

Pollens on the 'Shroud': A Study in Deception

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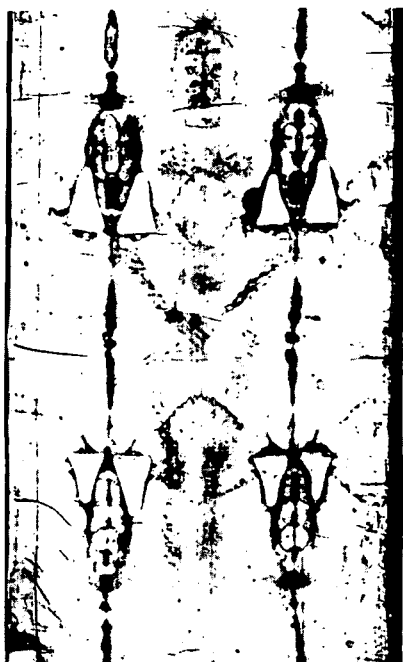
Despite its exposure as an artistic forgery, the Shroud of Turin (which bears the front and back images of an apparently crucified man) is still promoted as the burial cloth of Jesus by a small, but vocal, group of religious enthusiasts, including a few scientists. They continue to cite the "presence of Palestinian pollen grains on the Holy Shroud" (De Vincenzo 1993) as a major counterargument to the carbon-14 test results, which indicated the cloth was of medieval manufacture (Damon et al. 1989; Nickell 1989, 1991). Unfortunately, it now appears that the pollen study was an exercise in deception—self-deception, at best, if not outright scientific fraud.

The analysis was conducted by a Swiss criminologist named Max Frei-Sulzer (1913-1983). Frei once taught an evening course in microscopical techniques in the Zurich University extension system; subsequently he was asked to create a crime laboratory for the local police, which he began in 1950 (Palenik 1982). In 1973, as a consultant to a shroud commission Frei was granted permission to take samples from the cloth. This involved pressing small strips of sticky tape onto the cloth's surface, then peeling them off—coated with surface debris—and sticking them on microscope slides.

During the next two years, between jobs as a freelance criminologist, Frei microscopically examined his tapes and in March 1976 issued a report, claiming he had found certain pollens that "could only have originated from plants that grew exclusively in Palestine at the time of Christ." Frei was also quoted as asserting: "I can state with certainty that the Turin shroud dates from the time of Christ." (Humber 1978: 196; Wilcox 1977:167). Apparently, however, he



The Shroud of Turin has been shown to be an artistic forgery, but a small group of enthusiasts still cite the supposed presence of Palestinian pollen as a major counterargument. It now appears that the pollen study was an exercise either in self-deception or outright scientific fraud.



The half of the Shroud of Turin containing the frontal image.

was either "misquoted" or withdrew this rash statement, because shroud researcher Ian Wilson (1979:80) soon insisted, "Frei makes no such claims," describing him as a "cautious individual."

Subsequently, Frei had also claimed, according to wire-service reports, that "he found traces of ointment made from a type of aloe that grows only on the island of Socotra, off the coast of South Yemen. Ancient texts refer to the ointment as having been applied to corpses before burial, Frei said." These alleged findings—consistent with the reference to aloes in the Gospel of John (19:39)—were presented to the Archbishop of Turin just in time to make 1981 Easter news (Dart 1981).

Earlier, Frei had also claimed to have found pollens on the shroud that were characteristic of two other non-European regions, including Istanbul (formerly Constantinople) and the

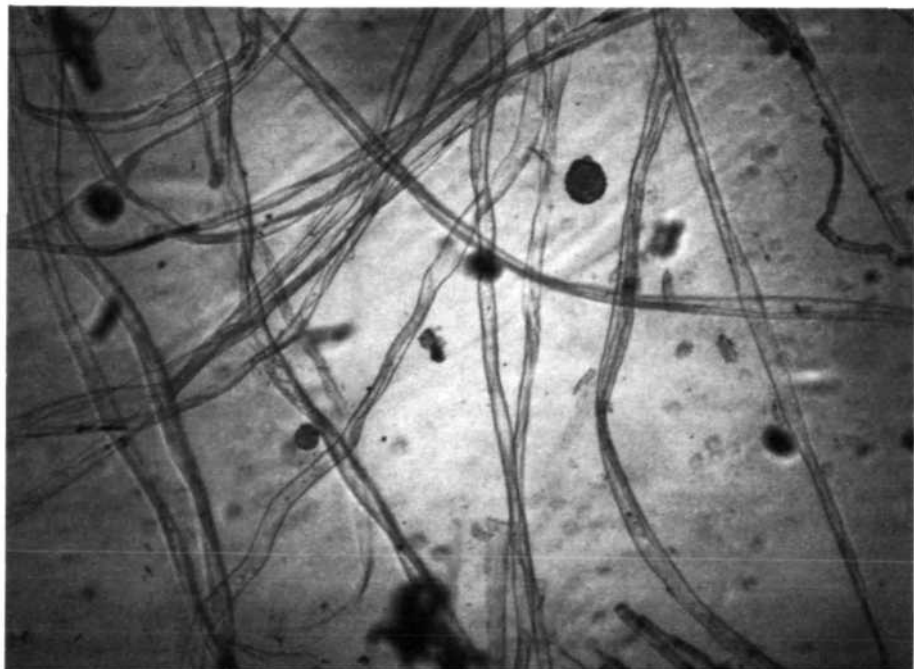
area of the Anatolian steppe that includes Urfa (Edessa, in ancient times)—both in Turkey (Frei-Sulzer 1979). He reportedly traveled through the Near East and Turkey "in different floral seasons" in order to obtain pollen specimens to compare with those on the shroud (Frei-Sulzer 1982). The discovery of these additional pollens seemed strikingly to confirm a "theory" of the shroud's history advanced by Ian Wilson. This is an important issue for shroud advocates since the cloth lacks any provenance before the 1350s.

Wilson's conjectural history of the shroud begins with the notion that it was the ancient Image of Edessa, also known as the Mandyllion. According to a fourth-century legend, Jesus miraculously imprinted his face on a cloth as a gift to Edessan King Abgar, in "consolation" for his affliction with leprosy. The Mandyllion remained in Edessa until 943, when it was seized by the Byzantines and installed at Constantinople. From there, this theory holds, it was eventually taken to France by crusaders (Wilson 1979: 126-191).

However, not only is the story of Abgar and Jesus demonstrably apocryphal, but the Mandyllion bore only a facial portrait, not the twofold imprint of a crucified man. It is therefore not surprising that historians are quick to dismiss Wilson's scenario (Nickell 1987: 41-48).

Nevertheless, Frei's pollen evidence gave Wilson's ideas new credibility. In return, Wilson devoted a chapter to Frei in his book and gave an extended list of 49 "Plant Species of Pollen Samples from the Shroud (*as identified by Dr. Max Frei*)" in an appendix (Wilson 1979: 77-81, 293-298). (Later Frei [1982] claimed to have identified at least 56 different pollen types.)

Still, Wilson did concede "that Frei



Photomicrograph of slide 6-B/d from the Max Frei collection. While this detail shows two or three of the many pollen grains found on that tape (which contains much more pollen than all of the other 25 tapes combined), they are from the lead end where Frei's gloves left the myriad of cotton fibers shown crisscrossing the area. Clean gloves should have left no pollens in this area. McCrone labels this—and a suspicious smear of several hundred pollens on the body of the same tape—"contamination." (Photomicrograph courtesy of Paul C. Maloney, ASSIST)

was using palynology, the science of pollen analysis, in a particularly unusual way." As he explained: "Normally a core is taken from some sedimentary deposit, and by simple analysis of the pollens at different levels, a picture can be built up of changes of flora in one region over a given period." He continued: "By contrast Frei was trying to use the method to determine through which geographical regions one given object, the shroud, had moved, the significant clues being the identification on the object of pollen from plants of specifically limited geographical distribution." Wilson elaborated: "One of the complications of the method is that many plants are common to virtually all areas in which the Shroud might

have been kept in the course of its history. Another complication is that plants that originally had one specific regional derivation are today found all over the globe" (Wilson 1979: 79-80).

Related criticisms came from various quarters. Some faulted Frei's work for apparently failing to use control samples. Another problem was the possibility of contamination. According to an article in *Science* 81, even Shroud of Turin Research Project (STURP) scientists "say the pollens might have been carried by the wind or deposited by the shroud's visitors; its presence does not prove that the shroud was ever in the Holy Land" (Burden 1981).

However, Smithsonian botanist Richard H. Eyde (1986) observed that

the real problem with Frei's work was that he claimed to do that which was suspect. Eyde noted that pollen identification "is not to species save in rare cases; rather it is to this or that 'type' of [pollen] grain—or to genus or species-group." He added: "This is so well known, that the burden of proof is on the one who says he's identified a species by its pollen. The identifier must say what traits separate the identified grain from grains of related plants."

Other problems with Frei's credibility were forthcoming. Before his death in 1983, his reputation suffered a severe blow when, representing himself as a handwriting expert, he pronounced as genuine the notorious "Hitler diaries," which were soon exposed as third-rate forgeries (Brown-ing 1983).

In the meantime, an even more serious question had arisen about his pollen evidence—not just about its interpretation, but concerning its very existence. Frei's alleged findings were at variance with those of STURP, whose members had taken their own sticky-tape samples from the shroud in 1978 (at which time Frei took a second set of samples). Now, it is not true—as shroud enthusiast Daniel C. Scavone (1989: 44-46) reports (with characteristic inaccuracy)—that "the STURP scientists were shocked when they examined the tapes for pollens and not one pollen was found on any of them." However, STURP did report that "very few pollen were observed on the tape samples in the present project" (Schwalbe and Rogers 1982).

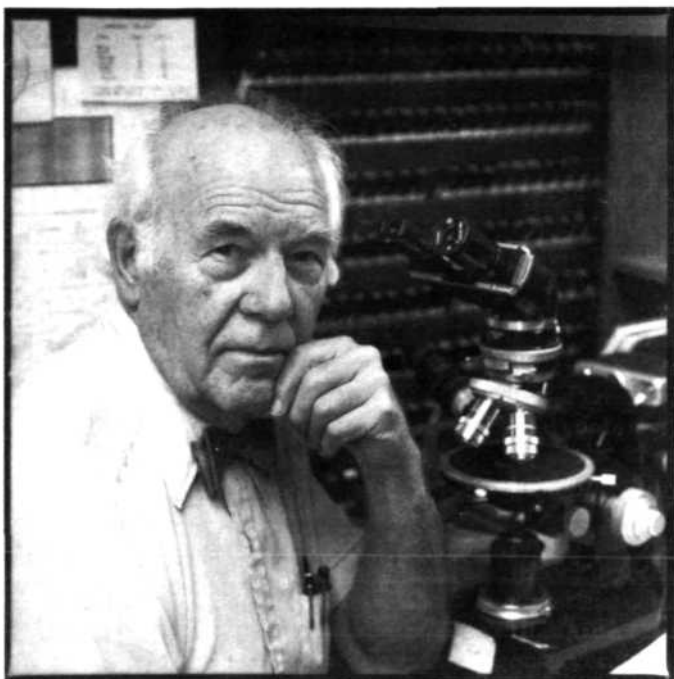
Probably the first person to publicly suggest Frei might be guilty of deception was shroud critic Steven D. Schafersman, a professional micro-paleontologist. He, Walter McCrone, and I each gave presentations on the shroud at an international microscopy conference held in Chicago in 1982.

McCrone (1980; 1981) is the noted microanalyst who discovered paint pigments—notably red ochre—on the shroud image.

Schafersman (1982a) subsequently elaborated on his views, terming Frei's pollen data "incredible" and casting suspicion on how the data "supports in exquisite detail a highly speculative history of the 'shroud's' journey that no reputable historian or scientist endorses because there is no independent evidence for it." Schafersman pointedly observed that at the International Congress on the Turin Shroud in 1978, Frei publicly endorsed Wilson's shroud/Mandylyion theory.

Schafersman went on to explain how unlikely it was, given the evidence of the shroud's exclusively European history, that 33 Middle Eastern pollens could have reached the cloth, particularly only pollen from Palestine, Istanbul, and the Anatolian steppe. With such selectivity, Schafersman stated, "these would be miraculous winds indeed." In an article in the *SKEPTICAL INQUIRER*, Schafersman (1982b) called for an investigation of Frei's work, for comparison not only with STURP's tapes but with "duplicate and independent sticky-tape samples of pollen and dust" that Schafersman wished to be taken from the shroud.

Although new samples were not taken, after Frei's death another organization, the Association of Scientists and Scholars International for the Shroud of Turin (ASSIST), obtained Frei's tape samples. His widow, Gertrude Frei-Sulzer, first loaned five tapes to ASSIST. I was present when these were made available for microscopical viewing in mid-February 1986 at a shroud conference at Elizabethtown College, Elizabethtown, Pennsylvania; McCrone was the first to examine one of the tapes and soon announced: "There's a



Walter McCrone, regarded by many as the world's leading microanalyst, discovered paint pigments on the Shroud of Turin and subsequently examined pollen specimens allegedly removed from the same linen cloth. His motto is "Think small." (Photo by Joseph Barabe, copyright McCrone Scientific Photography)

pollen" (Maloney 1989).

Two years later, ASSIST acquired Frei's collection of tapes from his widow and son and invited two scientists—McCrone and STURP's Alan Adler—to verify that the samples were taken from the Shroud of Turin. With the proceedings being videotaped, as each slide was handed to McCrone he observed it under the light microscope while simultaneously shroud researchers observed the microscope's field on video monitors. McCrone described linen fibers (including scorched fibers) and various contaminants, including synthetic fibers, particles of iron oxide (red ochre), and a few pollens.

Termed "one of the most surprising revelations of the day" was the discovery of "various kinds of plant

parts and floral debris, such as anthers, filaments, and vascular tissue on at least three of the tapes." This was held to support a hypothesis that "actual flowers had been laid down on the Shroud at some time during its history," which in turn "would explain the high percentage of floral pollens on the Shroud as described by Dr. Frei" (Flaherty 1989).

Interestingly, ASSIST's Paul Maloney (1994) reports that the pollens "are mostly located in what I call the 'lead' (as opposed to the 'body') of the tapes," supposedly attributable to Frei's method of handling the tape, by which he picked up additional pollens from between the threads. On the other hand, McCrone (who did not examine the leads during his marathon inspection) is suspicious of the

excessive pollens reported in those unlikely areas, stating that, at best, they would represent "contamination" of some sort (McCrone 1994).

Indeed, McCrone's overall assessment of the pollens is at variance with that of ASSIST. When I headed the symposium on forgery at the Manuscript Society's 1993 meeting in Santa Fe, I invited him to give a presentation. The evening before, we had a lengthy discussion, during which the distinguished microanalyst confided to me his opinion of Frei's pollen evidence. This he did with some obvious pain, explaining that "Max" had been a friend of his. At my prodding, in two subsequent letters he elaborated in some detail on his observations.

Explaining that he "spent a long day examining the 26 Frei tapes in order to be able to say that they had definitely come from the Turin shroud," McCrone stated: "It was not too difficult to conclude that they had since it was easy to find red ochre on linen fibers much the same as I had seen them on my samples." He continued (1993a):

At the same time I was interested to note that there were very few pollen grains; perhaps one per square cm, which was pretty much what I had observed on my set of tapes. Incidentally I had talked to Max Frei at one of our London Microscopy meetings a year or two earlier and had asked him what the concentration of pollen was, and he did say about one per square cm. Considering that figure and the number of tapes and their length there could not have been much more than 100 pollen grains all total on his or my tapes. It is difficult to see how he could have found an assemblage of pollens representing 49 different species of Palestinian pollens on a piece of cloth that has spent the last 650 years of its life openly exhibited and much handled

in France and Italy. I'm afraid that Max Frei was like so many other members of the STURP group who were so convinced by their faith the Shroud was real that they were just as convinced that whatever was needed on the Shroud to prove that fact must be there, and if they didn't literally find it they regarded this as their error rather than a reality in terms of what the Shroud actually shows.

McCrone added (1993b):

I have looked back over my notes and see that I mentioned, marginally, the presence of very few pollens. Only 10 plus or minus on all of the tapes other than 6 Bd which has dozens of them. I also noted that those on 6 Bd were located within 2-3 square millimeters of the tape. At the time I remember saying diplomatically that they were "contamination." I didn't in fact, identify those pollen, so I don't know whether they are Palestinian or Italian. It is very doubtful that they were present on the Shroud itself and sampled by Max. The fact that they are then present indicates that the tape had to be pulled back so that they could be introduced and I see no good reason for that except skullduggery. A skilled skulldigger would, of course, pick off all but one or two of those contaminating pollen grains.

So I can't be sure that Max really adulterated the tapes from that bit of evidence, but the fact that most of the pollen he found supposedly came from the Palestinian area even though it had spent the last 600 years or so bouncing around in France and Italy is more than a little surprising.

Finally, he added this bombshell:

One further point with respect to Max which I haven't mentioned

anywhere, anytime to anybody is based on a statement made by his counterpart in Basel as head of the Police Crime Laboratory there that Max had been several times found guilty and was censured by the Police hierarchy in Switzerland for, shall we say overenthusiastic interpretation of his evidence. His Basel counterpart had been on the investigating committee and expressed surprise in a letter to me that Max was able to continue in his position as Head of the Police Crime Lab in Zurich.

The implications of McCrone's revelations are devastating to authenticity advocates—or should be. However, experience shows they are never dissuaded by negative evidence.

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Joe Nickell is the author of many investigative books, including Inquest on the Shroud of Turin (Prometheus Books, 1983, 1987).