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Fingerprints Are Permanent From Third Month of Life

DERMATOGLYPHS, or "skin prints," are the ridge-like markings on our fingers, palms and soles. They are laid down as early as the third month of fetal life and their permanence (except for very deep scars and burns) has made them familiar tags of personal identity.

The finger details that are used for identification differ even between one-egg twins. They must stem from local, delicate and unpredictable incidents of development like those that determine the veins of a leaf or the spreading out of a river delta. Once formed, however, the ridges are surprisingly permanent, and there is no evidence that a pattern, once locked into the underlying tissue, ever changes even when stretched out by the growth of the body.

The function of the ridges can only be guessed at, but their location on the palms and soles of other primates, in patterns similar to the human, suggests that they are related to touch and grasping.

THE ENGLISH geneticist Prof. L. E. Penrose, who has been instrumental in bringing dermatoglyphs to deeper notice, points out that ridges tend to run lengthwise along the side of the nail, but across the width of each finger. In doing this, the pattern must then incorporate an arch or loop or whorl of ridges opposite the nail, over the ball of the finger. The size of a loop or whorl is measured by counting the ridges in it, but any arch counts as zero ridges, which in my opinion confuses these statistics.

Ridge counts have, however, helped in first efforts to put the genetics of fingerprints on a sounder basis. The two hands generally show a high correlation (about 95 per cent) in ridge count, about the same correlation as we find between one-egg twins, which have, of course, identical heredity.

Very few bodily features distinguish the unborn male from the female. However, Dr. Sarah B. Holt's recent book "The Genetics of Dermal Ridges" points out that the male right thumb has an average ridge count of 19.8 compared to 16.5 for females, a statistical difference which must have been established early in fetal life.

ONE OF THE most promising potentialities for fingerprint study would be its use to survey large populations for subtle abnormalities of development. Australian workers have, indeed, reported recently that patients who had been damaged by prenatal rubella virus infection had an increased proportion of whorl

patterns compared to controls. This was statistically significant for group comparisons, but, as with sex differences, it is still impossible to diagnose any individual by his fingerprint pattern, as this is now analyzed.

Palm print patterns have been somewhat more revealing for medical purposes, and the diagnosis of some chromosome diseases can be helped by noticing certain characteristic creases that are less often found in normals. We can hardly put any scientific credence into palmistry, but we would do better to plead ignorance than to insist too loudly that nothing about a man's life will ever be read from his handprint.

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