ON GROWTH AND FORM

AnneMarie Maes is fascinated in the processes by which Nature creates form: how bees create honeycombs in the hive, how they self-organize into swarms, how plants grow and form geometric patterns, or how bacteria and yeast collectively create material surfaces forming biofabrics. She observes and analyzes these processes, isolates them, or causes them to appear in artificial conditions, and then creates art works from this artistic research in many different media: installations, video, audio, prints, and sculptures. These art works often go beyond a pure esthetic experience, even if a sense of beauty is always there. They are intriguing because they make the viewer wonder about the natural growth processes that gave rise to them. They raise questions about the sustainability of our current life style and fabrication processes.

AnneMarie Maes is representative of a new wave of artists for which art is life and life is ecological, artists that, paradoxically, exploit the extraordinary possibilities of the most advanced information and communication technologies, and even synthetic biology, in order to connect us back to nature. This direction of work is of course not entirely new. It is the visionary 20th century artist Joseph Beuys who already in the nineteen sixties showed the need for a radically different kind of art. He argued forcefully against the wasteful use of natural resources and in favor of a social humanitarianism that tries to connect individuals back to their communities and to the ecosystems on which human life depends. Beuys lived this vision and translated it into a broad range of multi-media art works, performances, lectures, and community activism that still resonates today.

AnneMarie Maes structures her work similarly through long term projects that generate a steady stream of interventions, experiments and art works. Many of these activities take place through collectives of artists and in collaboration with scientists, in Brussels and in Barcelona.

One example is the **Open Greens Project** (started in 2008 and ongoing) that focuses on the Politics of Green Spaces in cities. The creation of the *Hortus Experimentalis*, her ‘laboratory on the open fields’ on a large rooftop in central Brussels, was a huge undertaking. It required solving a large range of administrative, technical and practical problems. She equipped the rooftop garden with all kinds of sensors and installed several experimental live beehives with instrumentation equipment. From this garden laboratory, data is continuously being collected and broadcast through streaming technology. Maes her art work flows naturally from the daily practice of dealing with these natural processes. She makes use of technological mediation to search for new forms of communication with the natural world.

Older work often included the participation of the public, as in the **No2pho** installation (2006-2008) where spectators shape a sound

scape by moving around sound sources based on literary texts, or the **People Database project** (1998-2004) which creates multi layered life narratives triggered by found pictures, and the **Politics of Change project** (2008-2010), which documents the grassroots activism of women in India. These projects all take a social and anthropological dimension and foreshadow the later turn towards ecology and sustainability.

The artworks collected in this book come from more recent work. Maes, an accomplished beekeeper and herbalist, designed and fabricated various experimental observation beehives, including the **Transparent Beehive** (2011-2013), the **Sound Beehive** (2014-2015) and the **Guerilla Beehive** (2015-ongoing). She also started to experiment intensely with new organic materials created through growth processes involving bacteria and yeast.

Experimental beehives as living sculptures

The Transparent Beehive is inspired by the 'leaf beehive' originally designed by the blind Swiss naturalist Francois Huber at the end of the 18th century, which looks like a book with pages for the different honeycombs. Maes has upgraded this design to a contemporary model, inspired by sliding bookshelves in a library. With this new hive, constructed from wood and aluminium with a plexiglass exterior, it is possible to see, smell and hear the activities of a live colony. The bees enter and leave the hive through a glass pipe opened to the outside world. It is installed in the art space and viewers are often stunned when experiencing, often for the first time in their life, the remarkable activities of bees and bee colonies in such close contact. The hive is enhanced with cameras, contact microphones, and other sensors and these are logged and uploaded for display and analysis.

The Sound Beehive focuses on the sound produced by bees, measured through contact microphones installed inside the hive. The data is processed and made audible to the viewer and used as well to perform statistical analysis and make soundscapes mixing electronic music and bee sounds. The Guerilla Beehive is intended to be put in unexpected urban spaces to help swarms find adequate shelters. It can be attached on an external wall of a building, in a tree, or on an appartment balcony. It is 3d-printed from natural materials and is enhanced with sensors integrated in the hives' exterior shell. The materials of the hive are biodegradable so that the shelter can decompose after usage by the colony.

A steady stream of artworks has come from these experimental hives and bee colonies. Maes has made videos from infrared recordings inside the hives, created geometric objects with the beewax coming from the colonies, produced audio-scapes based on recordings of the sound produced by bees in the hive, mapped out the flight routes of the bees and which areas they visit, took amazing microscopic views of the exterior of a bee body taken with a very high resolution scanning electron (SEM) microscope,

catalogued pollen brought back by the bees and linked them to the plants where they came from, etc. It all adds up to a 'Wunderkammer', a chamber of wonders. Each object or image has an intriguing story to tell. It makes us see Nature in a new light. Maes' is carefully observing Nature using her artistic eye to highlight the remarkable forms and structures found there and performing experiments - mostly without complex scientific equipment - that bring out the beauty and sophistication of the natural world. And, like some of the early naturalists, she is also an artist that can transform these observations in stunning and intriguing imagery.

`Des arts plastiques'

Work on the Guerilla Beehive project has recently opened a new chapter in Maes her artistic research. Combining her work in the Barcelona fab lab on 3d-printing and computer-programmed fabrication, and the challenge to come up with a sustainable hive that would decompose after use, Maes started a research program to develop a shell for the hive based on organic materials, experimenting with cellulose to create a customized organic skin. The skin is formed in a growth process that can take between a few weeks to several months. This lead to further discoveries, no longer tied to experimental beehives. Maes started to experiment with adding other biomaterials to create unusual textures and unexpected colors. They include ground coffee, natural dyes from indigo and beetroot, ground eggshells, pollen, essential oils, hair of sheep, hemp fibers and of course wax from her beehives.

Through this kind of experimentation, Maes discovered a new medium for painting and sculpting. She has no absolute control over the outcome but puts biological processes in motion that create intriguing sensorial surfaces. The result has the esthetic qualities of abstract art works but invokes at the same time the spirit of Arte Povera by its appropriation of unconventional materials, its emphasis on process, its use of additional senses like smell and tactile sensing, and its attempt to move away from the overly rational, mechanistic attitudes that dominate our world.

There is at the moment an upsurge of activities on the borderline of science and art. AnneMarie Maes has been one of the pioneers in this movement, not by a superficial appropriation of scientific jargon or `make-believe' installations but a profound engagement with scientists in biology labs and engineers in fab labs. She has been received heartily because scientists see value in her work and love the way she makes a scientific outlook accessible to a larger audience. The engineers love the unusual challenges she poses, which seem at first crazy but then lead to ideas and technologies `out of the box'.

Luc Steels, Barcelona 6 November, 2016