CALIFORNIA DEPARTMENT OF JUSTICE
BUREAU OF FORENSIC SERVICES
PHYSICAL EVIDENCE BULLETIN

COLLECTION OF FIBER AND HAIR EVIDENCE

INTRODUCTION Many crimes involve direct physical contact between victim and suspect. Whenever such contact occurs, there is frequently an inadvertent transfer of microscopic evidence. This evidence transfer is usually hairs and fibers. However, this type of evidence, which can be microscopic in form, may often be overlooked by investigating officers because it is not easily observed. Even though the most commonly encountered fibers are white and/or blue polyester, cotton, or blends of these, this type of evidence should be collected and submitted for evaluation.

TYPES OF CASES IN WHICH FIBER AND HAIR MAY BE OF VALUE AS EVIDENCE

Assault/Rape/Homicide - these types of crimes usually involve personal contact of some sort. Therefore, fibers and hairs may be interchanged between victim and suspect and/or their respective environments and apparel. Weapons and fingernail scrapings also may be important sources of fiber evidence. Bindings, such as rope, may also leave distinct fibers if a person was tied up.

Burglary - Clothing fibers will frequently be found at the point where the burglar may have been forced to crawl through a window or other opening. If no head covering was used, hair may also be found.

Hit-and-Run - Due to the forceful contact between victim and automobile, clothing fibers and hair can generally be found adhering to the fenders, grill, door handles, or parts of the undercarriage. Fabric impression patterns may also be observed on surfaces with which the fabric may have impacted.

COLLECTION, PRESERVATION, AND MARKING OF FIBER/HAIRS EVIDENCE

Before attempting specific procedures listed below, note the following general precautions:

(1) The size of container should correspond to the size of the object.

(2) Do not package wet evidence. Fibers or objects containing fiber evidence should be air dried before placing in appropriate containers. BIOLOGICAL STAINS DEGRADE WITH TIME. THIS PROCESS IS ACCELERATED WHEN ITEMS ARE WET AND SEALED IN AIRTIGHT CONTAINERS SUCH AS PLASTIC BAGS.

(3) Do not wrap exhibits on a table top without first thoroughly cleaning that surface. Avoid cross contamination between all evidence and control samples.

(4) Label all evidence containers with appropriate information such as submitter's initials, case or exhibit number, source, and date, to document the chain of custody.

COLLECTION PROCEDURES

(1) Where fibers/hairs are visible and firmly attached to an inanimate object, photograph (if possible) and then transport to the lab:

Leave fibers/hair intact. (a) Diagram and note exact location and number of fibers/hairs adhering to each object. (b) Label object and package so that fibers/hairs cannot become dislodged in transit. (c) Label and reference to notes.

(2) Where fibers/hairs are visible and not firmly attached, photograph (if possible), or if firmly attached and object is too large to send to the lab:

(a) After diagramming and noting each location, and the number of fibers/hairs present, carefully remove with clean tweezers and package. (b) Place fibers in small pill boxes, glass vials, or other tightly capped containers. Fibers may also be placed in small folded paper bindles. (c) Label and reference to notes.

(3) Where fibers/hairs are possibly transferred to clothing of victim or suspect:

(a) Be sure clothing is dry before packaging. (b) Keep each item separate. (c) Avoid disturbing soil, dust, blood, seminal stains, or other foreign materials adhering to clothing. (d) If any of the aforementioned are apparent, see appropriate PEB for special instructions. (e) Place ID mark on each item in an easily-located area that does not damage the clothing. (f) After allowing wet apparel to air dry, carefully fold, wrap and package each article separately (do not use plastic).

(4) For fingernail scrapings/clippings

(a) Take scrapings from both suspect and victim. (b) Use a clean instrument such as a fingernail clippers, file, or toothpick. (c) Use a separate folded paper bindle for each hand to collect scrapings. (d) Place folded, labeled bindle in separate pill box, glass vial or other small tightly capped container.

(5) Where fibers are in hair of suspect or victim:

Vigorously comb the subject's hair over a clean, white paper using a clean, fine-tooth comb. Carefully fold the paper, together with the comb, into a bindle to prevent loss of any trace evidence. Place the bindle in an envelope, seal it, and submit to the lab for processing.

(6) OTHER SPECIAL TECHNIQUES SUCH AS TAPE LIFTING OR PROCESSING OF DEAD BODIES SHOULD BE REFERRED TO YOUR LOCAL CRIME LABORATORY FOR GUIDANCE.

(7) Certain blood types may be detectable if the hair has been recently pulled. These hairs should be treated like physiological fluids, REFRIGERATED and brought to the laboratory as soon as possible. A sample of the blood of the various subjects should also be submitted.

COLLECTION OF FIBER AND HAIR EVIDENCE

COLLECTION OF CONTROL SPECIMENS OF FIBER AND HAIR

A. Fiber Controls. When fibers have been collected by the investigating team, it is imperative that appropriate and adequate control specimens also be submitted. This could involve multiple control samples such as front and rear vehicle carpets. A control sample about the size of a $.25 piece will usually suffice.

B. Hair Sample Controls. Whenever hair is collected, the roots should be included because considerable information can be obtained. People may not like to have their hair pulled by another person. However, they generally can be persuaded to pull out enough of their own hair for root evaluation. The preferred method of sample collection is this order: (1) pulled hairs, (2) backcombed hairs, and/or (3) close cutting.

Head or Scalp Hair. "New" (unused) plastic combs should be used to collect loose hair from all parts of the scalp. COMBS SHOULD BE USED ONLY ONCE. BACK COMB THE SCALP HAIR BRISKLY. Catch falling hairs in piece of paper, fold into a bindle and place bindle and comb into envelope. Seal and label appropriately.

It is suggested that hairs should be representative of the left temple, the right temple, crown, and the base of the neck. At least 15-20 hairs from each area should be submitted.

Pubic and Other Body Hairs. When indicated by circumstances of the case or when requested by the laboratory, appropriate body hairs (pubic, chest, etc. - at least 15-20 hairs from each area) are recommended. Use a separate container for each area with appropriate labeling.

Animal Hairs. Comb and pull 50-100 hairs (pulling is again preferred as roots are needed for species identification in some animals). Hair should be pulled from the head, back, tail and underbelly of animals. Label each sample appropriately. All samples must include the coarse guard hair and fine fur hair. If the animal is multi-colored in patches or stripes, samples from all major color areas should be obtained.

The investigator should record the overall color of the subject's hair, his/her age; and any signs of hair treatment (i.e., grey, red, brown, etc.). Take samples of each color for comparison purposes.

For further information and instructions, you may wish to consult with the criminalistics laboratory serving your agency.