ARTIST'S NOTE

The Return of Images: Photographic Inquiries into the Interaction of Light

Edgar Lissel

ABSTRACT

Edgar Lissel has been using the camera obscura for more than 10 years. He converted a transporter into a mobile pinhole camera and transformed living quarters and museum displays into walk-in pinhole cameras. Since 1999, Lissel has been working with bacteria, using their phototropic properties to produce his images. The bacteria move out of the shadow into the light. In the photographic installations *Mnemosyne I* and *Mnemosyne II*, he uses fluorescent color pigments to fix the images. Like a memory, the image is stored and emitted by the pigments.

In my works as a visual artist, mostly in the field of photography, the exploration of the direct influence of light on the photo carrier has been an important focal point. Experimental setups in the realms of optics and the natural sciences, experiments with the laws of all these fields and my curiosity to explore these relationships put me on the path to my current work. In the course of these projects, it was always important to me to allow the process—in other words, the path to the picture—to become an integral part of the work itself. Since 1993, I have concerned myself intensively with the pinhole camera and the camera obscura and completed a number of projects using these techniques.

In my first works, I transformed a lorry into a pinhole camera. With this mobile pinhole camera, I moved through the urban landscape. The lorry-made camera obscura became an artificially generated space for the purpose of creating pictures and subtending the architecture of human ideologies. The themes that I explored in my search for images were examples of architecture created during the time of Italian fascism and German National Socialism (Fig. 1), as well as the architecture of German churches. In the interior of this mobile camera obscura, the concentrated light that passed through the tiny hole fell onto large-format photographic material. The original left its mark on the photographic material directly on site and without temporal delay. Exposure times of several hours did not allow for the depiction of strolling pedestrians and daily traffic. Life left no trace, and the monuments of collective desires turned into sculptures devoid of human life.

In the work *Räume—Fotografische Dekonstruktionen* (1996–1997) (Fig. 2), I converted living spaces, with all their furni-

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Article Frontispiece. *Bakterium-Vanitas*, digital pigment print on paper, 80 × 250 cm, 2000/2001. (© Edgar Lissel)

Fig. 1. *Illusion der Macht*, color paper, 125 × 250 cm, 1994. (© Edgar Lissel)

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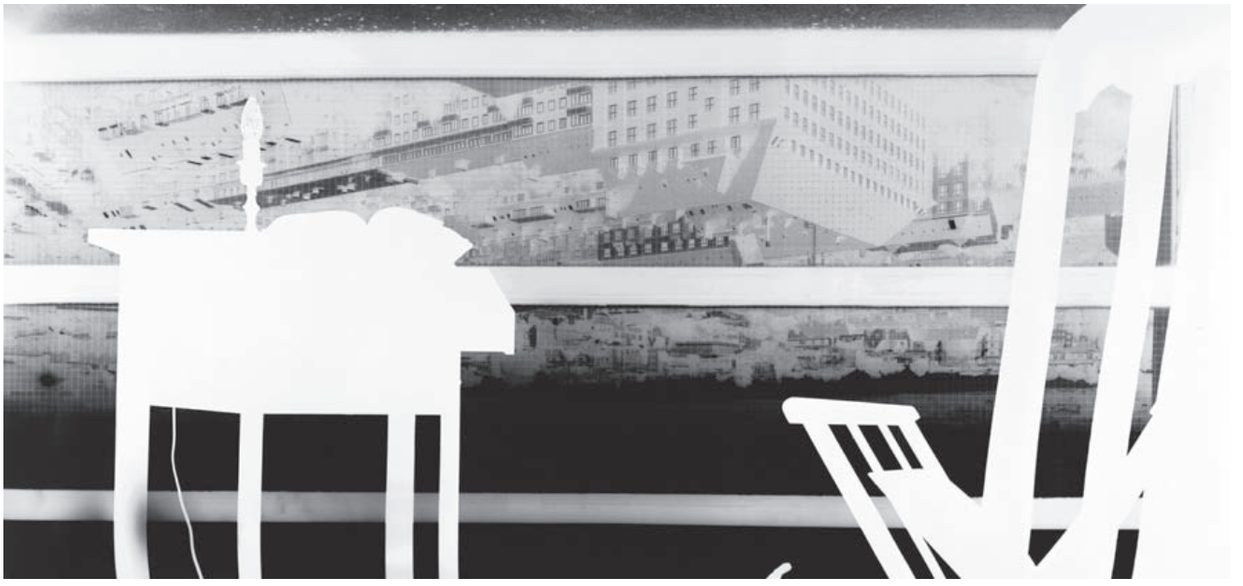

Fig. 2. ***Räume—Fotografische Dekonstruktionen*****, black and white baryta paper, 125 × 250 cm, 1996. (© Edgar Lissel)**

ture and everyday objects of private life, into walk-in pinhole cameras. A room was darkened, with light only entering through a tiny hole in the window and striking the photographic material on the other side of the room. Pieces of furniture located in the room would obstruct the incoming light and leave their white shadows in the photographic likeness of the world outside. The white objects invade the photographic image like abstract sculptures, combine with one another and, together with the exterior views, create new spatial situations.

Whereas the photographic image appears as an upside-down mirror image thanks to the technique of using the pinhole camera, the shadows are depicted directly, without being reversed. Two entirely different photographic techniques come into play at the same time. Thus,

Fig. 3. ***Bakterium-Wasser licht(et) Geschichte*****, digital pigment print on paper, 80 × 80 cm, 1999–2000. (© Edgar Lissel)**

Fig. 4. ***Bakterium-Selbstzeugnisse*****, digital pigment print on paper, 80 × 80 cm, 1999–2001. (© Edgar Lissel)**

using basic photographic methods, a new visual representation, unique to this photographic and physical process, is created. Visual irritations present contrary information.

In the following work, which deals with the submarine bunker Kilian in Kiel as a "memorial of history," I also wished to use the interior space as a camera obscura. In the time since an only partially successful demolition by the British in 1946, half of the bunker had rested underwater, the other half above the surface. In initial tests I experimented with exposure of the photographic paper, which was partially submerged below the surface. In this manner those parts of the image that reached the photographic paper directly combined with those that were reflected by the water surface and those that reached the photographic paper after traveling through the water.

When it seemed as if the project would not be possible due to the treacherous entry to the bunker and the no-less-difficult dealings with the harbor administration, I began to consider finding a carrier material related to the organic environment of the bunker.

Together with Donat-P. Häder of the Friedrich-Alexander-Universität Erlangen-Nürnberg, I experimented with algae, specifically blue algae, which have the characteristic of moving and gathering in accordance with incoming photons.

In the course of comprehensive research I attempted to determine whether this potential image carrier, which re-

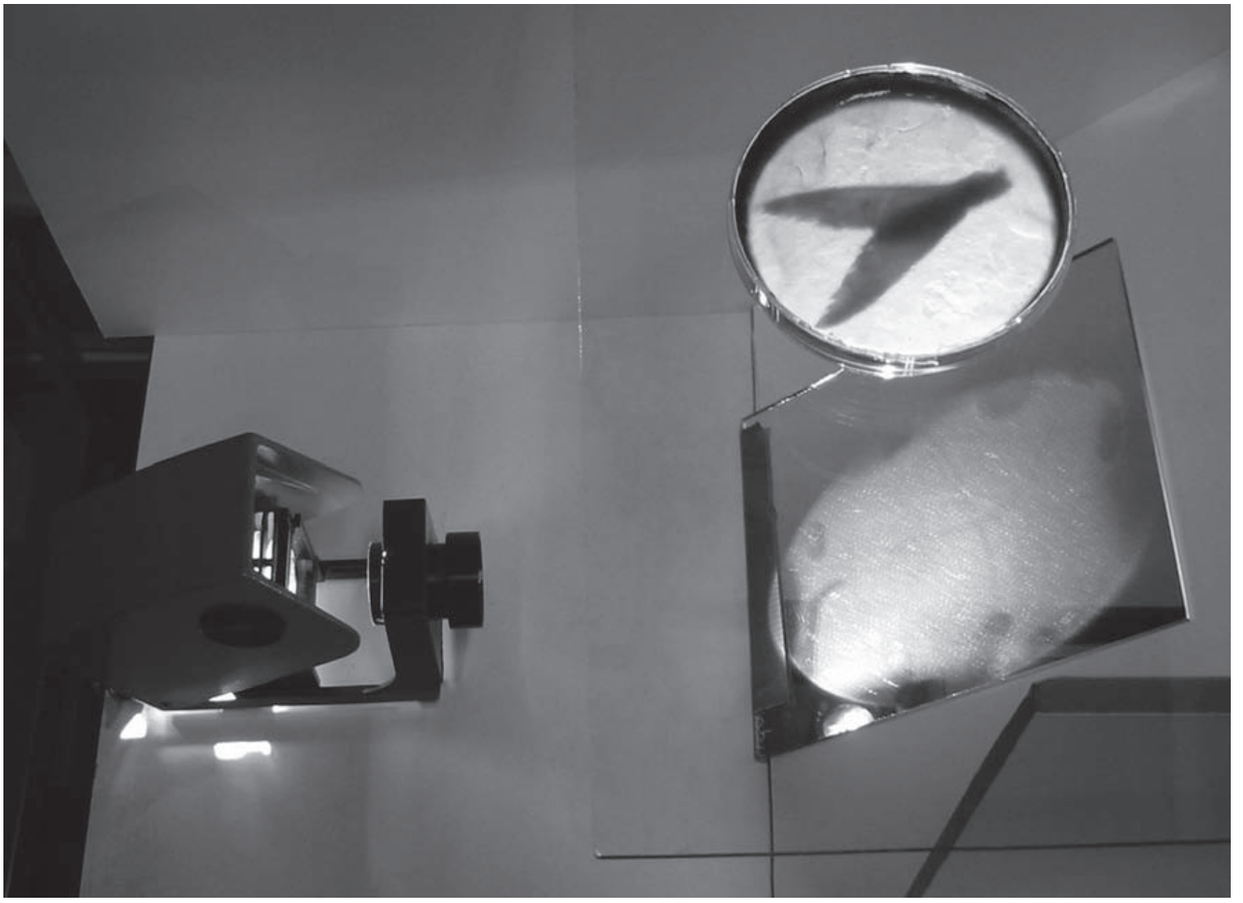

Fig. 5. ***Bakterium-Vanitas*, documentation, 2000–2001. (© Edgar Lissel)**

acted with such fascinating dependence to light, might be suitable for the pictures I wished to create. In 1998 I began to cultivate various members of the blue algae family, or, to be precise, cyanobacteria. In this manner my traditional photography laboratory was rapidly transformed into a biolab, complete with the familiar trappings and attributes of a functioning workplace in the field of microbiology.

In petri dishes filled with a nutrient solution of agar and various salts, the bacteria (in this case *Phormidium uncinatum*) underwent a rather complicated breeding process. On the surface of semipermeable filters placed in the petri dishes, the bacteria increased. During this process they needed to be illuminated 8 hours a day; after approximately 2 weeks, the medium could be collected. To produce an image as filigreed as possible, the furry structure of the bacteria needed to be reduced in a glass homogenizer. After that, the bacterial mass was mixed with a special concentrated agar solution and cast into a new petri dish.

In a darkened room, a photographic negative or light silhouette was projected with an ordinary slide projector onto this living bacteria emulsion. Over the course of several hours or days, the algae migrated from the dark to the light sections of the projected image. They position themselves toward the light. The bacterial formation—the image—in the petri dish had only a limited permanence—several weeks. To fix the image, but also to scale up the structure of the bacteria medium, I produced a high-quality photograph and enlarged it. All works in these series are therefore connected through this special method of creating images, a method based on the phototactic characteristics of cyanobacteria.

The series *Bakterium—Wasser licht(et) Geschichte* (Fig. 3) reflects the potential transformation of all architecture into ruins, using the Kilian bunker (which has since been demolished) as an example.

In the interior of the petri dishes, one can recognize the contours of the gigantic, partially destroyed bunker. Parts of the bunker appear to be sinking like a shipwreck, while others remain standing, with dark, cavernous windows and concrete walls that appear to be several meters thick, yet are already affected by decay. The decay of the building corresponds to its metaphor, the creation and disappearance of its image in the petri dish.

For *Bakterium—Selbstzeugnisse* (Fig. 4), microscopic images of the bacterial structures were projected onto petri dishes filled with bacteria solution. Thus the bacteria cultures grew in the pattern of their own microimage. A myriad of organisms too small for the unaided eye to see formed a magnification of an individual organism, whose aliveness became a part of its image.

The series *Bacterium—Vanitas* followed the method of the photogram: The objects to be reproduced in the image were positioned between the petri dish and a light source positioned beneath (Fig. 5). The transient nature of the material is the primary focus of this work.

The decay of classic still-lifes such as fruit or dead animals is transferred to their depiction in the petri dish. The objects appear as relatively clear silhouettes that stand out from their backgrounds,

yet, even where only a small amount of light has passed through, the bacteria have begun to grow (Article Frontispiece and Color Plate C).

All pictures in this body of work were created through the organic growth processes of the bacteria and were subsequently photographed and enlarged. These works document a highly ephemeral state, a moment in an organic process of generation and decay. The fragility of this state is reflected in the shadowy pictures, which are reminiscent of the early days of photography. At the same time, the process conforms to the specifications of scientific experiments and documentation.

In this complex experimental arena of reciprocal references, the photograph introduces a third temporal index. The first is that of the building or object that actually existed and is decaying, the second is that of the depictions that formed over several days by means of the growth of the bacteria; the third is that of the photograph, which captures the ephemeral state of an instant and remains as a document over a long period of time.

Domus Aurea

The focus of my *Bacterium* project was the exploration of a technical process in natural science leading to the creation of an image in a scientific experimental setup. Following biological laws and dependent on light, the cyanobacteria have served as a living medium, forming themselves into an image. As a further continuation of these works, I began the ongoing project *Domus Aurea* in 2004.

The Domus Aurea, built circa 64 A.D. by the emperor Nero near the Colos-

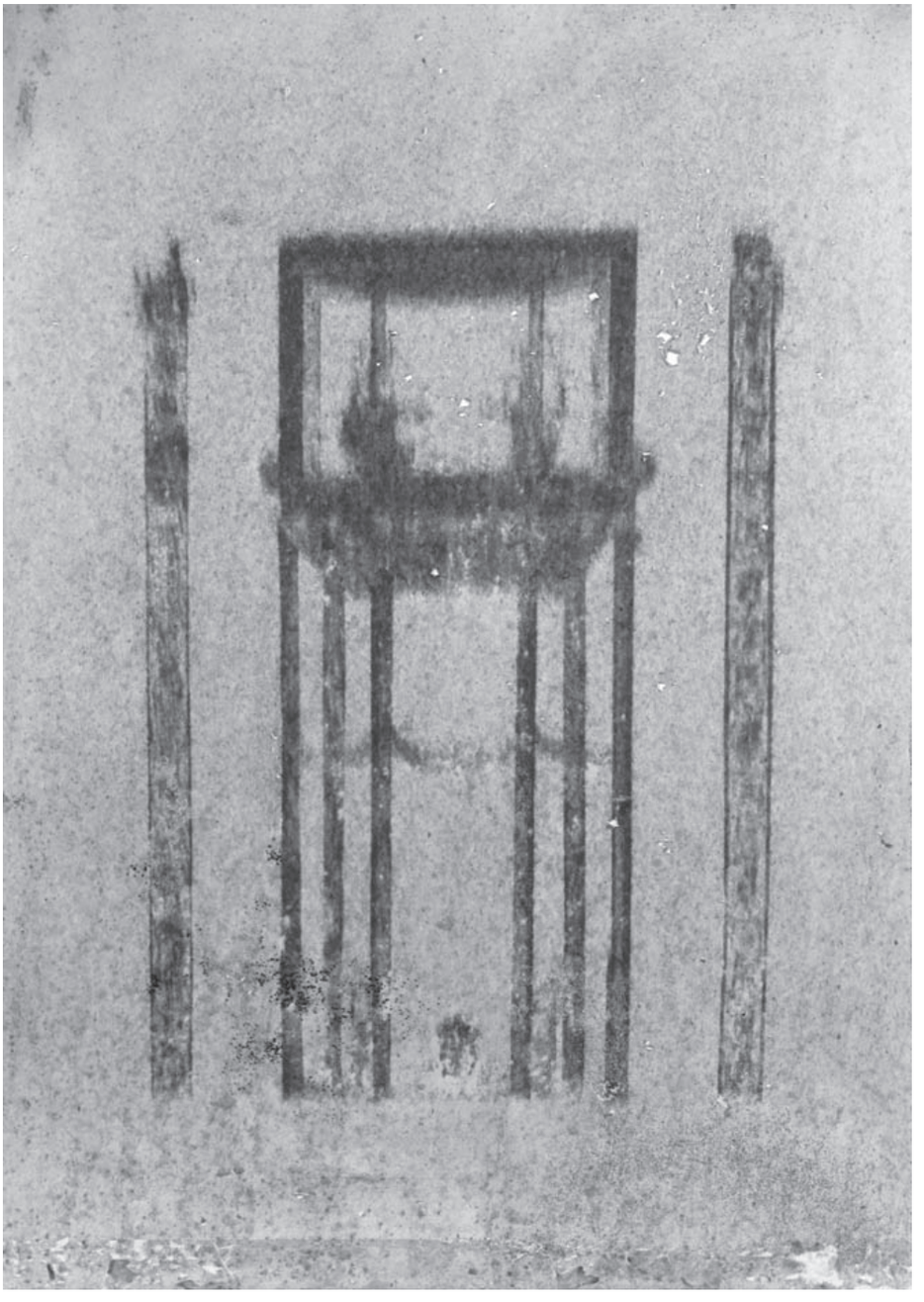

Fig. 6. *Domus Aurea*, bacteria on cast board (after 3 months projection), 60 × 50 cm, 2005. (© Edgar Lissel)

Fig. 7. ***Mnemosyne I*****, installation, documentation, 2003. (© Edgar Lissel)**

seum in Rome, remained unfinished at the time of his death in 68 A.D. and was razed and filled in by his successor, Trajan, in order to serve as the foundation of Trajan's bath complex. Only in the year 1480 were its chambers and frescoes rediscovered. Since their historical origin was unknown at the time, they were taken for subterranean rooms, or *grotti* in Italian. Their frescoes were therefore called grotto paintings, or *grottesche*. The grotesque, the decorative combination of architectural, plant and animal motifs to a metamorphosing whole, was rediscovered by numerous painters of the Renaissance and spread by countless painters throughout the centuries.

My project *Domus Aurea* deals with the destruction of the frescoes in Nero's former palatial estate caused by light-sensitive bacteria. Together with archaeologists and biologist Patrizia Albertano of the department of biology of the University of Rome, I have been conducting research at the site since 2005. We were able to trace the decay of the frescoes to bacteria of the cyanobacteria family. These bacteria, known as *Leptolyngbya,* have a reddish hue and grow primarily on walls containing calcium.

In this piece, these bacteria will be coated on the plaster walls of an artificial room. Over the course of several weeks a photographic negative with an image of a Domus Aurea fresco will be projected on these bacteria-walls. Due to the tendency of these bacteria to move toward light, they will form an image of this fresco. Thus the bacterial formation becomes a new fresco—a fresco consisting of bacteria.

In this experiment the bacteria, which acted—and still act—as agents of decay on the "original" site, serve a constructive purpose. The agent of decay's role is reversed and used to create a new image in a different place (Fig. 6). This living process is being documented meticulously; this documentation becomes, as is the case in scientific, archaeological examinations, part of the observation. The result of this work is therefore not only a picture, but the documented interplay between destruction and creation.

In this interdisciplinary examination, what particularly interests me as an artist is the original site, which was culturally and historically integrated in an eternal circle of destruction and rebirth.

I would like to use this process, which continues to this day and which I can neither prevent nor delay, as the theme of yet another new work.

In a new walk-in installation I will project a newly compiled cycle of images onto large-scale plaster slabs that have been coated with bacteria from the Domus Aurea [1]. This installation, designed to last for several months, will be open to the public while it is being erected.

Two phases will continually alternate with one another: On the one hand the darkened room will provide the bacteria with an opportunity to grow; on the other, this process will be disrupted and disturbed by public viewing under lighted conditions, which represents an artificial repetition of the genius loci. Light thus serves as a medium not only of recognition but also of destruction.

MNEMOSYNE I: LIGHTMEMORY

The work *Mnemosyne I: Lightmemory* was based on the principle of the camera obscura and expanded the darkened chamber by providing it with an active purpose.

A room that could be entered was darkened; bundled light only reached the interior through a lens, as a photographic image [2]. Instead of using photographic material to capture this image, I coated the wall opposite the hole with luminescent pigments.

The image of the world outside en-

Fig. 8. ***Mnemosyne II*****, installation, documentation, 2006. (© Edgar Lissel)**

tered the darkened room and activated these pigments (Fig. 7). Once the process of charging was complete, the incidence of light was interrupted, and the luminescence of the image glistened in the dark room. The surface coated with pigments did not merely play a passive role by absorbing the light but turned into an active, charged storage system that emitted the image.

Like a memory, information was accepted and re-emitted although with a transformed quality, until it finally faded entirely. When the luminosity of the pigments waned and the image receded into darkness, the process of charging would begin anew, with daylight activating the screen (see Fig. 7). The interplay between the regular intervals of light incidence and the reflected image and the creation and disappearance of images led to a constant alternation between the projected image and the activated luminous sister-image.

Mnemosyne II

Led on by my interest in the creation and disappearance of images, I developed the photographic installation *Mnemosyne II*.

In the installation, observers enter a darkened room in which specially treated one-way mirrors have been installed. These mirrors are divided into thin vertical strips with a width of several millimeters. The strips are arrayed so that mirrors and strips of luminescent pigment alternate side by side. Opposite this surface is a flash bulb. Above the screen there is a diffuse light source.

When the observers enter the installation, the first thing they see is their reflections. The observers' movements trigger the flash, whose intensely bright light projects the observers' shadows onto the screen for a fraction of a second. This shadow is stored by the luminescent pigments and remains clearly visible until the next flash. Both pictures, the reflection and the afterglow shadow, are composed of fragments of adjacent strips and can be seen on the same screen. The observers can take their reflections with them, yet their original shadows remain in place, and they can step out of their own shadows (Fig. 8).

The reflection, an image of the present, lies next to the shadow of the previous moment, a moment that already lies in the observers' past and of which they are briefly reminded. This memory remains visible until it is superseded by the next flash and the next image. In this installation, familiar elements of photography are used to create pictures that seek out the relationship between the past and that which follows. Together with the visible parallel windows in time, the pictures also refer to the observers themselves, who determine their appearance through their presence.

Notes

1. Some works in this project have been realized, but the main project is still ongoing and will be completed 2009–2010.

2. Such rooms were realized in Greece (2003) and in Berlin and Paris (2007).

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Edgar Lissel was born in 1965 in Northeim, Germany. After work experience in a print office and a professional education as a lithographer, he studied photography at the University for Visual Art Darmstadt. Since 1993 he has worked as an international artist and has been included in various exhibitions and collections. After his 3-month scholarship project Domus Aurea *in Rome, he moved to Vienna in 2005 and started a collaboration as an artistic assistant at the Universität für angewandte Kunst Wien. Additional information can be found at <edgarlissel.de>.*