It is a delightful paradox that the normally invisible has an enduring influence on what can be our most profound visual experiences. In this context, the effect of microbes on the visual arts is antithetic in that their activities provide inspiration for the artist, yet they are also capable of destroying some of our most important artistic heritage. Whilst any painting is potentially at risk, perhaps the most poignant example of this is the microbial destruction of the Lascaux Cave paintings, which date back to 15,000 BC and are some of humanity’s earliest forays into art.

Long before their empirical revelation, microbes influenced the sensibility of many artists, perhaps most notably in Nicolas Poussin’s The Plague at Ashdod and Raphael’s Il Morbetto. Then as the microscope began to reveal a previously hidden world, artists and scientists alike were quick to appreciate that microbiology is also able to produce depictions of great beauty. Indeed, in some of the earliest representations of micro-organisms it is often difficult to differentiate between technical representation and art. The aesthetic nature of microbes can be readily seen in Hooke’s Micrographia, Sergei Winogradsky’s hand-coloured drawings from Microbiologie du Sol, Henriette Beijerinck’s paintings, and Ernst Haeckel’s Kunstformen der Natur. Micro-organisms have also featured in more obvious examples of art, for instance in Hieronymus Bosch’s Garden of Earthly Delights, in which there appear to be representations of at least 22 species of slime moulds.

Today, at a time when many micro-organisms have been rendered into the very still life of a DNA genome sequence on a computer screen, our over-familiarity with the microscopic life forms means that the aesthetic nature of microbiology is often overlooked. However, cross-disciplinary projects involving scientists and artists are becoming increasingly common and the microbe is being reinvigorated as an art form. Artists are now beginning, with some understanding of the science, to exploit the vast conceptual palette that microbiology offers, and in a manner that seeks to blur boundaries between art and science. We are approaching an artistic microbiological renaissance, where the microbe is taking centre stage, and starring in forms of art where the medium is living matter itself.

As I recently discovered for myself, even the apparently mundane can have artistic potential. Given time, and if allowed to grow beyond the standard overnight incubation, bacterial colonies can develop into some remarkably beautiful structures. The images shown in Fig. 1 formed the basis of Microcosmos, an audio/video installation that presents these images together with a soundscape derived from the DNA sequences of bacteria. Eshel Ben-Jacob has also found artistic potential in colonies, but in this instance, in the striking organization of the colonial forms of Paenibacillus dendritiformis (Fig. 2). Both of these examples, which could be considered to be ProkaryArt, are visually appealing, yet they also carry a scientific message that reflects the nature of bacterial growth, pigment and antibiotic production, and the underlying social intelligence of bacteria. Of course, artists may choose to practice EukaryArt and land artist Chris Drury has produced some striking works based on fungal spore prints (Fig. 3).

The often unappreciated microbiology of the familiar has also provided inspiration for several modern artists. Anna Dumitriu has used the qualities of the aesthetic microbe: ProkaryArt and EukaryArt.
murmurate some of the complexity of modern microbiology. Eduardo Kac’s work Genesys operates in this context as it involved the insertion of a synthetic gene sequence, derived from a sentence from the bible, into E. coli. Specimen of Secrecy about Marvelous Discoveries, another of his works, is a series of visually striking, self-sustaining microbiological ecologies (Fig. 8), that, like Winogradsky columns in the laboratory, reveal the hidden complexity of the microbial world, but in an art gallery. Jennifer Wightman has also explored this concept in an interpretation of Mark Rothko’s paintings using bacterial ecologies. Other examples of this genre include bioluminescent furniture and glass vessels; Steven Wilson’s interactive microscope installations in which humans can compete with protozoa or interact with their own microbiota; a signature of human intelligence that has been embedded into the genome of Bacillus subtilis; an audio microscope; pictures made from E. coli expressing green fluorescent protein; and Adam Zarenisky’s E. coli which were monitored, not surprisingly, for signs of stress after being exposed to Edward Burtynsky’s Centaurus His for 48 hours.

I should add a brief note of caution at this point in case any non-microbiologist reading this article should be inspired to practice BioArt. The use of microbes in art is not without risks to the artist. Steve Kurtz, an associate professor of art at the University at Buffalo, but not a microbiologist, is also a practitioner of ProkaryArt. He first came to the attention of the police in May 2004, not because of this, but when he reported the death of his wife due to heart failure. Investigators coincidently discovered some of the mostly harmless biological specimens that he used for his work in the house, and whilst he never intended to cause harm with the bacteria, this did not prevent the FBI from detaining him for fraudulently obtaining bacterial cultures. He now faces 20 years in prison under terrorism legislation. He now faces 20 years in prison under terrorism legislation. He now faces 20 years in prison under terrorism legislation. He now faces 20 years in prison under terrorism legislation. He now faces 20 years in prison under terrorism legislation.

I should add a brief note of caution at this point in case any non-microbiologist reading this article should be inspired to practice BioArt. The use of microbes in art is not without risks to the artist. Steve Kurtz, an associate professor of art at the University at Buffalo, but not a microbiologist, is also a practitioner of ProkaryArt. He first came to the attention of the police in May 2004, not because of this, but when he reported the death of his wife due to heart failure. Investigators coincidently discovered some of the mostly harmless biological specimens that he used for his work in the house, and whilst he never intended to cause harm with the bacteria, this did not prevent the FBI from detaining him for fraudulently obtaining bacterial cultures. He now faces 20 years in prison under terrorism legislation. He now faces 20 years in prison under terrorism legislation. He now faces 20 years in prison under terrorism legislation. He now faces 20 years in prison under terrorism legislation. He now faces 20 years in prison under terrorism legislation.