DR. MAX FREI-SULZER

Ehem. Leiter des wissenschaftlichen Dienstes der Stadtpolizei Zürich

Seehaldenstr. 14
8800 Thalwil
Tel. 01 720 16 95

7.11.1982

Herrn
Prof.Dr.Werner Bulst
Nieder-Ramstädterstr.30
D- 61 Darmstadt

Lieber Herr Professor ,

Sie haben schon lange nichts mehr von mir gehört. Der Grund ist eher traurig: Vor wenigen Tagen bin ich aus dem Spital entlassen worden. Auch jetzt bin ich noch sehr ruinenhaft. Die Diagnosen reichten von Herzinfarkt bis schwerste Lungenentzündung...

Vermutlich habe ich im letzten Halbjahr zuviel gearbeitet: Kriminalfälle in Italien, Deutschland und sogar in den USA, ausserdem arbeitete ich an einem Manuskript in englischer Sprache für ein Buch, das in den USA erscheinen soll mit dem Titel: "the Pollens of the Shroud of Turin" und in welchem ich hoffe, rasterelektronenmikroskopische Fotos aller von mir gefundenen Pollensorten in Form eines Bilderatlasses publizieren zu können. Hoffentlich gelingt der Plan.
Momentan muss ich noch ganz kurz treten, will aber doch versuchen, auf die wichtigsten Argumente in Ihren Briefen einzugehen.
Die Unterscheidung von 3 verschiedenen Eisenverbindungen nach Heller und Adler im Gegensatz zu McCrone ist sicher richtig und von höchster Bedeutung. Die anglo-amerikanische Fachwelt nimmt denn auch McCrone gar nicht mehr ernst.
Es stimmt, dass das Tuchbild nur die äussersten Spitzen der Leinenfibrillen betrifft und nicht durchgeschlagen hat, mit Ausnahme der Flüssigkeitsspuren von Blut. Daraus ergibt sich wieder auf neuem Wege die Unmöglichkeit, das Bild mit irgendeiner Maltechnik zu erzeugen, denn so feine Pinsel gibt es gar nicht, die nur die Spitzen der Fibrillen berühren würden.
...

Ihre Pflanzentabellen, auch in den als Manuskript gedruckten "Neuesten Forschungen zum Turiner Grabtuch,Mai 1982" geben zu keinen Aenderungswünschen Anlass.
Mit Vergnügen habe ich das "Gedankenexperiment" gelesen und die Abfuhr, die Sie Averil Cameron zuteil werden liessen. Von Bedeutung ist für mich auch das, was Heinrich Pfeiffer weit über bisherige ~~Kenntnisse~~ Erkenntnisse hinaus gehend geschrieben hat.

Ich bin zu müde, um weiterzuschreiben. Fortsetzung folgt.

Liebe Grüsse

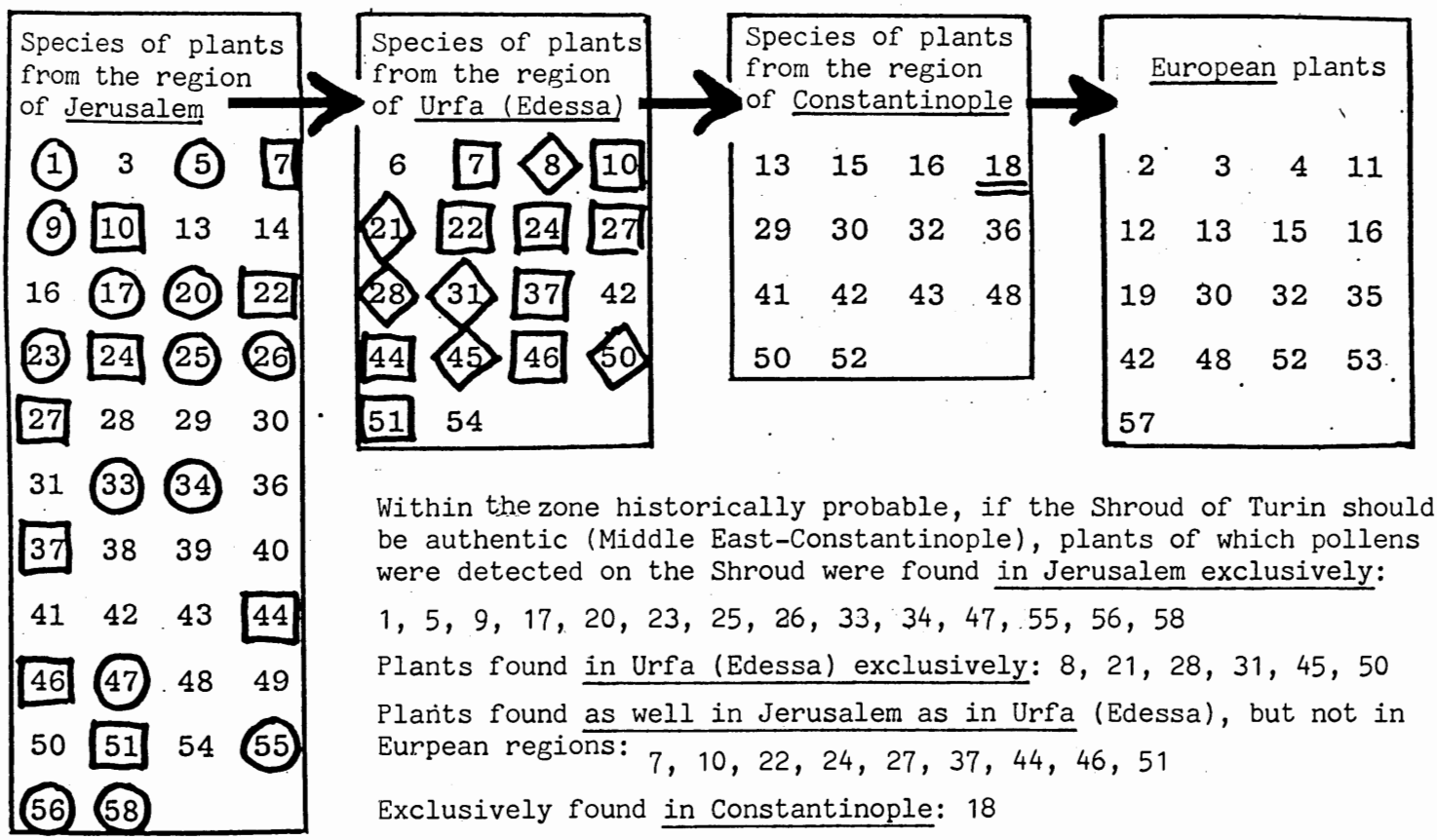
M. Frei

The pollens on the Turin Shroud

On the Turin Shroud numerous pollens were found. But less than the third of them are from European plants. In not any botanic collection could be found exemplars of the pollens for the present unknown. Therefore Dr.Frei, botanist and criminalist of international repute, undertook seven extensive expeditions in the Middle East in order to identify these pollens. Of course he visited above all regions where the Shroud, if authentical, probably could have been, before it came to Europe. Until november 1982 Dr.Frei, assisted by prof.Morano (Vercelli) and by A.Mahler, president of the society of microscopy in Zurich, could identify 58 species of pollen. The result is convincing:

1. The majority of these plants grow in Jerusalem and its surroundings, namely 36 species, of which 14 species were found in Jerusalem exclusively.
2. 6 species were found exclusively in the region of Urfa, the old Edessa (South Anatolia). Edessa is important in the controversial history of the Shroud.
3. Moreover 9 other species were found as well in Jerusalem as in Urfa.
4. 14 species were found in Constantinople, one species exclusively there. Constantinople is a station very probable in the history of the Shroud.

The plants found in Jerusalem and in Edessa the most are highly specialized for deserts or for aride and saliferous ground. - Some of the plants, of which pollens are found on the Shroud, are spread around the Mediterrean Sea. These pollens of course prove nothing. Several of the Jerusalem resp. Urfa plants grow also in the Iran or in Arabia or in the Sahara, where similar conditions exist. - Decisive is the ensemble of plants which grow in Jerusalem resp. in Urfa (Edessa).



Within the zone historically probable, if the Shroud of Turin should be authentic (Middle East-Constantinople), plants of which pollens were detected on the Shroud were found in Jerusalem exclusively:

1, 5, 9, 17, 20, 23, 25, 26, 33, 34, 47, 55, 56, 58

Plants found in Urfa (Edessa) exclusively: 8, 21, 28, 31, 45, 50

Plants found as well in Jerusalem as in Urfa (Edessa), but not in Eurpean regions: 7, 10, 22, 24, 27, 37, 44, 46, 51

Exclusively found in Constantinople: 18

Plants which grow more or less in the whole Mediterranean zone: 3, 6, 13, 16, 29, 30, 36, 38, 39, 40, 41, 43, 48, 49, 54

Plants which grow also in the Iran and in the deserts of south Central Asia: 5, 7, 8, 10, 21, 22, 23, 25, 27, 29, 31, 33, 36, 37, 44, 46, 47, 50, 54.

Plants which grow also in Arabia: 5, 7, 20, 24, 47, 55, 56,

Plants which grow also in the Sahara: 20, 24, 47, 55, 56, 58

Synopsis of the pollens on the Turin Shroud found by Dr.Frei-Sulzer

1 Acacia albida Del. (Deserts)
Jer., frequ.: Jordan, Dead Sea // Africa
2 Alnus glutinosa Vill (Alder)
Eur., // Asia - Japan
3 Althaea officinalis L. (Mallow)
Jer.,Fr.,It.// Asia, widely cultivated
4 Amaranthus lividus DC (Amarant)
Eur.
5 Anabasis aphylla L (Deserts,haloph.)
Jer. // Iran, Arabia, Marocco
6 Anemone coronaria L.
Jer.,Mediterr.
7 Artemisia Herba alba Asso (Semi-deserts)
Jer.(frequ.), Urfa // Iran, Arabia, Medit.
8 Atraphaxis spinosa L (Stony fields)
Urfa // Iran, Turan
9 Bassia muricata Asch.
Jer.
10 Capparis specialis (Semi-deserts,rocks)
Jer., Urfa // Iran, Anatolia, East-Medit.
11 Carduus personata Jacq.
Frankr, South-West-Europe
12 Carpinus Betulus L.
Frkr, It. // Europe
13 Cedrus libanotica Lk.
Jer.,Const. // Medit., now also Europe
14 Cistus Creticus L.
Jer. // Medit.
15 Corylus avellana (Hazel)
Frkr, It., Konst. // Europe, West Asia
16 Cupressus sempervirens L.
Jer., Fr., It.,Konst.// Medit.
17 Echinops glaberrimus DC (Stony fields)
Jer., North Africa
18 Epimedium pubigerum DC
Const., Bulgaria, Turkey
19 Fagus silvatica (Beech)
Europe
20 Fagonia mollis Del.(Deserts)
Jer., frequ.: Jordan // Arabia, Sahara
21 Glaucium grandiflorum B+H
Jer., Urfa // Iran, Turan
22 Gundelia Tournefortii L (Haloph.)
Jer., Urfa // Iran, Turan
23 Haloxylon persicum Bg. (Deserts, Haloph.)
Jer., Iran, Turan
24 Haplophyllum tuberculatum J. (Deserts)
Jer., Urfa // Arabia, Sahara
25 Helianthemum vesicarium B.(Semi-deserts)
Jer. // Iran, Turan, North Africa
26 Hyoscamus aureus L. (rocks, ruins)
Jer.(frequ.), Urfa // Iran, Turan, Medit.
27 Hyoscamus reticulatus L.(Steppe)
Jer., Urfa // Iran, Turan
28 Ixolirion montantum Herb. (Steppe)
Jer., Urfa // Libanon, Syria
29 Juniperus oxycedrus L.
Jer., Const. // Iran, Medit.
30 Laurus nobilis L.(Laurel)
Jer.,It.,Const. // Medit.
31 Linum mucronatum B.(Chalk-steppe)
Jer., Urfa // Iran, Turan
32 Lythrum salicaria L.
Fr., It., Const. // Asia, Europe
33 Oligomeris subulata D.B.:Chalk-Sand-Des.
Jer. // Iran, North Africa
34 Onosma syriacum Labill (Rocks, ruins)
Jer (frequ.) // Iran,Syria,Libanon
35 Oryza sativa L.(rice)
It. // India, East Asia ...
36 Paliurus spina Christi Mill.
Jer., Const. // West Asia, Medit.
37 Peganum Harmala L. (Deserts)
Jer., Urfa // South West Asia, Medit.
38 Phylirea angustifolia L.
Jer. // Medit.
39 Pinus halepensis L.
Jer. // Medit.
40 Pistacia lentiscus L.
Jer. // Medit.
41 Pistacia vera L.
Jer. // Medit.
42 Platanus orientalis L.
Jer.,It.,Fr,Urfa,Const.//Balkan,Asia
43 Poterium spinosum L.(arid grounds)
Jer., Const. // Medit.
44 Prosopis farcta Macbr.
Jer., Dead Sea, Urfa // Iran, Turan
45 Prunus spartioides Spach.
Urfa
46 Pteranthus dichotomus Forsk.(Haloph.)
Jer., Urfa // Iran, Turan, Medit.
47 Reaumuria hirtella J+Sp (Haloph.)
Jer. // Iran, Turan, Arabia, Sahara
48 Ricinus communis L.(warm zones)
Jer., Urfa, It., Const.
49 Ridolfia segetum Moris
Jer., // Medit.
50 Roemeria hybrida DC (Steppe)
Jer., Urfa, Const. // Iran, Turan
51 Scabiosa prolifera L.(arid grounds)
Jer., Urfa // Turkey
52 Scirpus triquetus L.
Jer.,Const.,Fr.,It.// Asia,Africa,Eur.
53 Secale (Rey)
Fr., It. // Europe
54 Silene conoidea L.(Steppe)
Jer.,Urfa // Iran, Turan, Medit.
55 Suaeda aegyptiaca Zoh.(Deserts,Hal.)
Jer. // Arabia, Sahara
56 Tamarix nilotica Bunge (Haloph.)
Jer. // Arabia, Sahara
57 Taxus baccata L.
Fr., It., Const. // Europe, Asia
58 Zygophyllum dumosum Bois (Deserts)
Jer., Dead Sea // Sahara

Const. = Constantinople; Fr. = France; It. = Italy; Jer. = Jerusalem (and its environs)
Urfa (the old Edessa) and its environs (South Anatolia); Medit. = Mediterranean area;
Hal., Haloph. = Halophytes.

Iran, Turan Arabia, Africa

Underlined: The places or regions, where the pollens were found in the expeditions of Dr.Frei. Not underlined: Other zones, where the same plants occur too.

Annotations to the opposite map

A) The intention. The suppositions

1. The intention is to give an impression, as concrete as possible, of the geographical distribution of the plants, of which pollens were found on the Turin Shroud. Beginning in 1973 Dr.Max Frei on samples, took from the Shroud, detected a great number of pollens. The minority of these, all from European or Mediterranean plants, were known.

2. By medical and scientifical investigations the Turin Shroud already was proved as a real burial cloth of a crucified man.

Several circumstances - like traces of a crown of thorns, a side wound, the fact of the burial, the preservation of the Shroud - suggested, that he is Jesus.

If it should be so, the Shroud must have been first in Jerusalem. Some historical reasons suggested the way by Edessa, to-day Urfa, and Constantinople to France.

3. Therefore Dr.Frei undertook seven expeditions in these regions in different times of the year in order to identify the non-European pollens.

Until Decembre 1982 Dr.Frei, assisted by professor Morano (university of Vercelli) and A.Mahler, president of the Microscopical Society of Zurich, identified the pollens of 58 plants.

All these plants grow in France or Italy, or in the regions of Jerusalem, Urfa and Constantinople. The great majority was found in Jerusalem and its near environs.

Concerning the identification of the Shroud man Jerusalem is the most interesting place.

B) Comments to the opposite map

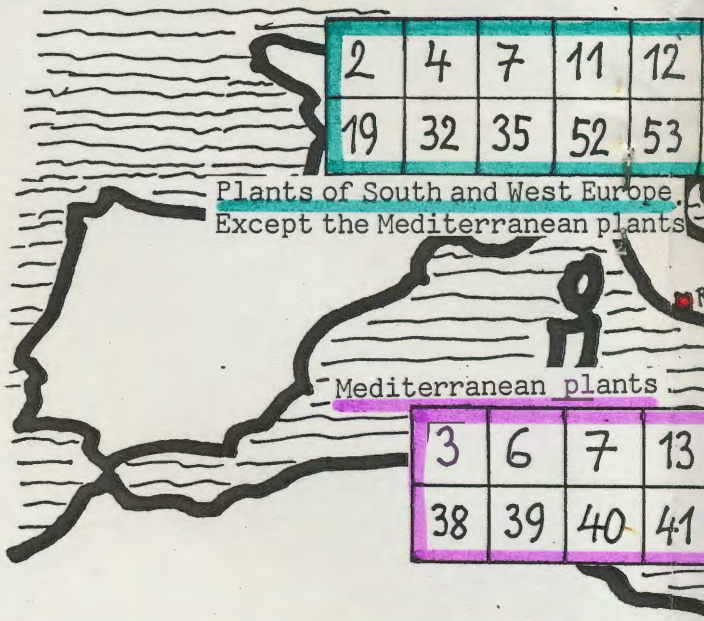
1. Obviously the various plants don't grow exclusively on the place, where pollens were found on the expeditions. On the opposite map the plants are registered in the different zones, where they occur mainly. The numbers correspond to the alphabetic index.

2. The Jerusalem table, on account of its peculiar importance, is disposed in another manner: in order to illustrate the extremely manifold relations of the flora of Palestine, situated on the land-bridge between Asia and Africa, moreover connected with Europe by the Mediterranean Sea.

Especially the geographical condition of Jerusalem must be considered: inside of the desert of Juda, adjoining arid and saliferous grounds, but also exposed to the winds from fertil zones along the Mediterranean coast.

Therefore this table is arranged corresponding the groups of plants, which occur also in Europe, in the Mediterranean area, the South Anatolia, the Iran and Turan, Arabia, Sahara and other regions of Africa.

This survey cannot be complete, but I hope, it is sufficient for a well-founded judgment.



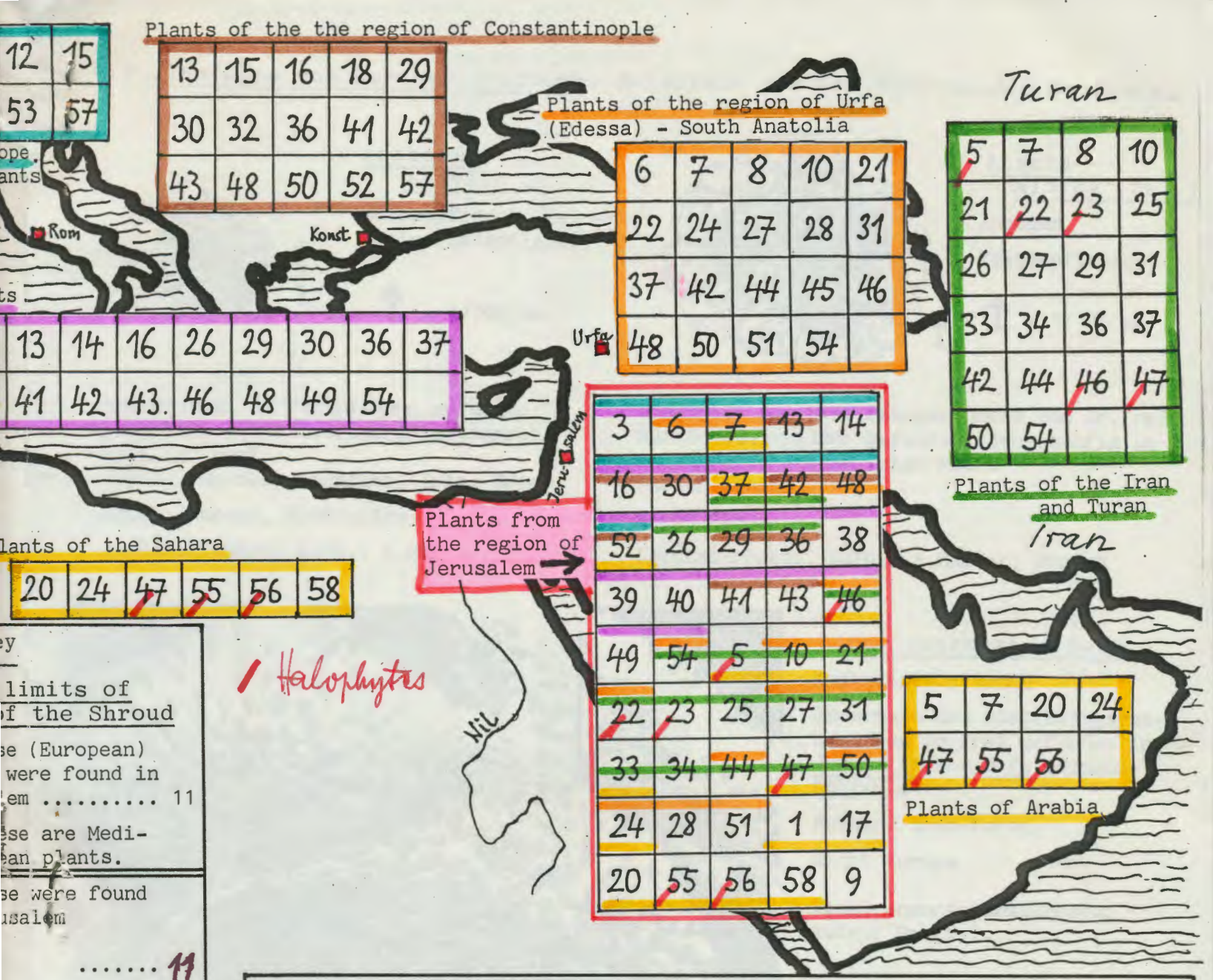
C) Statistical survey

1) Concerning plants within the limi
the probable historical way of th

a) European plants, of which pollens were found on the Shroud... 21	Of these (Eu plants were Jerusalem .. All these ar terranean pl
b) Plants, of which pollens are found, from the region of Constantinople ..... 15 Of these plants within the probable limits of the history of the Shroud (if authentic) was found in Constantinople exclusively: Nr. 18 Epimedium pub.	Of these wer in Jerusalem Most of thes occur also i diterranean and in Europ
c) Plants, of which pollens are found on the Shroud, from the region of Urfa ..... 19 Of these plants within he probable historical limits were found in Urfa exclusively: Nr. 8 and 45.	Of these pla found in Jer Most of thes occur also i Iran/Turan, the Mediterr area, some i African regi

2) Concerning plants, of which polle
tected on the Shroud, which don't
Europe, Constantinople, Urfa, but
found in the region of Jerusalem:

From these plants grow in Iran/Turan ....
Arabia ....
Sahara ....
Africa, except Arabia and S



ey

limits of
of the Shroud

se (European)
were found in
lem 11

ese are Medi-
ean plants.

se were found
usalem

..... 11

these plants
also in the Me-
anean area or/
Europe.

se plants were
in Jerusalem.. 17

these plants
also in the
iran, some in
diterranean
some in diverse
regions.

pollens are de-
lon't occur in
but were
lem:

..... 23
..... 7
..... 6

ept
and Sahara .. 7

What can be proved by the pollen findings?

1) Negatively: It must be conceded, that by the pollens alone cannot be proved accurate places like the town of Jerusalem or Edessa.

2) Without any doubt the to-day Turin Shroud was in the Levantine area, before it came to Europe, where it is documented since the 14.century.

Generally the pollens of a plant are spread in a relatively small area. There are no winds strong and constant enough, by which pollens exceptionally could have been transported from Palestine to France or Italy. The typical Mediterranean winds, like the sirocco or the Etesian winds, blow in the contrary directions.

3) Especially the Shroud must have been in the region of Jerusalem, because the totality of plants, of which pollens were found on the Shroud, is characteristic for that region between Asia, Africa and the Mediterranean Sea.

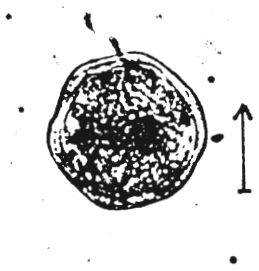
The Hebrew University of Tel Aviv by sediment layers has proved, that all the plants, of which pollens were found on the Shroud, growed in Palestine already 2000 years ago.

4) Moreover the totality of plants, of which pollens were found on the Shroud, agree very well with the probable stations of his historical way, if it should be authentic. At least there is not any contradiction.

5) Concluding: In the context of the many other circumstances the pollens, found on the Shroud, are an important contribution regarding the identification of the crucified man of the Shroud.

15.4.1983 W. Bulst

Pollenfunde vom Turiner Grabtuch. Beispiele aus den Forschungen Dr.Freis.



Anabasis aphylla L.

Wüstenpflanze, Halophyte (Salzpflanze)

↕ = 1/100 mm

Von Dr.Frei in Jerusalem gefunden; innerhalb des historischen Bezusgrahmens nur dort.
Ferner: Marokko, Arabien, Iran, Krim.

Nicht: Europa, Kleinasien

Lichtmikroskop. Aufn.: A.Mahler, Zürch

Acacia albida (Del.)

Anabaum.

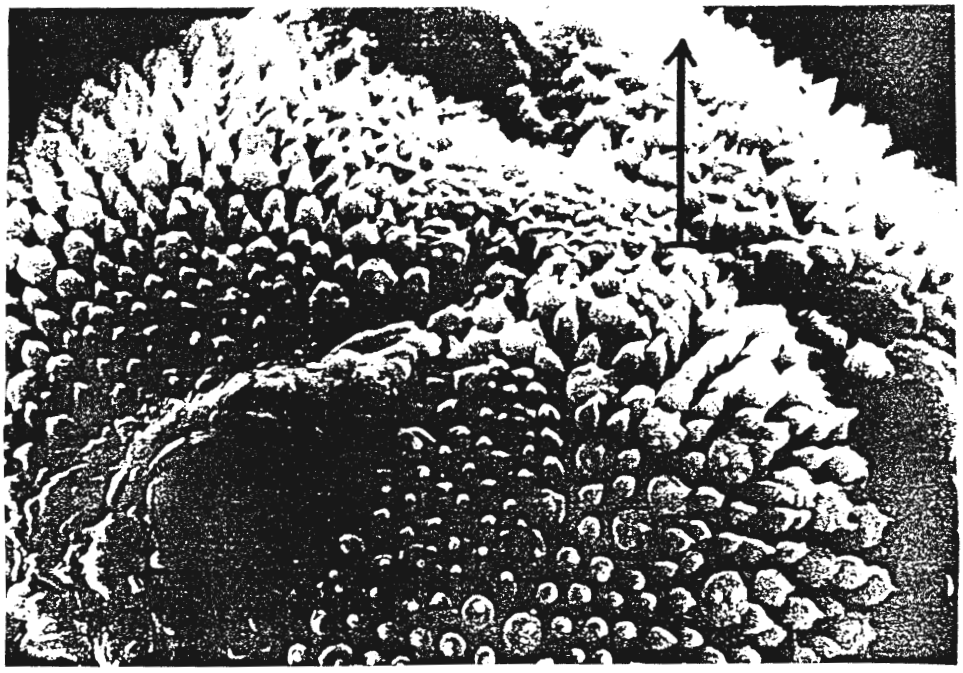
Wüstenpflanze

↕ = 1/100 mm

Innerhalb des hist.Bezugsrahmens von Dr.Frei nur in Jerusalem gefunden. Sehr häufig im Jordangraben und am Toten Meer.
Ferner Afrika

Nicht Europa

Lichtmikroskop. Aufn.: A.Mahler, Zürich



Linum mucronatum Bert.

Kalksteppenpflanze

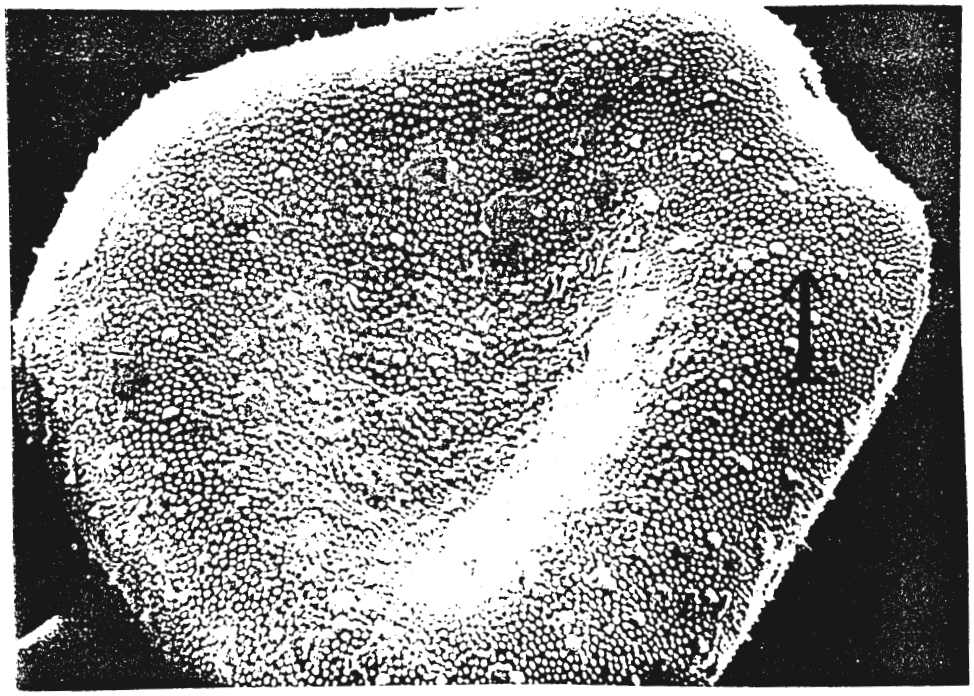
Innerhalb des hist.Bezugsrahmens von Dr.Frei gefunden in Jerusalem und Urfa (Südanatolien).

Ferner: Iran-Turan.

Nicht Europa

Elektronenrastermikroskop
Aufn.: Dr.Frei.

↕ = 1/100 mm



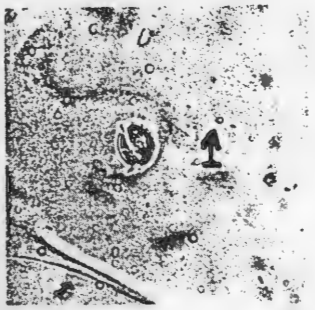
Scabiosa prolifera

Nur in Trockengebieten.

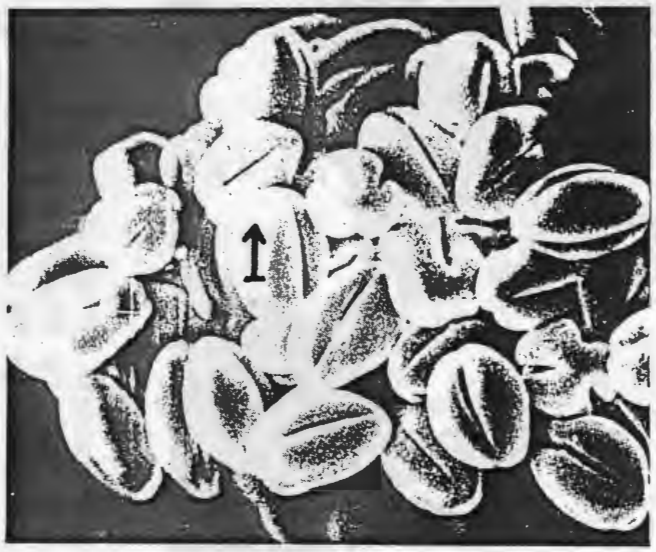
Von Dr.Frei gefunden in:
Jerusalem und Urfa (Südanatolien).
Palästina bis Türkei.
Nicht Europa.

Elektronenrastermikroskop
Aufn.: Prof.Mornano, Vercelli

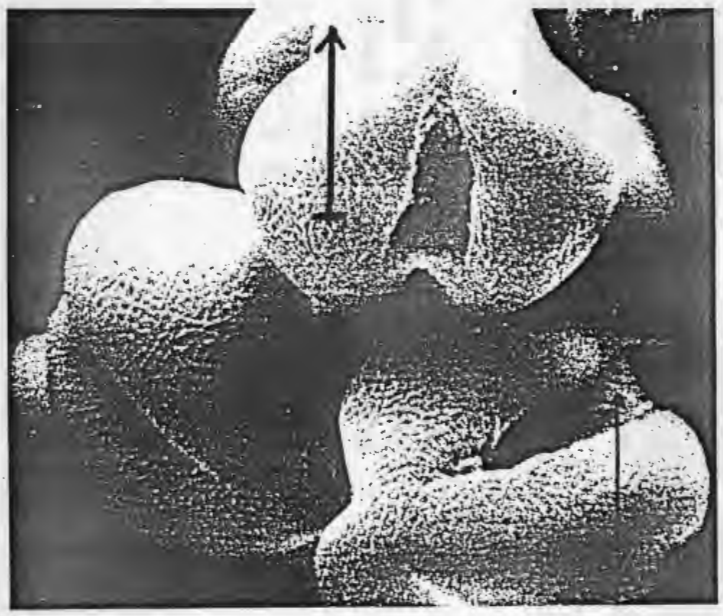
Aus:
La Sindone e la Scienza.
Bilanci e programmi.
II.Congresso Internazionale
di Sindonologia. Turin 1978



480 : 1

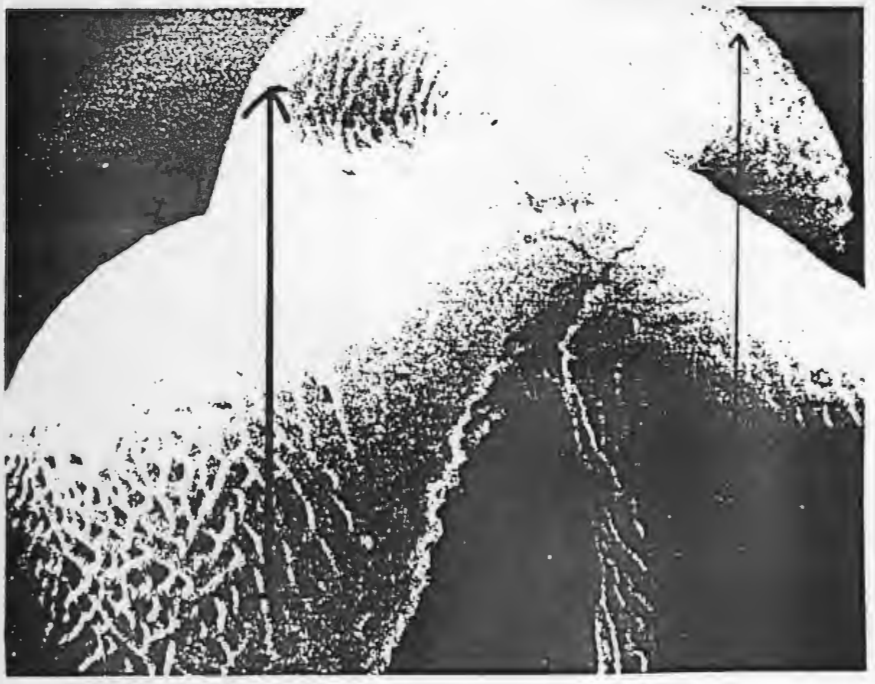


900 : 1



3500 : 1

8800 : 1



Epimedium pubigerum DC

Innerhalb des historisch in Betracht kommenden Rahmens nur in Konstantinopel vorkommend (nicht West- und Südeuropa, Palästina, Anatolien). (Sonst noch: Bulgarien)

Bild 1: Lichtmikroskop

Bild 2-4 Elektronenrastermikroskop

Aufn.: Dr.Frei

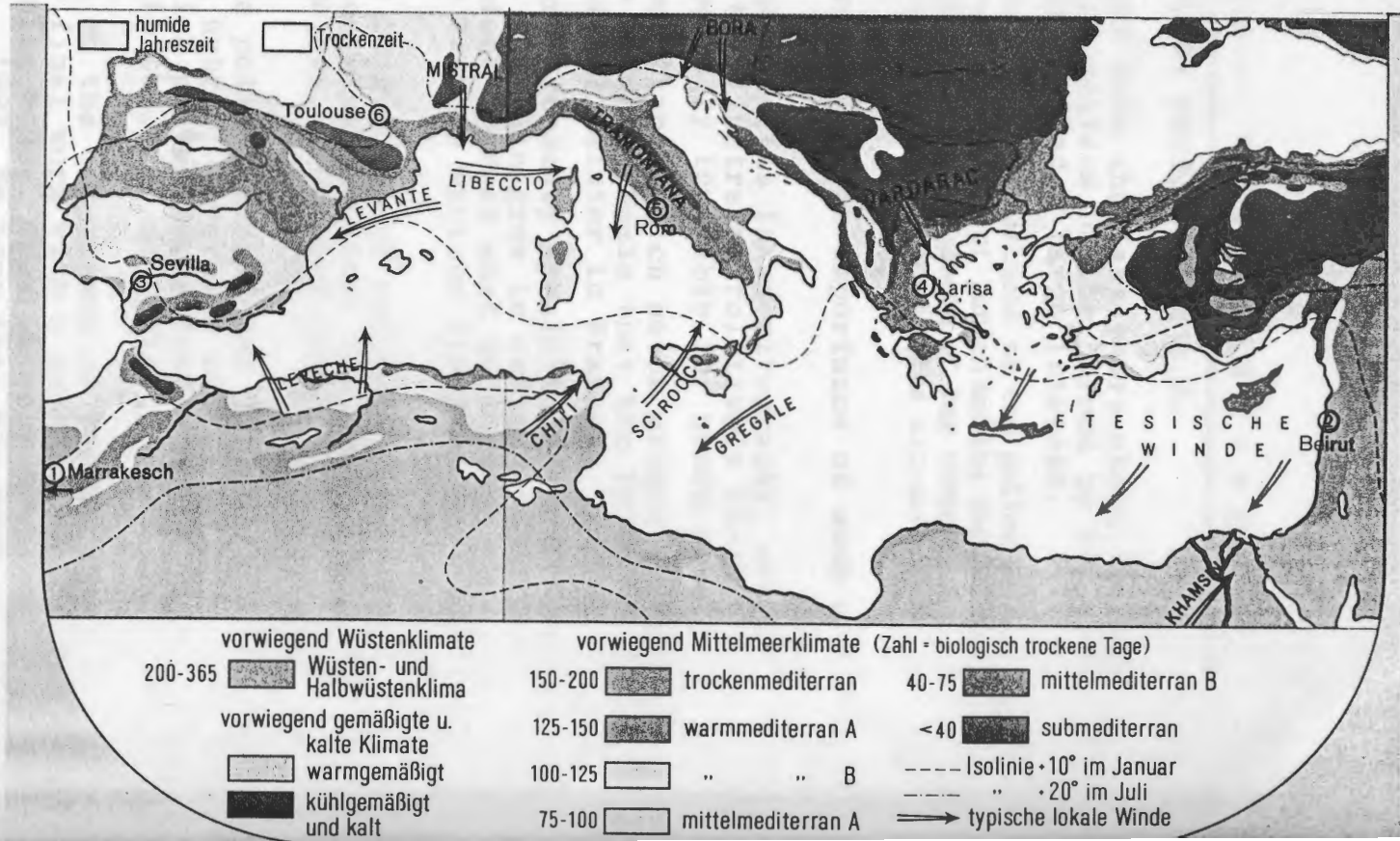
Aus: La Sindone e la Scienza. Bilanci e programmi. II.Congresso Internazionale di Sindonologia

↑↑ jeweils = 1/100 mm

7/3.83 W Bulst

Windverhältnisse im Mittelmeerraum:

Für die Diskussion über die Pollenfunde auf dem Turiner Grabtuch ist wesentlich, daß es keine ins Gewicht fallende Winde aus der Levante in Richtung Italien gibt.



Eine Eigentümlichkeit des Mittelmeerklimas, die sich aus der Vielfalt der Klimate und dem jahreszeitlichen Wechsel erklärt, ist die große Zahl lokaler Winde, die oft mehr als andere klimat. Erscheinungen das Wetter prägen.

Aus der Wüste Afrikas wehen trockene heiße Winde, die oft staubbeladen sind: der Leveche, der Chili, der Scirocco und der Khamsin.

Von Norden strömen meist trockene kalte Winde aus Zentraleuropa und von den Alpen in den Mittelmeerraum: der Mistral, die Bora, der Vardarac, die Tramontana, der Gregale, der Libeccio und der Levante, der allerdings Regen an die Südost-Küste Spaniens bringt.

Im östl. Mittelmeer wehen mit großer Beständigkeit ab Mitte Mai bis Mitte Oktober von Nordosten die Etesienwinde. Da sie in früheren Zeiten für die Handelssegelschiffe aus der Ägäis von großer Bedeutung waren, wurde lange Zeit das Mittelmeerklima als Etesienklima bezeichnet.

The pollens on the Turin Shroud

A comprehensive synopsis by Prof.W.Bulst S.J.

Many and important investigations are made the last years about the Turin Shroud. Especially the finding of pollens on the Shroud by the criminalist Dr.Max Frei-Sulzer (Zurich) excited a large interest.

M.Frei, Dr. of botany, has founded the scientific department of the police of Zurich. He was lecturer of criminology on the University of Zurich and the German Police Academy, president of the UN-commisssion after the death of Dag Hammarsköld. He has initiated new scientific methods into the criminology. The extraordinary interest which found the pollen findings has good reasons:

1) The finding of pollens on the Shroud and the importance of such a finding was totally inexpected.

2) Unlike other scientific investigations (as in spectrography, microchemistry) the pollen findings can be illustrated relatively easily and they reveal a wonderful world normally invisible for human eyes.

3) The finding of pollens of numerous plants which never growed in Europe exclude anew and evidently the old hypothesis that the Turin Shroud would be fabricated by a medieval painter in France.

4) Moreover many of these plants are extremely specialized, like halophytes and plants of desert. They only can grow in certain regions and under special conditions. Therefore Dr.Frei must undertake seven extensive expeditions in the Middle East in various times of the year to identify the pollens.

5) Till to-day there are identified 58 species of pollens of very varies plants. They allow important conclusions about the historical way of the Shroud before the 14. century, from what time it is documented in Europe.

6) The Shroud cannot be dated by the pollens alone, but we know by sediment investigations made by the Hebrew University of Tel Aviv, that all the Palestine plants of which pollens were found on the Shroud growed in Palestine already in the time of Christ.

Dr.Frei reported about his findings on the congresses of Turin 1978 and Bologna 1981. He was preparing a final work with a complete illustration atlas for an U.S.A. publishing house. Unexpectedly came the sad news that he deceased januar 14., 1983. We hope that his work will be completed by a competent scientist. But it is difficult to say when it will come out.

Until then this comprehensive synopsis can be considered as a authorized information about the pollen findings and the importance of them for Shroud discussion. Many years I had a very friendly contact with Dr.Frei. We interchanged our ideas, investigations and arguments: from his side scientific arguments from my side historical and many others which I had learnt by my collaboration in the Shroud discussion in the course of thirty years. Some weeks before his death in his last letter he confirmed expressively the correctness of this synopsis and the conclusions I draw.

Enclosed: The letter of Dr.Frei from Nov.7.,1982

Darmstadt, 12.2.1983 W.Bulst SJ

Revised 15.4.1983 W.Bulst