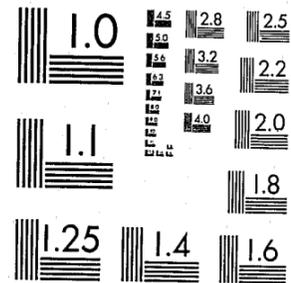


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Washington, D. C. 20531

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# FBI LAW ENFORCEMENT BULLETIN

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80995

# Obtaining the Bitemark Impression (Mold) from Skin

## A Technique for Evidence Preservation

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Bitemark evidence is becoming increasingly useful to the criminal justice system. Both prosecutors and defenders realize the significance of bitemarks and are using this evidence more frequently. Although bitemarks left in human flesh are not uncommon, it is estimated that fewer than 5 percent are ever recognized or worked up. Forensic dentistry in the United States goes back to the days of Paul Revere; however, bitemark evaluation has only been used in the United States to any extent within the last 10 years. More bitemark cases were evaluated in 1979 than in all preceding years.

Bitemark evidence is a true scientific analysis of the wound, not just a comparison between the inflictor's teeth and the marks in the skin. It may be possible from the marks to describe the attacker's teeth. For example, it is possible to tell whether his teeth were crowded, whether there was a space between the front teeth, or whether a specific tooth was out of line. Bitemark impressions are valuable in both analyzing the bite and making a match.

Bitemarks have been described by some experts as toolmarks and impressions are valuable, if not indispensable. A classic case of bitemark comparison and the value of a bite mold is *People v. Walter E. Marx*.<sup>1</sup> In this 1975 case, a bitemark was left on the nose of the victim. A mold was taken, and a preliminary cast of the attacker's teeth was made. These pieces of evidence proved to be invaluable to the State in obtaining a first degree murder conviction against the defendant. The case was sustained through the Second District Court of Appeals in California.

This article presents a standard, simple, and accurate method of reproducing a bitemark pattern. The rubber base impression on the stone positive model may be made and used in analysis and comparison and later during courtroom presentation.



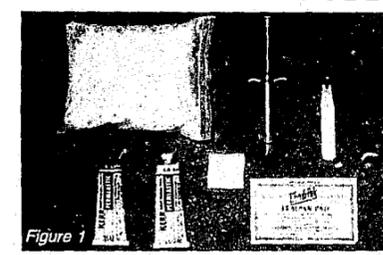
Dr. Souviron



Dr. Mittleman

### Obtaining A Bitemark Impression From Skin

Materials (See fig. 1.)

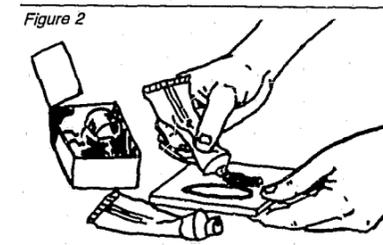


- 1) Light-bodied permlastic base and catalyst;
- 2) Spatula;
- 3) Paper mixing pad;
- 4) Rubber base syringe;
- 5) Gauze (3-x-3-inch square); and
- 6) Dental dye stone

Supplies for steps 2-6 can be purchased at any dental supply house.

### Method

- 1) Squeeze a 2-inch line of both permlastic base and catalyst onto a sheet of paper mixing pad so that the two lines are parallel to each other, about 1 inch apart. (See fig. 2.)



- 2) Using the spatula, mix the base and catalyst until there is a homogeneous brown color.

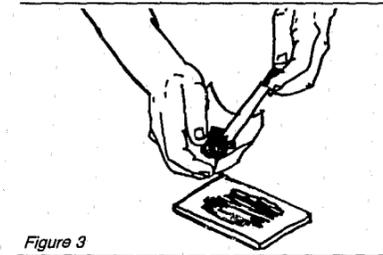
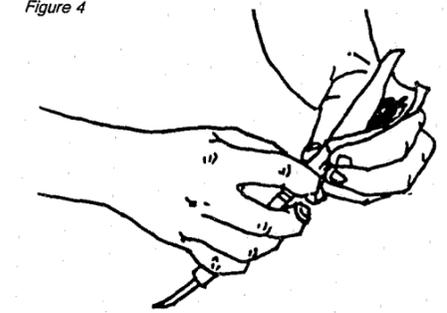


Figure 3

Quickly apply to the properly folded sheet from the paper mixing pad and squeeze into the syringe. The syringe package contains instructions for folding, or the syringe barrel may be filled by scraping the barrel across the mixing pad. (See figs. 3 & 4.)

Figure 4



- 3) Using the rubber base syringe, apply the mixture to the bitemark indentations in the skin. It is crucial that air bubbles be avoided. This is accomplished by slowly and methodically beginning at one point within the bitemark ring and continuing the application around the entire ring without stopping. If this is done correctly, the mixture will cover the skin between and around each individual bitemark. (See fig. 5.) It is important to insure that

Figure 5





Mr. Valor

there is a reasonable amount of mixture above the skin level since the mixture will later be smoothed over the remainder of the skin surface with the spatula.

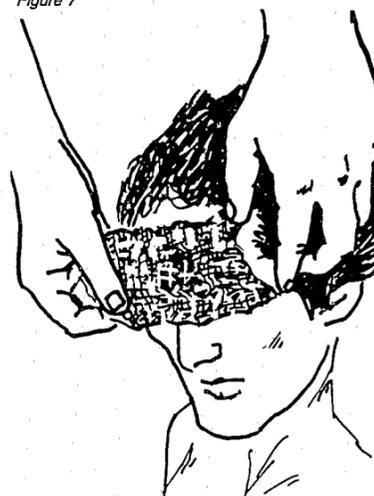
- 4) Spread mixture over the bitemark area and at least 1/4 inch of the adjoining skin from the outer perimeters of the teethmarks. (See fig. 6.) Completely cover the region by spreading the rubber base remaining in the syringe on the spatula and on the mixing paper.

Figure 6



- 5) Immediately place a single layer of gauze mesh over the area. (See fig. 7.) The gauze should be

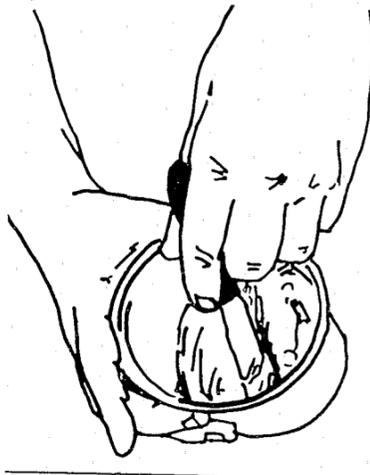
Figure 7



cut to the appropriate size either before or after placement. It is important that steps 1-5 be completed in a few minutes.

- 6) Allow the mixture with the gauze to harden for approximately 5 minutes.

Figure 8



- 7) Mix dental dye with a small amount of water and place on top of entire surface of gauze. (See figs. 8 & 9.) The mixture should

Figure 9



be the same consistency as a heavy pancake mix, and the depth of the overlay on the gauze should be about 1-inch thick. Allow to dry for 15 minutes.

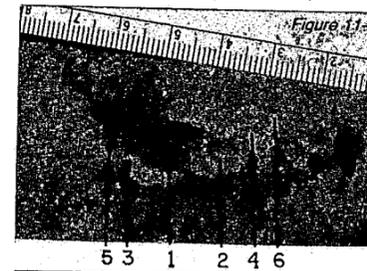
- 8) The mold should be carefully removed by gently lifting at one end until it is completely removed from the skin surface and should then be stored at room temperature. (See fig. 10.) If there is any evidence of air bubbles, the collecting process should be repeated.

Figure 10



The bitemark mold may be of great value when there is a depression in the skin from the attacker's teeth. The mold provides a description of the inflictor's teeth, allows a match or positive comparison to be performed, and is an excellent demonstration aid for later presentation to the jury.

The entire process of obtaining bitemark evidence is demonstrated photographically in figure 11, using a human bitemark as an example. (See fig. 11-A.) The rubber impression



shown in fig. 11-B is a negative (mirror image) of the original bitemark, and in this model, the teeth imprints are somewhat raised, making them much

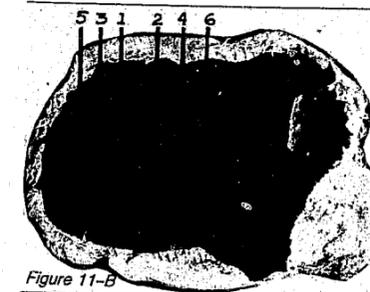


Figure 11-B

easier to see and evaluate. In order to make a positive model as shown in fig. 11-B, spread a thin layer of lubricant, such as automatic transmission fluid, over the rubber and pour in a heavy creamy mixture of dye stone. Allow to set for 15 minutes. When separated, there is a positive of the bitemark. This model can be compared to the suspect's teeth as shown in fig. 11-D and can be prepared for use in court. (See fig. 11-E.) The model may also be compared with the suspect's wax bite impression. (See fig. 11-F.)

Figure 11-C

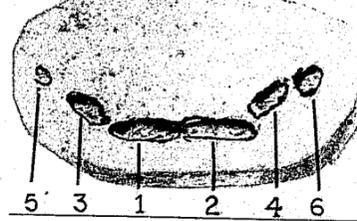
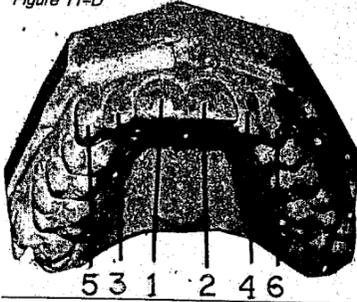


Figure 11-D



### Conclusion

This is an attempt to show an easy step-by-step method of preserving the bitemark for future analysis. Crime scene personnel who recognize and preserve bites may find this article helpful and may wish to modify and improve on the technique for their special situation.

FBI

### Footnote

People v. Walter Edgar Marx, 54 Cal. App 3d. 100, 126 Cal. RPTR 350, 77 ALR 3d 1108.

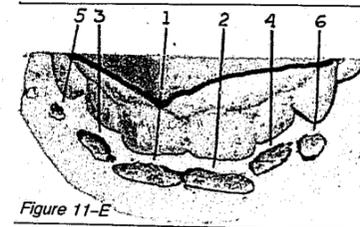


Figure 11-E

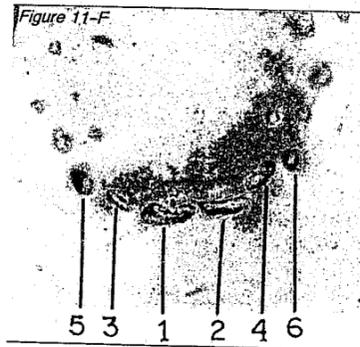


Figure 11-F

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