

News

Office of Medical Information
The University of Texas Southwestern Medical Center at Dallas
5323 Harry Hines Boulevard Dallas, Texas 75235-9060 214/688-3404

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CONTACT: Susan Evans
Office: 214/688-3404
Home: 214/750-5963

****Fingernail analysis gains acceptance
as criminal investigation technique

DALLAS -- Was the clue the knife in the library? The candlestick in the kitchen?
Perhaps the rope in the bedroom?

No, the clue was a fingernail.

In the real world, where solving a crime is never so simple as opening the envelope at the end of a game, investigators have a battery of sophisticated tests at their disposal. And slowly gaining acceptance is analysis of the flip side of the finger.

As the nail grows, a hard tissue is deposited on the underside. The ridges and valleys of the nail bed score this undercoating, creating a random array of parallel lines, or striations, similar to the marks left on a bullet by a gun barrel.

Many crime lab investigators believe the fingernail striations are unique to a given nail and thus offer positive identification, much like a fingerprint, says Dr. Irving C. Stone, chief of the Physical Evidence Section of the Dallas County Southwestern Institute of Forensic Sciences and associate professor of clinical pathology at The University of Texas Southwestern Medical Center at Dallas.

Stone has testified in Texas and other states on fingernail matches, including one in the well-publicized Wylie ax murder case of 1980. In that case, where Candice Montgomery was accused of hacking Betty Gore to death, Stone matched a fingernail found at the scene to Montgomery. Montgomery was later found not guilty by reason of temporary insanity.

The Texas court in the Montgomery case, and a number of other courts around the nation, have accepted fingernail evidence on the grounds that it would help the jury. But most states still follow the Frye Rule. Under that 1923 U.S. Supreme Court ruling, a new scientific technique or procedure is admissible in court only after those members of the scientific community who deal with the given procedure generally accept it as valid.

(More)

Identification of nail striations first came into court in a 1955 case, but only in the past seven to eight years has there been a push to have the technique generally accepted. Stone presented a technical overview of fingernail striation matching to the Association of Firearm and Toolmark Examiners (AFTE) at the group's last national meeting. The procedure -- which supporters consider analagous to bullet or toolmark identification -- is now before an AFTE committee for consideration. If the AFTE votes to accept fingernail striations as another type of toolmark, the procedure should meet the Frye test.

But court acceptance does not mean that fingernail matching will become commonplace, Stone says. Only in a struggle is a nail usually ripped off, and even then an investigator on the scene may well overlook the crucial sliver. Or the nail may belong to the victim, not the assailant.

"You just can't say, 'Oh, I've got a fingernail from a scene, and I will be able to identify it absolutely with a person.' A lot more goes into it than that," Stone says. "It's just another one of the tools that we have."

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Note: The University of Texas Southwestern Medical Center at Dallas comprises Southwestern Medical School, Southwestern Graduate School of Biomedical Sciences and Southwestern Allied Health Sciences School.