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What Exactly Does Money Smell Like? Hint: Sweaty Palms

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Perfumer captures the elusive aroma
for art project; eau de inky cotton

By KELLY CROW

Grab a dollar bill and sniff. What does cash smell like, really?

Customs agents and chemists around the world have long been curious about the exact aroma of the U.S. greenback. The hunt is complicated by the fact that a dollar's scent evolves as it circulates—from an inky-cotton fragrance fresh from the bank to an earthier, greasy-palm smell that should remind people to wash their hands more often.

Marc vom Ende, a chemist and senior perfumer with German flavor and fragrance

house Symrise AG, thinks he has hit on the precise blend.

Starting with base notes of cotton, soap and ink, Mr. vom Ende says, the scent sweeps in odors derived from more than 100 volatile organic chemicals. It includes whiffs of leather from time spent in wallets and handbags, a metallic tang that evokes cash registers, salty human sweat and even bacterial and bathroom smells.

Mike Bouchet, a Frankfurt-based artist who commissioned the scent search, said the first time he stuck his nose into an early sample, "I felt a bump, like a jolt of electricity, be-

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Mike Bouchet

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cause it smelled just like money. It was invigorating."

Companies in the \$25 billion flavor and fragrance industry maintain elaborate databases of more than 10,000 smell-able materials, such as foods or flowers that can be squeezed down to their essential oils, like oranges, as well as aromatic, molecular compounds patented by perfumers.

Until now, the smell of U.S. dollars hadn't been inventoried.

When Mr. Bouchet approached Symrise, based in Holzminden, Germany, two years ago with his idea to recreate the used money smell, executives assigned the project to Mr. vom Ende, its 48-year-old senior perfumer who designs scents for diffusers in the interiors of Mercedes-Benz cars as well as European perfume companies.

Mr. vom Ende smelled a challenge. "Money takes something from everyone who uses it," he said. "That makes it crazy complex, but that also makes it interesting to detect."

To begin, the perfumer inserted a wad of new and used U.S. paper money—in denominations of \$1, \$5 and \$20—into an airtight chamber containing activated charcoal. Like a sponge, the charcoal absorbed elements in or around the dollars in the trapped air, allowing molecules from the money to be extracted. (Different currencies have different smells.)

After subjecting the extracted elements to additional chemical tests, Mr. vom Ende detected more than 100 ingredients. The biggest group were aliphatic aldehydes, a dominant smell in soap, linen and "a key smell in Chanel No. 5," he said. People typically find such compounds appealing, he added, "unless it gets too strong, and then we think it smells like vomit."

Next, he found high amounts of alkanes, or compounds we often find in gasoline or ink. The rest were largely animal-derived, he said, coming from body oils, skin cells and decay. He also found the presence of butter, cheese and hay as well as indole molecules, which are commonly found in fecal matter. "I found more than I expected," he said.

One material he perversely hoped to find—but didn't—was cocaine, he said. Having read a 1997 study by Argonne National Laboratory that found 78% of U.S. dollar bills circulating in the Chicago and Miami areas contained traces of cocaine, he wondered if he would find at least a few drug-related molecules in his samples: "Sadly, no."

Mr. vom Ende took six months before he felt he had re-created the smell of freshly minted money, relying on several colleagues known as "evaluators" to sniff-and-approve his efforts. It took an additional

eight months before he felt he had conjured money that had been in heavy circulation.

"New money is easy, but to make the smell of used money? That's where the creativity comes in," said Pamela Dalton, a cognitive psychologist who studies smell at Philadelphia's Monell Chemical Senses Center.

The artist intends to diffuse the smell throughout the gallery—as a work of art.

The final formula could prove tempting to counterfeiters seeking to make their fakes "smell authentic," she added. The Secret Service, which oversees efforts to stem financial crimes like money laundering, was intrigued by the idea of recreating the smell, but said the odor isn't one of the tools ex-

perts currently use to weed out counterfeit currency.

The Bureau of Printing and Engraving, which printed 7.6 billion new notes for the Federal Reserve last year, said that the notes' odor isn't proprietary, even though some of the manufacturing processes used to make them are protected.

Microsoft executive Patrick McCarthy hired a "nose," or perfumer, to help him design a new money-like fragrance for men and women in 2000. The result—called Money—smells like a sudsy cloth infused with musky or fruity accents. "Cotton, soap and linen? That's a smell you can really build off of," he said. "Used money? Not so much."

For now, the results of Mr. vom Ende's olfactory detection will be able to be inhaled in only one place: New York gallery Marlborough Chelsea, where the perfumer plans to come to turn over his vial to Mr. Bouchet, the artist who paid Symrise to produce it. Mr.

Bouchet is known for making wry artworks exploring commercial processes. He has created his own bluejeans, cans of hamburger and flavored cola. On Thursday, he intends to diffuse the smell throughout the gallery—as a work of art. To him, the gesture turns the entire space into a sculpture, a spare, white gallery that seems empty yet smells like an invisible vault.

"Money is a symbol of power, and yet we never think about how it smells, which I find fascinating," Mr. Bouchet said. "Even handling money makes people want to buy more luxury goods."

His dealer, Pascal Spengemann, said Mr. Bouchet's piece, titled "Tender," will be offered for sale for \$75,000. The buyer would own the right to reproduce the smell and get unlimited refills and diffusers to emit it. Should people take a whiff and feel inspired to buy something else, he added, "I'll have other artworks on the second floor."