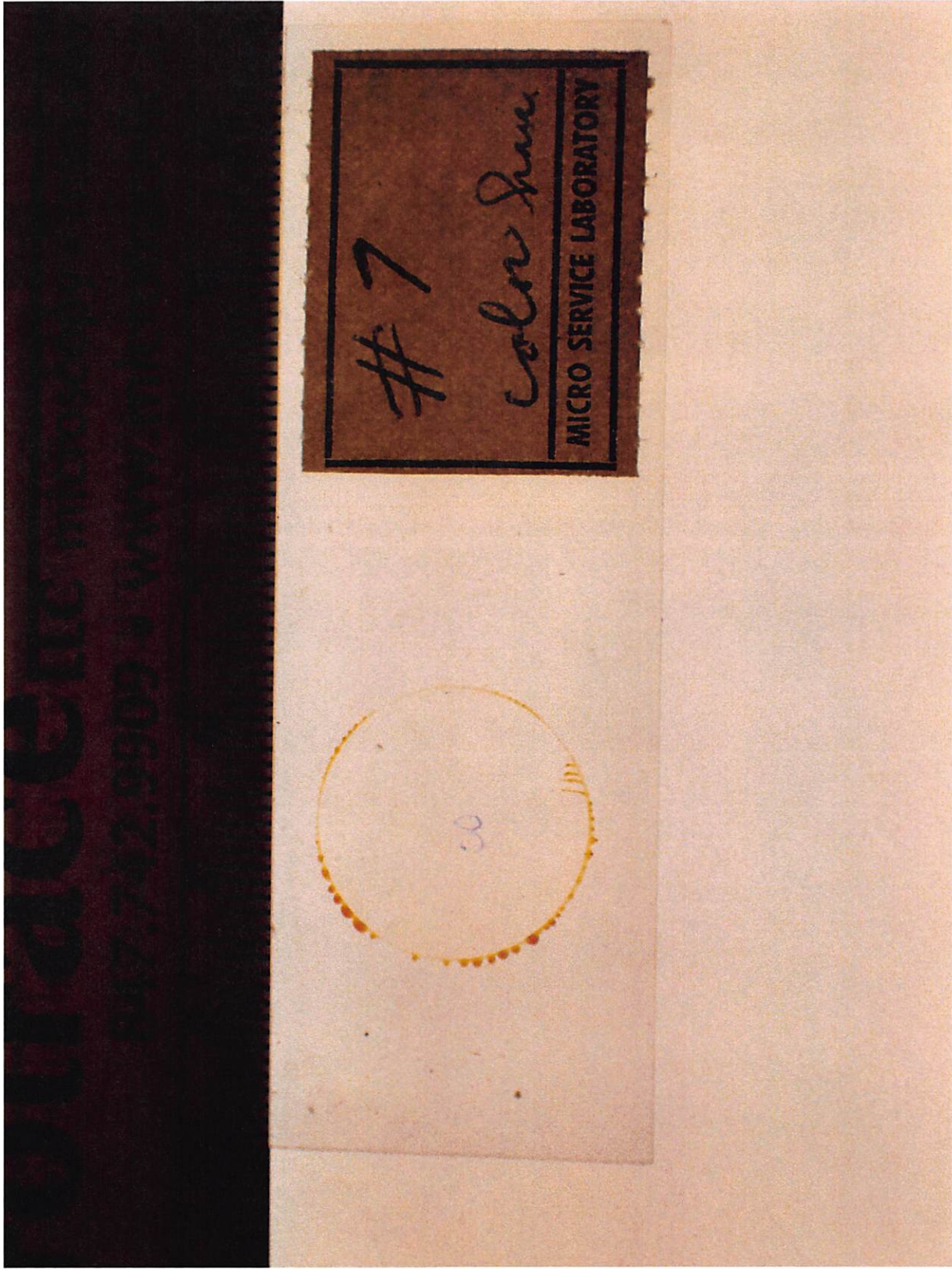


Figure 20. Four different microscope slides, all permanent mounts, all containing hair from Item 7.



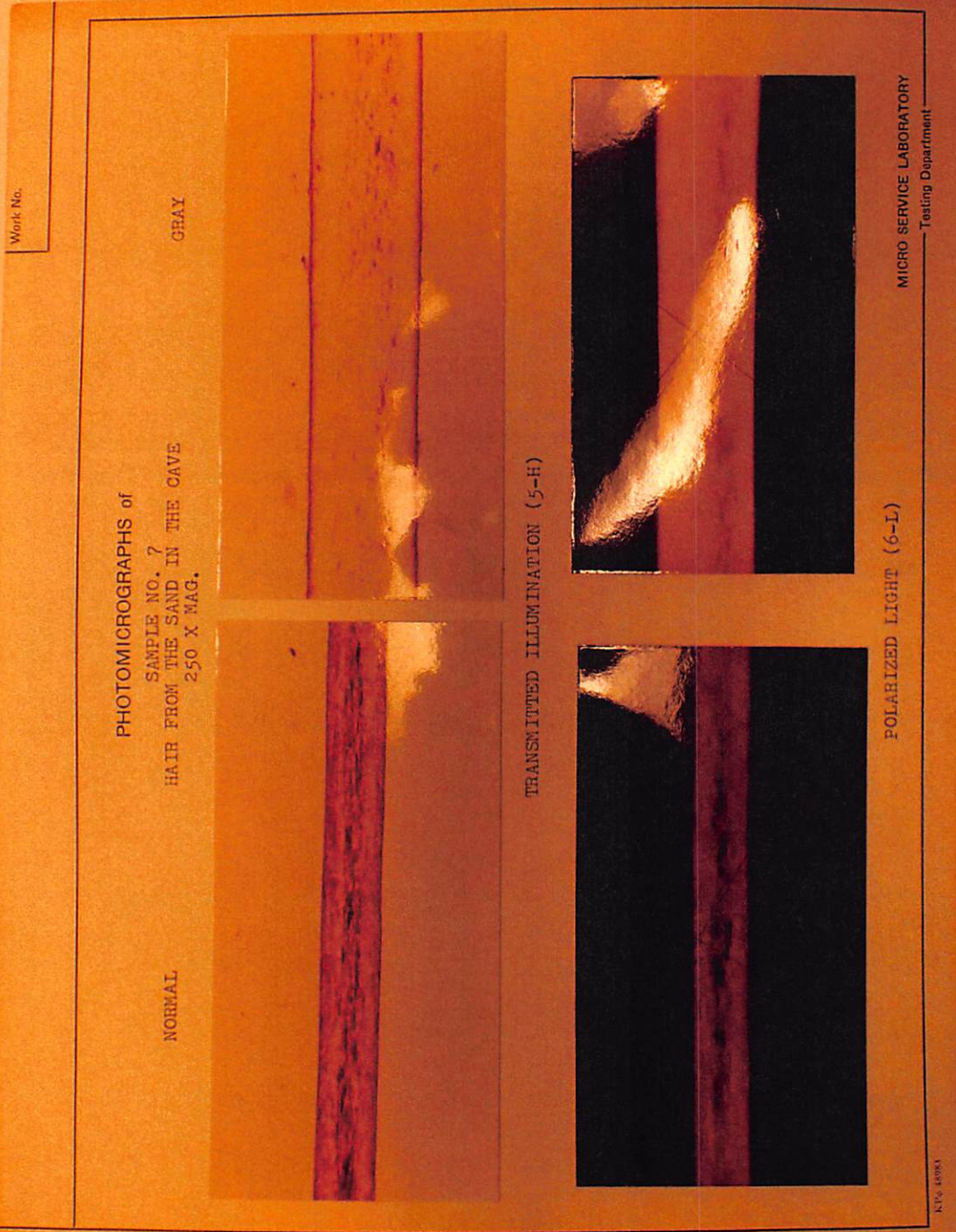


Figure 21. Labeled photomicrographs of a hair from "Sample 7" – "Hair from the sand in the cave."



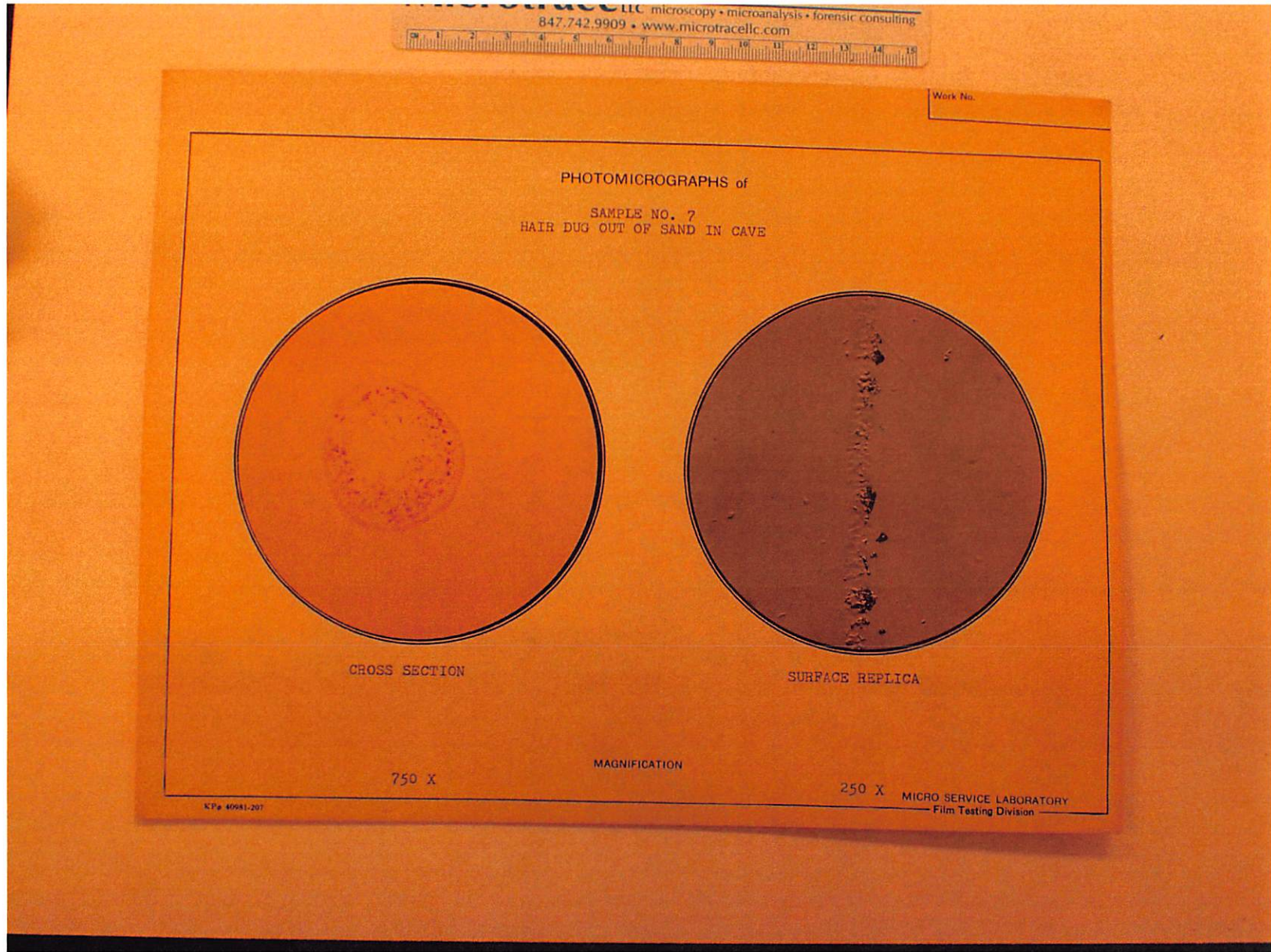


Figure 22. Labeled photomicrographs of a hair from "Sample 7" – "Hair from the sand in the cave."





**Figure 23.** A sack removed from Drawer 4 of the filing cabinet containing clothing evidence. There is no scale in this picture, but the posterboard is 22" tall.





Figure 24. Mr. Weger's jacket and the inside label.



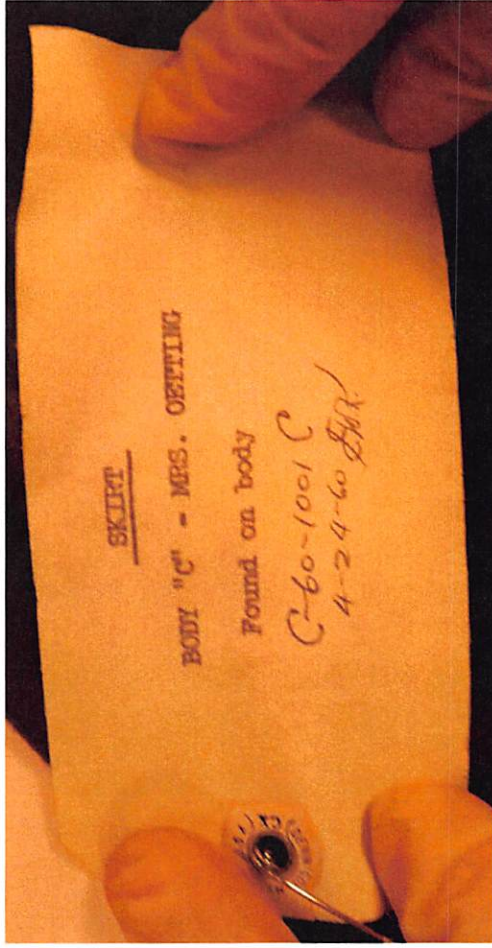


Figure 25. Mrs. Oetting's skirt.



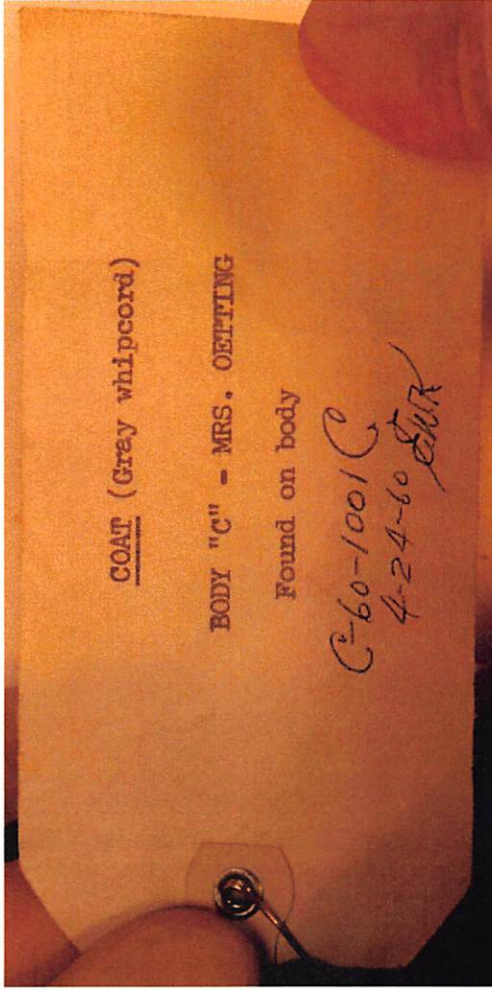


Figure 26. Mrs. Oetting's coat.

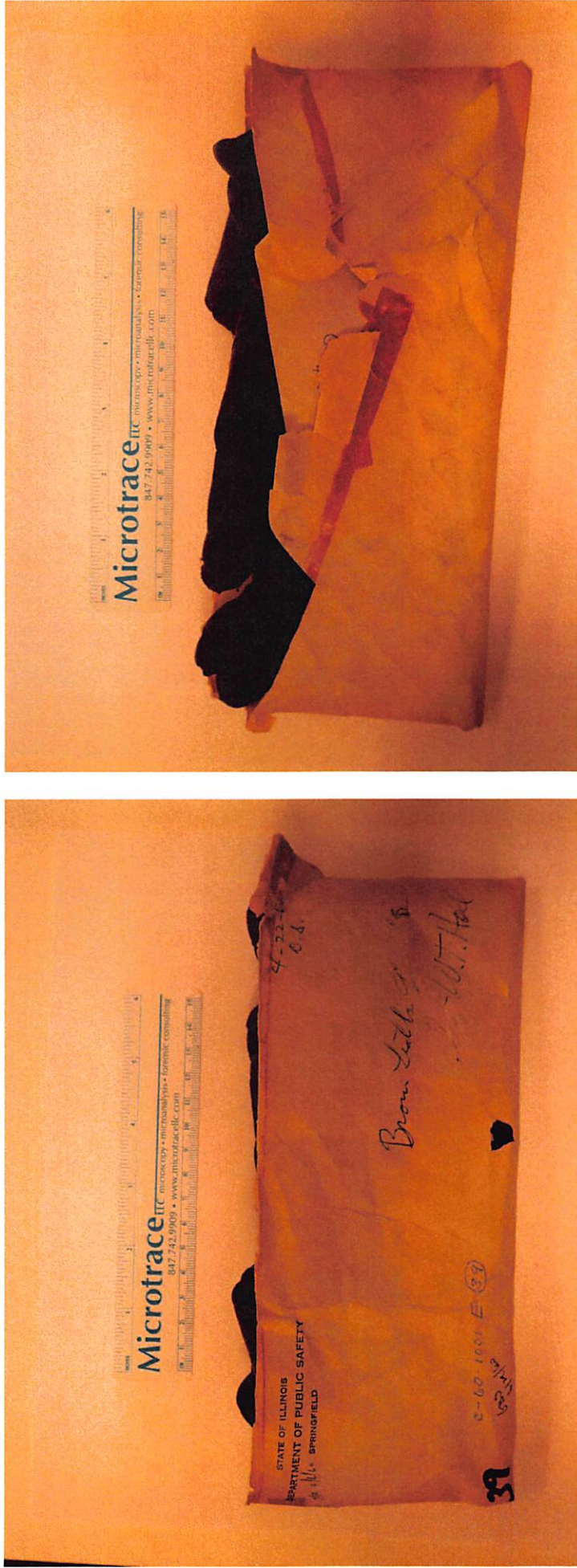


Figure 27. Gloves from Mildred Lindquist (Victim B).



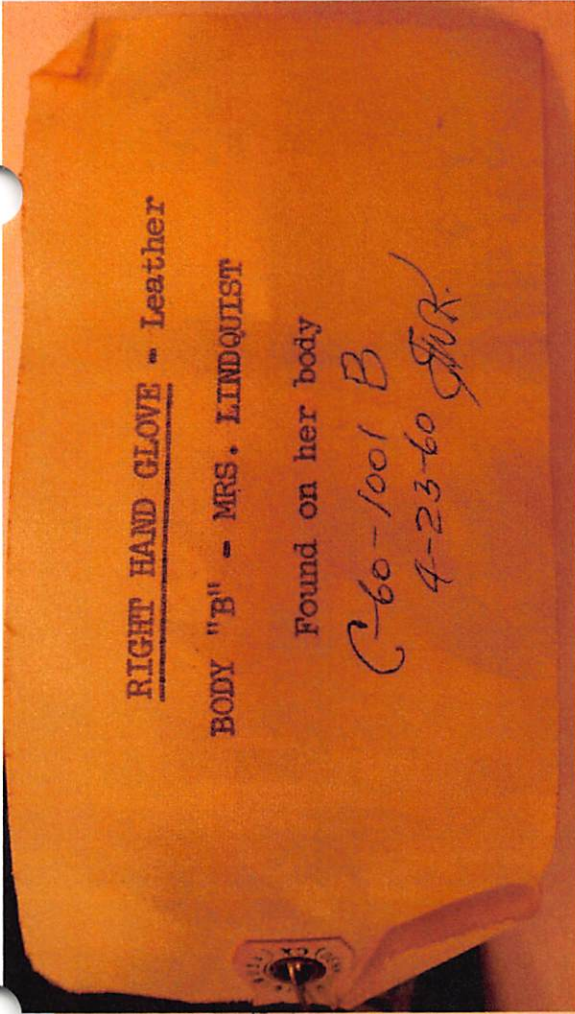


Figure 28. Gloves from Mildred Lindquist (Victim B).





Figure 29. Mrs. Oetting's coat showing dried stains and dried droplets.







**Figure 30.** Mrs. Oetting's coat showing dried soil deposits.



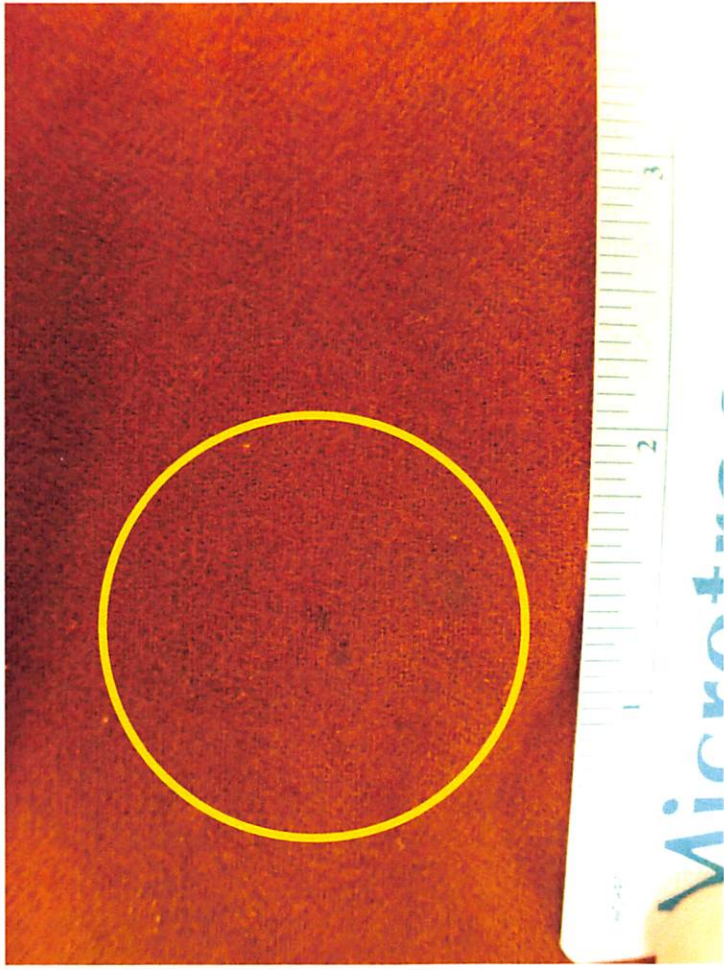
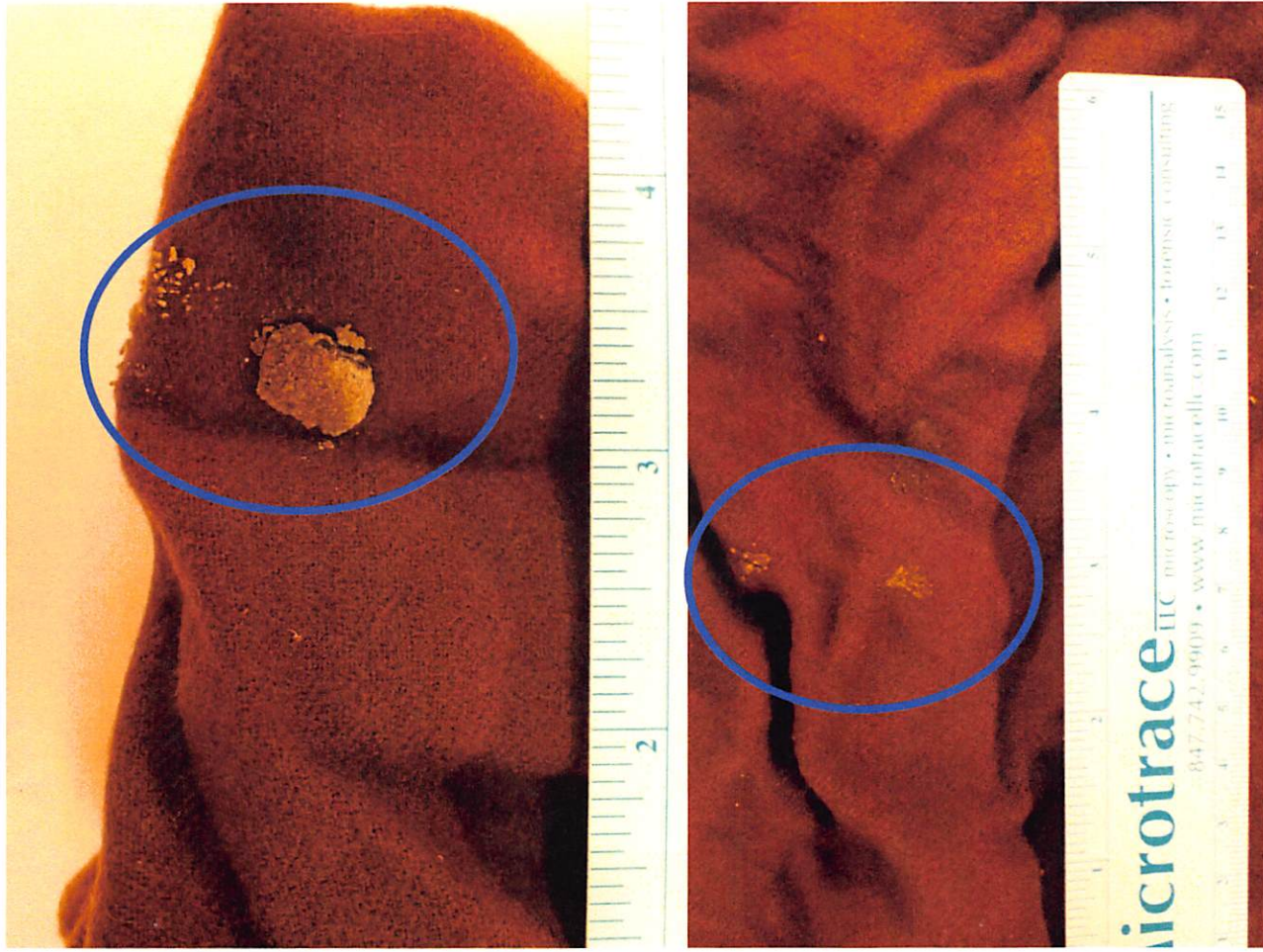


Figure 31. Mrs. Oetting's coat showing dried soil deposits (blue) and an unknown stain (yellow).



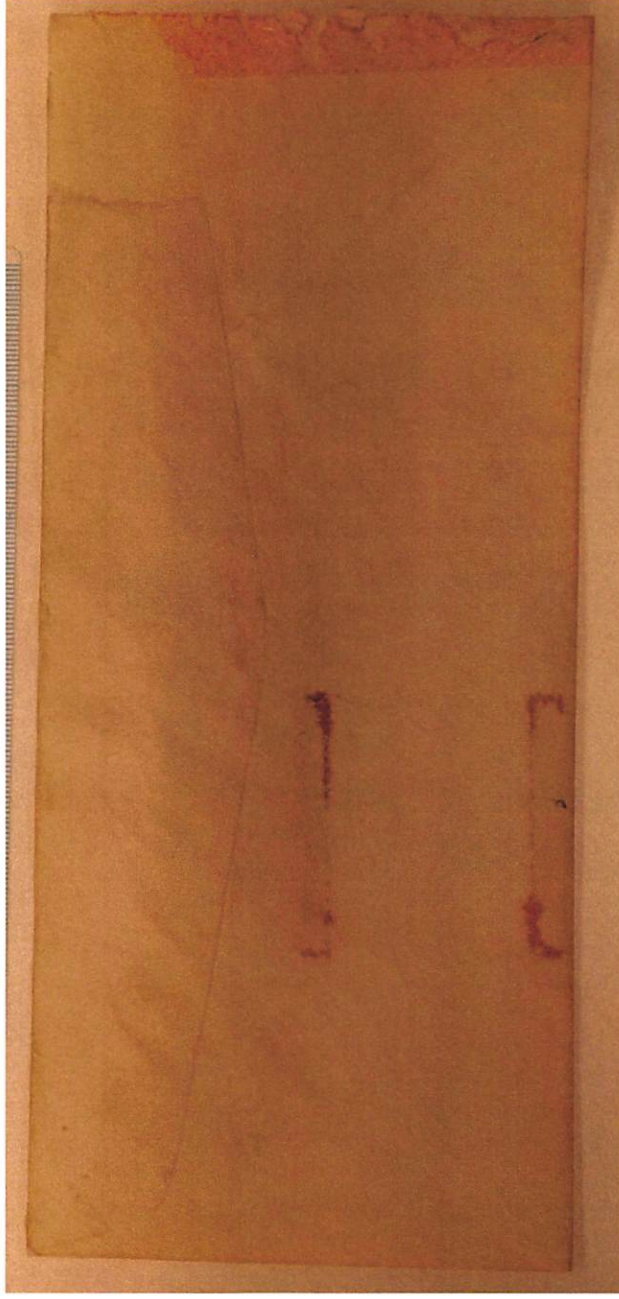
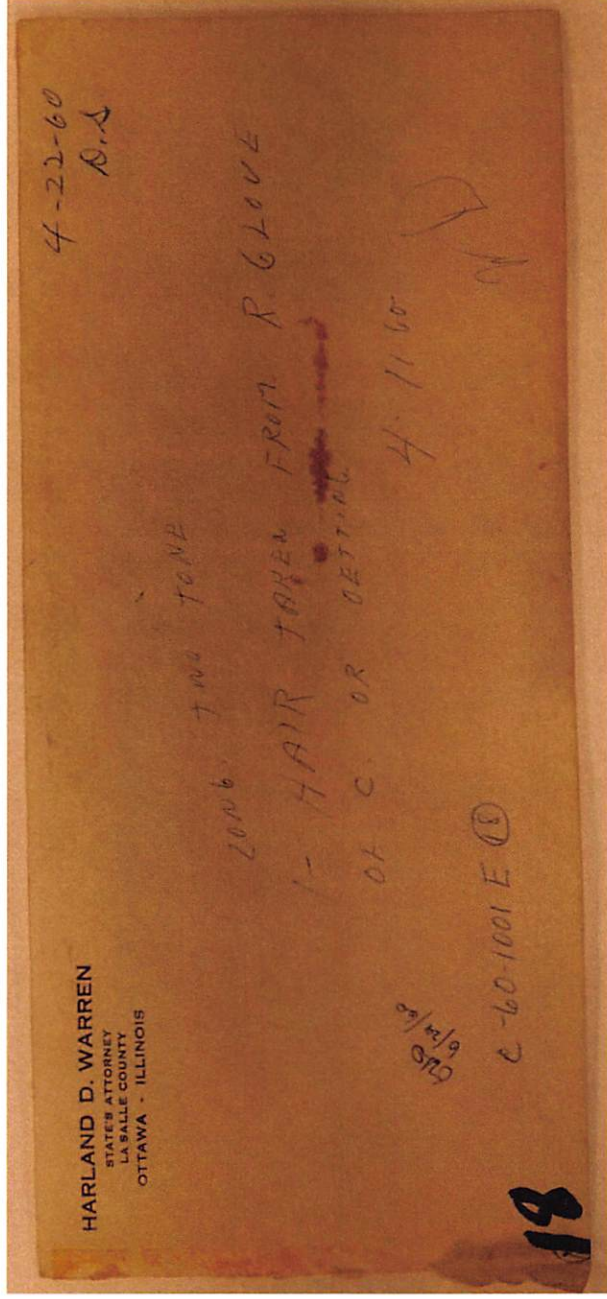


Figure 32. Envelope (front and back) containing Item 18.



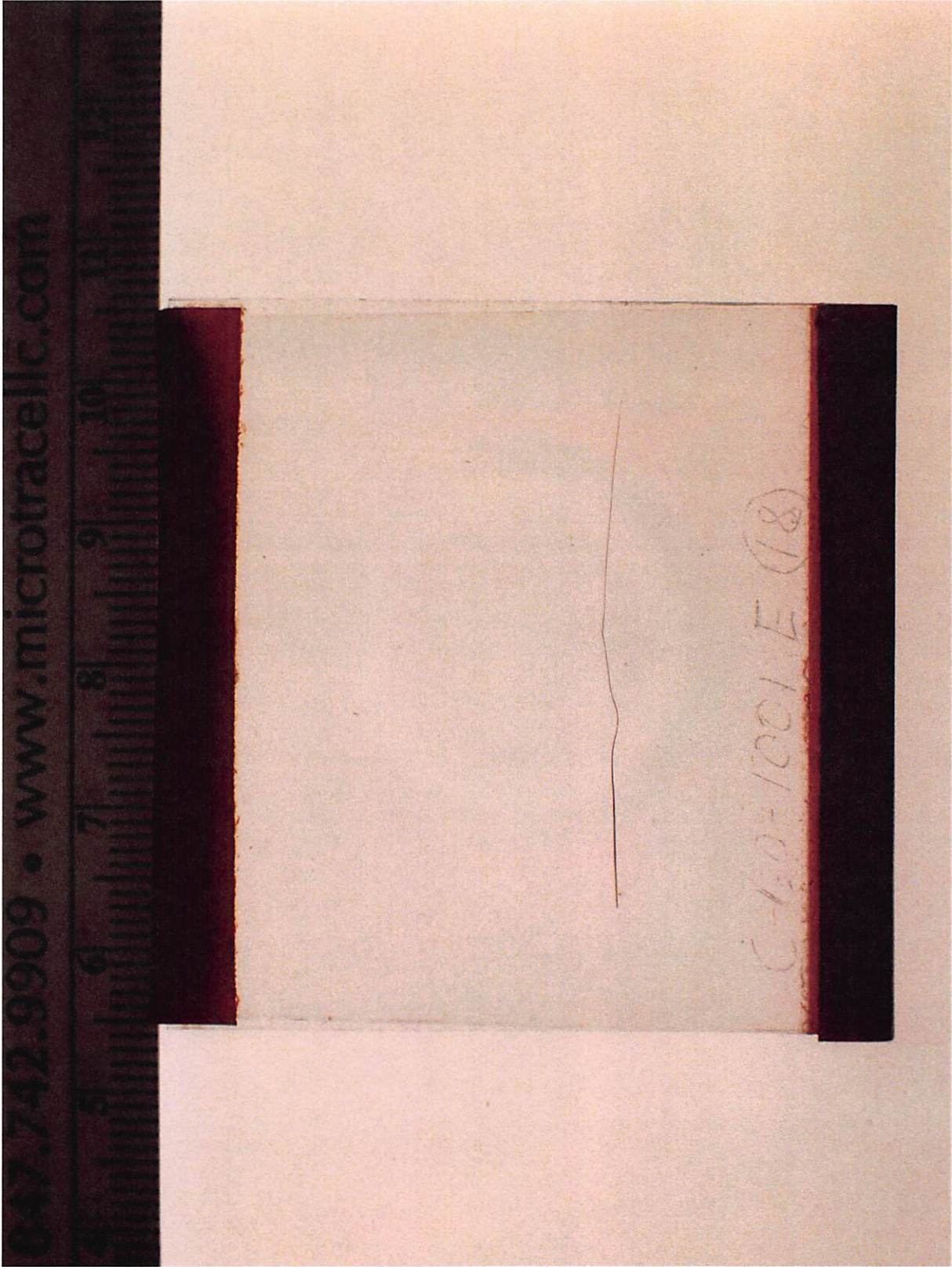


Figure 33. Glass slide from item 18 observed in transmitted light.



A

Sheriff Ray Butsey

May 31, 1960  
page 4.

Re: Starved Rock murder

D. (continued)

One manila envelope 10 x 13" torn open on the end and containing notes that were evidently made originally to identify certain evidence.

One scotch tape sealed manila envelope 10 x 13" containing a second scotch tape sealed white envelope marked as containing hair samples removed from the head of William Meyers.

E.

An unsealed cardboard box 10½ x 1¼ x 5" containing the following evidence. Unless otherwise specified, the evidence was individually contained in 4-1/8 x 9½" scotch tape sealed white envelopes.

Sheriff Ray Butsey

May 31, 1960  
page 5.

Re: Starved Rock murder

E. (continued)

15. Sample of hair from right shoulder of jacket of body 'C'.

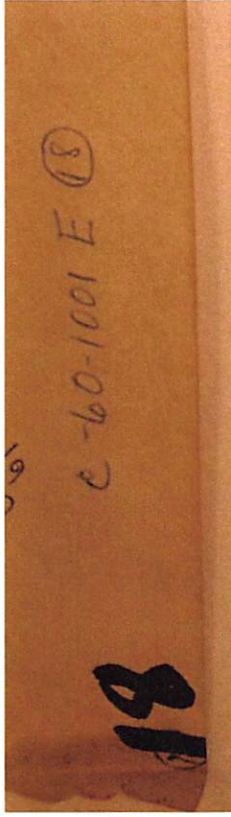
16. Sample of hair or strand unknown from stocking of body 'C'.

17. Sample of hair from sole of right shoe body 'C'.

18. Sample of hair from right glove of body 'C'.

19. One strand unknown from scarf of body 'B'.

B

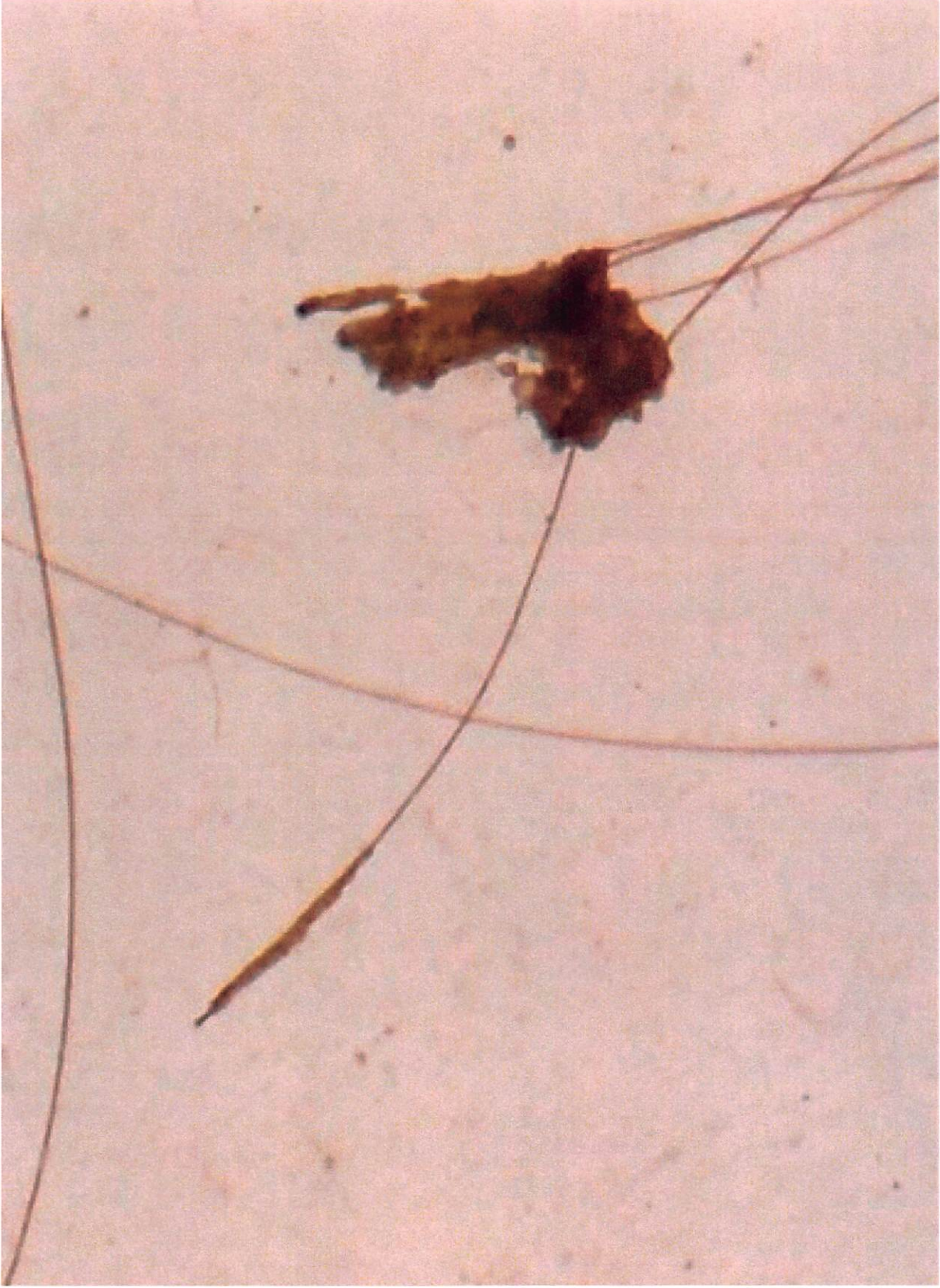


C



Figure 34. (A) A report dated 31 May 1960 compared to (B) the label on an envelope and (C) an engraved label on a slide.





**Figure 35.** Hair and likely tissue removed from the binoculars.





**Figure 36.** Close up of a likely root in the paper fold (Q1) from the Item 4 envelope.

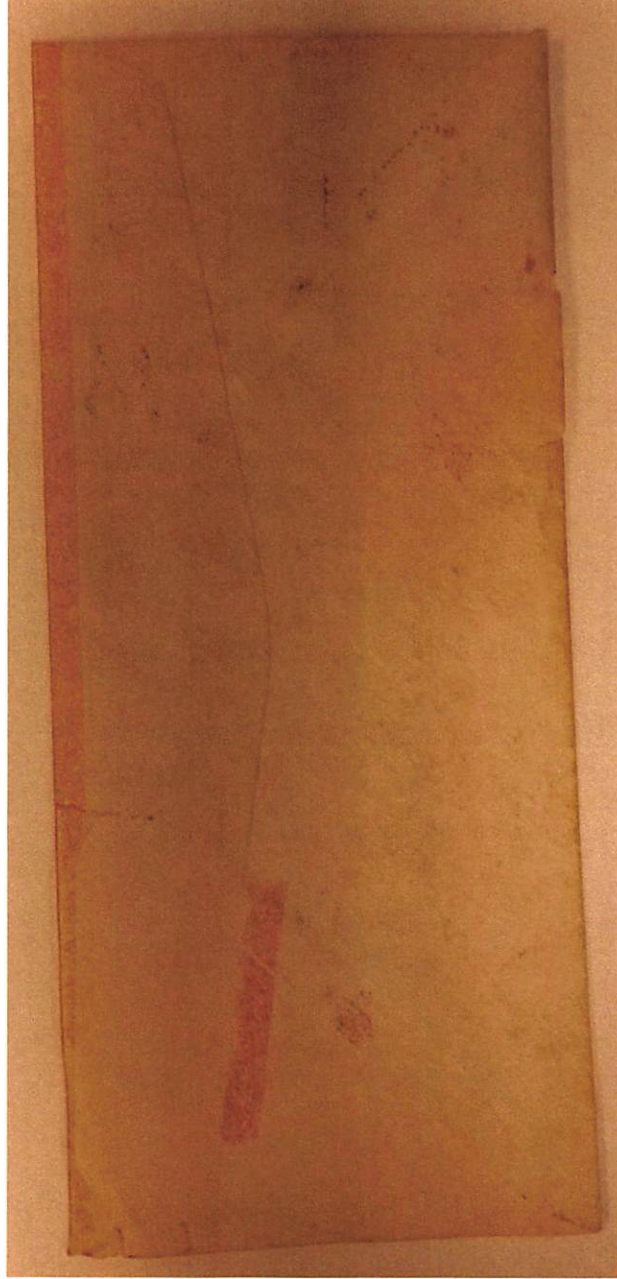
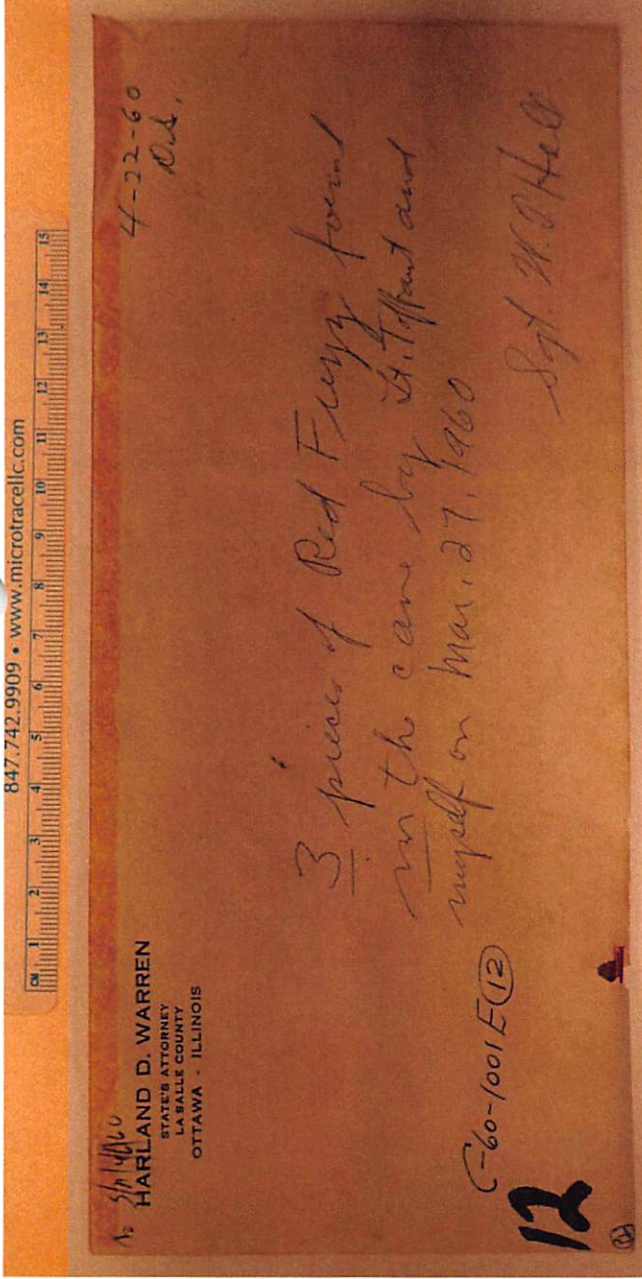


Figure 37. Envelope (front and back) containing Item 12.



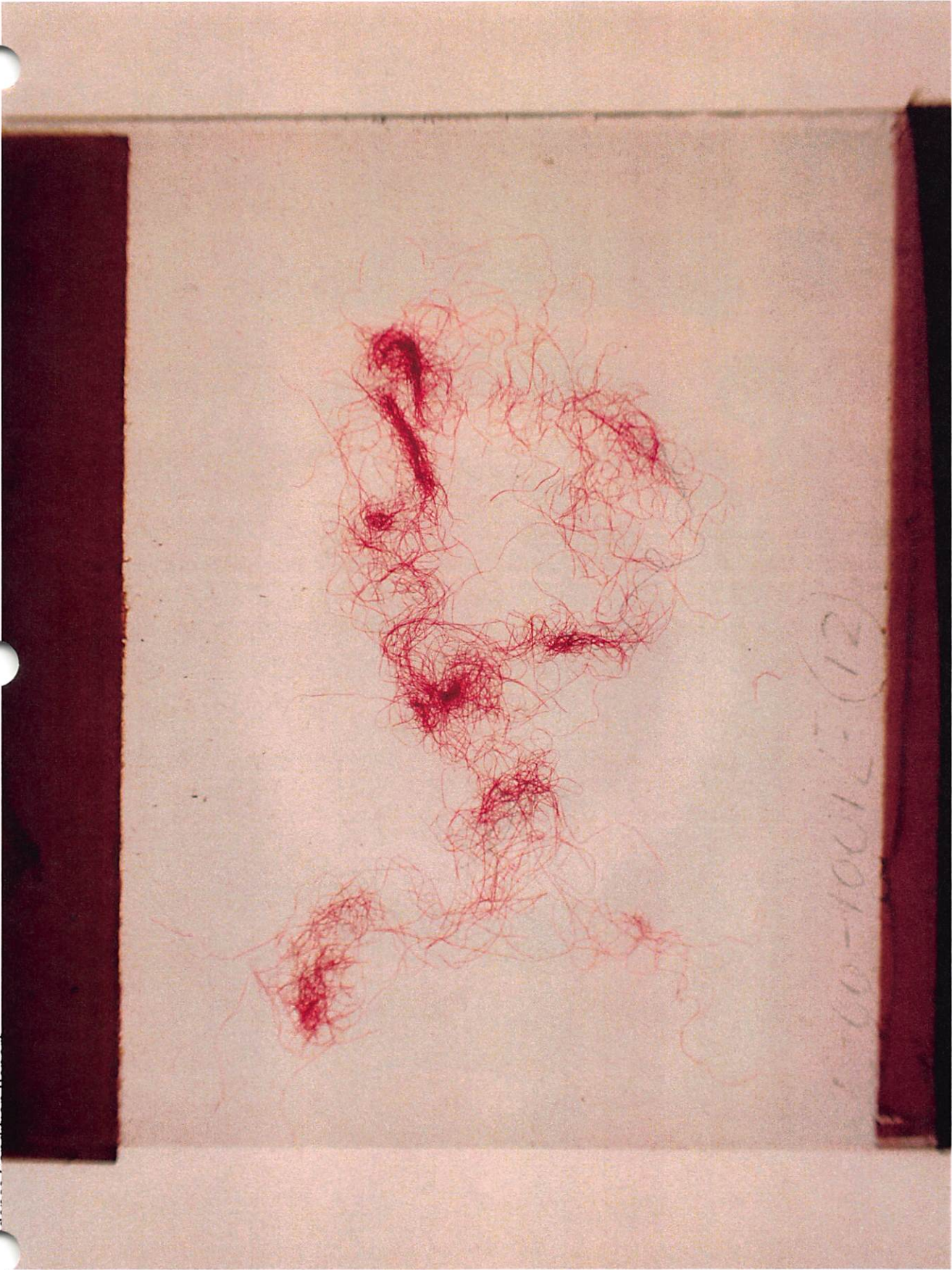


Figure 38. Glass slide from item 12 observed in transmitted light.



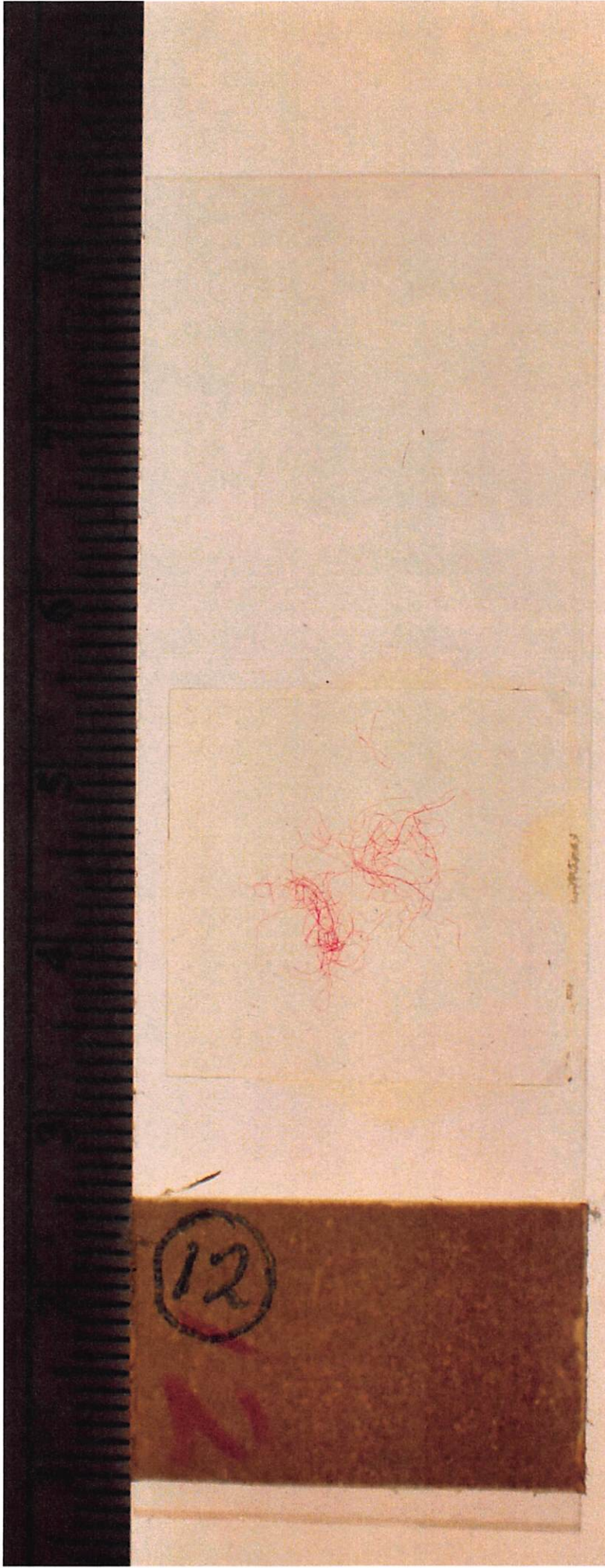


Figure 39. A mounted slide labeled circle 12, which corresponds to the red fuzz. This slide is from the Slide Bag within Drawer 2.



A

Sheriff Ray Eutsey

May 31, 1960  
page 4.

Re: Starved Rock murder

## D. (continued)

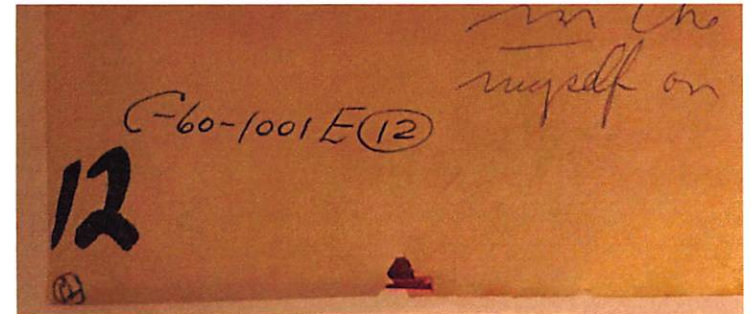
One manila envelope 10 x 13" torn open on the end and containing notes that were evidently made originally to identify certain evidence.

One scotch tape sealed manila envelope 10 x 13" containing a second scotch tape sealed white envelope marked as containing hair samples removed from the head of William Meyers.

E. An unsealed cardboard box  $10\frac{1}{2} \times 14\frac{1}{2} \times 5$ " containing the following evidence. Unless otherwise specified, the evidence was individually contained in  $4\text{-}1/8 \times 9\frac{1}{2}$ " scotch tape sealed white envelopes.

1. Sample of head hair from Body 'A'.
2. Sample of head hair from Body 'B'.
3. Sample of head hair from Body 'C'.
4. Sample of hair from finger left hand Body 'C'. ✓
5. Hair from left index finger of brown wool glove of Body 'A'.
6. Two small pieces of bark from head of Body 'C'. ✓
7. Two locks of hair dug out of sand in cave.
8. Hair sample from binocular.
9. Part of comb in hair found at body 'B'.
10. Cord from left wrist of body 'A'.
11. Cord from right wrist of body 'C'. ✓
12. Three pieces of red fuzz found in cave on floor.
13. Left glove of body 'A'.

B



C

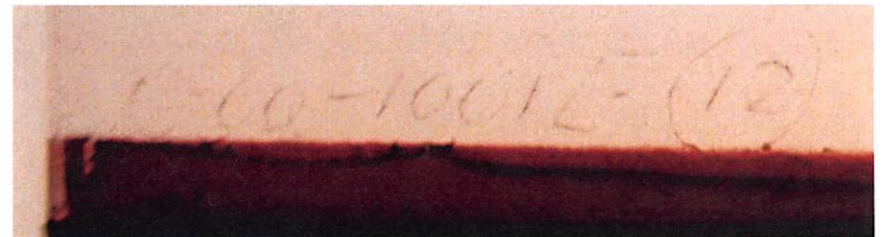


Figure 40. (A) A report dated 31 May 1960 compared to a (B) the label on an envelope and (C) an engraved label on a slide.

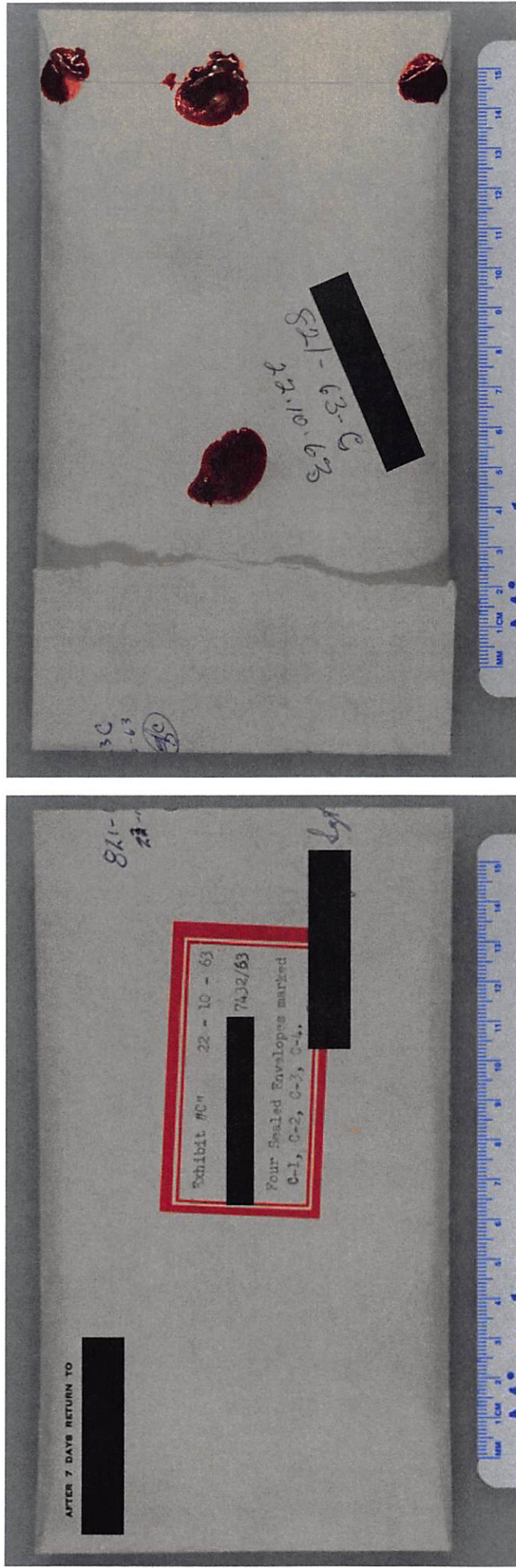


Figure 41. Evidence from another 1960's era case (1963) in which unsealed evidence was submitted by the prosecution-side for analysis.





Figure 42. Crime scene photo showing likely drag marks.



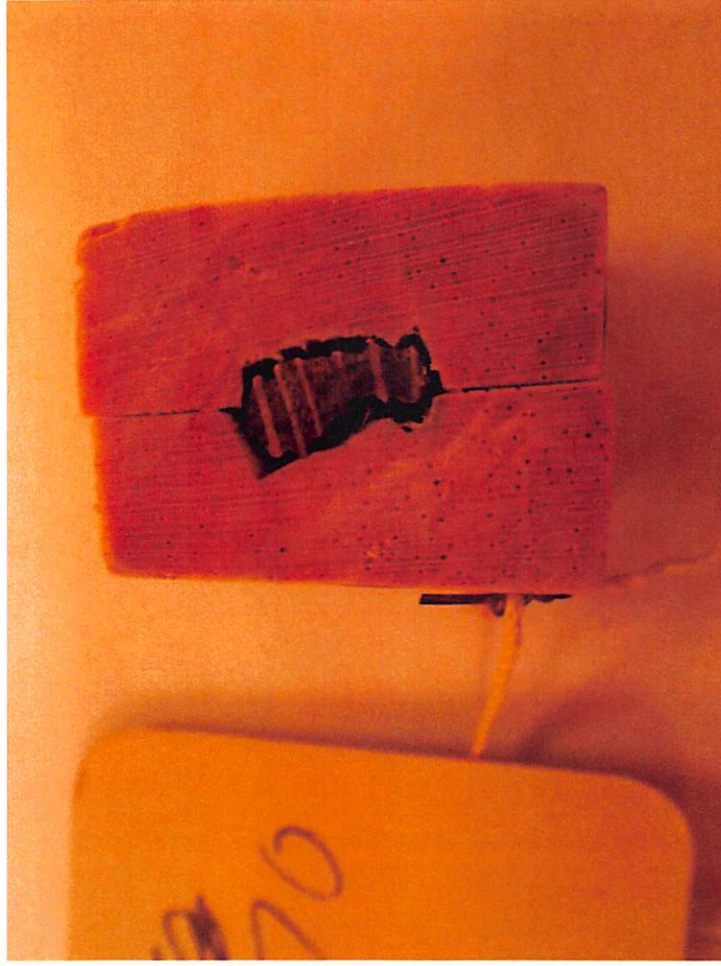
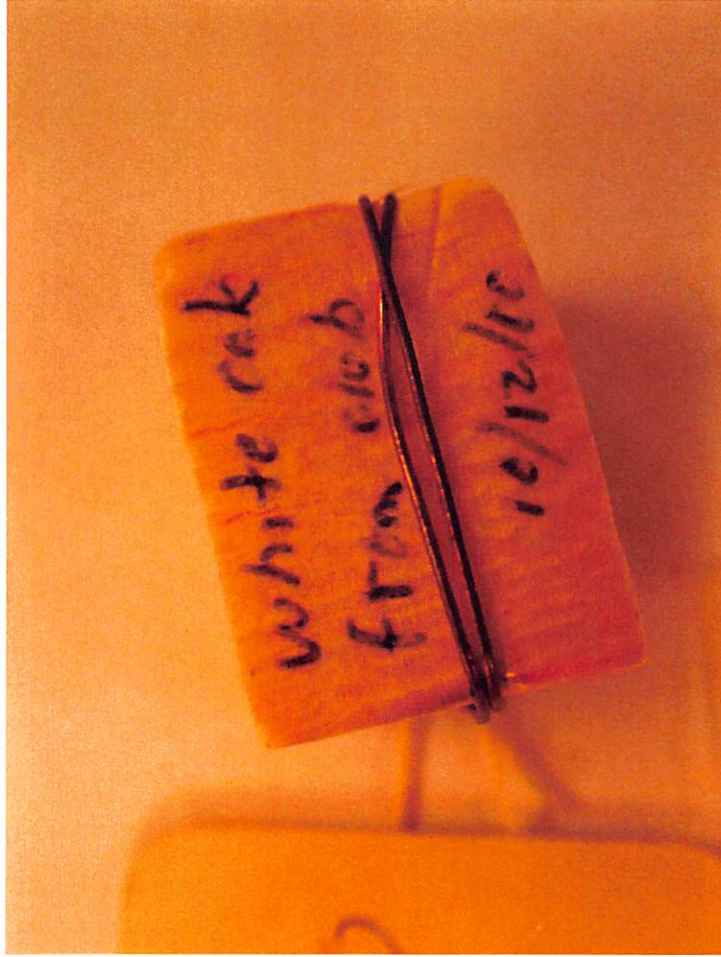
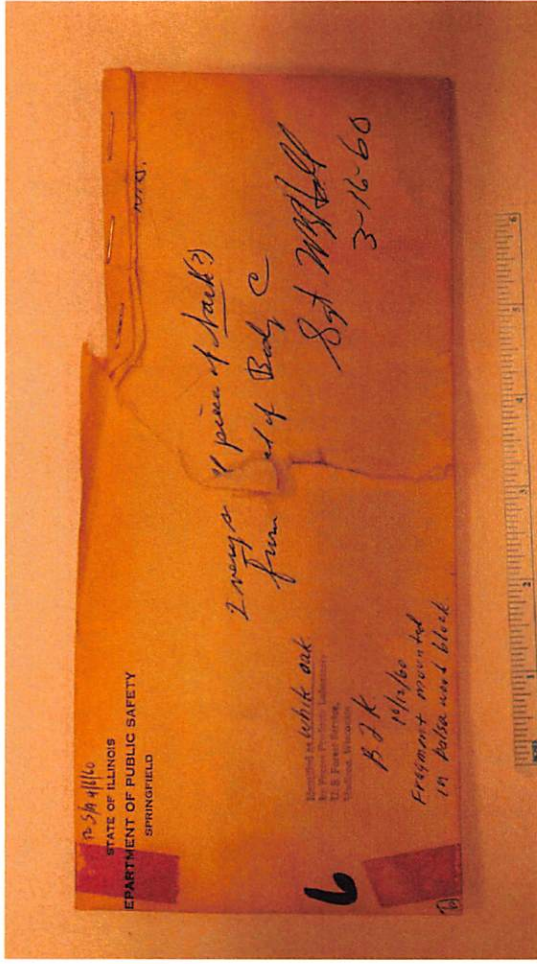


Figure 43. Item 6.



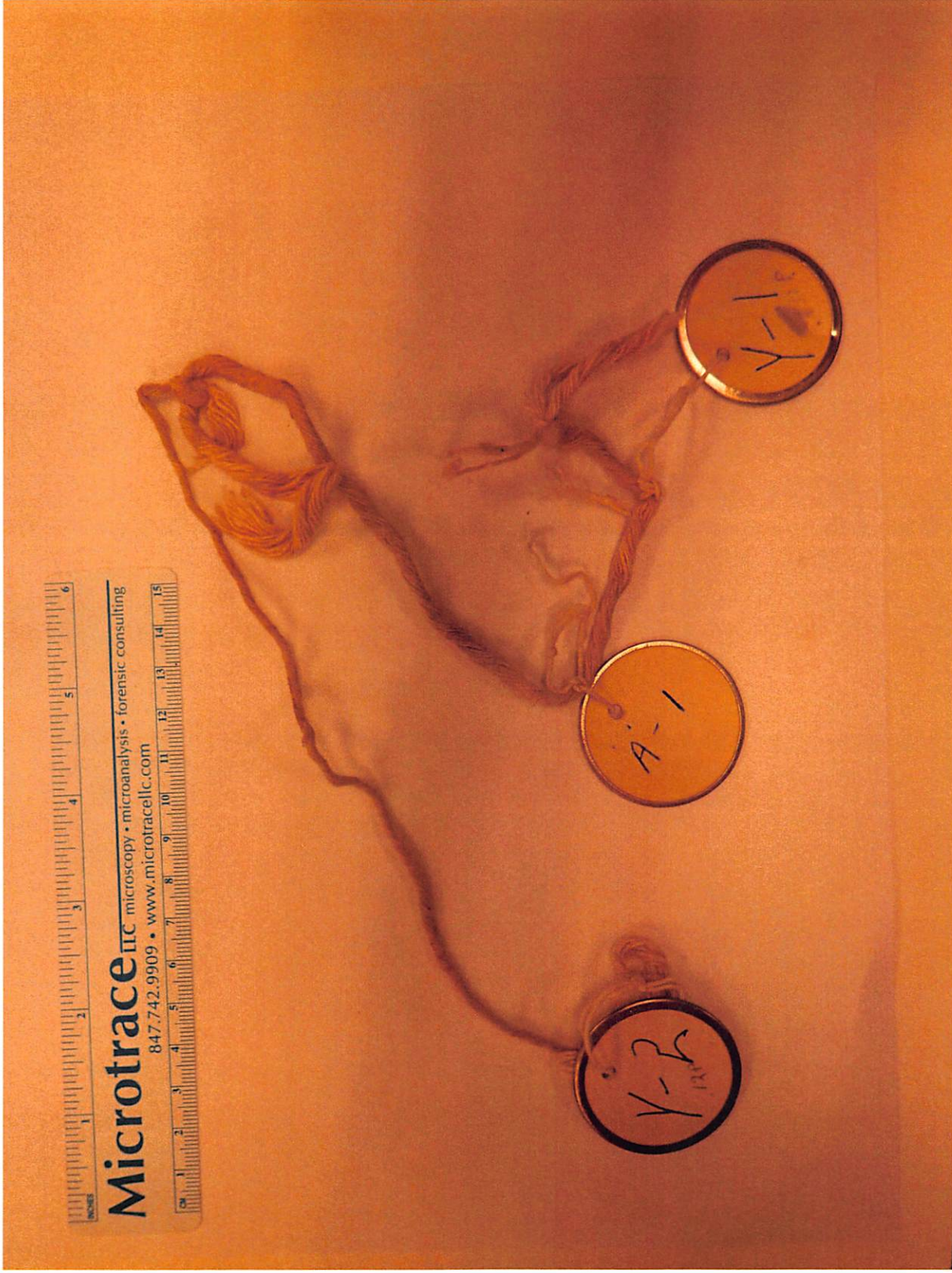


Figure 44. String collected from a cave area at the scene, includes parts Y-1, Y-2, A-1.