

Review - Botany of the Shroud: The Story of Floral Images on the Shroud of Turin

By Avinoam Danin¹

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Botany of the Shroud,² by the eminent Israeli botanist Avinoam Danin, provides information that precludes any possibility that the Shroud of Turin could have originated in Europe and thus is a critical addition to scientific research on the Shroud. It is a “must read” and a “must add” to your Shroud bookshelf. The book delineates numerous plant images detected on the Shroud by Danin and others, and includes beautiful photographs as well as maps, charts and figures which supplement the text, clearly written and readily accessible by the non-scientist.

Subtitled *The Story of Floral Images on the Shroud of Turin*, this book is equally the story of Danin’s lifelong fascination with flowers from earliest childhood and the focused trajectory of his education that led him to become the world’s foremost authority on flora of Israel and surrounding regions. It is, moreover, a memoir of how he came to be “irrevocably involved,” over the course of many years, with the Shroud of Turin. (As a botanist, Danin has not commented on the nature or origin of the human image on the cloth.)

Faint images of many species of plants were found on the Shroud, but only those with restricted geographic distribution are useful for determining its geographic location when the images were formed. Danin found four such floral images – *Gundelia tournefortii* (a type of thorny thistle from the sunflower family³), *Zygophyllum dumosum* (bushy bean caper), *Cistus creticus* (hoary rock rose) and *Capparis aegyptia* (Egyptian caper) whose overlapping geographical distribution is limited to the area between Jerusalem and Hebron.

The presence of these four species, coexisting within a very limited geographical area, substantiates a narrow window – between Jerusalem and Hebron – as the only possible location of the Shroud when the plant images were formed.⁴ If, as seems most reasonable, the plant images and the image of a crucified man were produced at the same time, this eliminates any possibility that the cloth could have originated in Europe.⁵ Danin has brilliantly provided valuable authenticating information for the Shroud.

As the calendar dates when these flowers bloom is known, the images of about ten of the seventeen plants identified on the Shroud must have been formed during March or April. This rich floral evidence cannot help in establishing any year for image formation, however.

Many of the identified flowers are mentioned in the Hebrew Bible, and therefore there is no question that they have grown in Israel and surrounding areas for

millennia. Among the various plant images identified were two species of “ferocious” thorns near the head.

Danin discusses in some detail studies of pollen grains performed by several palynologists. The identifications of numerous plants by Max Frei, who extracted pollen grains from the Shroud in 1973 and 1978, were confirmed only in part by the Israeli palynologist Uri Baruch, who examined Frei’s sticky-tape slides in 1998. In 2001, Thomas Litt of the University of Bonn was asked to review Frei’s samples. Using advanced microscope equipment not available to previous investigators – light microscopy and laser-scanning microscopy -- Litt examined most, but not all of Frei's sticky-tape samples. He was unable to confirm “identification of the pollen at the genus level, even less at the species level,” and in surprising contradiction to previous results, “with high probability” excluded *Gundelia* altogether. Danin suggests new pollen grain studies, “preferably by aspiration or from the dust gathered during the Shroud re-arrangement of 2002.”⁶

Certain floral images were observed on photographs taken of the Shroud (1898, 1931, 1978) and on the Shroud itself in 2000. Danin concludes, “This means that the images are not artifacts from the photographic laboratories, but views of the same parts of the Shroud seen through different photographic procedures.”⁷

Danin compared these floral images with corona discharge photographs of flowers made by Oswald Scheuermann⁸ and concluded that the floral images on the Shroud were the result of a corona discharge event or of some analogous process.

Some curious results include holographic images of the Shroud produced by Petrus Soons⁹ which Danin examined and found that certain blank areas on the holographs correspond to areas of flower images on the Shroud. Additional images on the Shroud reported by Danin include a broken length of handmade rope¹⁰ and a reed on the dorsal image.

Professor Danin has substantiated the greater part of his findings very well. At certain points, however, I am puzzled: About 2600 small marks, scattered all over the Shroud, were tentatively identified as the fruit of *Pistacia atlantica* or *Pistacia palaestina* (both referred to in the Bible as “terebinth”). 2600 pistachio nuts? Danin also found “almost 300” flowers with stems removed placed around and on the head, some of which are indicated with red ink in figure 65. As I examine this enhanced photograph taken in ultraviolet light, I wonder how discernible the flowers might be without the red ink drawings. I recall the *caveat* given by Murra and Di Lazzaro, “Sometimes we are able to recognize some familiar shapes in images which represent a completely different subject... due to a wrong interpretation or to our past experience.”¹¹ Yet I definitely see floral images corresponding to *Chrysanthemum* near the head image when I examine the photographic facsimile of the Shroud here at the Shroud of Turin Center in Richmond.

The direct, conversational tone and high quality photographs,¹² as well as Danin's personal reflections, make this little book a refreshing update to the somewhat more technical *Flora of the Shroud of Turin*¹³ with its inferior graphics. It is helpful to have both volumes at hand, since some discussions and figures refer back to information in *Flora* which is not reproduced in *Botany*.

ENDNOTES

1. Danin is Professor Emeritus of Botany in the Department of Evolution, Systematics and Ecology, The Hebrew University of Jerusalem.
2. A. Danin, *Botany of the Shroud of Turin: The Story of Floral Images on the Shroud of Turin*, Jerusalem: Danin Publishing, 2010, 104 pages. (Available in USA from adw2@duke.edu and from the publisher at avinoam.danin@gmail.com; in Europe at rpa@legionaries.org; in Israel at fpo@cicts.org and info@notredamecenter.com.)
3. All common names of plants are supplied by the reviewer for the readers' clarification. As a scientist, Professor Danin does not use common names for the plants.
4. *Botany*, p. 54. Elsewhere, Danin refers to "the three indicator plants" (p. 78).
5. This is not to say that the body image and the plant images were necessarily produced by the same process.
6. *Botany*, p. 68.
7. *Botany*, p. 46.
8. For further information on the corona discharge photographs, see O. Scheuermann, *Turiner Tuchbild aufgestrahlt? Nachweisversuch*, Saarbrücken: VDM, Verlag Dr. Müller, 2007.
9. For further information on holographs of the Turin Shroud, see P. Soons, "The Shroud of Turin, the Holographic Experience," paper presented at *The Shroud of Turin: Perspectives on a Multifaceted Enigma*, conference at Ohio State University, August 14-17, 2008. (Available at <http://ohioshroudconference.com/papers.htm>.)
10. Professor Danin has informed me that the cord or rope image he discerns on the Shroud is approximately 10 mm. (about 1/4 inch) in diameter, and that this is the diameter of regular cords done by Bedouin or other people who have made such ropes or cords throughout history. The small ropes given as gifts to readers, as shown on page 79, are 3 mm. in diameter and are not meant to accurately represent the size of the rope images observed on the Shroud.

11. D. Murra and P. Di Lazzaro, "Sight and brain: an introduction to the visually misleading images," paper presented at *International Workshop on the Scientific Approach to the Acheiropoietos Images*, conference at ENEA, Frascati, Italy, May 4-6, 2010.

12. Several photographs of the Shroud were unfortunately reversed by the printer. Thus on Figure 57,A,B, locations of various flora on the body image have been confused. These printer's errors undoubtedly will be corrected in future editions. This may be moot, since the numbers identifying the plants are taken from *Flora of the Shroud of Turin*,¹³ Table 4, which is not reproduced in *Botany*.

13. A. Danin, A. Whanger, U. Baruch and M. Whanger, *Flora of the Shroud of Turin*, St. Louis: Missouri Botanical Garden Press, 1999. (Available from the publisher at <http://www.mbgpress.info/>.)

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