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Police Science Technical Abstracts and Notes

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POLICE SCIENCE TECHNICAL ABSTRACTS AND NOTES

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The Destruction of Fingerprints by Skin Grafting

An unusual case of attempted destruction of fingerprints by means of skin grafting is reported in the January-February number of *The Illinois Policeman.*[1]

On October 30, 1941, a hitch hiker was picked up on suspicion near El Paso, Texas by two Texas State Highway Patrolmen. Later when an attempt was made to take his fingerprints it was discovered that there were no friction ridges on the end joints of his fingers. The prisoner, who gave the names of Paul Cline and Robert James Pitts, stated that he had had the skin on his fingertips removed and replaced with skin taken from the sides of his chest, the operation having been performed in May, 1941. The method of the operation as determined from his statements and corroborated by medical examination is described in *The Illinois Policeman* as follows:

"Five portions of skin, each about two inches in diameter, were cut from each side of his chest in a well determined pattern. Each portion of skin was left attached to the chest by one side of each of the formed flaps. Most of the flesh on the end joint of each finger and thumb was then cut away and his arms were folded across his chest.

"The fresh cut side of each of the above described flaps was then sewed to each of the fresh cut finger tips. His arms and hands were taped to his body and remained thus until his fingers had grown to the skin of his chest. The remaining uncut edge of each flap was then cut loose from the chest and carefully trimmed. This left the end joints of the fingers and thumbs covered by epidermis taken from the chest and free from papillary ridges essential to fingerprint recording."

Although the "fingerprints" taken at the time of his arrest showed no ridge texture, the identity of the prisoner was subsequently established by means of ridge characteristics of the second joints. He was found to be an ex-convict with a long criminal record and at the time of his arrest was wanted on a felony charge in Wilkesboro, N. C.

Detection Dyes

The value of dyes or "staining powders" as a means of detecting petty thefts is well known to many investigators and laboratory technicians. The most commonly used powders are either strongly fluorescent substances, such as anthracene, or some type of dye. When a dye of suitable color is lightly applied to objects which may be handled it is practically invisible, but when moistened by perspiration or water it forms almost ineradicable stains on the hands of the person coming into contact with them.

In an article published by the Bureau of Criminal Investigation of the New York State Police, a number of suggestions are given for the application and subsequent detection of such dyes.[2] In the preparation of planted paper currency it is recommended that Malachite Green be applied with a soft brush on the green printed parts of the bill. The hands of the suspect are examined as soon as possible; if they appear to be clean, a magnifier should be used to examine crevices around the fingernails and under any rings on the fingers. It is suggested that towels, soap, faucets, and anything the suspect may have used or touched be examined also. The clothing is also thoroughly inspected including the insides of all pockets, handkerchiefs, shoes and socks. The examination of objects of this kind is facilitated by using a moistened cotton swab, brilliant green spots appearing on the cotton as soon as it comes into contact with the dye.

[1] "New Finger Tips Fail," The Illinois Policeman, *8* (1): 15 (Jan.-Feb. 1942). See also, Finger Print and Identification Magazine, *23* (8): 15, 31-32 (1942).

[2] "A Chemical Detective," Bulletin of Bureau of Criminal Investigation, New York State Police, *6* (11): 2-3 (1941).

A New Test for Hypo Elimination

In the February, 1942 issue of American Photography (incorporating Photo Technique) an article appears on "Quantitative Tests for Residual Hypo" by E. Cary and A. H. Wheeler of the Aerial Photographic Laboratory, U. S. Dept. of Agriculture.[3]

The authors report that in the laboratory at Washington, some half million enlargements, most of which are 20½" x 26" or larger, are made annually. Mechanical washing was not feasible because of limited tank space and the introduction of undesirable creases in the prints. Manual washing was resorted to, and this method also proved to be somewhat unsatisfactory, as many prints were shipped that were not sufficiently washed.

A problem of finding a test which would determine when prints were sufficiently washed was thus presented. Convenience and time were to be the dominant factors. A volumetric method of testing was decided upon. This was based upon the reaction of the residual hypo with a standard solution of iodine.

After many experiments, in which test solutions of various strengths were used, a "five spot test," using a 400th normal solution of iodine, was found to be the most satisfactory. It was found "that the presence of hypo in sufficient quantity to effect the keeping quality of the print was instantly detected when one minim of 400th normal iodine test solution was applied to the one square inch spot."

Extra prints are processed at regular intervals to serve as test material. The five spots are placed one in each corner and one in the center of the print. "An ordinary eye dropper is used . . ., the dropper being held about six inches above the test print to get a good spread of the drop. If any of the spots tested show a tendency to fade, the batch is rewashed. Testing time for five spots, thirty seconds."

The authors assert that as a result of this study, guesswork in print washing has been eliminated, and it can be determined in a minimum of time how thoroughly a print has been washed.

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[3] Cary, E. and Wheeler, A. H., "Quantitative Tests for Residual Hypo," American Photography (incorporating Photo Technique), 36 (2): 16-18 (February, 1942).