16 February 2024

Mr. Andrew M. Hale
Hale & Monico LLC
53 W. Jackson Blvd., Suite 334
Chicago, IL 60604

Re: ***Trace evidence analysis***
IL v Chester O. Weger (60-CF-753)

Dear Mr. Hale,

At your request, we have prepared this letter to address the potential evidential value of three categories of physical evidence preserved in this case: a lock of hair, fragments of wood, and a variety of red fibers. This letter details the specific information each of these categories of evidence could provide through examination and analysis employing methods, techniques and instrumentation, much of which was unavailable at the time of the murders. The letter also provides the specific items of evidence that we propose to analyze.

Background

In considering the potential value of conducting such analyses, it is important to recognize that while some of these items were previously analyzed, our review of the available discovery files shows that the analyses conducted in 1960 are, at best, cursory relative to what is possible and expected in the present day. This is due to significant improvements over the past six decades in all aspects of forensic microanalysis, including: our knowledge of materials, advances in available microanalytical instrumentation, and the interpretation of analytical results. By way of contrast with modern scientific expectations, the reports submitted in the 1960's lack analytical support and reviewable data, among other shortcomings.

Over the three plus decade history of Microtrace, we have been asked to study microscopic traces of almost every conceivable type. In almost every such case, the analysis provided new, factual information, and in many of those instances, that information has furthered an investigation or provided support for a conviction or acquittal.

For example, our analyses and interpretation of microscopic traces, which commenced two decades after a series of serial murders began in Seattle, on evidence previously studied by multiple forensic laboratories, provided new and critical information that led directly to the confession of the Green River murderer. The lesson from this is that no matter how old the evidence (especially trace evidence), it is still possible to extract useful clues. In the Starved Rock matter, the physical evidence has yet to be fully exploited.

In another instance, the analysis of microscopic traces on a glove associated with an alternate suspect led to the postponement of an imminent execution date. The individual (Clinton Young) was later granted a new trial based, in part, upon this evidence. [1]

These are just two of many potential examples that illustrate ways in which evidence beyond that containing DNA, tested long after it was collected, can provide new and impactful information in an old case. In the following sections, we lay out reasons for reanalyzing specific items of wood, hair, and fibers in this case.

Wood

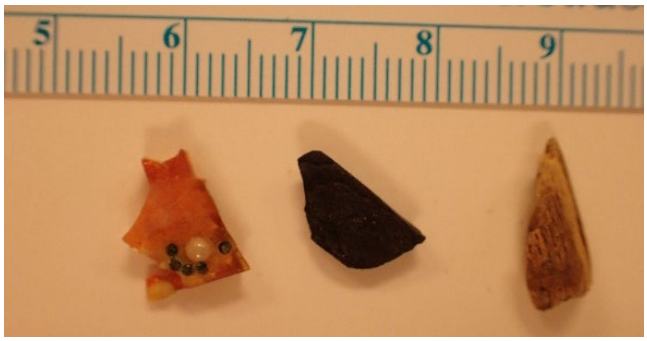


Figure 1. A fragment identified as "wood" (far right item) recovered with other items of debris at the scene (Item 25). Note that this image was collected by Microtrace during a visual evidence inspection at the LaSalle County Sheriff's Office.

There is no indication that a recovered fragment of wood (Item 25)[2] was ever critically analyzed (Figure 1). This wood fragment could be analyzed to identify or classify the type of wood and determine whether there are any foreign deposits on it such as blood, tissue, varnish, or paint. The surfaces could also be inspected to determine if they provide any indications as to the source of this wood (*e.g.*, is there anything to suggest this wood came from a bat or a tool handle). Such information may lead to constraints on the original source of this wood fragment (*e.g.*, a bat, dimensional lumber such as a 2x4).

Microtrace has conducted analyses of wood in numerous forensic and industrial cases as well as in the field of sports memorabilia authentication. Samples have included wood from trees, wood chips, wood fragments, wood products, and other woody plant tissue. In addition to analyzing wood, we have analyzed the surfaces of baseball bats to identify materials such as varnishes, paints, embedded sand paper abrasive, inks, and other botanical matter. Information derived from an analysis of a wood fragment has the potential to provide new factual information that could help, for instance, to confirm or refute certain scenarios.

[1] https://deathpenaltyinfo.org/news/clinton-young-free-pending-retrial-after-20-years-on-texas-death-row
[2] See Appendix A for a images and other details related to this sample.

Hair

Figure 2. A curl of hair "dug out of sand in cave" (Item 7). Note that this image was collected by Microtrace during a visual evidence inspection at the LaSalle County Sheriff's Office.

Exhibit 7 contains a clear curl of hair, as shown in Figure 2. This curl, along with other parts of it, that were split into several sub-items of evidence,[3] were dug out of sand in the cave on March 27th, 1960 by a Sergeant who collected other evidence in the case. While some of the hairs from these samples were apparently mounted on glass microscope slides (*e.g.*, Exhibits 7.10 and 7.11), there is no indication that:

(a) if these are from a true lock of hair, that any laboratory efforts were placed into identifying the manner in which the hairs were cut;

(b) the overall curl of hair was every studied as a whole;

(c) the hair curls are, indeed, a lock of hair from a single individual and that no other hairs are present in the sample;

(d) these hairs were compared to hair standards of anyone associated with this case;

(e) any conclusions were drawn from the original 1960's era analysis.

While the field of hair comparison still utilizes some of the tools available in 1960 (in addition to other previously unavailable methods), the approach and knowledgebase for hair microscopy and its interpretation have developed considerably in the ensuing decades. Each of these unexplored topics may provide insight into the origin of this apparent lock of hair and its significance in the broader case.

[3] See Appendix A for a full list of exhibits and images related to this hair sample

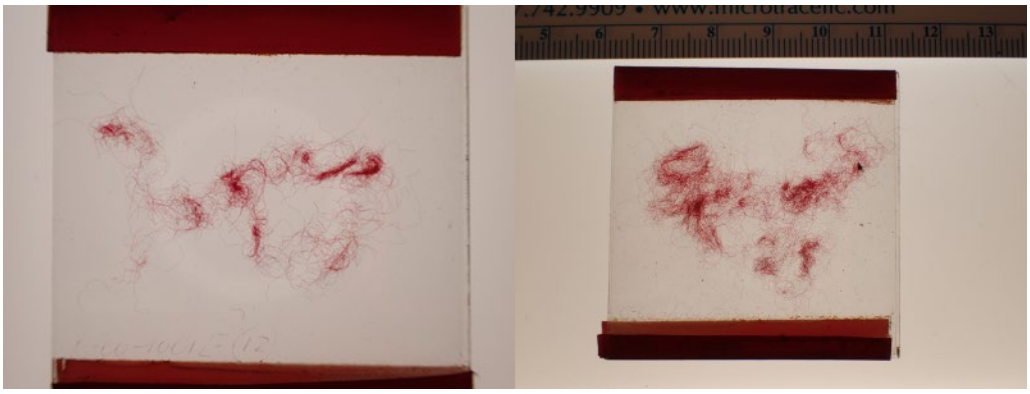


Figure 3. (left) "Red Fuzz" collected from the cave and (right) "Red Fuzz" collected from a bush between Bluff Train and the St. Louis Canyon trail. This represents two examples of the many red fibers observed amidst the preserved evidence in this case. Note that these images are not suitable for critical comparison as they were collected during a visual evidence inspection at the LaSalle County Sheriff's Office.

Fibers

In the 1960 fiber analysis, numerous red fibers were specifically identified as DuPont's Orlon® fiber. Two examples of the so called "red fuzz," collected from the scene and a bush in the St. Louis Canyon area are shown in Figure 1. These identifications were made by a textile engineer from Sears, Roebuck & Company. In our experience reviewing many reports from both forensic and industrial laboratories over the years, we have found that scientists from industrial laboratories are generally used to addressing very different questions than those posed to a forensic scientist, and as a result, their answers are often insufficiently supported relative to the burden of proof expected from a forensic examiner in a forensic case. In this case, there is no data to review that would permit us to evaluate the specificity of an identification to the level of brand and trade name.

For these reasons, it is not unreasonable to anticipate that some of the identifications made and comparisons conducted may not be as certain or specific as indicated in the reports. As noted above, fibers from numerous items of evidence were identified as Orlon® brand acrylic fibers. This is a remarkably specific identification, particularly since no other synthetic fibers of any brand or type were noted amongst all of the numerous fiber evidence analyzed. Considering that these analyses were conducted in the 1960's, that most of the instrumentation available to a modern forensic scientist was not available, and considering the actual instruments that were available, it is reasonable to ask whether the fibers are actually (a) the DuPont branded Orlon® product, (b) another of the commercially available acrylic products at the time, or (c) simply a synthetic (*i.e.*, non-animal or vegetable) fiber. Based upon our review of other forensic case files, this would not be the first time that an overly specific identification has been provided.

Most of the methods used today for characterization, identification, and comparison of fibers were not available or not as systematically developed as today. So besides questioning the identifications and comparisons made in the 1960's, there is a real possibility of expanding the analysis and comparison to new horizons. For example, we anticipate that it will be possible

specifically identify the type of fibers, in part based upon the limited number of synthetic fibers available at the time.[4] Similarly, the color, along with other properties of the fibers, have never been critically studied in a comparative manner, and there are numerous questioned and known fibers from the victims, scene, area, etc. that are worthy of comparison. A summary of the specific items of evidence requested for comparison are listed in Appendix A. A critical fiber analysis and comparison has the potential to provide new factual information, new associations, investigative leads, and support that corroborates or refutes certain theories.

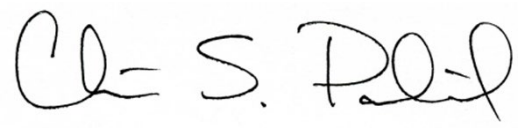
Potential value of Trace Evidence

We would note, based upon our professional experience, that a wide range of trace evidence in post-conviction casework, in Illinois (Cook County) and other states around the US, has been released to our laboratory for purposes of (a) reanalysis, (b) conducting more detailed analyses than were originally carried out, and (c) conducting analyses using methods that were not available at the time of an original analysis. In some of these cases, the prosecution and defense have worked together in post-conviction cases to mutually submit such evidence for analysis to ensure that untested or potentially underutilized evidence was given a just opportunity to impact the case.

In this case, a great deal of trace evidence was collected. Even in 1960, the prosecution saw sufficient potential value in the trace evidence to utilize a range of experts, which included scientists from a university laboratory[5] and two industrial laboratories[6] across the United States. Based upon the records we have seen, the original defense team was never afforded an opportunity to have this evidence analyzed or even to have the results from the prosecution labs critically reviewed by their own expert. There seems to be no downside to having a new look at this evidence using modern analytical approaches, applied at a high level, that will leave the items in substantially the same condition as they were received.

Should questions arise, we would be happy to address them.

Sincerely,



Christopher S. Palenik, Ph.D.
Senior Research Microscopist

Skip Palenik
Founder and Senior Research Microscopist

[4] The Microtrace physical reference collections contain thousands of manufacturer derived fiber samples, including examples of many early textile polymers.
[5] Washington University
[6] Sears, Roebuck and Co. (Chicago) and Kodak Micro Service Testing Laboratory (Rochester New York)

Appendix A – Summary of Items Requested for Analysis

Hair Exhibits

- 7.0 – Envelope containing a slide (7.1) and paper fold (7.2) labeled "2 locks or curls of hair dug out of sand in cave by me on Mar 27 1960 – Sgt. WJ Hall (Figure 1).
- 7.1 – Slide showing part of a curl (Figure 2).
- 7.2 – Paper fold showing a curl of hair (Figure 3)
- 7.12 – Envelope containing a curl "hair dug out of sand" (Figure 4)

Wood Exhibit

- 25.0 – Envelope containing various debris including sunglass lenses and bits of wood (Figures 5 and 6)

Red Fiber Exhibits

Scene exhibits with red fibers

- 12 – Red "fuzz" found in the cave (Figures 7 and 8)
- 36 – Red "fuzz" found on bush on St. Louis Canyon trail (Figures 9 and 10)

Victim's exhibits with red fibers

- 14.3 – Miscellaneous debris recovered from Mrs. Oetting (Figure 11)
- 114.1 – Mrs. Oetting coat sleeve debris (Figure 12)
- 115.1. Debris from dark brown skirt of Mrs. Oetting (Figure 13)
- 116.2. Debris from coat back of Mrs. Oetting (Figure 14)
- 118 – Red fibers found on the girdle of Mrs. Oetting (Figure 15)
- 119.1. Debris from the white panties of Mrs. Oetting (Figure 16)
- 19.5 – Mrs. Lindquist scarf debris (Figure 17)
- 910.1 – Mrs. Lundquist girdle debris (Figure 18)
- 910.2 – Mrs. Lundquist girdle debris (Figure 19)
- 912.1 – Debris collected with binoculars (Figure 20)
- 918.2. Debris from inside front right book of Mrs. Murphy (Figure 21)
- 922.1 – Debris from Mrs. Lindquist green coat (Figure 22)

Known exhibits with red fibers

- Numerous known fiber exemplars were collected. These items represent a possible point of comparison to the above questioned fibers. A full list of known fibers could be compiled upon request.

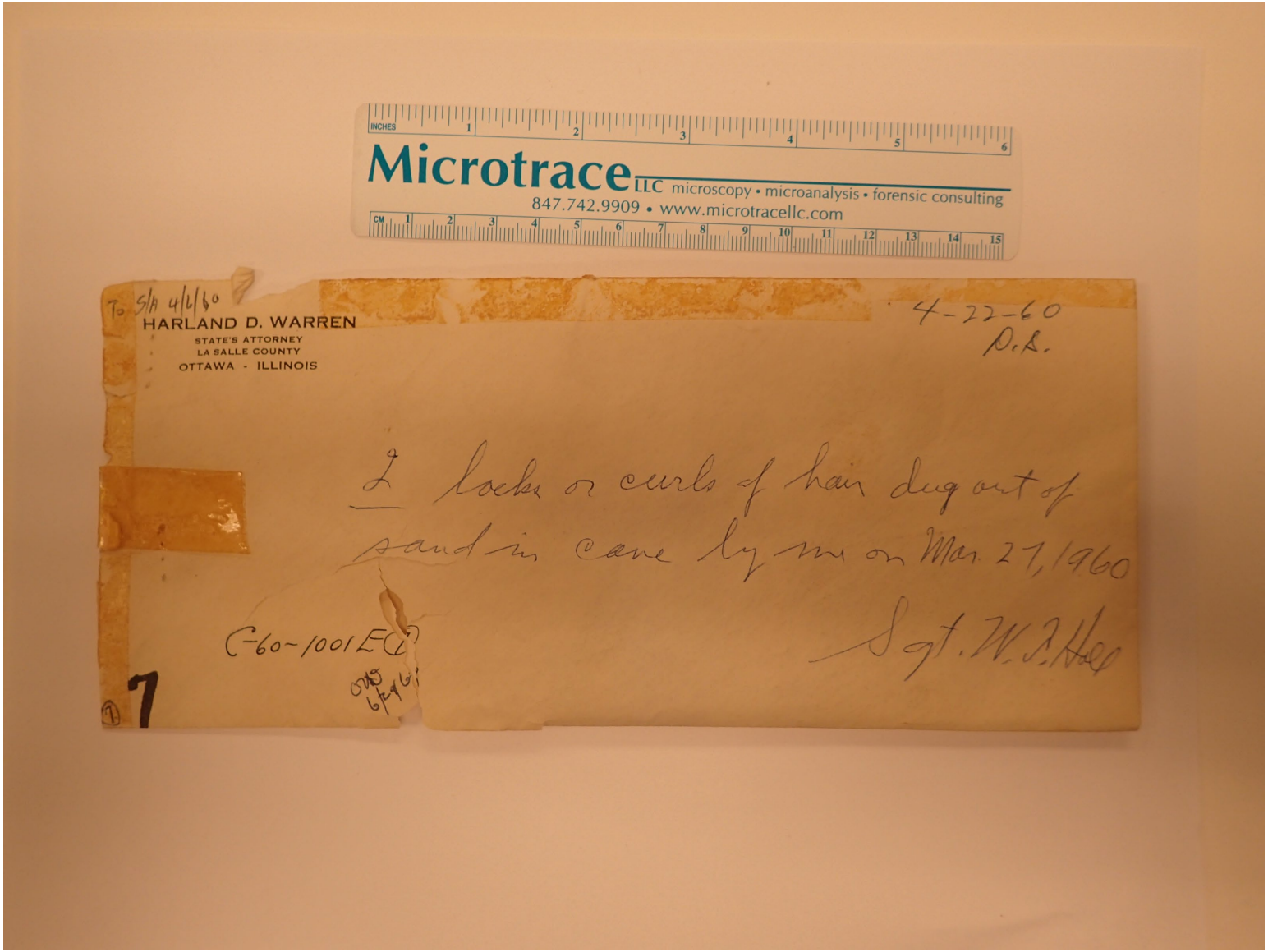


Figure 1. Exhibit 7.0 Envelope containing two locks or curls of hair dug out of sand in cave by me on March 27, 1960.

Figure 2. Exhibit 7.1 Slide containing a portion of a lock of hair from Envelope 7.0.

Figure 3. Exhibit 7.2 Opened paper fold showing a curl of hair dug out of sand in cave on March 27, 1960. Inset shows the label of the paper fold.

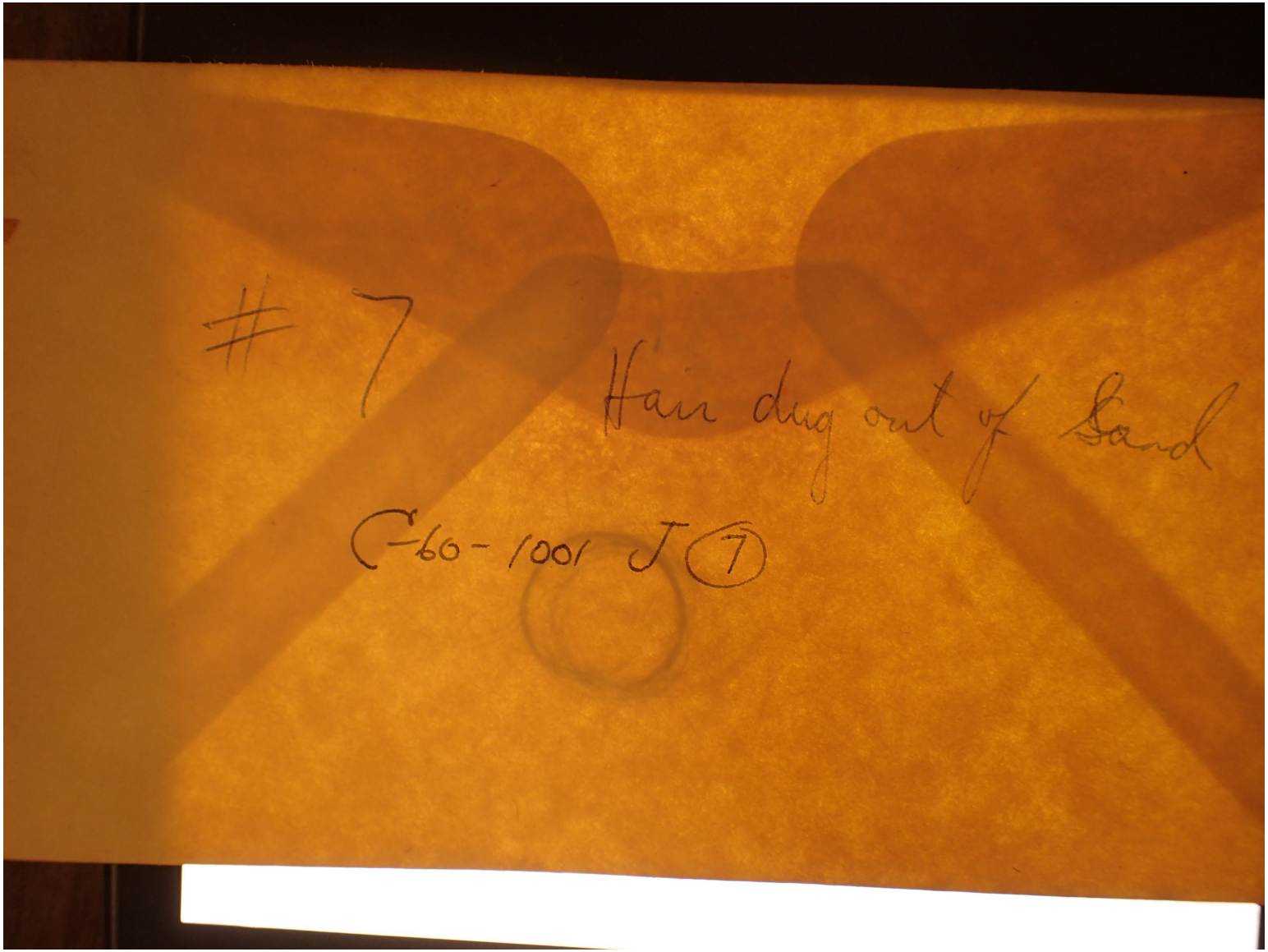


Figure 4. Exhibit 7.12 Another Exhibit 7 envelope containing a portion of the hair dug out of sand.

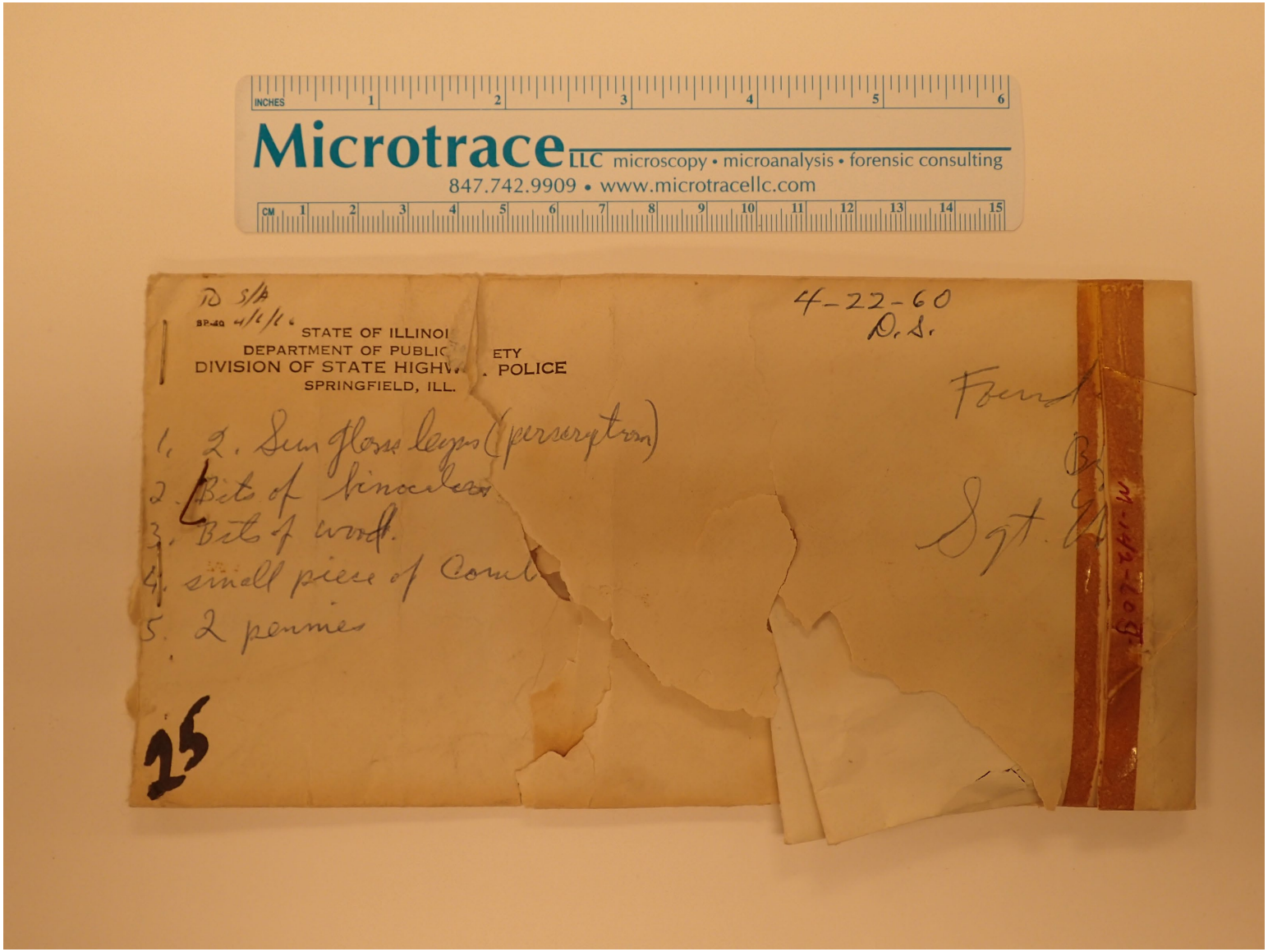


Figure 5. Exhibit 25 envelope, which contains, among other items, “bits of wood.”

Figure 6. Exhibit 25. Apparent wood fragment from Exhibit 25, which

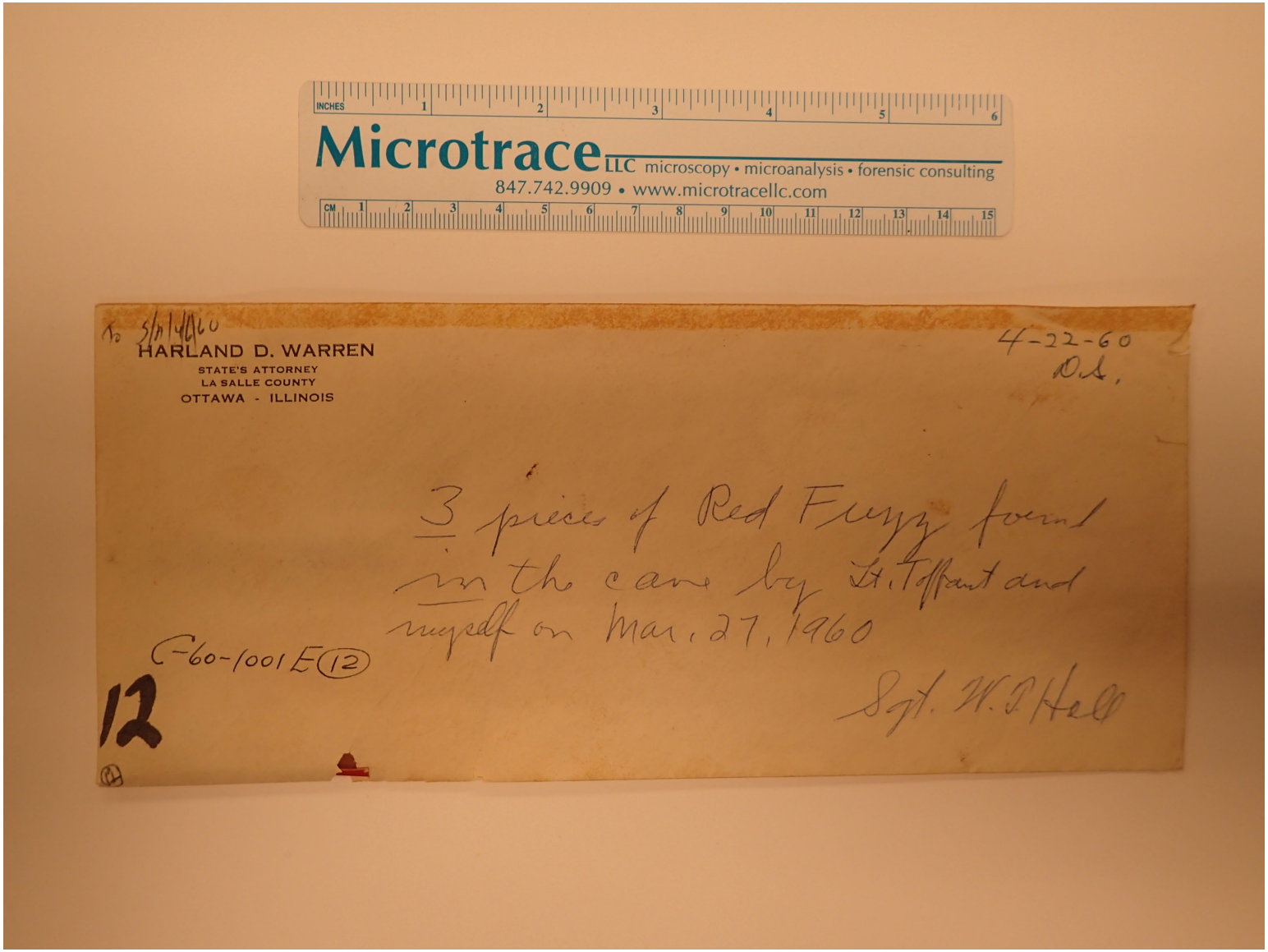


Figure 7. Exhibit 12. Three pieces of red fuzz found in the cave.

Figure 8. Exhibit 12. Three pieces of red fuzz found in the cave.

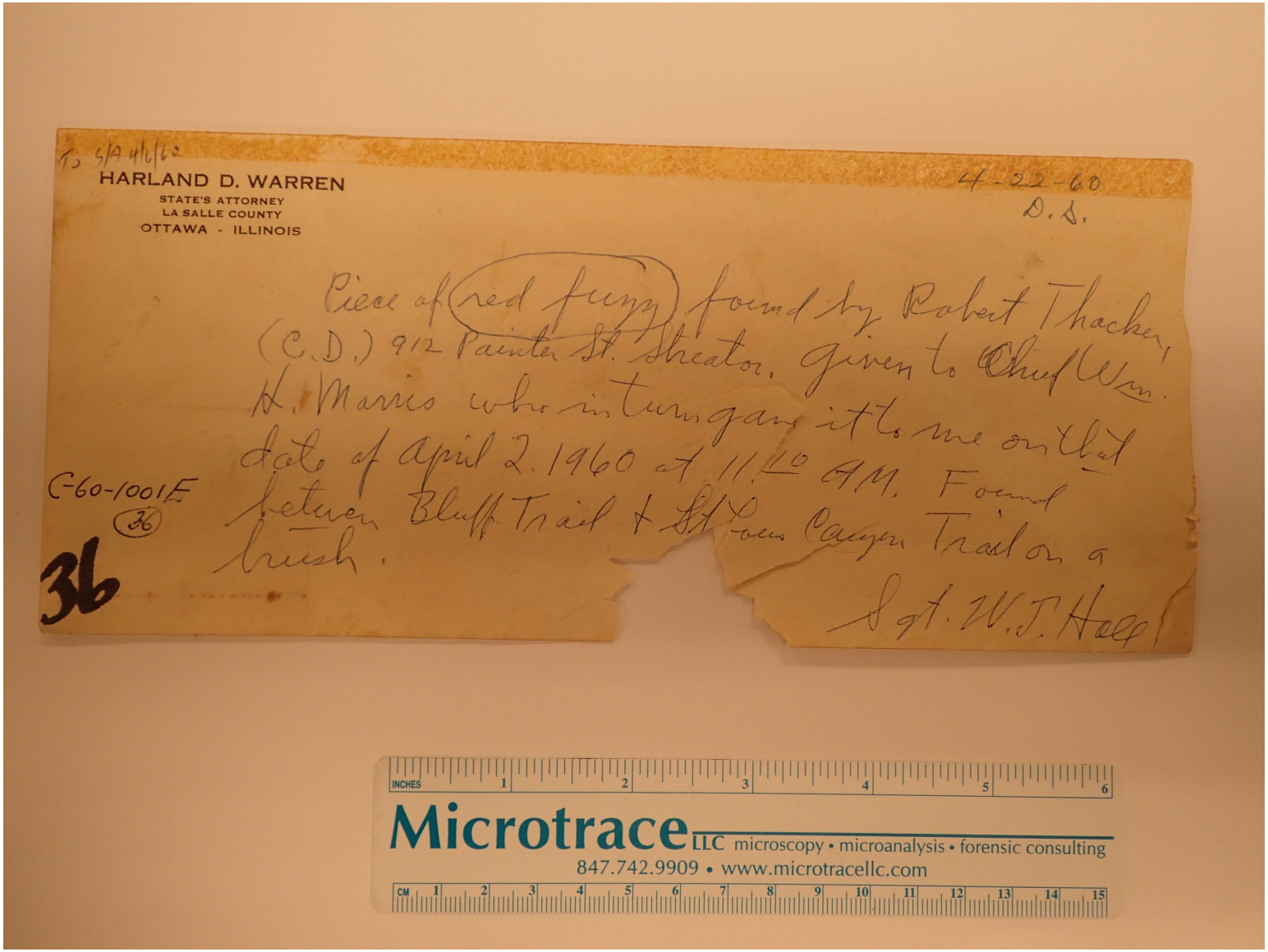


Figure 9. Exhibit 36. Piece of red fuzz found by Robert Thacker (C.D.) 912 Painter St. Sheraton. Given to Chief W. H. Morris who in turn gave it to me on that date of April 2, 1960. Found between Bluff Train & St. Louis Caynon Trail on bush. Sgt. W.J. Hall.

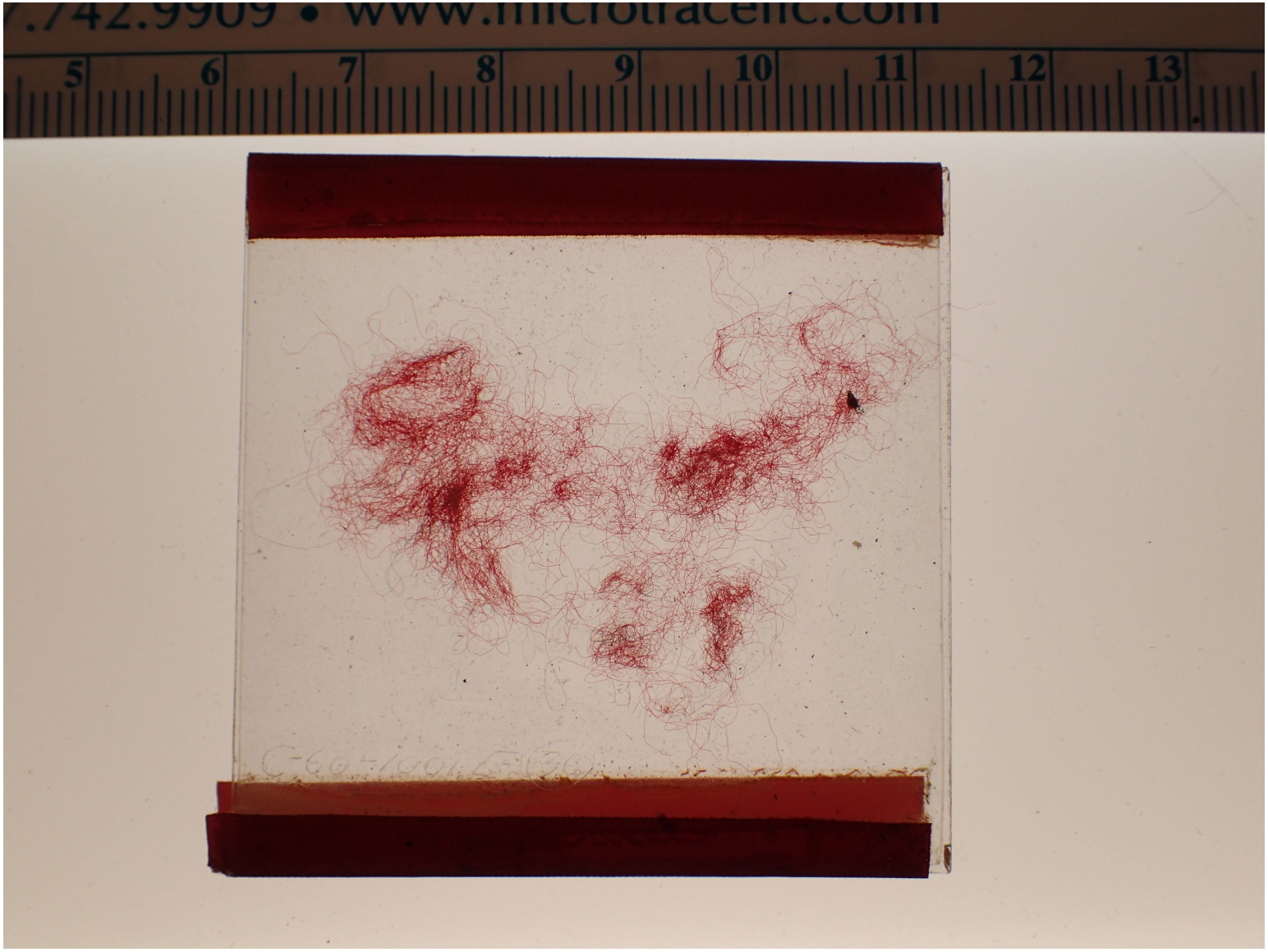


Figure 10. Exhibit 36. Piece of red fuzz found between Bluff Train & St. Louis Canyon Trail on bush.

Figure 11. Exhibit 14.3. Miscellaneous debris recovered from Mrs. Oetting.

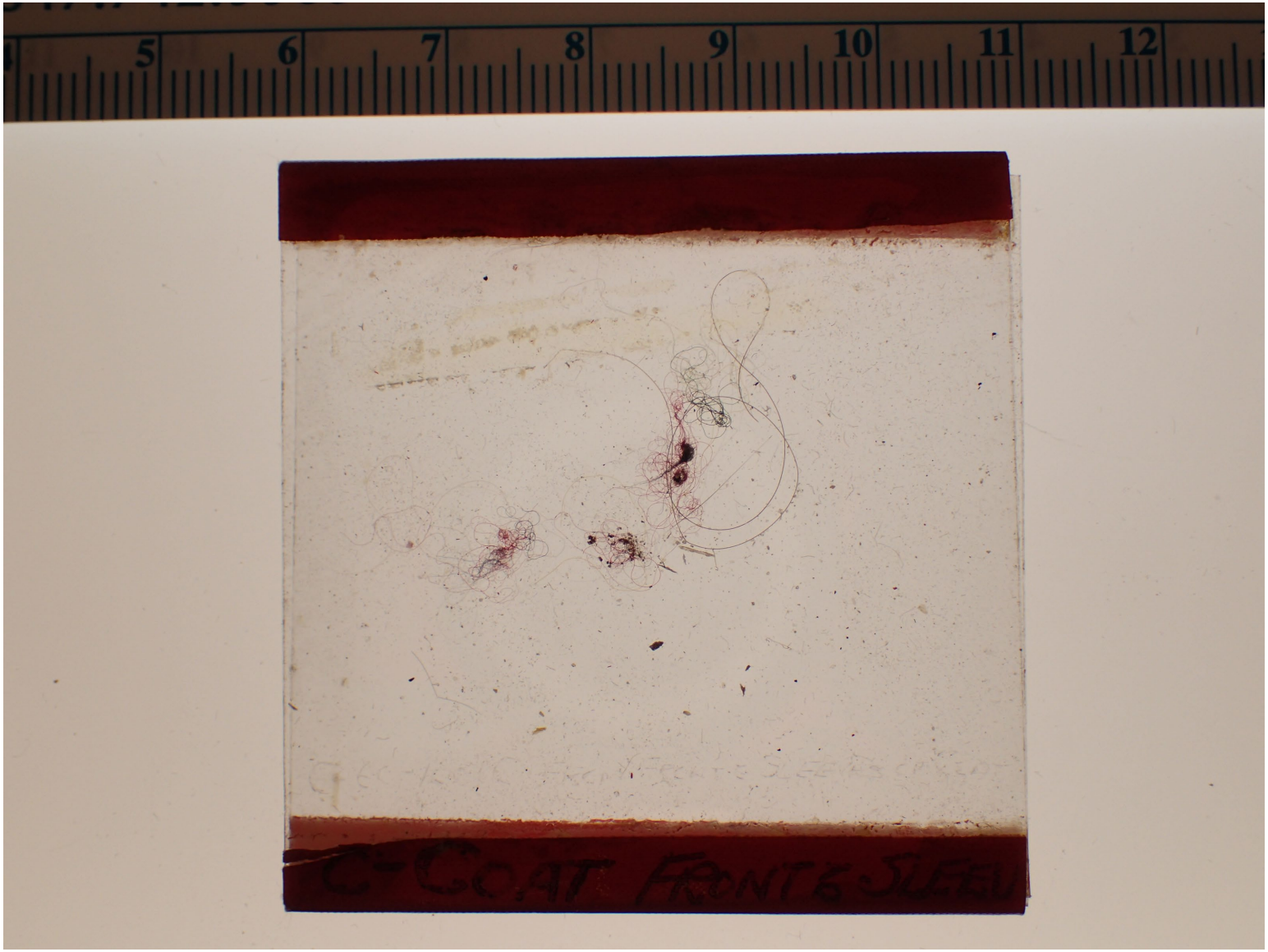


Figure 12. Exhibit 114.1. From front sleeves of Mrs. Oetting's coat.

Figure 13. Exhibit 115.1. Debris from dark brown skirt of Mrs. Oetting.

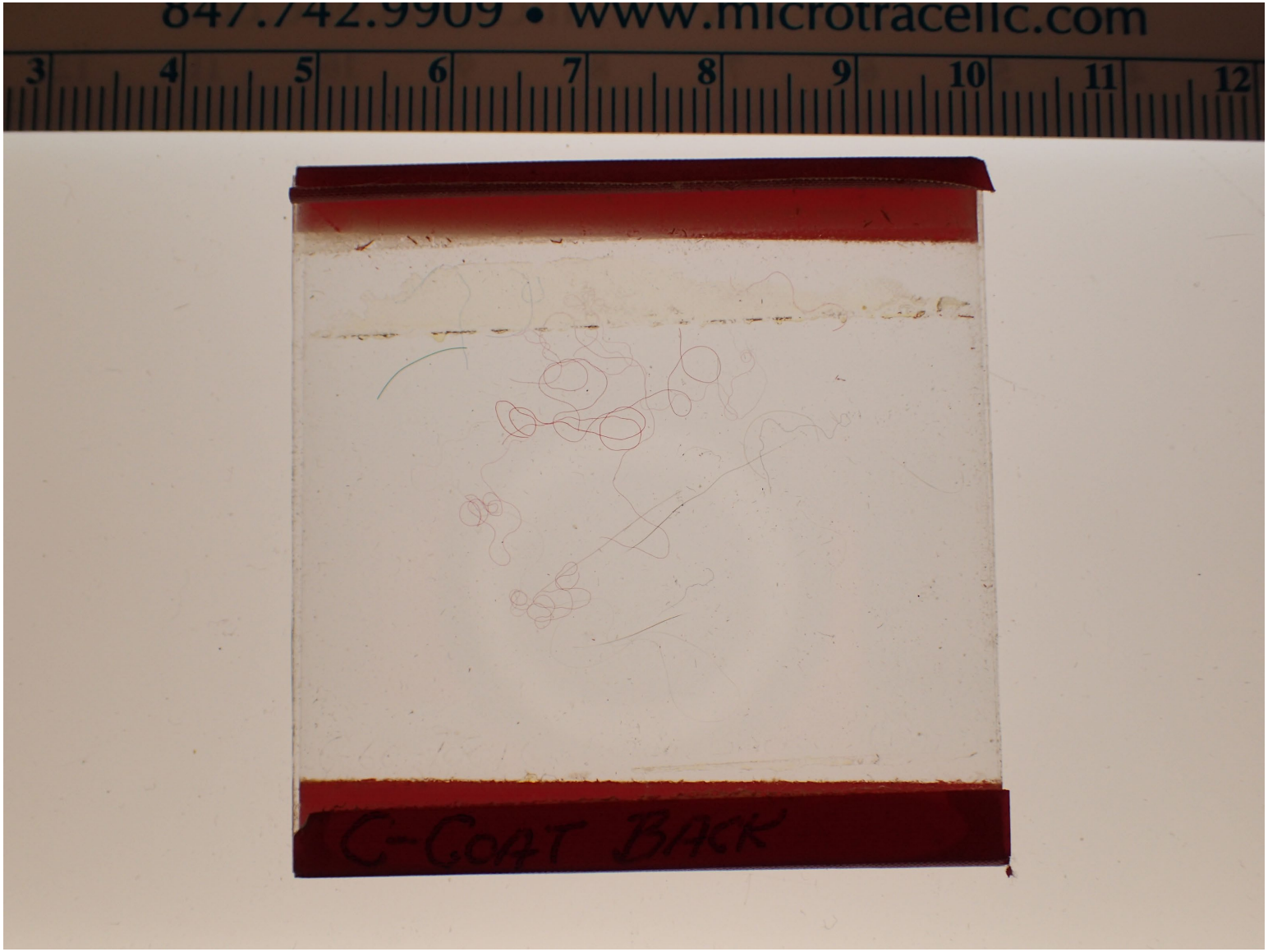


Figure 14. Exhibit 116.2. Debris from coat back of Mrs. Oetting.

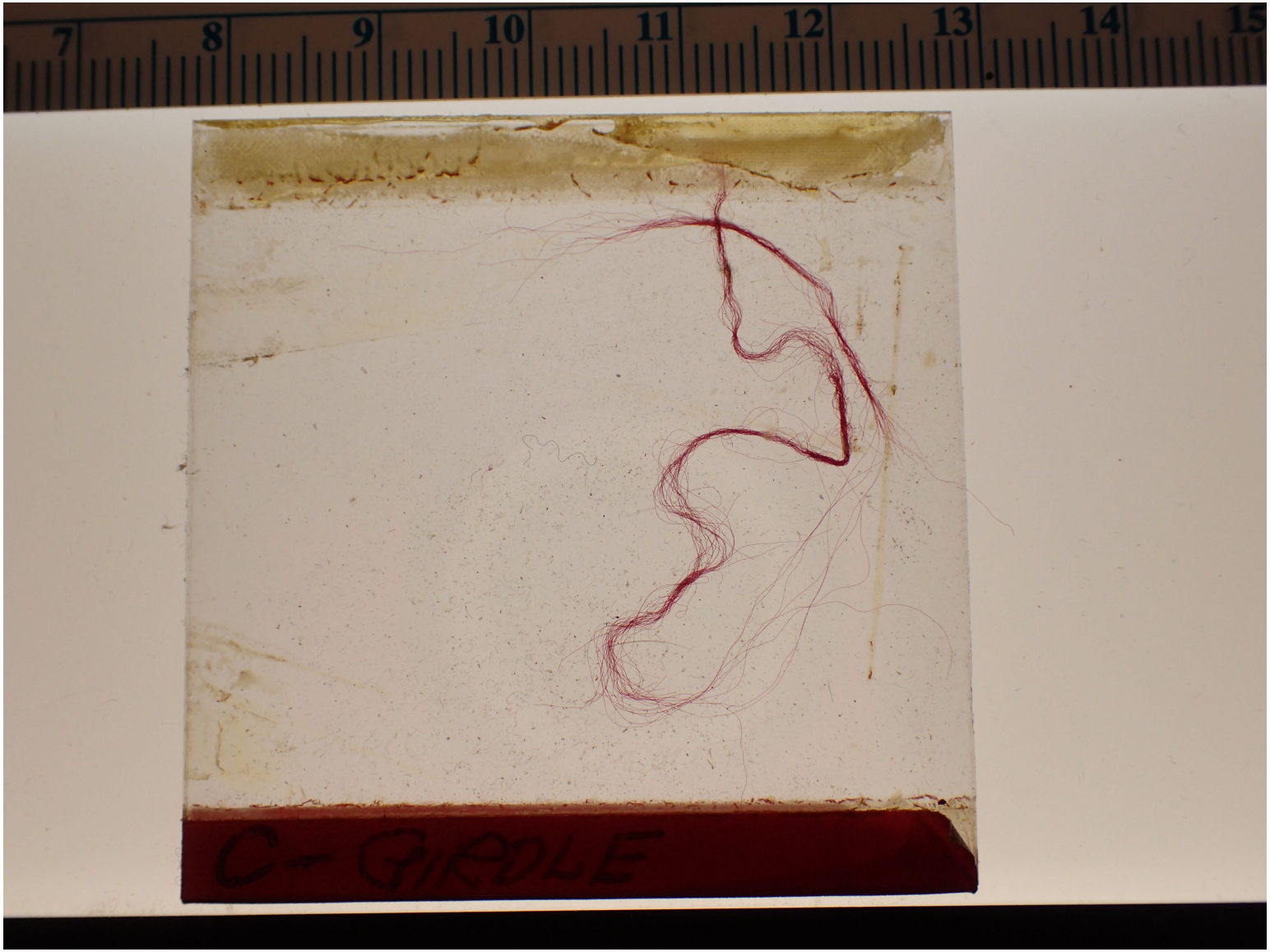


Figure 15. Exhibit 118. Red fibers found on the girdle of Victim C (Lillian Oetting).

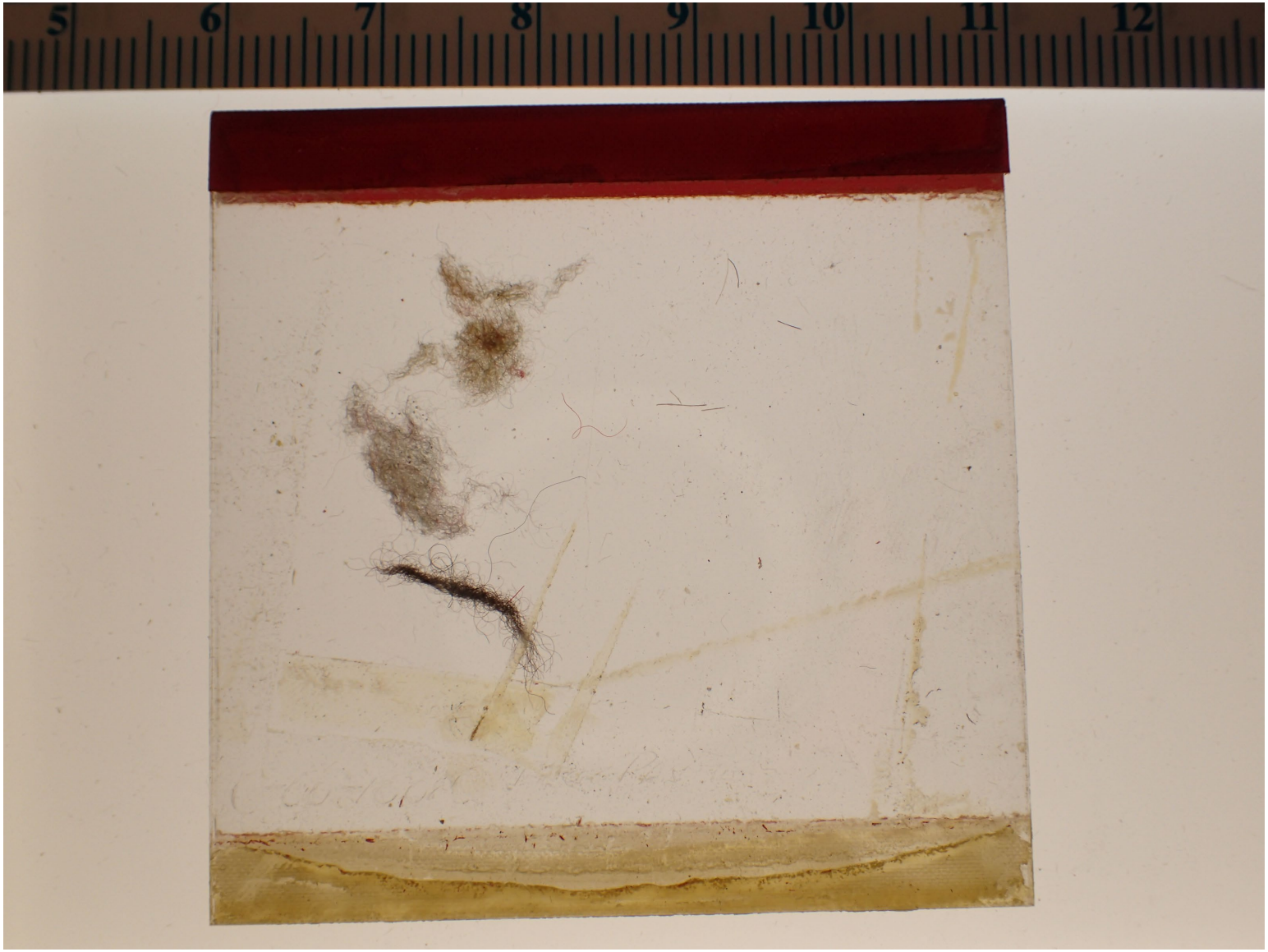


Figure 16. Exhibit 119.1. Debris from the white panties of Mrs. Oetting.

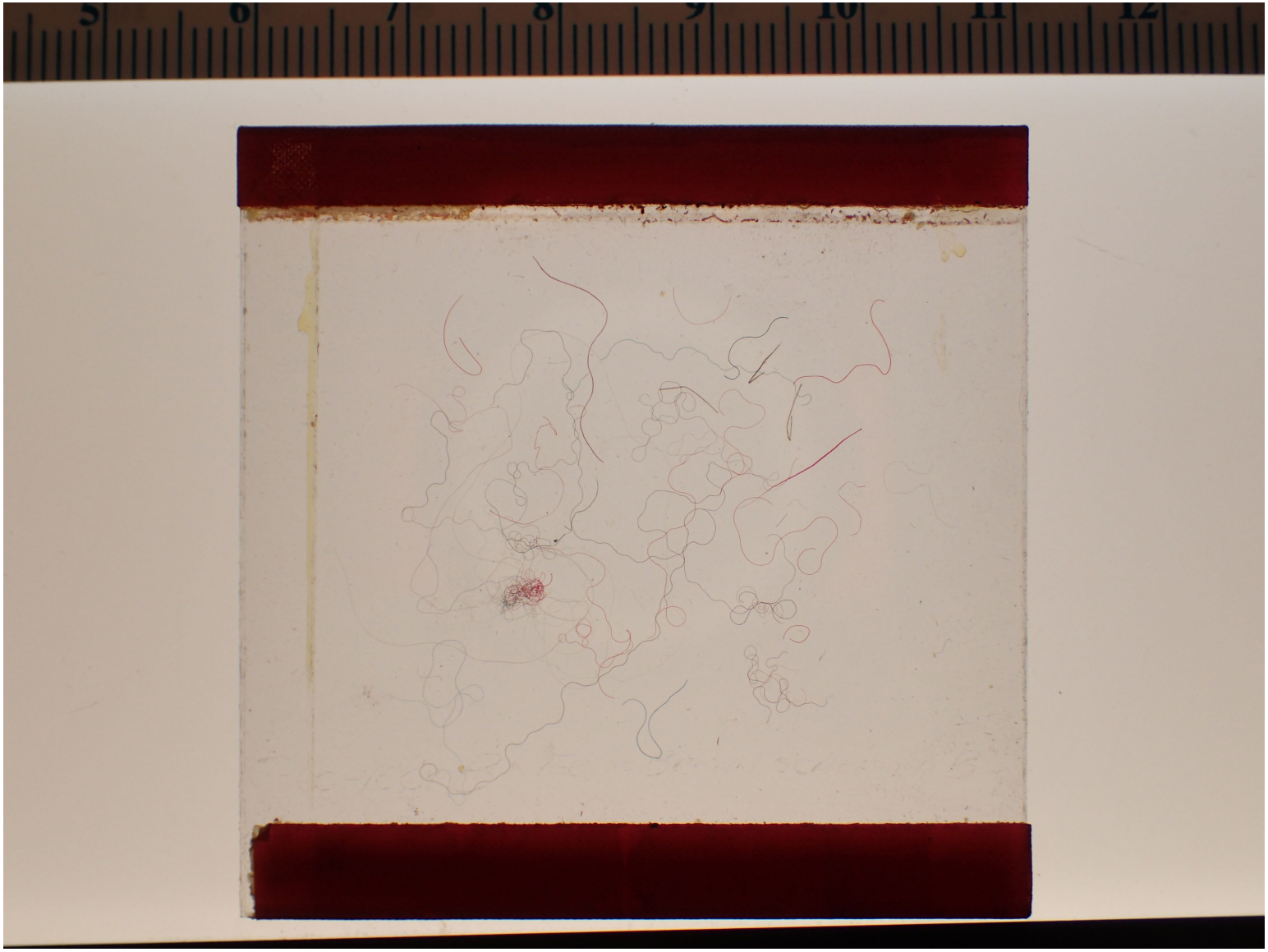


Figure 17. Exhibit 19.5. Debris from a dark brown wool scarf of Mrs. Lindquist.

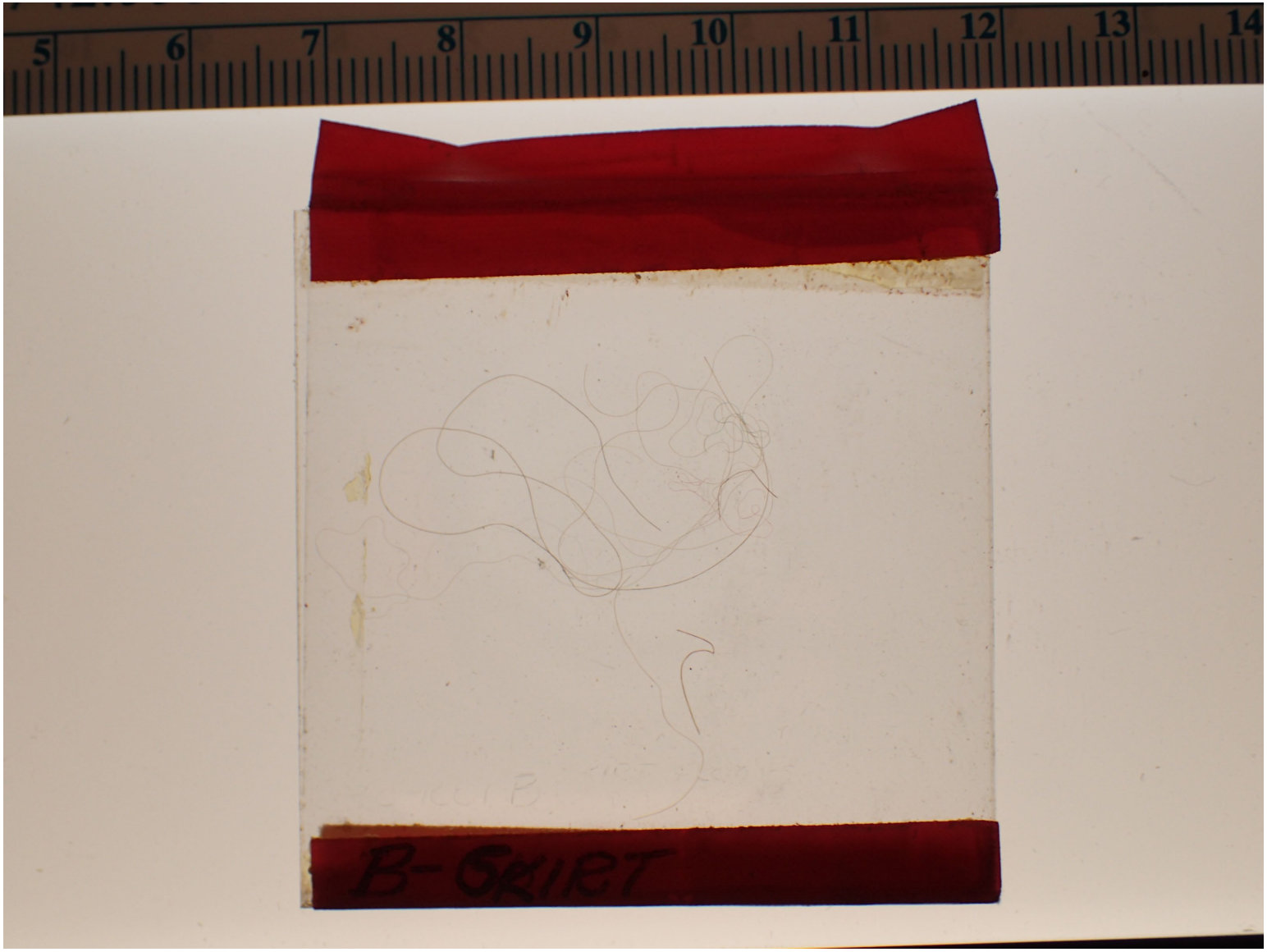


Figure 18. Exhibit 910.1. Fibers from the girdle of Mrs. Lundquist.

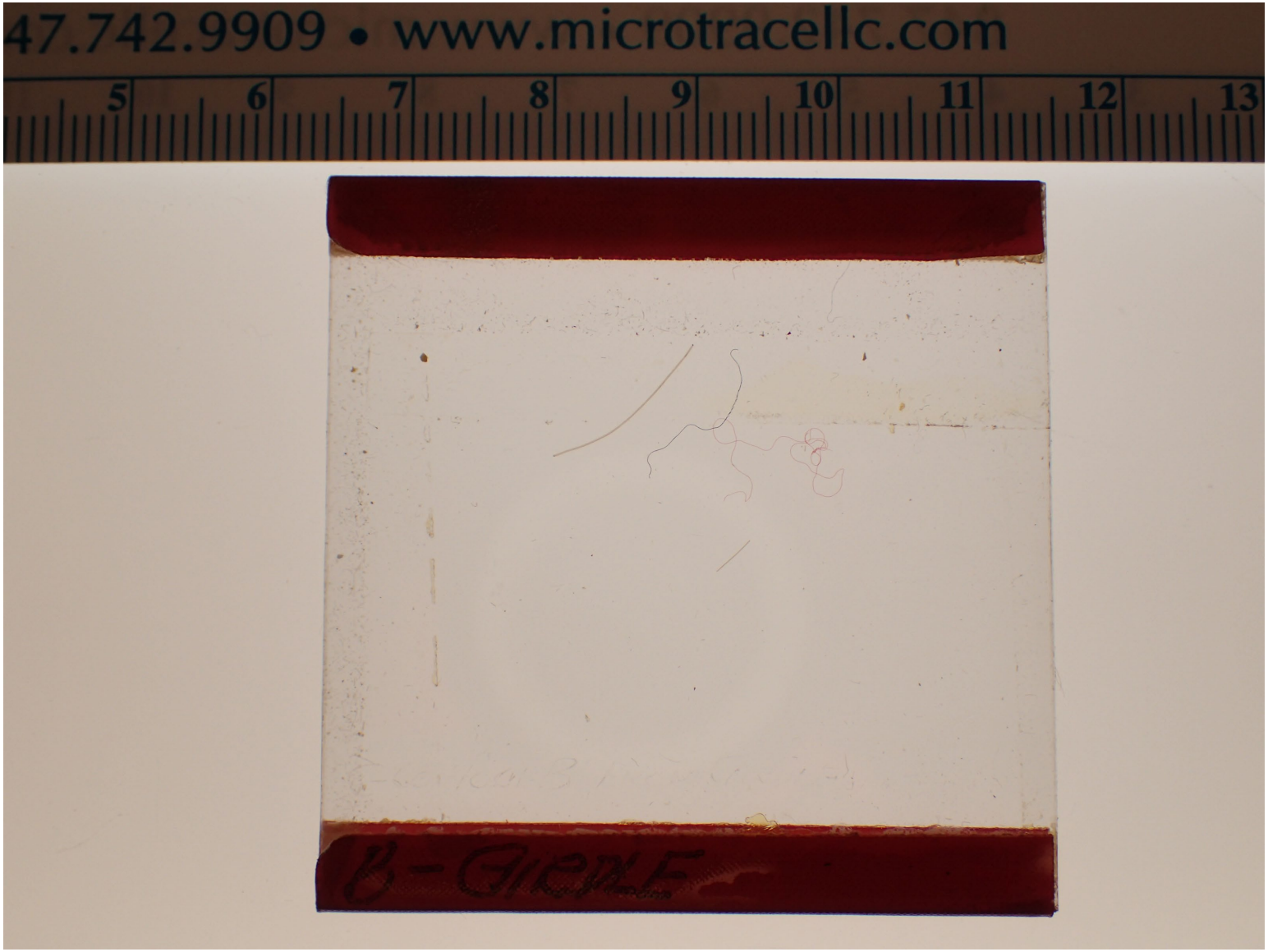


Figure 19. Exhibit 910.2. Fibers from the girdle of Mrs. Lundquist.

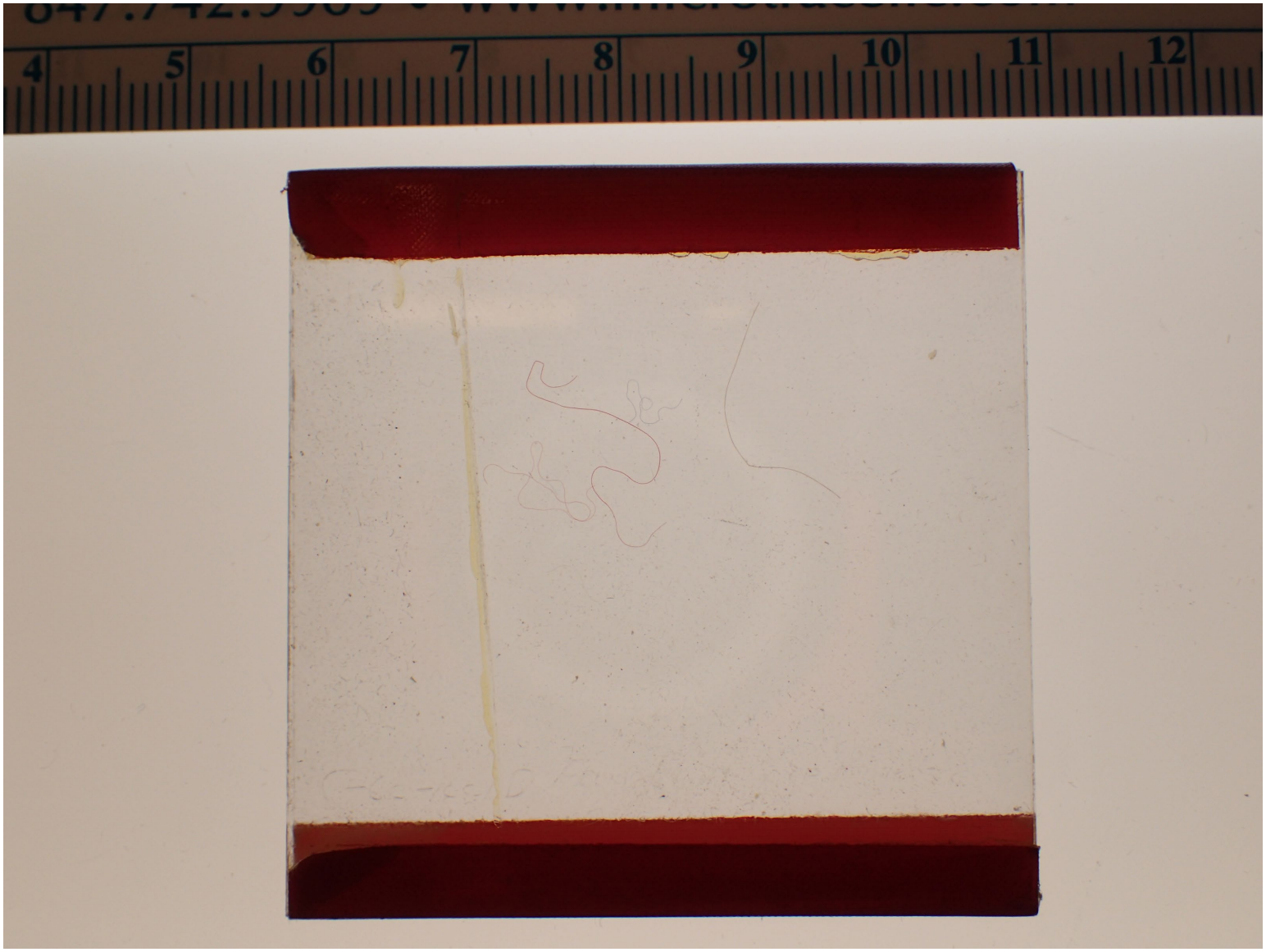


Figure 20. Exhibit 912.1. Debris from binoculars of Mrs. Lindquist.

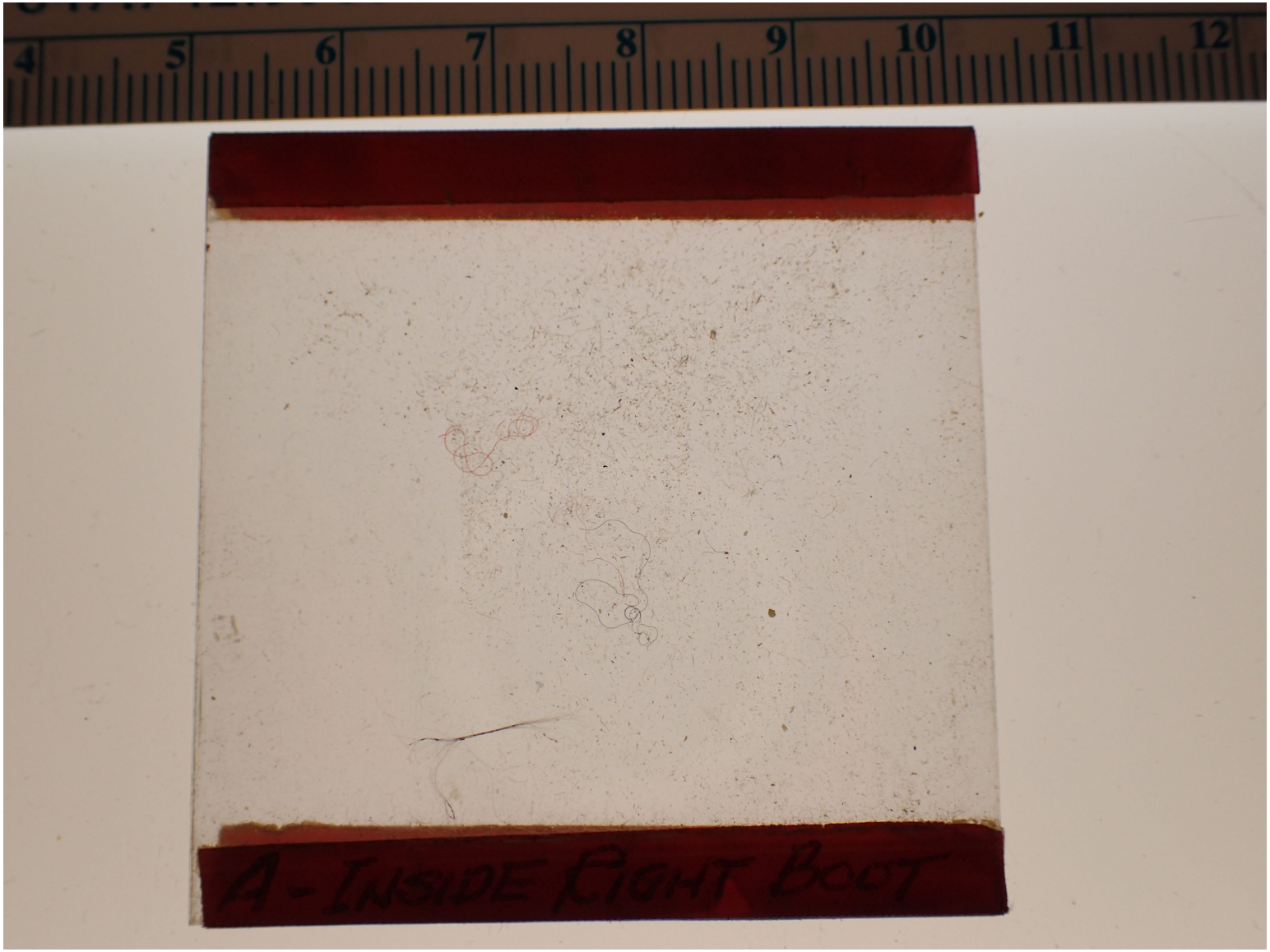


Figure 21. Exhibit 918.2. Debris from inside front right book of Mrs. Murphy.

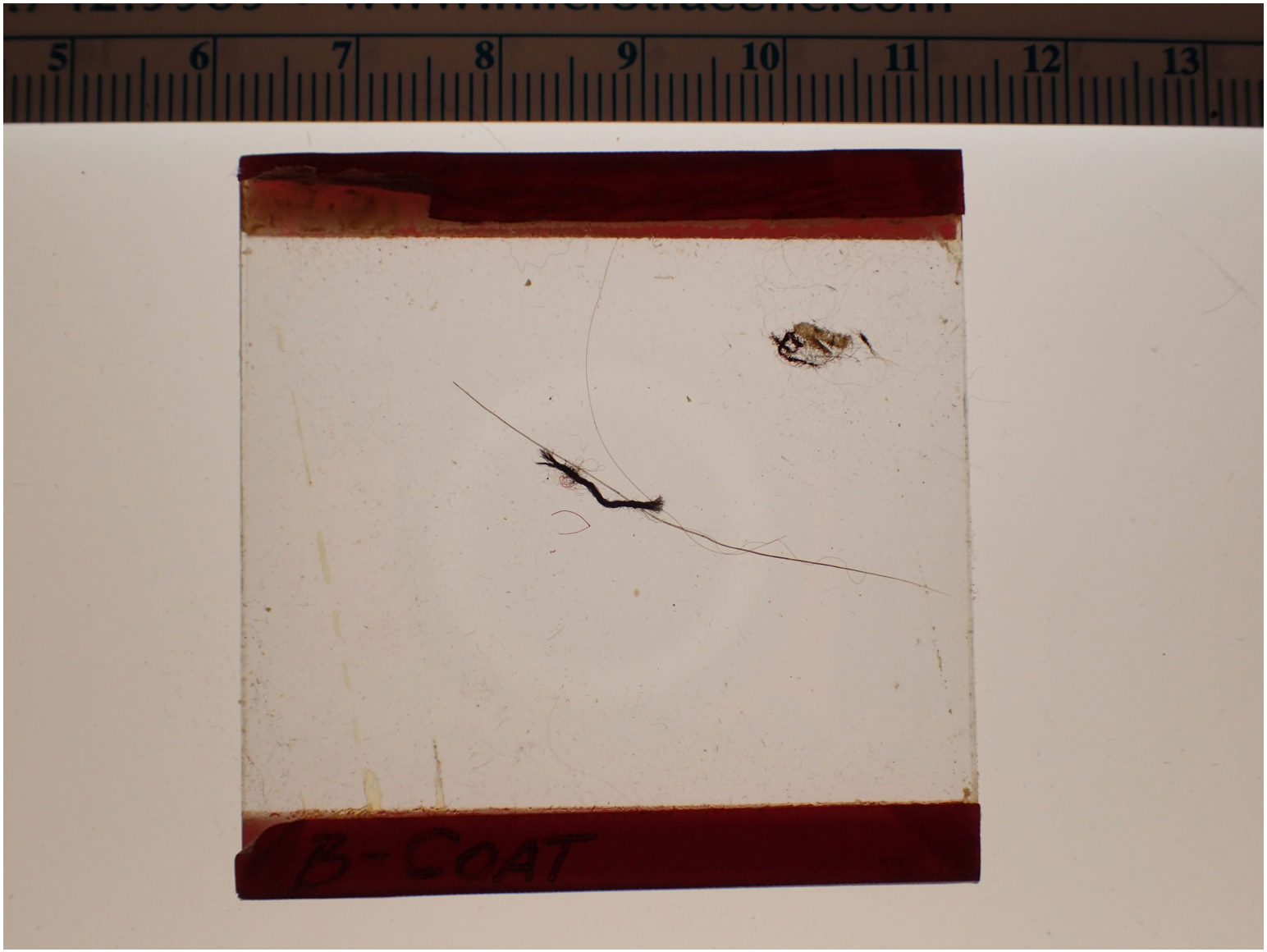


Figure 22. Exhibit 922.1. Debris from green coat of Mrs. Lindquist.