

BOTANY OF THE SHROUD OF TURIN

An addition concerning new information since the 1999 report

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Introduction

Plant images discovered on the Shroud of Turin, near and on the image of the Man of the Shroud indicate a few important issues. Several species indicate the geographical origin of the linen and the time of the year when it was used to cover the dead man; others give several hints as to the identity of the man. New findings relate to the production of new 3D images as anaglyphs and holograms by Dr. P. Soons and his collaborators prove the physical role of flowers on the 3D image of the head of the Man of the Shroud.

The reader is advised to use the following links for observing the appropriate illustrations of the entire lecture summarized here:

1. In English - <http://flora.huji.ac.il/browse.asp?action=showfile&fileid=13818>
2. In Italian – <http://flora.huji.ac.il/browse.asp?action=showfile&fileid=21834>
3. In Spanish - <http://flora.huji.ac.il/browse.asp?action=showfile&fileid=26844>

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Plant images

The Shroud of Turin is well known because of the image of the man seen on it (Weaver, 1980). The discovery of plant images on the Shroud has already been reported many years ago (Scheuermann, 1983; Whanger & Whanger, 1998; Danin, 1997; Danin et al., 1999; Danin & Baruch, 2001; Danin & Guerra, 2008). We started our investigations by observing enhanced black and white photos made in 1931 by Enrie. In November 2007 we began studying the plant images seen on the UV photos made by Vernon Miller in 1978 (Miller & Pellicori, 1981), as part of the investigations carried out by STURP.

The plant images on the Shroud display properties that resemble Kirlian photography (Kirlian & Kirlian 1961; Mills, 1995). We consider the plant images produced on photographic paper and on linen by Scheuermann (1983) as the basis of our experimental studies. The findings of the latter physicist were communicated through personal correspondence with A. & M. Whanger. Flat flower parts such as petals, are seen by the high concentration of dark points at their periphery, as the rose leaflets in Fig. 1: 3. Certain thorns are seen as relatively large circles at the tips of the thorns (Fig. 1:1). Full small fruits look like round and full circles, as the fruits in Fig. 1:2. Thin stems are seen as full lines, fragmented, or as their silhouettes. A cord made of two tassels looks like oblique lines crossing each other or a chain of several joined figure eights (8). Altogether, hundreds of plant images have so far been discovered on the Shroud of Turin.

Geographical indicators

Three species were selected as geographical indicators. A large spiny inflorescence of the thistle *Gundelia tournefortii* is seen on the right shoulder of the Man of the Shroud. This plant grows in the Middle East in an area that includes Turkey, Iran, Syria, Jordan, and Israel. Images of two succulent leaves of *Zygophyllum dumosum* are seen on the chest area. This plant grows only in Israel, Sinai and Jordan. The images of several flowers of *Cistus creticus* appear near the neck. This plant shares a common boundary of distribution with the two preceding species, in Jerusalem and the area of the Judean Mountains. To conclude, these plants indicate that the only area on earth where people could put together non-wilted specimens of these plants on, or together with the body of the Man of the Shroud, is the area between Jerusalem and Hebron.

A flowering calendar

The three geographical indicators and an additional five species share two months of blooming (Danin et al., 1999). These additional species are: *Anemone coronaria*, *Capparis aegyptia*, *Chrysanthemum coronarium*, *Lomelosia prolifera*, and *Ridolfia segetum*. All eight species bloom simultaneously during March and April. Finding images of all these species in bloom on the Shroud indicates that the entombment took place in March-April.

Thorny plants

Images of several thorny plants have been discovered on the Shroud. In our first report (Danin et al., 1999) we listed the occurrence of *Gundelia tournefortii* near the right shoulder and a pair of thorns of *Ziziphus spina-christi* at the back of the head of the Man. Further studies of Whanger & Whanger (2002) on the Crowns of Thorns, the images of which they discovered on the Shroud, also revealed four inflorescences (capitula) of *Carduus* sp. and three stem thorns of *Rhamnus lycioides* (Danin, 2006). The thorns of *Ziziphus spina-christi* and of *Rhamnus lycioides* are portrayed by Fleury (1870) in his excellently illustrated book. He lists the thorns he saw in churches and monasteries in Europe in the 1800s. The thorns have been kept there since they were brought from the Holy Land many years earlier.

A cane of reed

Reed is mentioned many times in the Old Testament (Danin, 2007) and several times in the New Testament. We discovered a clear image of a reed on the Shroud of Turin (Danin et al., 1999), near the dorsal image of the Man. This finding makes a definite link between the Man of the Shroud and the New Testament.

Segments of a cord

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Images that look like chains of the number "8" are interpreted as parts of a cord. The cord was made in the same method used to make cords that have been discovered in many archaeological sites in Israel from 9000 years ago. The total length of cord segments comes to ca. 10 m. Danin et al., (1999) assumed that this cord was used to bind the Man of the Shroud to the Cross.

Interference of flowers with the 3D information

During a lecture Dr. P. Soons presented in Jerusalem in the spring of 2007, he displayed a 3D image of the Man of the Shroud and called it "a scientific version." He explained the "complaints" of the computer expert B. Galmarini concerning the material he received. The latter transformed the 2D information encoded in the gray-scale of the Shroud photo into 3D depth-information which enabled us to see the perfect 3D image of the Man of the Shroud. Galmarini displayed depressions in the forehead and on the right cheek. Dr. Soons recalled that he saw flower images in these areas, as presented in a book by Whanger & Whanger (1998): p. 73. It was a photograph showing my findings on a black and white photograph made by Enrie in 1931. Dr. Soons' theory was that the flowers blocked the way of the 3D information derived from the body from reaching the linen. Dr. Soons discovered another object that similarly blocked the path of information and formed another depression in the 3D photos. Our way to prove the impact of the "flower-interference" obstacle was to study photographs made by the STURP team in 1978. Dr. T. D'Muhala hosted us in November 2007, and showed us digitized photos made in several methods by Mr. Vernon Miller, the leading photographer of STURP. The most impressive photos were the result of UV illumination (Miller & Pellicori, 1981). The reflected fluorescence was captured on appropriate films. Many flowers were seen in the head areas mentioned above.

To conclude - the flowers seen in the black and white photograph made by Enrie in 1931 are also seen in Miller's photos although they were made by a different set of techniques. Hence, the flowers observed in the same places in different methods are genuine and not artifacts of one or another method of photography.

Hundreds of flowers on the forehead and the cheeks

In April 2008 I received a UV-photo of the head area, made by Vernon Miller and digitized by Dr. T'. D'Mahala. It was printed at a 1:1 scale and studied. The contours of the flowers are seen on a section of the photo (Fig. 2). Thin arrows point to the centers of flowers that are emphasized on the overlay in Fig. 3. The "flowers" are most similar to flowering heads (capitula) of *Matricaria recutita* or *Anthemis borenmuelleri* (Fig. 4; I put the living flowering heads on an earlier stage of preparing Fig. 3. This is why the total number of "flowers" in Fig. 4 is smaller than in Fig. 3). As these species belong to the sunflower family, each "flower" (capitulum) comprises many florets arranged in flowering heads. At the center of each capitulum there are yellow tubular florets whereas at the periphery there is one circle of white ligulate florets (Fig. 4). While laying the capitulae of *Anthemis bornmuelleri* on the lower left side of Fig. 3, I had to cut their peduncles (stems carrying the capitula). This action implies that when these "flowers" were laid, it was not a random throwing of plants but an orderly arrangement. More than 300 flowering heads were used. The species of the plant used here cannot be determined. There are dozens of *Anthemis* species in the East Mediterranean area that differ in the morphology of their minute fruits. However, the closest representatives were used to make the model displayed in Fig. 4.

Since I am dealing only with botanical findings, I cannot evaluate the reasons for putting these flowers on the head area.

Figure Captions

1. Experimental plant images produced on photographic paper (by O. Scheuermann) by electronic emission. He used “Van-der-Graaf-generator” as a high voltage source for the creation of corona discharge images. Main features: 1. Star-shaped dark dots at the tip of spines. 2. Fleshy fruit of *Berberis* looks dark and full. 3. Toothed margins of a rose leaf become prominent.
2. The forehead area with images of specific plant parts. Thin arrows indicate flower centers; thick arrows indicate *Pistacia* fruits (discussed in Danin et al., 1999).
3. Plant images (mainly capitula) marked on transparent cellophane on a photograph made by Vernon Miller in 1978.
4. A model reconstruction of the flower-covered head of the Man of the Shroud. *Anthemis bornmuelleri* (upper left photo) or *Matricaria recutita* (lower left) are possible plants used here.

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