



## Mosaics In Situ Project

# ILLUSTRATED GLOSSARY

Definitions of terms used for  
the graphic documentation of in situ floor mosaics

Developed by the Getty Conservation Institute and  
the Israel Antiquities Authority

December 2003



רשות העתיקות



תחום שימור

## INTRODUCTION

The present glossary is the result of collaborative work between the Getty Conservation Institute and the Israel Antiquities Authority as part of the research component of the Mosaics In Situ Project and was subsequently revised during the course of technician training in Tunisia in collaboration with the Institut National du Patrimoine.

The objective of this glossary is to establish a common and unambiguous vocabulary for the recording of the conditions of and interventions on in situ floor mosaics. The terms in the glossary are divided into CURRENT CONDITION, defined in written form and illustrated, and CURRENT INTERVENTION, only defined in written form.

This mosaic glossary is by no means comprehensive and must be considered a "base" document that could be adapted and added to as necessary. According to the specific requirements of the conservation program, the terms and definitions provided can be utilized as they are or can be tailored to the work at hand.

- Specific terms can be subdivided when more detail is required. For example, fills can be subdivided in modern fills and ancient repairs.
- Terms can be grouped either when conditions always occur together or when less detail is required. For example, deteriorated tesserae can be used to describe different conditions such as exfoliated, fractured, and pitted tesserae. Another example is deteriorated border, which can comprise both detached tesserae and the deteriorated preparatory layer located at the edge of the tessellatum.
- Alternative terms can be used. For example loss can be used instead of lacuna.
- New terms can be created to describe a condition specific to a mosaic and not included in this glossary.

The glossary has been developed to achieve objective recording. Therefore the written descriptions are formulated as much as possible with no reference to the cause of damage, but only to the visual evidence observed on site.

Some of the written definitions have been borrowed and/or adapted as necessary from existing glossaries for the conservation of plaster, stone, wall paintings, and mosaics.

# MOSAIC STRATIGRAPHY



The following stratigraphy is adapted from ancient literary sources. It is to be used only as a general reference in this document. In practice, all mosaics do not necessarily display this stratigraphy.

A mosaic can be built on natural ground made of soil or rock, or on top of a previous pavement. The mosaic itself is composed of a variety of foundation or preparatory layers and a layer of tesserae.

**1 - Statumen** - First preparatory layer which is made of large stones laid on the ground, previously leveled and rammed. This layer only exists if the mosaic has been constructed on a natural soil.

**2 - Rudus** - Second preparatory layer which is spread over the statumen. This layer is made of a lime mortar with large aggregates.

**3 - Nucleus** - Third preparatory layer which is spread over the rudus in a thinner layer. The nucleus is made of a mortar with fine aggregates.

**4 - Bedding layer** - Fourth preparatory layer of mortar which is very rich in lime, and thinly applied in small sections over the nucleus. Tesserae are inserted in this layer before the mortar sets.

**5 - Tessellatum** - Layer which constitutes the mosaic surface and is composed of tesserae and mortar filling the interstices between them.

# LIST OF THE TERMS USED

## 1. CURRENT CONDITON

### 1.1. *Previous Interventions*

- Edging repair
- Fill
- Fill between tesserae
- Treated surface
- Re-laid area
- Joints between re-laid sections
- Metallic elements

### 1.2. *Structural Conditions*

- Crack
- Lacuna
- Cavity
- Detached tesserae
- Deteriorated preparatory layers
- Detachment between mosaic layers
- Depression
- Rise / Bulge
- Plant intrusion
- Deteriorated repair mortar

### 1.3. *Surface Conditions*

- Deteriorated tesserae
  - Disaggregated tesserae
  - Eroded tesserae
  - Exfoliated tesserae
  - Fractured tesserae
  - Pitted tesserae
- Deposit
- Efflorescence
- Incrustation
- Microbiological organisms
- Color alteration

## 2. CURRENT INTERVENTION (in alphabetical order)

- Cleaning
- Consolidation of preparatory layers
- Consolidation of tesserae
- Edging repair
- Facing
- Grouting
- Filling
- Filling between tesserae
- Removal of previous repairs
- Resetting of tesserae
- Treatment of higher plants
- Treatment of microbiological organisms

### EDGING REPAIR

Mortar reinforcing a mosaic border or edge.

Within a single mosaic, edging repairs can be classified according to their color, surface texture and material utilized.



### FILL

Area where the original tessellatum is missing and the resulting lacuna has been filled, either in antiquity or in the modern period.

Within a single mosaic, fills can be classified according to their date, color, surface texture and material utilized; e.g. mortar alone or mortar with various materials bedded in it, such as tesserae, larger stone or ceramic fragments.

Fills using tesserae or attempting to indicate the design with other materials may be termed reintegration.



### FILL BETWEEN TESSERAE

Area where the original mortar in the interstices between the tesserae has been replaced.



## CURRENT CONDITION - Previous Interventions

### TREATED SURFACE

Area of the tessellatum where material has been applied intentionally to consolidate, protect or enhance the color of the mosaic surface, such as wax, chemical consolidant.



### RE-LAID AREA

Part of the tessellatum which has been detached from its preparatory layers, in sections or in one piece, and re-laid in situ on a new support.



### JOINTS BETWEEN RE-LAID SECTIONS

Spaces between the sections of a mosaic that has been cut, detached, and re-laid in situ.

The cuts may or may not follow the design of the mosaic. Joints may have been left empty or filled with a material (mortar, tesserae, etc.) to restore the continuity of the mosaic surface.



### METALLIC ELEMENTS

Structural reinforcements belonging to the new support of a re-laid mosaic.



## CURRENT CONDITION - Structural Conditions

### CRACK

Linear breaks visible at the surface of the mosaic, which may also penetrate into its lower layers.

The word fracture is also commonly used to describe this condition.

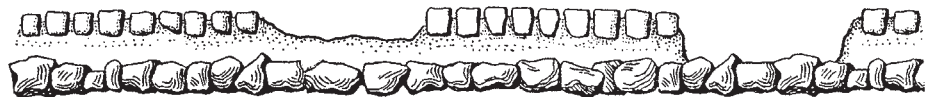
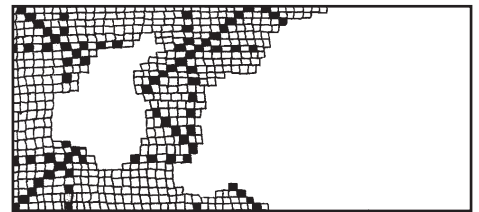


### LACUNA

Area of the mosaic where the tessellatum is missing.

Within a single mosaic, lacunae can be classified according to their depth; for example lacuna of tessellatum, bedding layer or nucleus.

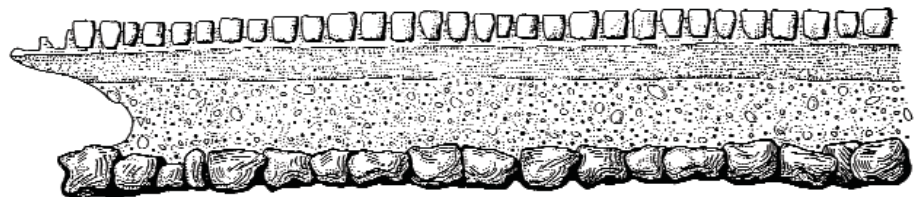
The word loss is also commonly used to describe this condition.



### CAVITY

Area of sub-surface loss.

Cavities can be due to water erosion or animals, including insects, burrowing.



## CURRENT CONDITION - Structural Conditions

### DETACHED TESSERAE

Tesserae which are still in their original location but have lost adhesion to the bedding layer and, as a result, move when lightly touched.



### DETERIORATED PREPARATORY LAYERS

Loss of physical integrity within one or more layers of mortar supporting the tessellatum as manifested by cracks, disaggregation, erosion, etc.



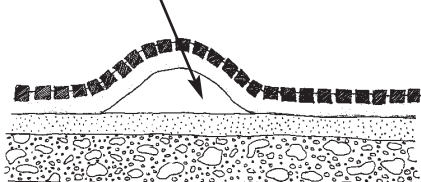
### DETACHMENT BETWEEN MOSAIC LAYERS

Lack of adhesion between two layers of the mosaic.

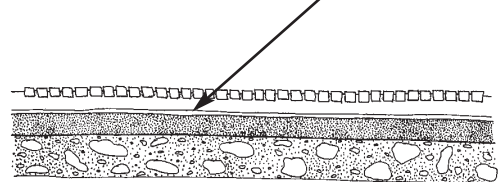
A detachment is not always visible and can be detected by the corresponding hollow sound produced when the surface of the mosaic is tapped.



Detachment with void



Detachment without void

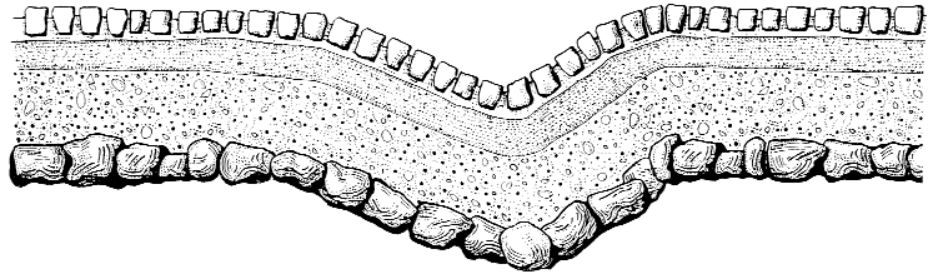




## CURRENT CONDITION - Structural Conditions

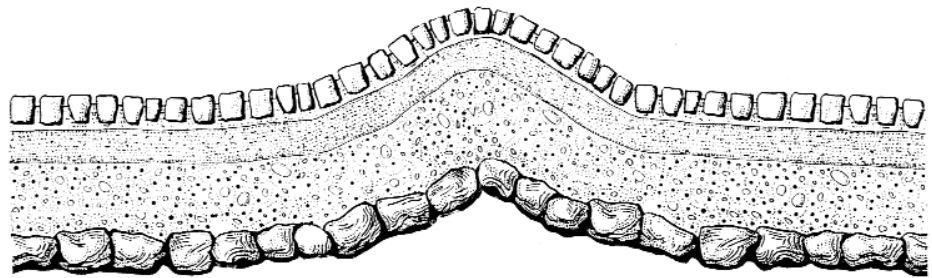
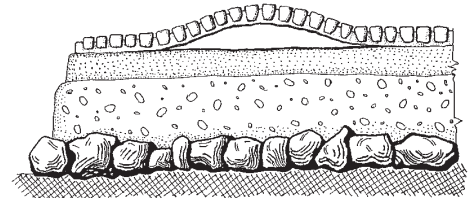
### DEPRESSION

Downward deformation of the mosaic below its original surface level.



### RISE / BULGE

Upward deformation of the mosaic above its original surface level.



## CURRENT CONDITION - Structural Conditions

### PLANT INTRUSION

Vegetation, such as weeds, grasses, bushes and trees, and their associated roots which are present under, within or on top of the mosaic.



### DETERIORATED REPAIR MORTAR

Loss of physical integrity of edging repairs or mortar fills as manifested by cracks, disaggregation, erosion, etc.



### DETERIORATED TESSERAE

Tesserae which have suffered a loss of material or of physical integrity.

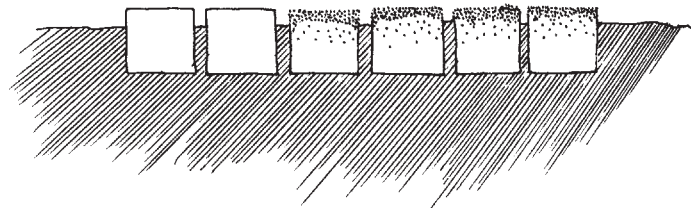
Deteriorated tesserae can be described more precisely as Disaggregated, Eroded, Exfoliated, Fractured, Pitted, etc.



### SUBCATEGORIES OF DETERIORATED TESSERAE (in alphabetical order)

#### DISAGGREGATED TESSERAE

Tesserae displaying loss of cohesion of their surfaces, which have disintegrated into powder or small grains.



#### ERODED TESSERAE

Tesserae displaying a worn or abraded surface.



## CURRENT CONDITION - Surface Conditions

### EXFOLIATED TESSERAE

Tesserae displaying detachment or loss of layers, parallel or perpendicular to the mosaic surface.



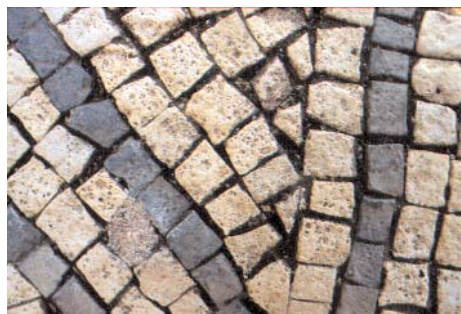
### FRACTURED TESSERAE

Tesserae displaying linear breaks or network of breaks through their matrix.



### PITTED TESSERAE

Tesserae displaying numerous small, rounded cavities on their surface.



## CURRENT CONDITION - Surface Conditions

### DEPOSIT

Accumulation of extraneous material of various types, such as soil, sand, animal droppings and vegetal materials, of variable thickness, and poor adhesion to the mosaic surface.



### EFFLORESCENCE

Formation at the mosaic surface of a loosely adhering substance, generally white and crystalline, powder-like or whisker-like in appearance.



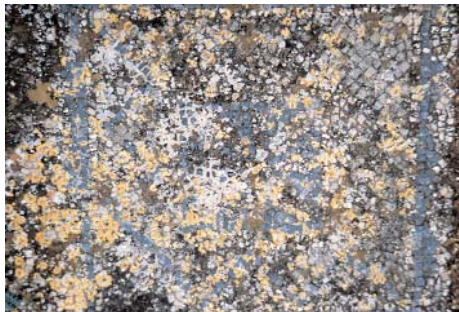
### INCRUSTATION

Mineral crust formation adhering to the mosaic surface, often hard and compact, and of variable thickness and extent.



### MICROBIOLOGICAL ORGANISMS

Small organisms of various colors and forms, living or dead, such as fungi, algae, lichens, mosses, or bacteria, which adhere to the mosaic surface.



### COLOR ALTERATION

Alteration of the mosaic surface characterized by a localized change in color.

Color alterations may be termed more precisely metallic stains, fire damage, graffiti, etc.



### **CLEANING**

Removal of extraneous substances from the mosaic surface, with or without water, and with tools such as sponges, brushes, scalpels, wooden tools, dental instruments, etc.

### **CONSOLIDATION OF PREPARATORY LAYERS**

Application of a material (natural or synthetic product) to restore cohesion to preparatory layers.

### **CONSOLIDATION OF TESSERAE**

Application of material (natural or synthetic product) to restore cohesion to individual tesserae.

### **EDGING REPAIR**

Application of a mortar along the edges of a mosaic.

### **FACING**

Application of gauze or similar material on the mosaic surface with an adhesive for its temporary protection during treatment.

### **GROUTING**

Introduction of a fluid binder-aggregate mixture into a void between preparatory layers.

### **FILLING**

Application of a mortar and/or other materials in an area of loss of the mosaic surface.

### **FILLING BETWEEN TESSERAE**

Application of a mortar in the interstices between the tesserae.

### **REMOVAL OF PREVIOUS REPAIRS**

Elimination of previous interventions, such as edging repairs and fills.

### **RESETTING OF TESSERAE**

Replacement of detached tesserae in their original position using an adhesive mortar.

### **TREATMENT OF HIGHER PLANTS**

Reduction or removal of trees and plants by mechanical or chemical means.

### **TREATMENT OF MICRO-BIOLOGICAL ORGANISMS**

Reduction or removal of microbiological organisms by mechanical or chemical means.

# CREDITS

## TEXT

Text compiled by Elsa Bourguignon, Jacques Neguer, Francesca Piqué, Thomas Roby; reviewed by Livia Alberti, Evelyne Chantriaux, Martha Demas, Jerry Podany, John Stewart, Jeanne-Marie Teutonic.

## IMAGES

Information is given in the following order: Site, country. Mosaic name (if available). Date. Photographer name © Copyright.

**Cover** Horvat Minnim, Israel. September 1998. Frank Long © J. Paul Getty Trust

### Page 3

Stratigraphy drawing by Haim Kapschitz, modified by Elsa Bourguignon © J. Paul Getty Trust

### Page 5

#### Edging repair

*Left photo:* Paphos, Cyprus. January 1999. Francesca Piqué © J. Paul Getty Trust

*Right photo:* Masada, Israel. West palace mosaic. August 1997. Francesca Piqué © J. Paul Getty Trust

#### Fill

*Top left photo:* Bardo Museum, Tunis, Tunisia. May 1997. Gaetano Palumbo © J. Paul Getty Trust

*Top right photo:* Utica, Tunisia. Maison de la Cascade, room XX1a. November 2001. Elsa Bourguignon © J. Paul Getty Trust

*Bottom left photo:* Caesarea, Israel. Francesca Piqué © J. P. Getty Trust

*Bottom right photo:* Vatican. Reintegrated mosaic in Vatican Museum. November 2003. Francesca Piqué © J. Paul Getty Trust

#### Fill between tesserae

*Left photo:* Thuburbo Majus, Tunisia. Maison de Neptune, room XIV. May 2002. Elsa Bourguignon © J. Paul Getty Trust

*Right photo:* Caesarea, Israel. May 2000. Gaetano Palumbo © J. Paul Getty Trust

*Bottom drawing:* Drawing by Haim Kapschitz, modified by Elsa Bourguignon © J. Paul Getty Trust

### Page 6

#### Treated Surface

*Left photo:* Bardo Museum, Tunis, Tunisia. May 2003. Thomas Roby © J. Paul Getty Trust

*Right photo:* Bardo Museum, Tunis, Tunisia. May 2003. Thomas Roby © J. Paul Getty Trust

#### Re-laid area

*Left photo:* Jericho, Israel. Hisham Palace. November 1999. Francesca Piqué © J. Paul Getty Trust

*Right photo:* Utica, Tunisia. Maison de la Cascade, room XVIII. November 2001. Elsa Bourguignon © J. Paul Getty Trust

#### Joints between re-laid panels

*Left photo:* Beth Shean, Israel. Kyria Maria Church. April 1997. Martha Demas © J. Paul Getty Trust

*Right photo:* Kourion, Cyprus. June 2002. Elsa Bourguignon © J. Paul Getty Trust

#### Metallic elements

*Left photo:* Byblos, Lebanon. 1998. Thomas Roby © Thomas Roby

*Right photo:* Israel. April 1998. Francesca Piqué © J. Paul Getty Trust

### Page 7

#### Crack

*Left photo:* Horvat Minnim, Israel. Mosaic no.1. September 1998. Frank Long © J. Paul Getty Trust

*Right photo:* Horvat Minnim, Israel. Mosaic no.4. September 1998. Frank Long © J. Paul Getty Trust

#### Lacuna

*Left photo:* Utica, Tunisia. Maison des Chapiteaux Historiés, room V. November 2001. Elsa Bourguignon © J. Paul Getty Trust

*Right photo:* Horvat Minnim, Israel. Mosaic no.1, west side. September 1998. Frank Long © J. Paul Getty Trust

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*Bottom drawing:* Drawing by Haim Kapschitz © Israel Antiquity Authority

#### Cavity

*Left photo:* Utica, Tunisia. 2001. Bettina Lucherini © J. Paul Getty Trust

*Right photo:* Thuburbo Majus, Tunisia. Maison de Neptune, peristyle. June 2002. Thomas Roby © J. Paul Getty Trust

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### Page 8

#### Detached tesserae

*Left photo:* Horvat Minnim, Israel. September 1998. Frank Long © J. Paul Getty Trust

*Right photo:* Ma'ale Adumim, Israel. Martyrius monastery. August 1997. Francesca Piqué © J. Paul Getty Trust

*Bottom drawing:* Drawing by Haim Kapschitz © Israel Antiquity Authority

#### Deteriorated preparatory layers

*Left photo:* Nirim, Israel. Ma'on synagogue mosaic. August 1997. Francesca Piqué © J. Paul Getty Trust

*Right photo:* Susiya, Israel. Synagogue, northwest corner mosaic. August 1997. Francesca Piqué © J. Paul Getty Trust

#### Detachment between mosaic layers

*Left photo:* Beth Shean, Israel. November 1999. Francesca Piqué © J. Paul Getty Trust

*Right photo:* Horvat Minnim, Israel. Mosaic no.1. September 1998. Frank Long © J. Paul Getty Trust

*Left drawing:* Drawing by Bettina Lucherini © J. Paul Getty Trust

*Right drawing:* Drawing by Bettina Lucherini © J. Paul Getty Trust



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### Depression

*Left photo:* Caesarea, Israel. November 1999. Francesca Piqué © J. Paul Getty Trust

*Right photo:* Zippori, Israel. Mosaic of the Nile. 1998. Francesca Piqué © J. Paul Getty Trust

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### Rise / Bulge

*Left photo:* Beth Shean, Israel. November 1999. Francesca Piqué © J. Paul Getty Trust

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### Plant intrusion

*Top left photo:* Caesarea, Israel. November 1999. Francesca Piqué © J. Paul Getty Trust

*Top right photo:* Cosa, Italy. 1998. Thomas Roby © Thomas Roby

*Bottom left photo:* Beth Shean, Israel. November 1999. Francesca Piqué © J. Paul Getty Trust

*Bottom right photo:* Horvat Minnim, Israel. August 1997. Francesca Piqué © J. Paul Getty Trust

### Deteriorated repair mortar

*Left photo:* Utica, Tunisia. Maison de la Cascade, room XII. November 2001. Elsa Bourguignon © J. Paul Getty Trust

*Right photo:* Horvat Minnim, Israel, Mosaic no.1. September 1998. Frank Long © J. Paul Getty Trust

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### Deteriorated tesserae

*Left photo:* Caesarea, Israel. Francesca Piqué © J. Paul Getty Trust

*Right photo:* Susiya, Israel. Synagogue mosaic. August 1997. Francesca Piqué © J. Paul Getty Trust

### Disaggregated tesserae

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*Right photo:* Caesarea, Israel. Francesca Piqué. © J. Paul Getty Trust

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### Eroded tesserae

*Left photo:* Thuburbo Majus, Tunisia. Maison de Neptune, annexe. May 2003. Elsa Bourguignon © J. Paul Getty Trust

*Right photo:* Caesarea, Israel. January 1999. Francesca Piqué © J. Paul Getty Trust

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### Exfoliated tesserae

*Left photo:* Caesarea, Israel. November 1999. Francesca Piqué © J. P. Getty Trust

*Right photo:* Beth Shean, Israel. Kyria Maria monastery, northwest corner of mosaic, west of large mosaic. August 1997. Francesca Piqué © J. Paul Getty Trust

*Bottom drawing:* Drawing by Haim Kapschitz © Israel Antiquity Authority

### Fractured tesserae

*Left photo:* Paphos, Cyprus. June 2002. Elsa Bourguignon © J. Paul Getty Trust

*Right photo:* Caesarea, Israel. April 1999. Cynthia Godlewski © J. Paul Getty Trust

### Pitted tesserae

*Left photo:* Horvat Minnim, Israel. Mosaic no.1. September 1998. Frank Long © J. Paul Getty Trust

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### Deposit

*Left photo:* Caesarea, Israel. April 1999. Cynthia Godlewski © J. Paul Getty Trust

*Right photo:* Beth Shean, Israel. Kyria Maria. May 2000. Gaetano Palumbo © J. Paul Getty Trust

### Efflorescence

*Left photo:* Paphos, Cyprus. Birth of Achilles mosaic. January 1999. Francesca Piqué © J. Paul Getty Trust

*Right photo:* Paphos, Cyprus. Birth of Achilles mosaic. January 1999. Francesca Piqué © J. Paul Getty Trust

### Incrustation

*Left photo:* Paphos, Cyprus. January 1999. Francesca Piqué © J. Paul Getty Trust

*Right photo:* Beth Shean, Israel. Tel Iztaba. May 2000. Gaetano Palumbo © J. Paul Getty Trust

### Microbiological organisms

*Left photo:* Carthage, Tunisia. November 2000. Livia Alberti © Livia Alberti

*Right photo:* Paphos, Cyprus. January 1999. Francesca Piqué © J. Paul Getty Trust

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### Color alteration

*Left photo:* Kelibia, Tunisia. May 2003. Elsa Bourguignon © J. Paul Getty Trust

*Right photo:* Nahariya, Israel. Bronze stains on mosaic from fire in church. August 1997. Francesca Piqué © J. Paul Getty Trust



### The Getty Conservation Institute

1200 Getty Center Drive, Suite 700

Los Angeles, CA 90049-1684

Tel 310 440 7325

Fax 310 440 7702

[gciweb@getty.edu](mailto:gciweb@getty.edu)

[www.getty.edu](http://www.getty.edu)