

would reveal the place from which the transplant was taken.

The fantastic tales being told of the wonders of surgery in transplanting skin are not all true. A criminal could not take the fingertips of another person. He could not use an ape for this purpose.

Successful grafting of skin is a most difficult operation. Most of what has been learned of the art of plastic surgery was learned under the pressure of necessity after the Great War, when men learned to restore the faces of those bearing ghastly scars resulting from their wounds.

Surgeons Not Available

The operation must be performed by a very skillful surgeon, and such men command high fees and the greatest respect in the legitimate pursuit of their profession. What inducement would there be for such a man to serve the needs of an outlawed criminal seeking to escape from justice?

The skin must usually be transplanted from the patient's own body, for the skin has a natural tendency to reject any foreign matter, even foreign skin. Nearly everyone is familiar these days with the way the skin acts when vaccine is injected. The skin gets sore and red, and the result is a scar.

Much the same thing might happen if someone else's skin were transplanted to make a patch on yours. When it is necessary to use skin from another person, the surgeon selects someone closely related to the individual and someone with the same blood grouping, just as they do for a blood transfusion.

Even with the best of care, the operation often fails. So far as is known, no criminal has ever tried it.

Those who believe that future developments of medical science might enable criminals to resort to such fingerprint forgeries have suggested other means of positive identification to supplement the fingerprint system.

Even Identical Twins Differ

Although 2,000,000,000 persons live now on the earth and countless billions have preceded them, no two of them are exactly alike—not even identical twins. A careful look, especially with the help of X-ray or microscope, will reveal thousands of differences.

For this reason, X-ray pictures of teeth, the bone formation of the sinuses, or other parts of the body have been used for identification. Even the dentist's record of tooth fillings and artificial teeth is valuable in making identification. Such methods are particular-

ly valuable in identifying persons who have met death by drowning when the body may not be recovered in time to make ordinary methods of recognition easy. Fingerprints have seldom been useful in such cases in the past because law-abiding citizens have not had their prints on record anywhere.

Now, however, the Department of Justice maintains a file of fingerprints of citizens in good standing. Wealthy babies in danger of kidnapping have records there to hinder the kidnapper. Careful men of affairs file their prints as a matter of prudence—to avoid any possibility of becoming ill or dying unknown in a strange place, and to settle the authenticity of wills and other important documents beyond question.

Blood Vessel Pattern in Eye

Another scheme for identification was recently proposed by Drs. Carleton Simon and Isidore Goldstein, of New York City. A certain type of camera that has been in use by physicians for detecting eye diseases makes a photograph of the optic nerve and the network of blood vessels in the eye. Such a picture is quickly and easily taken right through the pupil of the eye.

Drs. Simon and Goldstein have worked out a system for classifying the resulting patterns, so that now they might be used as an identification in much the same manner as fingerprints are used. As with fingerprints, the pattern is different for each individual, and will not change unless the eye is destroyed.

Difficulties in Technique

The difficulty in the way of practical use of this system is the expense of having such a camera in every police station where prisoners must be identified, and the difficulty of training police officers in the technique of taking the pictures. Fingerprints can be taken by anyone who has a pad of ink and a piece of paper, if he has once seen it done correctly.

X-ray pictures, and probably these eye photographs, must always be taken with the camera at exactly the same angle if identical results are to be obtained. It is doubtful whether the county sheriff in Nebraska, the police chief in Honolulu, or the Federal agent in Washington could all take pictures of the same man that would match up exactly and afford positive identification.

With fingerprints, such long distance comparison is a matter of daily routine. When and if this easy system is ever defeated by criminals, then these other systems of identification remain to be developed.

Science News Letter, February 8, 1936



NOT LOCKED UP

Guajiro Indian princess, who has been married and is therefore allowed at large, with two little sisters who are not yet old enough to be locked up.

FISHERIES

Fish Used For Live Bait Threaten to Spoil Fishing

FISHERMEN in Utah's trout streams are threatened with serious damage to their sport because other fishermen make use of live bait.

This ironic situation has received the attention of W. F. Carbine, of the University of Utah. Small fish used as live bait sometimes slip off the hook, and live to grow up and reproduce. Prominent among fish thus introduced into Great Basin waters is the chub, a species not particularly esteemed for either sport or food.

This fish makes life harder for trout in two ways. It produces many more eggs, in the same spawning grounds that the trout frequent. The more numerous and hardy young chub gobble up a great deal of the food that the troutlings would normally have for themselves.

Young trout that survive this period of over-competition for nourishment find that their troubles are not over by any means. As they swim down the streams, the adult chub, which are big fish measuring up to sixteen inches in length, pounce on them and gobble them up in numbers. Young chub, on the other hand, are not taken for food to any extent by the adult trout.

Science News Letter, February 8, 1936