

ANATOMY

# New Palm Study Is Real Science

Scientists Don't Tell Fortunes, But Palm Prints May Indicate Your Race and Show Whether You're Left-Handed

By JANE STAFFORD

CONSERVATIVE scientists have now taken up the study of palms. They do not attempt to see your future in your hand, like the gypsy fortune teller, and they will not predict how many marriages you will make or that you are going on a journey across water. But from the ridges and surface markings on your palms they can tell you many interesting facts about yourself.

Scientific palmistry, for instance, distinguishes differences between naturally right- or lefthanded persons. It finds differences among races, and it furnishes another means of identifying you, for your palm is different from every other one in the world.

Most important from the scientific standpoint is the fact that the markings on your palm may reveal your race. That these patterned markings are different in different races was first discovered by the late Dr. Harris H. Wilder, professor of zoology at Smith College. A number of scientists have made such studies subsequently and chief of the group now is Dr. Harold Cummins, professor of anatomy at Tulane University.

"The skin of the fingers, palms and soles of the foot is delicately ridged, like corduroy on a reduced scale," Dr. Cummins explained, "and the ridges in certain localities are fashioned in patterns of arched, looped and concentric forms. These markings are known as dermatoglyphics, which means literally skin carvings."

The question of whether you are naturally right- or lefthanded was settled before you were born, Miss Stella M. Leche of the anatomy department of Tulane recently reported. Miss Leche spent two years studying the ridges and surface markings of the palms of 244 lefthanded persons and comparing them with those of 300 persons chosen at random. The markings on the skin of the palms are known to be different for the right and left hands. Likewise they show which is the dominant hand, that is, the hand which you tend to use naturally for writing, cutting and other similar tasks.

Since the nature of the markings on the palms is determined long before birth, Miss Leche concluded that the matter of which hand will be dominant is also decided at this early period. This has a decided practical bearing, because psychiatrists have recently come to the conclusion that stuttering and many other behavior disorders are the result of forcing a naturally lefthanded child to use his right hand, or the reverse.

The transformation of lefthanded persons into righthanded ones produces an internal strain or mental limp, according to the explanation of one psychiatrist. This psychic limp shows itself in behavior disorders of varying degrees, such as illegible writing, mirror writing, difficulty in reading, stuttering, school failure, truancy, lying and stealing.

The left hand and side are dependent on the activity of the right half of the brain, while the left half of the brain governs the right hand and side. When the left hand is called upon to move in accordance with directions and controls from its own left brain lobe, nervous tension results. There is a rerouting of impulses which involves a slowing-up process and likewise affects the normal channels for coordination.

## Detecting Dominant Hand

Up to now, however, there has been no very sure way of telling whether a small child was naturally right- or lefthanded. Sometimes the child showed a tendency to use his left hand for throwing a ball or holding a spoon or crayon. But parents were apt to think that this was merely childishness, something he would outgrow or should be taught to overcome.

Each person has a dominant eye as well as hand, but this is difficult to determine in a preschool child. Usually a righthanded person will be right-eyed. You can test yourself to see which eye you depend on most by closing one eye and keeping the other open. The one you keep open is probably the one you depend on most for seeing. A small child, however, might not cooperate in even such a simple test, much less in the more complicated ones devised by



MAKING HIS MARK

*It may show that he was born lefthanded; hence being forced to use his right hand might have caused nervous disorders.*

scientists. Furthermore, in older children and grown-ups some defect of vision might have occurred in the naturally dominant eye so that the other one became dominant, in which case the eye test to determine handedness would not give the correct result.

Some scientists hold the opinion that the dominant arm is longer than the other and that this might be a test for handedness.

The palm prints offer an additional test, which with the others affords a basis for predicting quite early in a child's life which hand he should be encouraged to use.

So the modern babe may soon be having his palm prints taken not only to serve as means of identification, but to show whether the child is going to be a "southpaw" or whether he will wield pen, knife or other implements in his right hand.

No two palms or soles are alike, any more than any two fingers are alike. This is why palm prints offer another means of identification, like fingerprints.

There are, however, certain racial trends in the patterns marked on the palms and soles. Scientists skilled in

dermatoglyphics can now tell, for instance, the difference between the hand or foot prints of the Japanese race, the white, the Negro, the Eskimo or the Indian.

Certain criteria for distinguishing races already exist, among them finger prints. Other physical traits used in the comparative study of human groups are stature, facial features, and most important of all, measurements and proportions of the skull. Now, in scientific palmistry, anthropologists hope to gain a new criterion for comparing the races of man.

### Palm Prints Show Race

Men all over the world are helping Dr. Cummins to collect palm and sole prints, so that he can extend his studies to include various races. Thus far besides the white race, both European-Americans and Jews, he has studied Negroes, Mayas, Eskimos, North American Indians, Jews, Siamese and Syrians. Archaeologists and other explorers, and former medical students send him the prints which form the material for his study in his New Orleans laboratory.

When Henry B. Collins of the Smithsonian Institution was at St. Lawrence Island, Alaska, on an archaeological expedition one summer, he lined up a number of Eskimos, children, adolescents and some adults, too, to be "printed." With much giggling and amusement the Eskimos submitted to having an inked roller run over the sole of the foot, a tickling process, as well as a novel one, and to having an inked glass pressed against the hand. The impression was stamped on paper. The Eskimo prints were then studied by Dr. Cummins and his associate at Tulane University, Dr. Charles Midlo. They found a distinct racial trend in the combinations of patterns and configurations of the Eskimo palm and sole prints.

Another archaeologist took prints of Maya palms and soles when on an expedition into the Maya country of Yucatan, and sent them back to Dr. Cummins. A medical man now in Bangkok has taken prints of the Siamese and another is doing the same thing in Syria. Frederick Starr took them of Negroes in Liberia, which Dr. Cummins was then able to compare with those of Negroes in New Orleans.

One important advantage of dermatoglyphics over other bodily features which may be compared in various races is that these patterns and markings are established in their final form long before birth and never change during an individual's lifetime.

The measurements and shape of the skull have been considered the best method scientists had for distinguishing racial differences. However Dr. Franz Boas of Columbia University has found from a study of the descendants of immigrants in America that after several generations of life in this country the characteristic head forms of different races began to change. Whether these changes are due to changes in diet or environment is not known, but apparently it is not possible to tell so infallibly to what race a person belongs by measuring his skull. But there is no question of environment or experience altering the palm markings.

Dr. Cummins recently reported the first scientific study of the palm and sole patterns of North American Indians. The first tribe to have palm and sole prints taken for scientific purposes is the Shoshoni-Arapaho of the Shoshoni Indian agency in Wyoming. Studying the finely sculptured patterns, Dr. Cummins found a "definite racial trend." And when he compared the Indian tribe's prints with those of white subjects, he found the distinctiveness of the Indian prints emphasized by the contrast.

"For example, in the European-Americans a true patterned arrangement, usually a looped figure, is found frequently on the muscular eminence of the little-finger side of the palm," he explained; "in the Indians its occurrence is very rare. In European-Americans there is a far more pronounced tendency of the skin ridges to run transversely across the palm, contrasting with the Indian character of more nearly longitudinal course. Such contrasts might be multiplied."

### Eskimo Palms Like Chinese

When the Indian prints were compared with prints of Eskimos and Chinese, the three groups showed many points of similarity. This is another point suggesting the Asiatic origin of the old native inhabitants of America.

From Dr. Cummins' explanation of the differences in prints of Indian and white palms, you can see that the markings which he and his associates study are quite different from the ones the gypsy fortune teller traces on your palm. No "marriage lines" or "life lines" appear in the language of scientific palmistry.

"Main lines," however, are traced on the palm print with the aid of a hand magnifying glass. On a typical hand there are four "main lines," also four "digital triradii." The latter are triangu-

lar spots, one at the base of each finger, marking the common meeting point of tiny ridges which run in three chief directions. "Main lines" are traced from their start at these "digital triradii."

If you look at your palm through a hand lens, you will see how difficult it is to find either the triangular spots at the base of the fingers or the main lines, and these two features are merely the starting points for determining individual palm patterns. After the patterns have been formulated for a number of individuals belonging to a racial group, the same general trend will be noticed in them. When a number of palms are found with different general trend in their configurations, the owners of these palms may be identified as belonging to another racial group.

That, roughly, is the way in which Dr. Cummins and his associates go about distinguishing races and individuals by means of palm prints. And it explains why only those skilled in dermatoglyphics can make such identification, and why Dr. Cummins said that it is impossible to determine the race of a single individual by dermatoglyphics.

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*Science News Letter, August 20, 1932*

### CHEMISTRY

## Iodine Test May Show Vitamin C in Orange Juice

A SIMPLE test with iodine may some day be used to determine the amount of vitamin C in preserved orange juice, its appears from experiments by M. A. Joslyn and G. L. Marsh of the Fruit Products Laboratory of the University of California.

These investigators found that titrating orange juice against a standard iodine solution gave a good indication of the degree of deterioration.

In reporting their experiments in the scientific journal, *Science*, they point out that work of other investigators, Szent-Gyorgi, G. C. King, and W. A. Waugh, has shown that vitamin C is the same as hexuronic acid, chief constituent of the reducing substance in orange juice which reacts with the iodine in their test for deterioration.

*Science News Letter, August 20, 1932*

So little was known of deafness in the Golden Age of Greece, that Aristotle taught that "the deaf have no souls and are little better than animals."