

Small Categories Series

Fingerprints!

Now, wait! Wait! I know you're just about to say to yourself, "Oh, God! Here's another one of his impossible categories." But, I actually have seen more than one fingerprint covers over the years, and two are pictured here.

Scientists believe fingerprints form when the bottom layer of the epidermis grows at a different rate than the rest of the skin, causing it to buckle and tug on the dermis. Your fingerprints are made up of several skin layers twisted together, kind of like a soft-serve swirl.

Some people are born without them! Three genetic conditions can prevent fingerprints from forming: Naegeli-Franceschetti-Jadassohn syndrome (NFJS), Dermatopathia pigmentosa reticularis (DPR), and adermatoglyphia. NFJS and DPR cause a range of symptoms, most much worse than smooth fingers. Adermatoglyphia, on the other hand, has just one indicator: no fingerprints. It's sometimes referred to as "immigration delay disease," for the trouble it causes people trying to cross borders.

When examining fingerprints, experts attempt to match as many points of comparison as possible, but there's no minimum for a match, at least not in the United States. Other countries have set standards for what constitutes a positive identification, but not us. On top of that, there's an inevitable element of human error. A 2011 study found a false positive rate of 0.1 percent. That may not sound like much until you realize that 0.1 percent of the FBI's annual fingerprint intake is 60,000 people, or 60,000 potential false positive IDs.

So far, we're aware of only a few non-human animals with unique fingerprints, such as gorillas, chimpanzees, and koalas. Given apes' and koalas' arboreal lifestyles, scientists suspect fingerprints evolved as a consequence of living in trees. The fingerprints of koalas are so similar to humans' that even experts have trouble telling them apart.

Rough tactile work like bricklaying and chemotherapy drugs like capecitabine can erode and even erase fingerprints. "Just a good case of poison ivy would do it," forensics expert Edward Richards said in *Scientific American*. Don't get too worried: "Left alone," he said, "your skin replaces at a fairly good rate, so unless you've done permanent damage to the tissue, it will regenerate."

Two of the Mark Twain's books, *Life on the Mississippi* and *Pudd'n Head Wilson*, feature the use of fingerprints to nab criminals. Twain's focus on fingerprinting was incredibly prescient; the books were published in 1883 and 1893, respectively, but U.S. officials wouldn't implement fingerprinting practices here until the early 20th century. [<http://mentalfloss.com/article/78169/15-unique-facts->

