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Century-old smallpox scabs in N.M. envelope

FREDERICK, Md. (AP) — Government health researchers plan to conduct tests next year on the contents of a yellowed envelope apparently filled with scabs from 19th-century smallpox vaccinations.

The scabs, found in a New Mexico university library, could shed light on the development of American smallpox vaccines, an official at the federal Centers for Disease Control and Prevention said.

There's also a slim chance, researchers say, that the scabs could yield live smallpox virus, which is believed to reside in only two laboratories in the world. Smallpox in the general public was eradicated a generation ago, but it is often mentioned as a potentially devastating biological weapon.

"This could lead to a greater evolutionary understanding of the smallpox vaccine we're using in the U.S.," Inger Damon, chief of the CDC pox virus group, told The Washington Post. "It all depends on what's in there."

Researchers believe the scabs are either from smallpox vaccine patients or from victims, whose scabs were used in an early inoculation procedure.

The small packet, found tucked between pages of a library book in Santa Fe, now rests in a freezer at the CDC, thanks in part to the National Museum of Civil War Medicine in Frederick.

It was found March 31 by librarian Susanne Caro in an 1888 book on Civil War medicine at the College of Santa Fe's Fogelson Library. An inscription on the envelope reading, "scabs from vaccination of W.B. Yarrington's children," was signed by Dr. W.D. Kelly, the book's author.

Caro e-mailed the Frederick museum the same day, asking, "could these be dangerous?" Her second question: would the museum want them?

Collections Manager Ryan Rokicki relayed the inquiry to George Wunderlich, the museum's executive director.

Wunderlich knew that during the late 1800s, pus or bits of scabs from smallpox patients with mild cases were implanted in the skins of healthy people to generate a mild illness that bestowed lifetime immunity. The practice, used in the early 18th century, predated the cowpox-based vaccine that later became standard.

Wunderlich called forensic anthropologist Paul Sledzik at the Armed Forces Institute of Pathology at Walter Reed, who was excited by the discovery.

"To be able to look at (an untreated) specimen from the 19th century using the tools of today is incredible," Sledzik said. "If you want to look at disease evolution, this would be the perfect opportunity to do that."

Walter Reed contacted the CDC, which holds one of the two known stocks of live smallpox; the other is at the Institute of Virus Preparations in Moscow.

Within days, two FBI agents went to Santa Fe to pick up the scabs — after

questioning Caro about whether someone might have planted the material in the book. Her answer "was a great big no," she said.

Caro said she gave the agents documentation that Kelly, the book's author, had done work on childhood vaccinations in the late 1800s.

On April 3, the same day it received them, the FBI forwarded the scabs to the CDC in a triple-bagged, overnight mail package.

Damon said the scabs "will be potentially the oldest material we'll have looked at in terms of being able to determine any kind of genomic characterization."

She said the CDC hopes to develop a genetic portrait of the virus used in the vaccine, which could bring insight into the evolution of smallpox vaccine in the United States.

If the scabs do yield live smallpox, the laboratory could grow it, compare it to more modern strains and study how vaccines function against them. But Damon called that possibility "highly unlikely," particularly in a sample so old.

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