

## New Light on the Leptons

Fresh observation demonstrates that they are illusions.

Much has been written concerning the possibility that marks derived from coins over the eyes of the man in the Shroud prove that it must be an authentic first century burial cloth. Those who think them genuine have identified an unusual version of a specific coin, minted only in a specific year, and claim to have discovered coins still extant carrying the same imperfections. Others think that the marks are insufficiently clear for positive identification. Until now, the question has been one of individual perception, and thus difficult to prove either way, but a recent study of the area of the right eye as photographed by Haltadefinizione has settled the question beyond doubt.

As early as 1954, Fr Francis Filas thought he detected the letters ECAI in the middle of the right eye of the negative of the Shroud image, and must have guessed that they represented the inscription on a coin, but did not develop his idea until John Jackson and Eric Jumper discovered 'bumps' over the eyes on the VP-8 Image Analyser image. (Note 1) With this extra evidence, Filas took his idea to a numismatist friend, Michael Marx, who suggested that the letters were actually UCAI, and part of the inscription of a coin of Tiberias Caesar. In the English alphabet, the inscription reads TIBERIOU KAISAROS, which in the Greek alphabet becomes TIBEPIOY KAICAPOC. Curiously ignoring the Roman U / Greek Y distinction, Filas and Marx decided that their UCAI was a misspelling of the letters Y KAI, and that a *prutah* from the time of Pontius Pilate fitted the size and shape of the letters perfectly. (Note 2)

The *prutah* was a tiny copper coin (less than 15mm across) of such small value that very little care was taken in its minting. It was produced by hammering the design several times along a strip of copper, which was then cut into individual coins with a chisel. Dozens of dies were produced, so much so that it is difficult to find two coins from the same one; and mistakes in the dies and clumsy stamping make it almost impossible to find a "good" specimen. This is the best I can find. (Figure 1).



Figure 1

On the side which Fr Filas thought contacted the cloth, the pictorial element is a lituus, or augur's wand, resembling a shepherd's crook, with the hook turning to the right. The letters TIBEPIOY KAICAPOC surround it, and in most examples a circle of beads surrounds them. The other side shows a wreath, and the letters LIS, LIZ or LIH, corresponding to the 16th, 17th and 18th year of Tiberius's reign, roughly 29/30, 30/31 and 31/32 AD respectively. In no other years were coins with a lituus minted, pinning the Shroud, if the perceived observation were genuine, to exactly the correct period of the crucifixion.

To those who claimed the misspelling of the inscription was far fetched, and that KAICAPOC would never be misspelt CAICAPOC, Filas responded by discovering three coins which, he claimed, had exactly that error. (Figure 2)



As can readily be seen, in this he was mistaken in at least two of the three. However, subsequent researchers have discovered so many variants that it seems almost anything was quite possible. (Figure 3)



Archaeological investigations of first century Jewish graves have occasionally turned up small coins. As the corporal remains of the deceased are almost entirely reduced to disarticulated bones placed in ceramic ossuaries, it is impossible to be certain if the coins were placed on the eyelids of the corpse or not, but it cannot be declared impossible, in spite of some determined objections. Certainly the Jews had no tradition of paying the gods of the underworld, or even of leaving funeral offerings to the one true God, but some may simply have followed a common Roman or Greek custom of the day, out of habit, superstition, decoration, or mere whim. (Note 3) The coins are, however, too small and too light to have been used to keep the eyelids closed, which has also been suggested.

Actually, it can be clearly demonstrated that there are no coin images on the Shroud. There are, broadly, two possible ways in which such markings might have appeared, either by direct contact, and the leaving of some of the surface of the coin - corrosion or dirt, for example - on the surface of the cloth, in the manner of the drawing pins which were once used to pin it to a wooden support frame; or in the same way as the rest of the image, by some form of emanation, chemical or physical, which led to the darkening of the linen threads. For the second to be true, the coins would have had to behave, chemically or physically, identically to the rest of the body, which seems inherently unlikely, as they are made of such different materials.

Whatever the mechanism of the production of images of coins, it should have resulted in the darkening of the cloth where it was in contact with, or very close to, the raised inscriptions of the coins over the eyes. It will become obvious though, that no such darkening has occurred. In order to observe any variation in brightness in photographs, we must distinguish between the chemical darkening of the material, and darkening caused by shadows in the pits created by the warp threads diving under the weft threads. For this, Giuseppe Enrie's high resolution negatives are surprisingly unhelpful, because their high contrast tends to obscure the difference. (Figure 4) (Note 4)



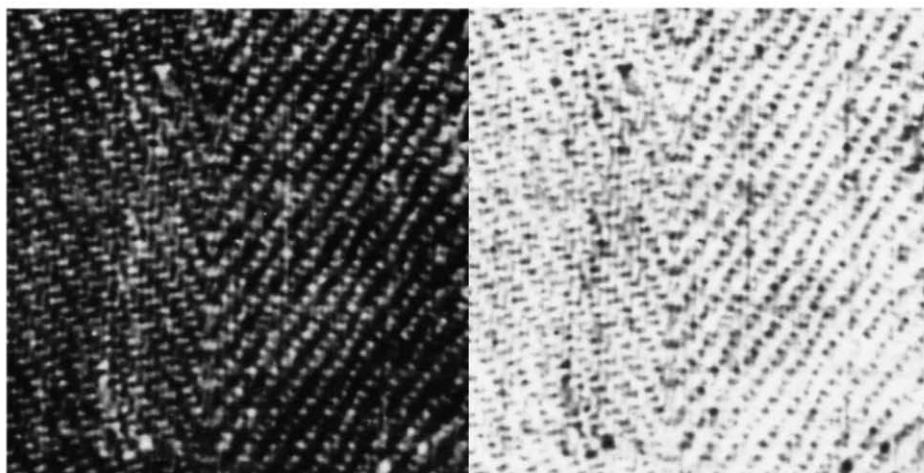
Figure 4

The photographs below, from the Haltadefinizione scan available as Shroud 2.0, show much more subtle variations in tone. (Figure 5)



Figure 5

In both the Enrie and the Haltadefinizione photos, the most prominent features are thin chevron lines, pale in the negatives and dark in the positives, which tend to obscure the variation in intensity of the area as a whole. In the Enrie photographs, it appears that the overall intensity is entirely composed of variations in thickness of these chevrons, rather than the actual difference in colour of the area between them. (Figure 6)



In the Haltadefinizione photos, the area between the thin chevrons can be seen to vary in intensity from place to place. (Figure 7)

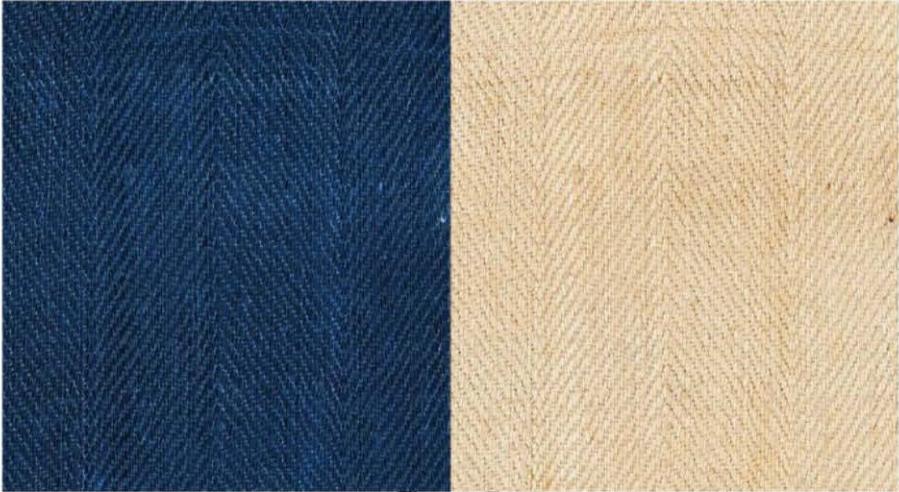
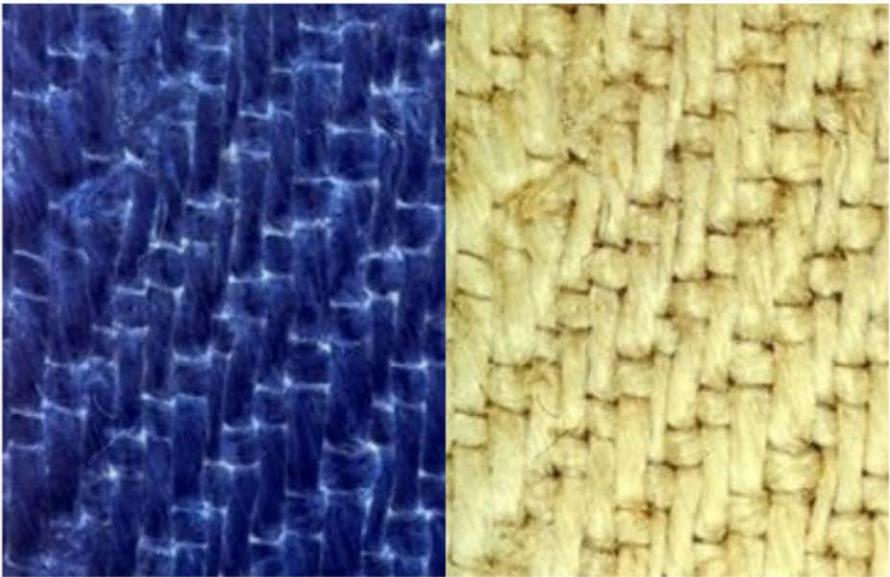


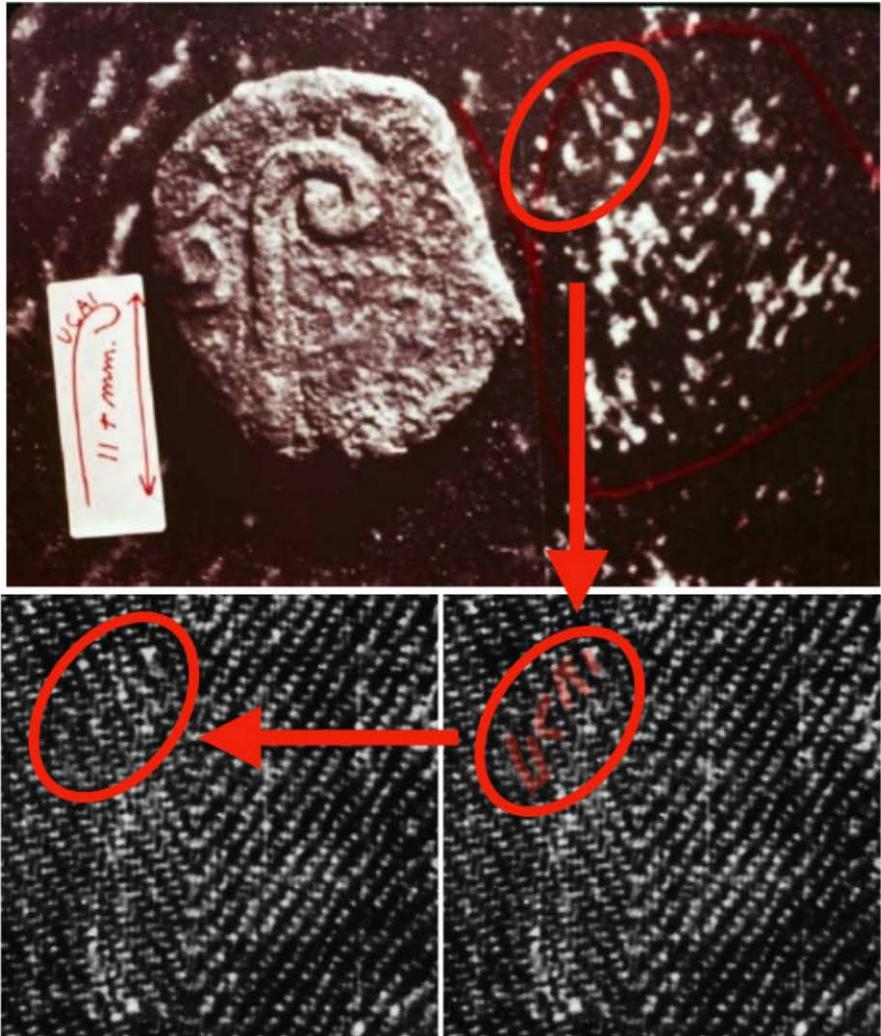
Figure 7

The thin chevrons are, of course, created by the shadows in the pits where the warp threads pass under the weft. They appear to be composed of short horizontal bars, offset vertically to create the illusion of continuous sloping lines. Some of the close up photos taken by Mark Evans in 1978 show the effect more clearly (Fig.8).

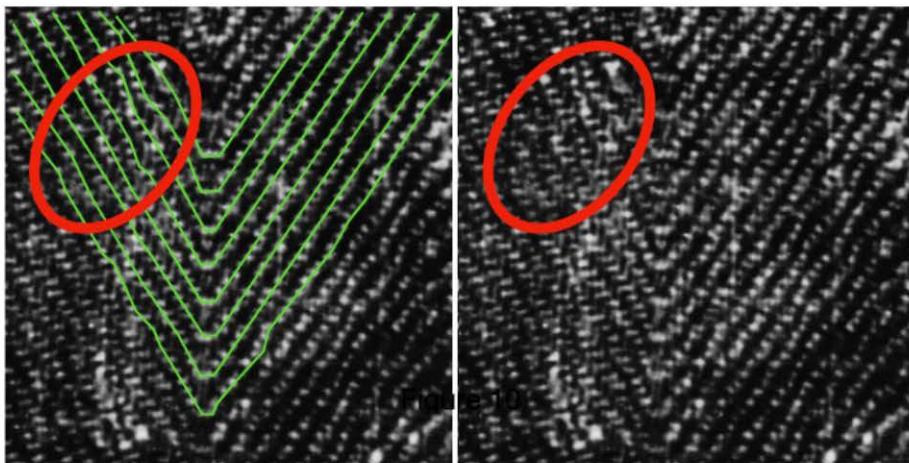


From the earliest observation of the alleged coin marks, every photographic illustration of them has used a negative of the Shroud, on which the marks appear white on black, rather than the dark on light that they are in actuality. Furthermore, by using a fairly high contrast Enrie negative, the darkening of the surface of the cloth is obscured by the dark areas caused by shadows.

Remarkable as it may seem, every one of the photos of the weave of the Shroud above, with the exception of the Mark Evans close-ups, shows exactly the area of right eye where the alleged coin sits (Figure 9).



The letters of the coin are clearly made of the white shadows formed by the warp threads dipping under the weft, and not by discolouration of the warp threads themselves. The apparent shapes are due to irregularities in the 'chevrons' as indicated below. Notice how straight the lines are on one side, and how crooked on the other. (Figure 10 below)



On the Shroud 2.0 image, negative and positive, it looks like this. (Figure 11)

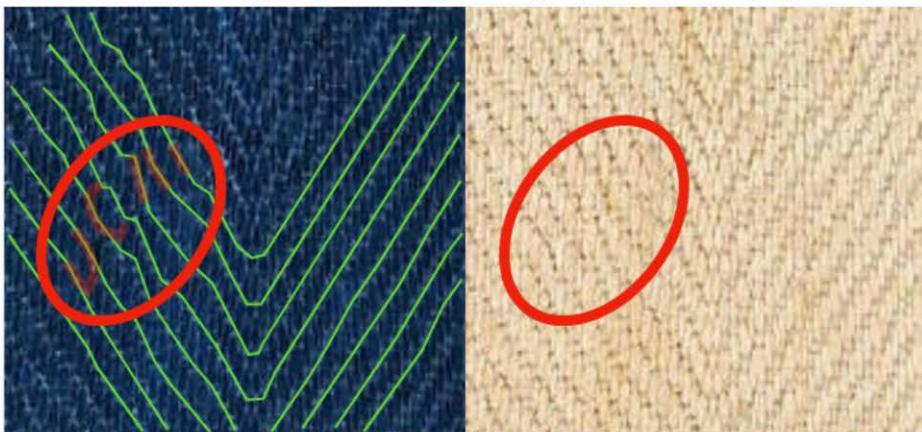


Figure 11

It is clear that, however some marks on negative images of the Shroud are photographically manipulated to resemble letters, they are actually made of vagaries in the lines of shadows making up the chevrons of the weave, and not of any discolouration of the threads. It is therefore impossible for them to have been made by coins being placed on the eyes of a body lying under the cloth.

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