

Atelier Luma Algae Review

ATELIER LUMA INTERNATIONAL ALGAE SUMMIT LUMA DAYS #4 / 27 – 28 MAY 2020

REMINDER: PITCH YOUR ALGAE PROJECT!

More information → p. 8

The Algae summit pecha kucha session is a public presentation for algae projects and initiatives. By providing this open discussion platform, Atelier Luma is giving the opportunity to individuals and collectives to pitch their project in front of a selected committee of international advisors and experts.

ATELIER LUMA ALGAE REVIEW *Everything you always wanted to know about algae*

The algae monthly review is a curated newsletter dedicated to algae knowledge and Atelier Luma's Algae Platform activities. By mapping existing algae knowledge — from literature to scientific research — Atelier Luma aims at consolidating a community of international algae practitioners, creatives and experts to actively participate in the event in Luma Arles in spring 2020.

“In the beginning, there was only moisture, which became clouds. The Great Father Sun, the Creator Awonawilona, thickened the clouds into water that then formed a great sea. With his own flesh, Awonawilona fertilized the sea and green algae grew over it. The green algae produced the earth and sky. The marriage of earth and sky and the action of the sun on the green algae produced all living things”

— J.F. Bierlein, *Parallel Myths*,
Ballantine Books, 1994

ALGAE IMAGINARY

The American Indian Zuni tribe hold this beautiful myth of creation that is intriguingly accurate for its explanation of the evolution of life. Algae as a vital natural resource was honoured in some nature-based cultures such as the Native Americans. More generally, its imaginary appearances and symbolic representations remind us that we are inextricably connected to the natural world, urging us to renounce to our persistent anthropocentric vision of terrestrial life. This review's fourth edition intends to explore the contemporary algae imaginary, seen here as an actor and a driving force of mysterious phenomena and human utopias through the Hitchcockian cinema, the fascinating beauty of marine organisms and the scientific myth of ocean cities.

BLAME HITCHCOCK'S CRAZED BIRDS ON TOXIC ALGAE LIVE SCIENCE

— By Wyne Parry

When algae inspire movie directors... Alfred Hitchcock's masterpiece *The Birds*, deemed to be one of best thrillers ever made, shows a seaside town suddenly being disturbed by flocks of aggressive birds attacking the inhabitants. The script was inspired by real events: on August 18, 1961, two years before *The Birds* was released, a local newspaper reported that thousands of crazed seabirds were sighted on the shores of North Monterey Bay in California. The birds regurgitated, flew into objects and died on the streets. Hitchcock lived in the region and allegedly contacted local reporters and scientists for more information.



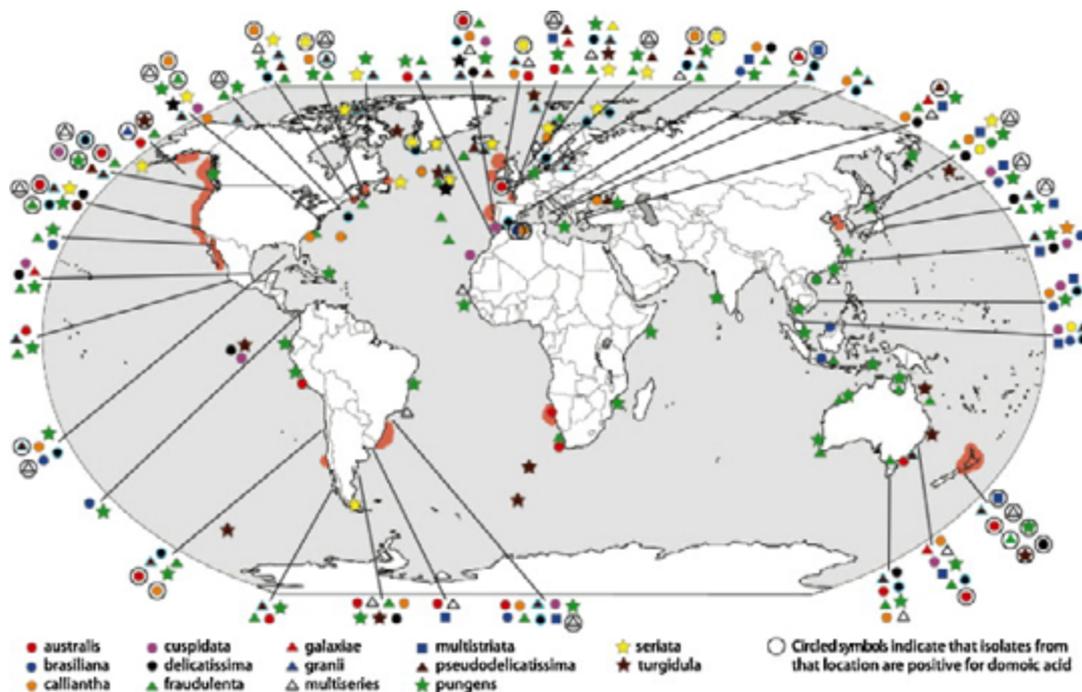
Not much was known about what caused the birds to act so strangely at that time. In 1991, after a similar episode, scientists examined dead birds and found they had eaten domoic acid, a neurotoxin produced by the marine algae *Pseudo-nitzschia*, causing disorientation, seizures and death. When analyzing samples of water dating from 1961 and collected in Monterey Bay, they found large quantities of the same toxin-producing algae.

Pseudo-nitzschia, which has been found along most the the world's coastlines, has been intensively researched over the last 20 years with the aim to better understand phenomena of blooms and toxin production as it causes real issues for ecology and public health.

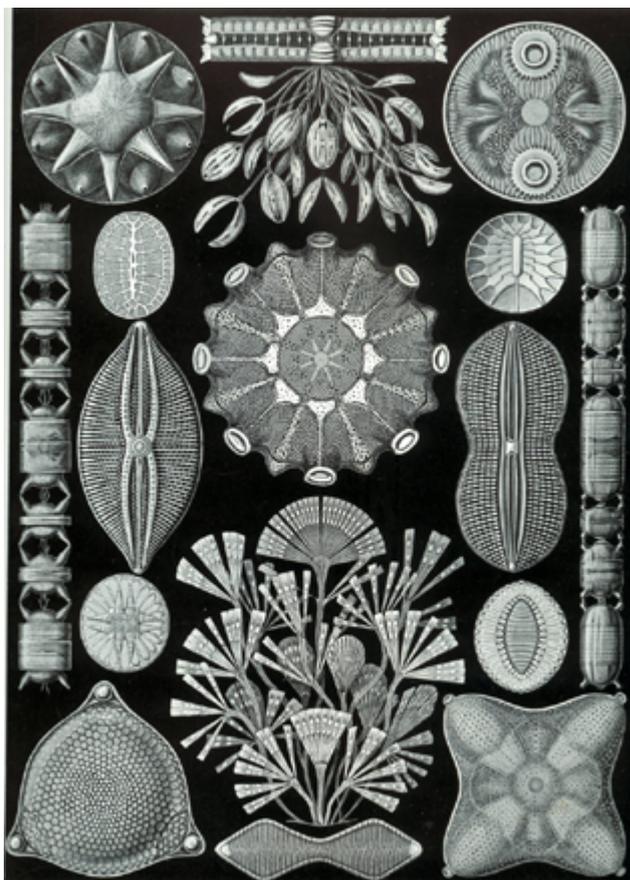
SOURCES

→ **BLAME HITCHCOCK'S CRAZED BIRDS ON TOXIC ALGAE LIVE SCIENCE** • BY WYNE PARRY

→ **PSEUDO-NITZSCHIA PHYSIOLOGICAL ECOLOGY, PHYLOGENY, TOXICITY, MONITORING AND IMPACTS ON ECOSYSTEM HEALTH** • BY V.L. TRAINER AND AL.
→ [DOWNLOAD PDF](#)



Global distribution of micro-algae Pseudo-nitzschia



The 84th plate from Ernst Haeckel featuring diatoms (microalgae species)

ART FORMS IN NATURE: MARINE SPECIES

— By Ernst Haeckel

Ernst Haeckel (1834-1919) led major encounters between art and sciences. The German biologist, naturalist, philosopher and artist researched fauna and flora and discovered thousands of new species, essentially marine organisms, that he documented with highly stylized lithographic illustrations. Published over 1899-1904, the exquisitely detailed plates were compiled into the book *Kunstformen der Natur (Art Forms in nature)*, Haeckel's most iconic publication.

Haeckel was an influential evolution theorist, combining Darwin's theory with an aesthetic derived from nature. Searching for the general unity behind all things he refuted the duality of man and nature. He was also the first to coin the term "ecology".



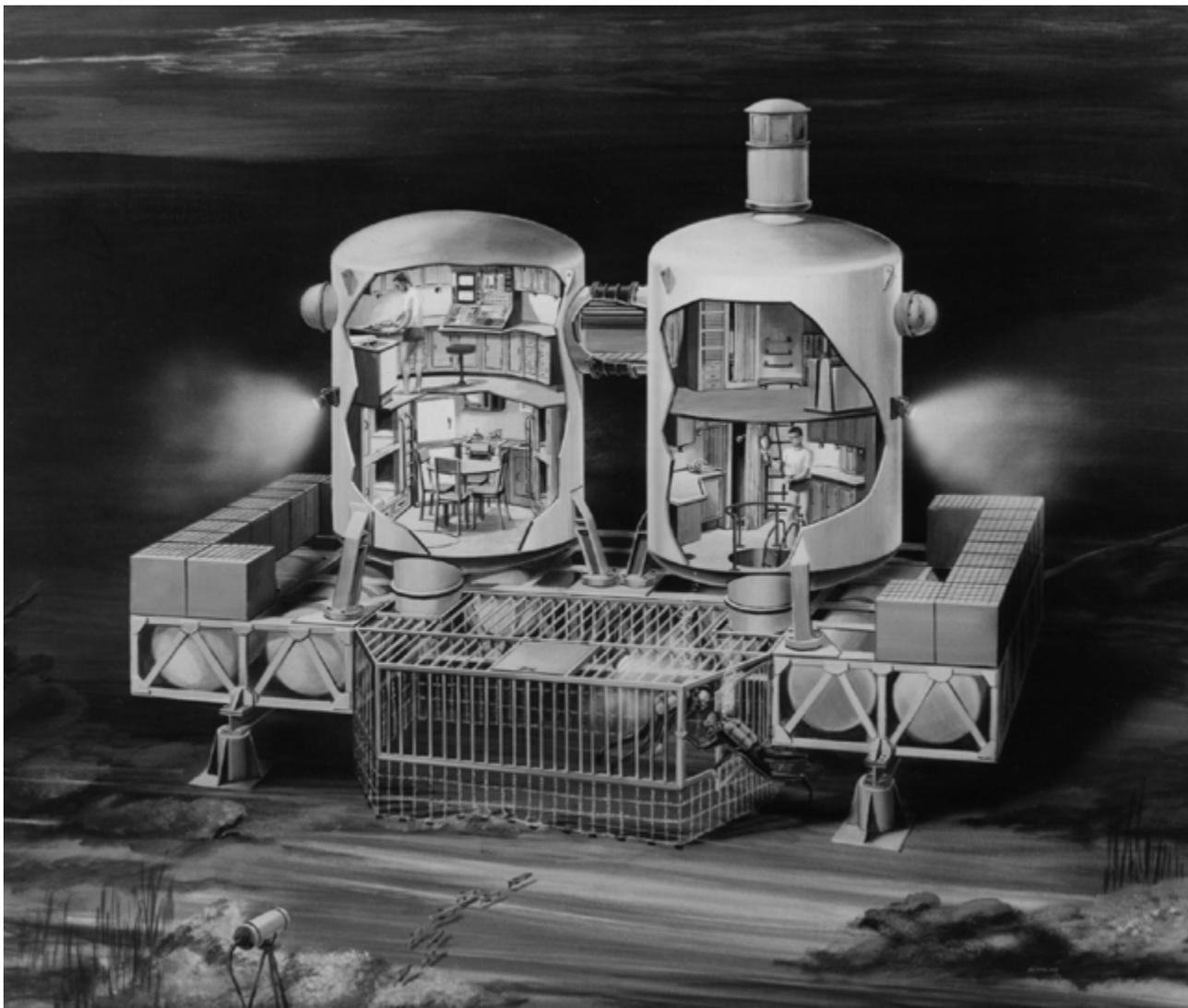
Water colour by architect H.P. Berlage (1865-1934) for the design of medals inspired by diatoms forms.

A pioneer of marine biology, Haeckel's work helped popularize scientific knowledge. It served at the same time as a huge source of inspiration for the art, design and architecture of the early 20th century, the most noticeable example being the organic shapes of Art Nouveau. Another influence is to be seen in Berlage: the famous Dutch architect who was directly influenced by Haeckel's illustration as proven by his sketches for medals inspired by diatoms.

Still today, Haeckel's plates are an invitation to marvel at the beauty of marine life.

SOURCES

- **ART FORMS IN NATURE: MARINE SPECIES FROM**
 - BY GRACE COSTANTINO ERNST HAECKEL. JUNE 2015
- **ERNST HAECKEL AND THE UNITY OF CULTURE**
 - BY DR MARIO A. DI GREGORIO. 24 JANUARY 2011
- **BERLAGE DRAWINGS** • WITH ERNST HAECKEL



HOW SCIENTISTS IMAGINED AND BUILT AN UNDERSEA UTOPIA FOR HUMANS

— *By Antony Adler*

Life originated from the sea and some visionaries have sought to regain this primordial connection with the ocean. After World War II, there was a growing interest for marine studies. Seaweed, for example, was considered a potential miracle food that might solve the problem of global hunger. The French explorer Jacques Cousteau immensely contributed to marine exploration and helped popularize the underwater world. He also built the first underwater habitats (the series of Conshelf), predicting a “conscious and deliberate evolution of Homo aquaticus”. Indeed, within the revolutionary political and social climate of the 1960s, the ocean sparked some utopian hopes. Alteration of human anatomy was to be expected,

as engineers of the NASA and General Electrics were allegedly working on “artificial gills” that could allow humans to filter oxygen from water. Experimentations on humans have even occurred!

The utopian project of marine cities responded to the modern dream of exploring new spaces: the oceanic space conquest was going on, hoping to expand human powers and freedom. Cousteau cherished the dream of “undersea parliaments and new nations”. The inexhaustible quest of the famous marine explorer still urges us to rethink and explore our relationship with the highly rich and diverse marine environment.

SOURCE

→ **HOW SCIENTISTS IMAGINED AND BUILT AN UNDERSEA UTOPIA FOR HUMANS** • BY ANTONY ADLER. NOVEMBER 25, 2019



WORKSHOP ALGAETYPE: MATERIALIZING THE CAMARGUE TERRITORY THROUGH ORGANIC PHOTOGRAPHY

ENSP x Atelier Luma, 2018 - 2020
By Kristof Vrancken et Yannick Vernet
pp. 5 – 7

During the summer of 2018, Atelier Luma and the photography school *École Nationale de la Photographie* joined forces to organize the first experimental bio-photography workshop “Algaetype: materializing the Camargue territory through organic photography”, supervised by Kristof Vrancken, professor and researcher in experimental photography and Diane Trouillet, artist and biologist.

The objective of the workshop was to experiment the “Algaetype”, a new form of experimental photography developed for the first time at Atelier

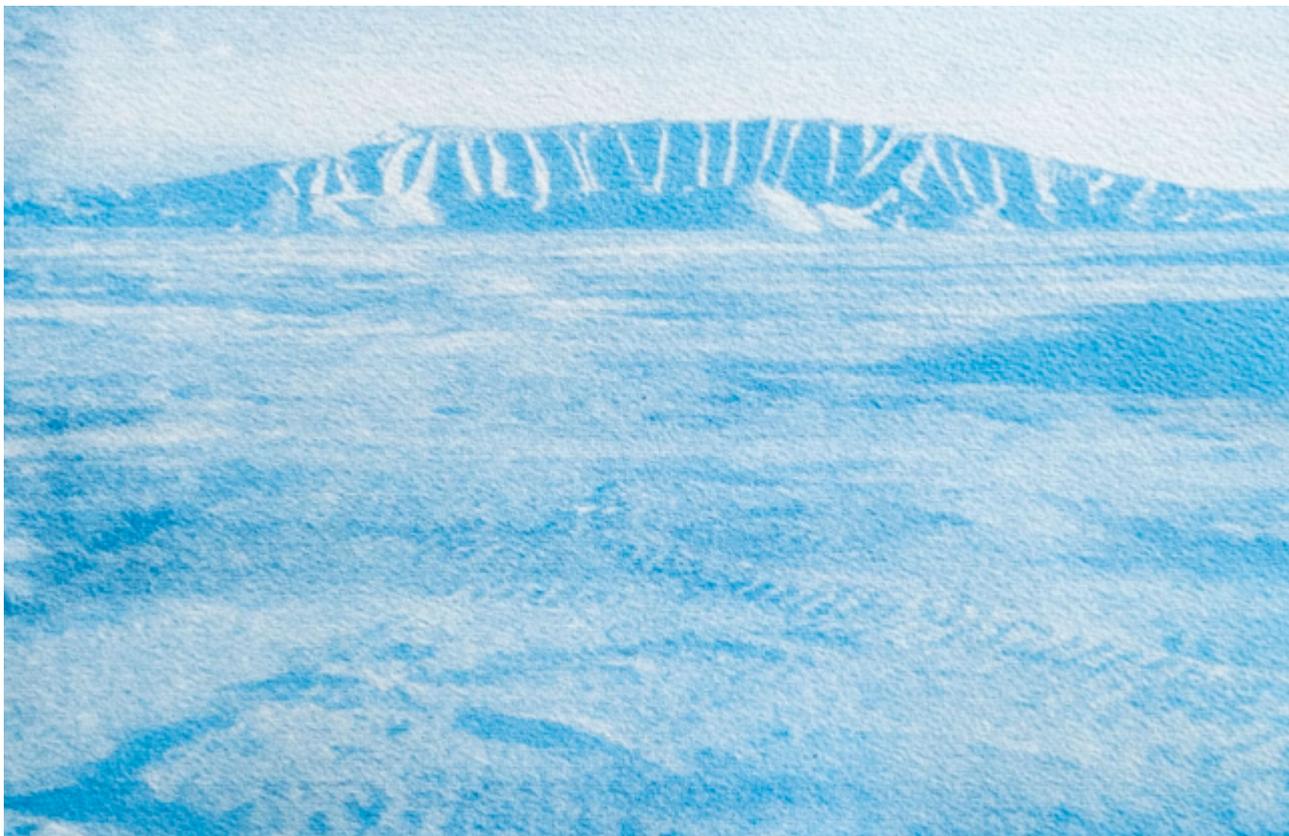
Luma. Inspired by the Anthotype, a photographic process dating from the 19th century, the Algaetype uses photosensitive colour pigments extracted from local algae to produce a bio-photograph printed on algae paper.

The Algaetype process has unique properties that allow not only to capture a landscape visually but also to materialize it by using locally harvested algae from the places photographed. The photosensitive properties of algae have proved to be very interesting. It was also discovered that the fibrous structure of some algae enables the manufacture of photographic paper. The landscape thus became the vector of the photographed image.

During the 4-day workshop, participants were invited to take part in this visual and scientific field research on the Camargue. Bringing together biologists, photographers, historians of photography, art students and curators, the workshop generated a precious collective intelligence.

The Algaetype process not only allowed the participants to feel the landscape from a human point of view but also to open up to the invisible history of algae and all the living organisms that inhabit





the Camargue. In this context, the opportunity to collectively confront and imagine new scenarios responding to the ecological challenges inherent to the region was created. The results of this first workshop held in 2018 were so promising that Atelier Luma and the *École Nationale Supérieure de la Photographie* decided to continue the project and develop a new workshop in 2019-2020 focused on the use of photography as a biomarker of pollution. The aim is to study the correlations between the colours of algae and the surrounding pollution. The images, in their very essence, reveal the pollution present in the territory.

Like any other organism, algae are victims of toxic elements found in their natural habitat. In the Camargue, as everywhere else, algae proliferate under the combined effects of three characteristics: shallow, clear water allowing efficient photo-

synthesis; a weak current that does not allow algae to be transported offshore; a high concentration in the water of the nutrients on which the algae feed, namely phosphorus and nitrogen from agricultural fertilizers. The objective is to make these pollutions visible by exploring two approaches: firstly, by using the bioenergetic process of these organisms, i.e. their ability to photosynthesis, to produce images. Secondly, by continuing research on the composition of the algae colours, which are directly linked to the presence of various pigments and modified by certain pollutants.

This year's workshop brings together students from all over the world, showing the growing interest in these techniques and in the pertaining philosophical questions raised by this approach.

WHERE TO SEE THE ALGAE PLATFORM

→ *Nature morte / Nature vivante* at the CID,
Center for innovation and design at the
Grand Hornu, Hornu, BE. From 24 November
2019 until 20 March 2020

REMINDER: PITCH YOUR ALGAE PROJECT!

Register at algaeplatform@luma-arles.org. Email should include:

- Email object: Algae Pecha Kucha Pitch_name of individual or organisation
- An image and a description of the project (max 500 words) in a single PDF file

ARTICLE 1

Image 1: A publicity still for Alfred Hitchcock's 1963 thriller *The Birds*, in which flocks of crazed birds attack and kill residents of a coastal California town.
© Universal Studios

Image 2: Toxigenic species of *Pseudo-nitzschia*.
V.L. Trainer et al. / *Harmful Algae* 14 (2012) 271–30

ARTICLE 2

Image 1: The 84th plate from Ernst Haeckel's
"Kunstformen der Natur" (1904)

Image 2: Watercolor drawing by H.P. Berlage. Inspired
by the *Navicula*. Diatomea from the book *Kunstformen
Der Natur* by Ernst Haeckel.

ARTICLE 3

Artist cutaway painting of the Tektite II habitat.
NOAA Central Library Historical Fisheries Collection/
fish/9765. © Harvard University Press

COLUMN

Images 1,2,3,4,6 : © Kristof Vrancken
Image 5: © Yannick Vernet