



Ubx Expression

November 2008

Ubx Expression was the result of research carried out in the entomological department at the Zoological Museum, University of Amsterdam. It was a huge collection (later merged with the Naturalis Biodiversity Center) with about eight million labelled specimens used for research and not open to the public. My point of departure for the project was the following research question: can natural sciences allow an artistic intervention and reverification of visual representation? I spent several months with the collection, studying the morphology in butterfly wing patterns through observation and drawing, zooming in on individual samples while at the same time examining the overall required analytic structures that inform scientific observation of differences. The decision to work with butterflies was practical—because of their pigmentation, it was easy to visualise the difference in patterns.

The rule of differentiation is shared by all living and non-living organisms, but in the case of moths and butterflies the differences crystallise in colour and forms. “*Ubx expression*” is a term that refers to a form of chemical expression. The *Ubx* protein affects the ways in which insect wing patterns are organised and is related to the variability of these patterns. It functions as a transcription factor and regulates detailed aspects of scale morphology, pigmentation and eye spot patterns in the hindwings of butterflies.

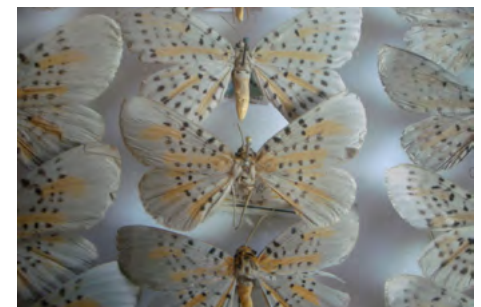
What is unique to moth and butterfly species is that the elements in the overall pattern are individuated: unlike the spots and stripes of vertebrate colour patterns, the elements of

butterfly wing patterns have identities that can be traced from species to species and typically across genera and families. Because of this identity, or blueprint, it is possible to recognise homologies among pattern elements and to study their evolution and diversification. During evolution, this blueprint is rearranged in novel ways to produce species-specific patterns. It requires a trained eye to see that a pattern undergoes different variations and permutations over the course of thousands of years.

As an artist, it is impossible to reach the level of expertise of the scientist working with and devoting their life to a collection of natural history. In engaging with archival material, the first key step is to collaborate with people, for it is they who open up the resources of an otherwise hermetic collection in a material sense, but also through the personal stories that are embedded in these collections.

In my first few weeks at the Zoological Museum, I kept visiting the place to wander around, open drawers, and bombard the curator Willem Hogenes and his colleagues in the entomological collection with all sorts of questions. I frequented the museum’s library and started to create maps and diagrams of the place so that I could relocate the material I often found by chance by randomly opening drawers or because one of the staff pointed out a particular specimen to me. I collected notes and thoughts and began to draw in my notebook some visual notes of the butterfly wing patterns. It turned out impossible to discern the subtle differences of these patterns at a first glance, and yet I soon figured out

Entomological collection at the University of Amsterdam



that this—observing these differences—was exactly what I wanted to do. To prove that the pattern of each sample was indeed singular.

Once I realised it was unfeasible to draw schemas embracing all the differences observed, I began to rely more and more on my notebook drawings. Gradually, I obtained a sense of pattern differences, evolution and morphology. I recognised that it had to do with my apparent choice to interpret my observations of visual information by drawing the butterfly samples. Opening a drawer, observing the samples inside, and even photographing them had not brought a very comprehensive view of the samples, nor of the collection they were part of.

It was only by drawing that I was able to acknowledge the minute details that made each of these patterns unique. Drawing helped me understand what I was witnessing: every tiny subtlety became visible through the transference of my observations onto a piece of paper. There was an analytical attitude to this processing of visual information into visual representation, and an investigative, systematic quality of these drawings, which forced me to ‘see’ what I could not visualise in any other way.

The factor of time was fundamental to this project: time seeing, time drawing, and time engaging with the material and stories of the collection. The outcome consisted of 120 detailed pieces. I decided to find the best creative format and used thick cardboard paper—specifically, 8 x 8 cm cards that I could bring along and play with. Creating my own archive of sorts, I began to set certain parameters, systematising my observations and

visual translations of the butterflies’ wings. I tried different pens and pencils. I opted for a cheap pen that would make it impossible to go into too much detail, or to erase any, once drawn. Each line would be both definitive and conclusive. On the back of each 8 x 8 cm card, I created a diagram—a chart that mapped the location of the butterfly sample in question inside a given drawer. I didn’t know if I would ever need to reconstruct the puzzle, but I liked the feeling that I could trace my navigation through the collection by means of these charts.

The study of the butterfly wing patterns turned out to become an investigation into my own methodologies as an artist and observer. It seemed practical to make written notes in order to trace the work in progress and to navigate my own trajectory following the logic of figuring out what I was doing, while I was doing it. This understanding is reflected in how I usually construct a corpus of ideas, how new concepts are generated through the work process itself (which is to do with experience), and finally how the cognitive process is modified by these experiences.

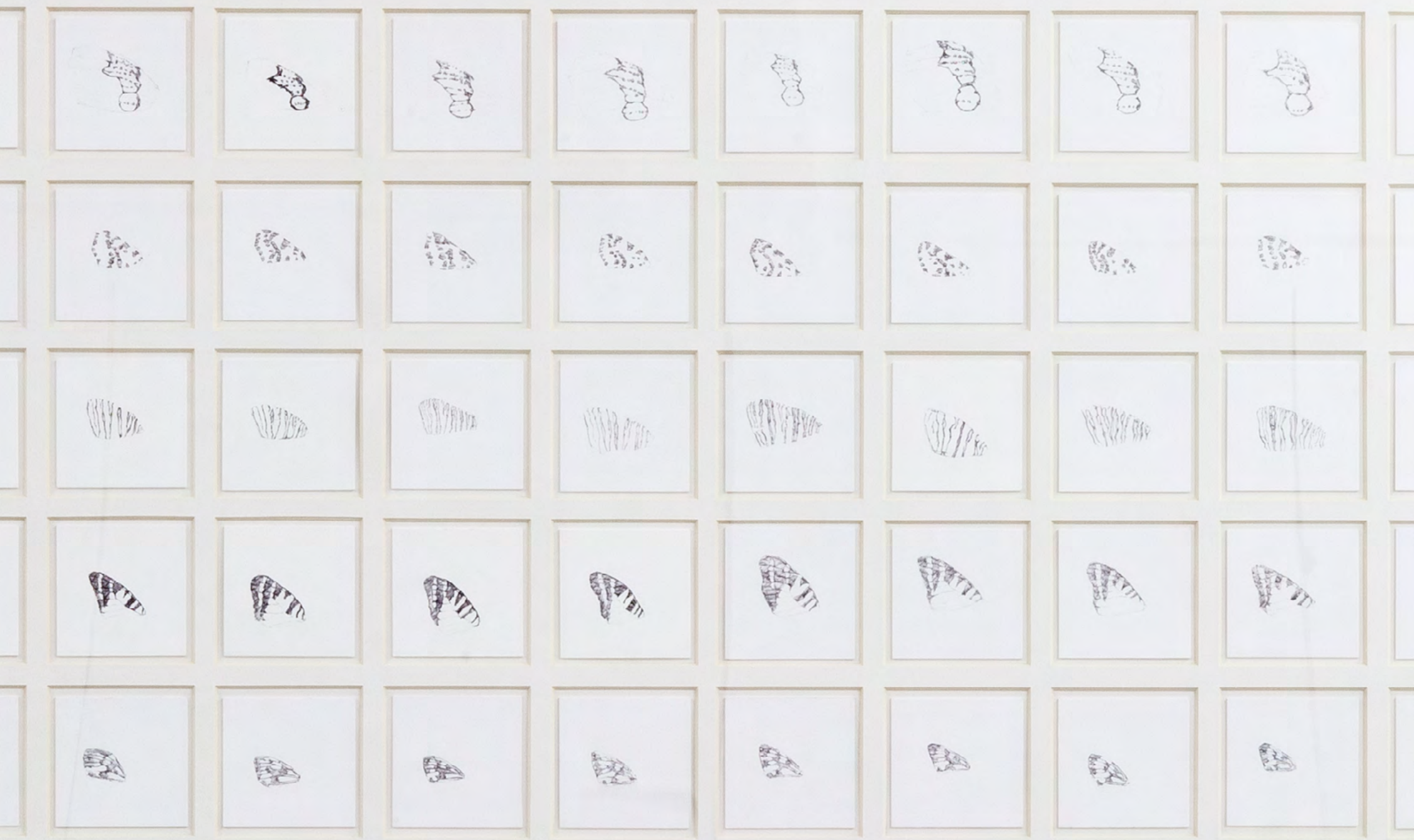
Ubx Expression explored a natural science collection with its display systems based on 19th-century forms of categorisation and logics of identity—a classifying logos that excludes differences and singularities. Through a concentrated series of artistic interventions and deconstructions of such device systems, I developed an alternative form of archiving and display.

Notebook



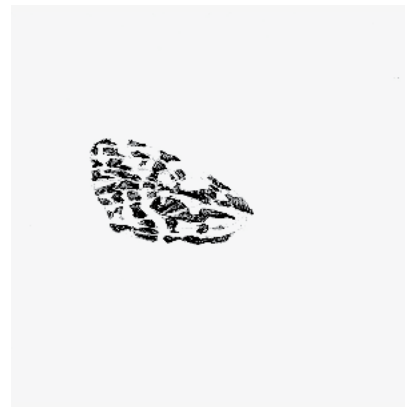
Ubx Expression, 2008
series of 120 drawings
(12 drawings of 10 species)
pen on cardborad
8×8 cm each



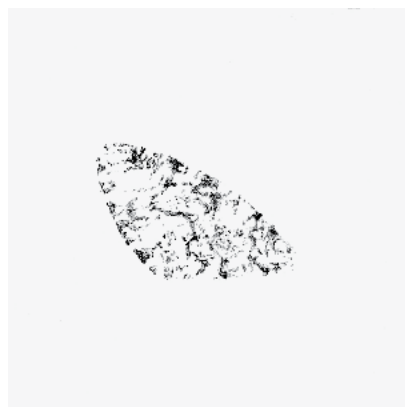
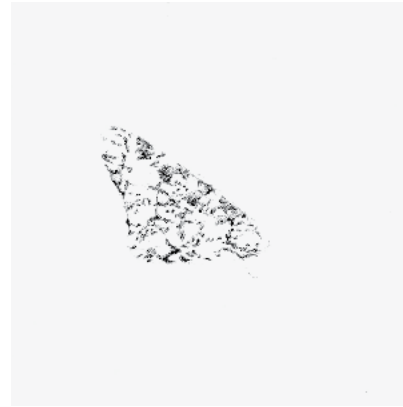




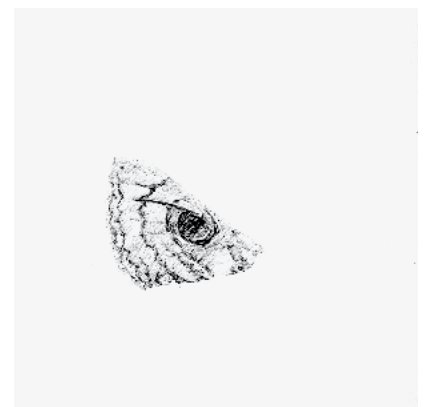
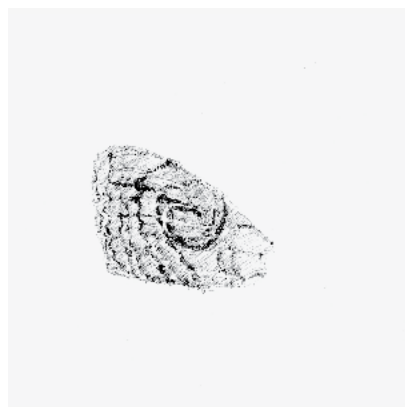
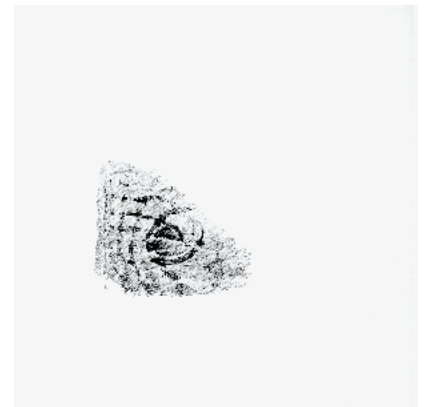
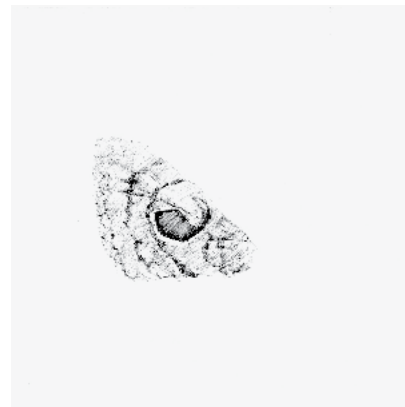
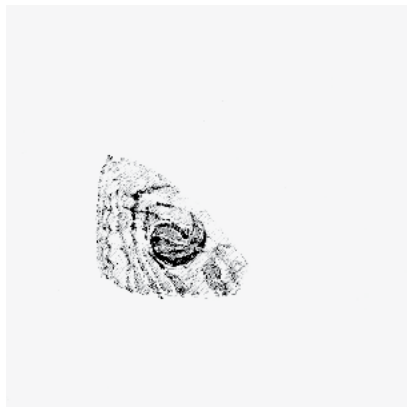
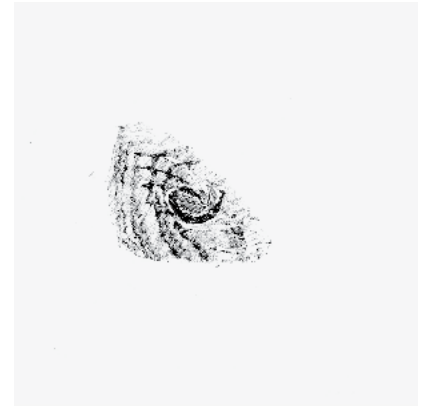
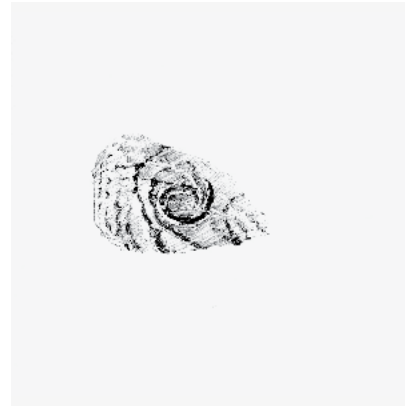
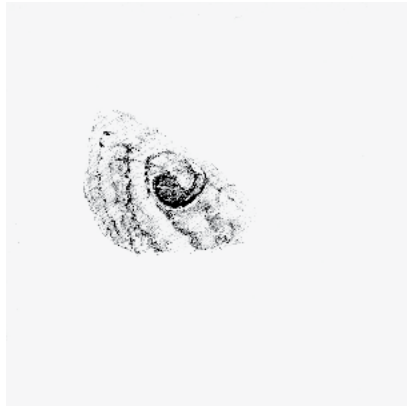
Spilosoma Glatignyi



Biston Betularia



Noctuidae Catocalinae
Trigonodes

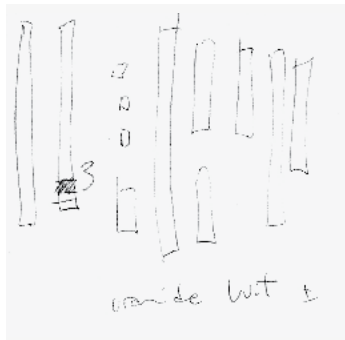


Trigodones

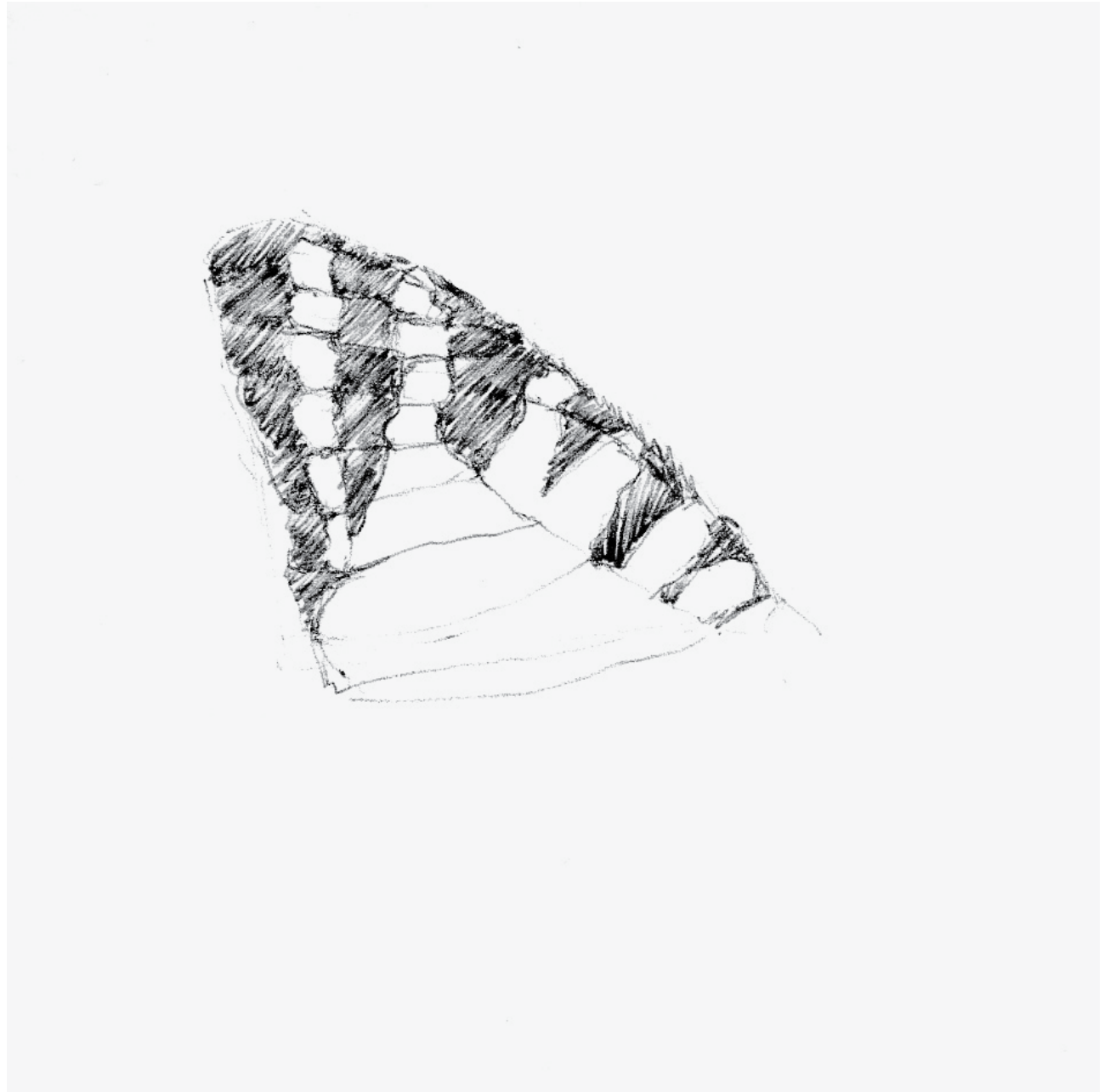


Uranide Wit

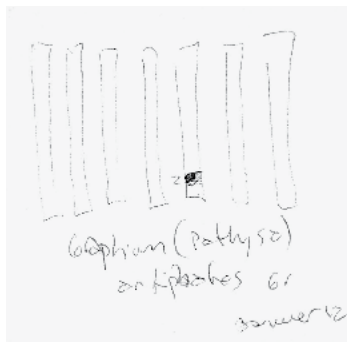
The backside of the drawings gives
an indication of which butterfly was
drawn in the drawer



Graphium Antiphates

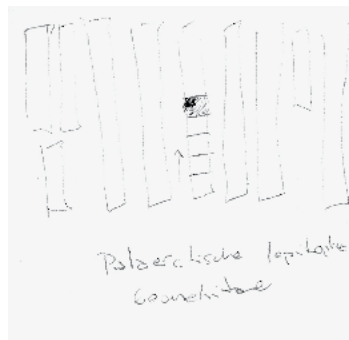


backside



Lepidoptera Geometridae

backside



Irene Kopelman
Ubx Expression

The work was exhibited at:
— *Asteroide B612*, Museo de Arte Moderno,
Mexico DF, 2010
— *Nameless Science*, Apex art, New York, 2008

Curated by:
Henk Slager (Apex art)

Design PDF:
Ayumi Higuchi

Sponsored by:
Mondriaan Fonds

Special thanks:
Willem Hogenes from the Entomological
collection Amsterdam