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THE SKIN GAME

WEBSTER A. MELCHER¹

We occasionally read of a keenly sensitive bloodhound tracking a criminal to his hiding place after partaking of a whiff from some garment that had been in intimate contact with the fugitive's body; the dog had no actual acquaintance with the human being he was following, and the person was found merely through the trail he had left behind him, marked by the odorous exhalations from his body, which clung to such solid substances as the person came in contact with; the dog passed by all other people and their several odors, wholly ignoring everyone except the particular individual he was seeking—and later found. Almost any dog, at some time or other, may have been seen wandering around where people were congregated, sniffing first at one person and then at another, and going on until he smelled the friendly acquaintance whom he sought and who was at once recognized by his proper odor. Both dogs availed themselves of the sign-physical, represented by the odor of the secretions and exhalations of a certain particular human body, which were distinguishable by the dogs from similar signs of all other human bodies; they had learned that every person within their experiences had his own particular natural body scent, thus becoming aware of a fact that in all probability is of universal application.

Human beings, however, are not at present endowed with so sharp a sense of smell as the lower animals, and therefore must depend on other means of identifying one another, such as the voice, the movements, and the physical form and appearance. In the *absence* of the individual, recognition is gained (1) through observation of the character of work done by the physical machinery of the absent one, such as his handwriting in penmanship, his style of brush work in a painting, his manner of cutting in an engraving, or (2) through observation of mere records of certain parts of his physical body, such as his bodily measurements, foot prints, finger prints, etc. The first form of absent recognition is therefore based on the *active operations* of the human physical machine, while the second rests on a mere *passive record* of certain parts of that machine. It is with a branch of the passive form that we are now particularly concerned.

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As was pointed out at the start, it is probably universally true that every human body has a distinctive natural odor—arising from the secretions and exhalations of the skin—through which a large portion of the poisonous waste of the system is eliminated; this is not so remarkable, when you consider the improbability of any two persons being in exactly similar physical and nervous strength and condition, absorbing similar quantities of similar elements, and assimilating like quantities of like foods. The magnitude of the skin's task may be better appreciated when we realize that, where more than *a third* of one's skin-surface is prevented from functioning, the medical profession throws up its hands and says—which has been proven correct—"he has but a few hours to live."

In order that the skin may accomplish its purpose and afford means for the elimination of the various body poisons, it is everywhere full of microscopic outlets or pores, which are of various sizes, shapes and positions, but always placed with regard to some sort of distinctive pattern formed by accompanying microscopic ridges and furrows; where the external skin surface is not protected by hair, and is fitted for the hardest strain and wear—as on the inner sides of the fingers and hand, the sole of the foot, etc.,—the patterns are simple or elaborate combinations of rather deep parallel lines, running more or less in a general direction, while elsewhere there is a much shallower network pattern of more complicated design.

In the case of the *deeper* line-patterns, their surface is capable of transferring their designs to any smooth surface with which they come in contact; and, from long study of them, the writer is satisfied that such cuticular pattern of every person is distinctive of that person and more or less unlike that of every other person; this belief is confirmed by the investigations of every competent observer who has studied the subject. As a result, there is a tendency now to claim that the mere finding of two impressions, such as finger prints or palm prints, showing lines arranged in a similar pattern, is *conclusive* evidence that both impressions came from the same individual. This is going entirely too far, for whether or not they were the product of the one original hand is dependent on much more than the mere design of their patterns—as a little thoughtful consideration of the subject will make evident.

The skin impression is made by a somewhat soft and yielding, but rather tough, substance, bearing on its surface, in microscopic relief, a reversed copy of the impressed design, by means whereof—with the aid of moist secretions or extraneous materials—the imprint may be

transferred to any other fairly smooth surface, upon contact therewith; for all essential purposes this is exactly as if an ordinary rubber stamp had been used for the transfer of the design.

The mere existence of two or more such impressions showing exactly similar pictorial designs would not (in itself) determine anything as to their coming from a common source; for one might, with as much reason, claim that, because an impression of a *facsimile* signature is of the same size and pattern as the handwritten original from which it was made, the facsimile and the original were both actually written by the same hand.

Everyone having a knowledge of the subject knows that any line design that can be photographed may be exactly reproduced, so far as the mere *picture* of the pattern is concerned; and there are many other less complicated and less exact ways of making such copies, that will (for all practical purposes) also result in substantial pictorial duplicates.



FIGURE 1



FIGURE 2

Referring to the illustrations, Figure 1 represents an original finger print, and shows an exact counterpart of its design; *for the present purpose* it may be taken as the original impression. Figure 2 is a mechanical *copy* of the impression shown in *Figure 1*. So far as the mere pictorial designs are concerned, is there any marked or radical difference between the two illustrations? If not, would one be justified in concluding (contrary to the actual fact) that both were the product of the same identical instrument of impression? Yet such a claim would be foolishly made by most persons who encountered two such similar pictures under circumstances where either of them *might* have been made by some one's fingers!

As the use of finger prints is becoming more general, and even many of our large business organizations are adopting them in routine work, the unsuspected dangers lurking in them need to be called to the public mind; for (as every physician knows) even the greatest curative agent may cause fatal results when improperly used.

The most popular method of investigating a finger print, at present, is to consider merely the *picture* presented by the lines of the design, and to rely on its likeness or dissimilarity, to determine the question of whether or not it is by the same finger that made a known or standard impression, but, as it is just as possible for the wrong person to secure a standard impression as it is for the right person to do so—and as anyone can readily produce a pictorial facsimile of any line design—such a method of investigation, alone, is worthless.

The first necessary step to take is (by microscopic tests) to ascertain whether or not the suspected impression was actually made by *any* human skin; for it is beyond question that every class of instrumentalities capable of placing a selected mark on a receiving surface, may be distinguished from every other class, through its mechanograms and other microscopic features.

If the impression be thereby determined to have been made directly by *some* human skin, then the next step is to examine the microscopic characteristics of that particular skin in order to obtain a microscopic analysis of all the various lines on its surface, and the detailed character, position, placement, etc., of the innumerable pores penetrating such surface; for it is generally conceded, by those who are in a position to know, that every person will show a distinctive and individual combination of results by such an analysis—certainly as to those parts of his cuticle that may cause the impressions we are considering, and probably as to all the rest of the outer covering of his body which does not carry a growth of hair.

If such analysis of the lines of the cuticular impression in question produces results that agree with those of a similar examination of the known standard prints, then one is ready for the remaining comparison—as to the general pictorial effects of the various impressions. This is the sole and only test that is now generally used, and (as before shown) is in itself of no probative value; if, however, its results agree with the results of the other really vital tests, one may be certain that the conclusion to which all point is the correct one.

From what has been stated it is evident that a finger print may be forged, and so cleverly done as to pass the usual crude tests; in fact it is an easier task than to forge a person's handwriting. The result of such work may be to place responsibility on an utterly innocent party, who (at the present thoughtless stage of our enthusiasm over the subject) might find it almost impossible to escape being made to suffer a penalty.

On the other hand, it is equally evident that one who desired to do so, would find it easy to manufacture a finger print that was either partly or wholly a creature of his imagination, and then to "plant" a duplicate of it where it would serve as a disguise for himself by being drawn, like a red herring, across his trail; in such case it might or might not—dependent on the chances of accident—turn out to closely resemble the impression of some innocent person.

Consequently, cuticular impressions are a source of grave danger when examined solely as line pictures, but if one discards the picture idea, treats them merely as collections of independent marks, and analyzes these marks microscopically, metrically and otherwise, then they may be found to have the strongest probative value—sufficient to overcome all denials and objections.

It's just a real *skin game*. May the *wrong* skin never suffer through it!