

# Images of Coins on



## a Burial Cloth?

by Eric Jumper, Kenneth Stevenson, Jr.,  
and John Jackson

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While perhaps an unknown subject for most numismatists, the Shroud of Turin has steadily grown in notoriety in the scientific community and in the interests of this article's authors. It now seems a certainty that in the fall of the year, we, along with other scientists from around the world, will be given the rare opportunity to examine, in great scientific detail, the cloth which many believe wrapped the body of Jesus of Nazareth after he was taken down from the cross nearly two thousand years ago. While the body of research regarding the Shroud has reached massive proportions, our singular intention is to provide an outline of the facts supporting the cloth's authenticity and set the stage for its accompanying numismatic mystery. It is hoped that our speculations may solicit responses from the learned numismatic community which will shed further light on this aspect of the subject.

### **The Mystery Unfolds**

The documented itinerary of the cloth we know today as the Shroud of Turin goes back to the 1350's where it suddenly appeared in the family of Geoffrey de Charny, a French Knight of Lirey. How it arrived there and from whence it came remains a mystery even today, although British historian Ian Wilson has done a fine job of reconstructing a history for it back to Palestine at the time of Christ.<sup>1</sup> From the time of its appearance in Lirey through its stay in Chambery, France (where a tragic fire left the scars visible today) and to its present location in Turin, Italy, the Shroud has had a rather large following of believers who thought the Shroud authentic. These believers, however, were far outnumbered by those who thought the Shroud simply a clever forgery by a misguided, albeit well intentioned, medieval artist...that is until 1898.

In that year an Italian photographer, Secunda Pia, a resident of Turin, was commissioned by Church authorities to photograph the Shroud for the first time in its history. Using large glass plates, Pia exposed his emulsion to the Shroud and returned home to his photographic facilities to begin the long developing process. Under the red light of his dark room, Pia watched with astonishment as faint images began to emerge from the otherwise black plates. He was witnessing the first of many revelations the Shroud had in store for the 20th

century: on what should have been a negative with the usual distorted images appeared a perfect positive image (see Fig. 1).

Pia's discovery made headlines around the world, and quite naturally the sceptical scientific community became interested in these most unusual photographs. A commission of scientists headed by Yves Delage began an intensive study of the Pia plates in an attempt to answer three basic questions: 1) Could the Shroud be 2000 years old? 2) Was the image in fact the image of a human body? and 3) Could the image on the cloth be that of Jesus of Nazareth? Delage reported the findings of the commission to the French Academy of Sciences in 1902. Summarized, the results of the study concluded that the Shroud could in fact be 2000 years old; the image must have been made by a dead human body—death by crucifixion; and finally, because of the phenomenal agreement with the gospel accounts of the passion and death, the image must have been made by the dead body of the historical figure, Jesus of Nazareth, as it lay in the tomb.

This statement by reputable scientists, the best in their fields, is a haunting one even today. Because of the unusual nature of the image on the cloth, one which is an anomaly, men of learning have asked the inevitable question, "How was the image formed?" Paul Vignon, a member of Delage's commis-

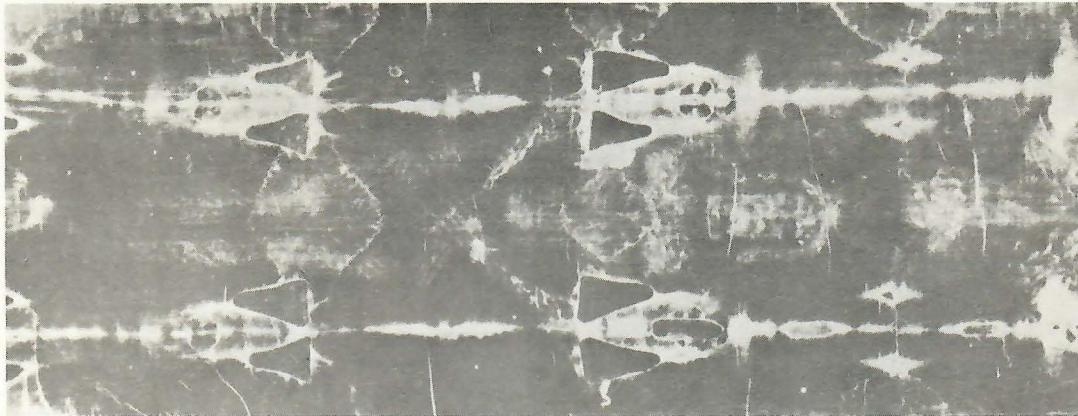


Figure 1. The Shroud of Turin: The front image in negative showing the "positive" image first discovered by Secunda Pia in 1390.

sion, made many observations about the characteristics of the image, the most important being that the image seemed to be present even where the cloth could not have been in contact with the body. After investigating many possible causes for the image, Vignon decided that the process must have been the vaporization of body excretions. Through a diffusion process, these vapors eventually made contact with the cloth and stained on the image visible today. Modern science, however, has great reason to doubt this process as the one involved.

#### Modern Revelations

During this century, men of science, history, and medicine have built on the original observations and comments of Delage's commission. Many of the theories and findings of these years can be found in the now classic work of Dr. Pierre Barbet, *A Doctor at Calvary*.<sup>2</sup> Because of the availability of so many books on the subject (see, for example, footnotes 3 and 4), discussion here will be limited to the startling discoveries made in the 1970's.

In 1969, discussions in Turin turned to a possible television exposition to be aired sometime in the early 70's. It had been 36 years since the last exposition of the Shroud and the Turin authorities felt that the largest possible audience could be reached through the television

media. The biggest concern of the authorities, however, was whether the powerful lights necessary for such an exposition would damage the Shroud. To answer this question, the Shroud was taken out of its reliquary and tests were performed to determine the effects of bright lights on the cloth.

As it turns out, these tests were not the only ones conducted at that time. The Turin authorities had commissioned a group of scientists to perform certain tests on the Shroud to see if any new information could be found. The group commissioned was somewhat disorganized and unprepared to examine the cloth, but nevertheless performed a few tests to see if certain stains on the cloth were made by human blood. These tests, unfortunately, proved inconclusive.

As a result of the 1969 tests, a decision was made to go ahead with the television exposition and it was scheduled for 1973. During the exposition, the group who examined the cloth in 1969 again viewed the cloth. Even though their report, finally published in 1975 in Italian and translated to English in late 1976, left a very dissatisfied feeling in the minds of most interested scientists, new information had, indeed, been discovered. For instance, pollen fragments were found on the Shroud which showed the cloth had been exposed to the open air in



Figure 5. Three-dimensional image of the face with the relief adjusted to call attention to the button-like objects on the eyes, the object on the right eye being the most noticeable.

Shroud images, we obtained the results shown in Figs. 3 and 4. I think you will have to agree that the distance information encoded into the image is so uniform and regular that a well proportioned three-dimensional image of the man of the Shroud can be seen. We call this property of the Shroud its "three-dimensionality."

In one of our investigations using the VP-8, we reduced the relief of the image to correspond to the slope of Fig. 2 at about the mid-point of the curve. The result of this process is shown in Fig. 5, which, surprisingly, revealed objects resting on the eyes—objects which resembled small disks or "buttons."

At first we thought the objects might simply be the result of someone somewhere in the history of the Shroud attempting to paint on some eyes. The position of these round spots, however, doesn't accurately reflect such an attempt. Further, we made color scans through the eyes on color photographs taken in 1973. The result was that the color of the disks was identical to the color of the rest of the image. It seemed impossible for an "artist" to reproduce this color so perfectly. Facing us was the realization that these images were

formed from something resting on the eyes, but what?

Using the curve in Fig. 2 and comparing the intensities on each side of the boundaries of these objects, we were able to conclude that their thickness was approximately 1-5 mm, and the average diameter of the objects was approximately 14mm. Further, the objects were decidedly flat, which can be shown from a contour map of the densities of the face.<sup>6</sup> In summary, then, the objects are circular, about the same size, and flat.

In an attempt to identify the kinds of things that might well be on the eyes of a dead man, we consulted Jewish burial customs prevalent at the time of Jesus and found that it was customary for the Jews to place objects (potsherds—pottery fragments—or coins) over the eyes of their dead.<sup>7</sup> It is interesting that this custom was allowed even on the Sabbath when washing was not. (Notably, the body of the man of the Shroud was uncleaned; if this is in fact the body of Jesus, it may not have been washed because of the onset of the Sabbath noted in John.<sup>8</sup> Washing of the body was considered work while placing objects on the eyes apparently

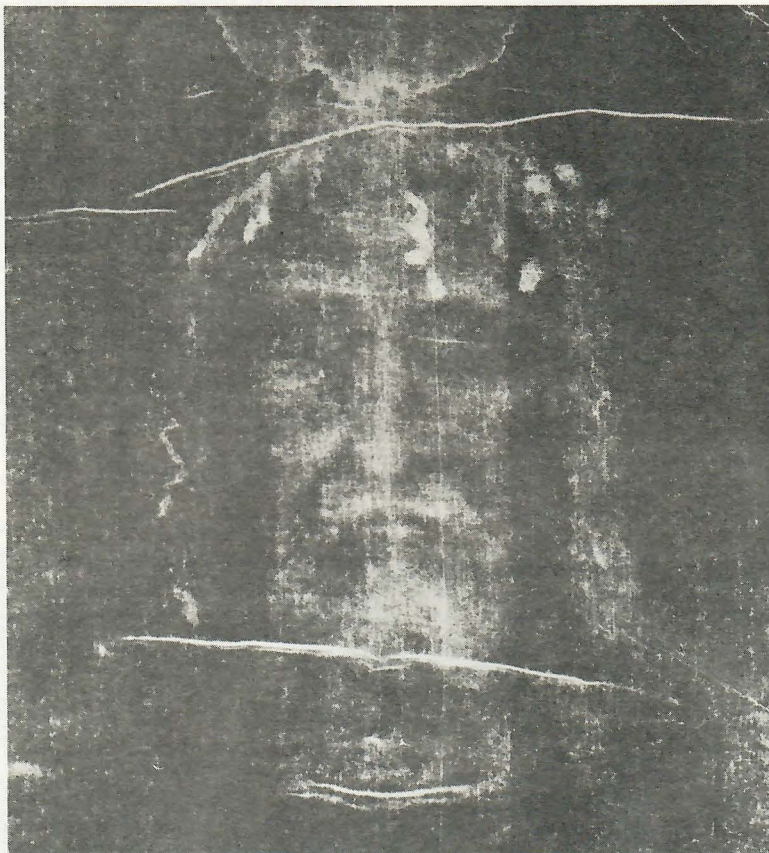


Figure 6. "Positive" image of the Shroud face with a Judea bronze lepton of Pontius Pilate superimposed.



*Other possibilities are a Judea bronze lepton of Herod the Great 37-4 B.C. or a Judea bronze lepton of Judas Aristobulus, 104-103 B.C. Can numismatic students of the period think of others?*

prevented work. This practice kept the eyes from opening due to rigor mortis and therefore negated the necessity of closing the eyes, which was considered work.)

Could these objects then be coins? If the two alternatives are either coins or potsherds, it's more likely that in such an apparently hurried burial, those present would probably have coins rather than pottery to break. What coins then would be the most likely candidates?

When we mentioned our coin theory to friend Ian Wilson, he, being somewhat of a coin buff, immediately looked into what coins might have been used if the Shroud was genuine. The result of his study produced the possibility of a Jewish bronze lepton of Pontius Pilate minted from 29-31 AD. One of Ian's observations was that this coin was acceptable as a temple offering (because it lacked the image of Caesar) and was therefore likely to be in the possession of orthodox Jews. Rather amazingly, the size and shape of the lepton are perfect (see Fig. 6). Additionally, the observation of what appears to be a backward question mark on the object on the left eye seems to correspond to the striking (Augur's wand) on a lepton! Intriguing points, but to date still inconclusive.

#### **Where Do We Go From Here?**

Since the Shroud itself offers so many questions that need to be answered, the

matter of these "coins" may, at first, seem to be quite trivial. But is it really? If, for example, the disk-like images were positively found to have been caused by coins minted in 29-31 AD, wouldn't that then date the image and the Shroud? This is certainly an exciting possibility and one which, for us, warrants serious consideration upon examination of the Shroud first hand in the fall.

The many tests we intend to perform include exacting photographic studies under controlled scientific conditions, and x-ray fluorescence analysis of the images. The photographs will be used for sophisticated image analysis and enhancement studies, while the x-ray fluorescence tests are designed to discover the atomic composition of the image.

With the photographic work, we hope to obtain very fine quality pictures which, among other things, can be used to take much of the noise out of the image, noise present, for example, from the weave pattern of the cloth. If we are successful, perhaps the vague suggestions of structure on the disks can be identified positively and matched with known coin candidates.

As mentioned before, the origin of the image is no longer thought to be organic. Many reputable scientists now feel the source of the image, however unbelievable, seems likely to be a thermal discoloration—a scorch, if you will.<sup>9</sup> Could the energy necessary to cause such a scorch have been sufficient to glean off a few metal particles from a "coin" and transfer them to the cloth? Well, whether this happened or not, we would like to include in our x-ray fluorescence testing scans over the eyes to determine if there are any deposits of various metal particles to suggest the presence of coins.

Of course, to do a proper job, we should know what kinds of coins we might be able to match up. Is the lepton the strongest candidate? What other coins might be as likely or more likely? What is the metallic composition of these candidates?

John Hunter of ANA's Certification Service made several suggestions of additional possibilities for the coins after his reading of this article, which are also

illustrated here. As students of numismatics, what coins do you feel may have rested on the eyes of the man of the Shroud as he lay in the tomb?

### Footnotes

<sup>1</sup>Ian Wilson, *The Shroud of Turin* (New York: Doubleday and Company, Inc., 1978).

<sup>2</sup>Pierre Barbet, *A Doctor at Calvary* (New York: Image Books, 1953).

<sup>3</sup>Peter Rinaldi, *It is the Lord?* (New York: Vantage Press, 1972).

<sup>4</sup>Thomas Humber, *The Sacred Shroud* (New York: Pocket Books, 1978).

<sup>5</sup>John P. Jackson, Eric J. Jumper, Bill Mottern, and Kenneth E. Stevenson, "The Three Dimensional Image on Jesus' Burial Cloth," *Proceedings of the 1977 United States Conference of Research on the Shroud of Turin*, (Bronx, NY: Holy Shroud Guild, 1977), p. 74.

<sup>6</sup>Eric Jumper, John Jackson, and Don Devan, "Computer Related Investigations of the Holy Shroud," *Proceedings of the 1977 United States Conference of Research on the Shroud of Turin* (New York: Holy Shroud Guild, 1977), p. 197.

<sup>7</sup>A. P. Bender, "Beliefs, Rites, and Customs of the Jews Connected with Death, Burial, and Mourning," *Jewish Quarterly Review*, 7 (1894-1895), pp. 101, 254.

<sup>8</sup>John 19:42.

<sup>9</sup>R. N. Rogers, "Chemical Considerations Concerning the Shroud of Turin," *Proceedings of the 1977 United States Conference of Research on the Shroud of Turin* (New York: Holy Shroud Guild, 1977), p. 131.



Eric Jumper



John Jackson



Kenneth Stevenson, Jr.

### About the Authors

The common meeting ground for these three men is the U.S. Air Force Academy in Colorado Springs where each is an instructor. *Eric Jumper*, born in Washington, D.C., in 1946, received his Ph.D. in Mechanical Engineering and Laser Physics from the Air Force Institute of Technology and is currently an Associate Professor in the Academy's Department of Aeronautics. Eric's interest and studies of the Shroud go back to 1974 when he met Shroud enthusiast *John Jackson*. Native of Denver, Colorado, thirty-two year old Jackson received his Ph.D. in Physics in 1972 from the Naval Postgraduate School followed by a B.A. in Religious Studies in 1976 from the College of Santa Fe. He is currently an Associate Professor of Physics at the Academy. Born October 15, 1947, in Pittsburgh, Pa., *Ken Stevenson* is a published poet with an M.A. in English from the University of Pittsburgh, and an assistant professorship in English at the Academy. During his involvement with the Shroud research program, Ken edited the technical volume, *Proceedings of the 1977 United States Conference of Research on the Shroud of Turin*.

*Editor's Note:* The authors of this article may be written c/o ANA, P.O. Box 2366, Colorado Springs, CO 80901. For those interested in pursuing the subject of the Shroud further, the address of the Holy Shroud Guild is 294 E. 150 Street, Bronx, NY 10451.