GEORG MÜHLECK

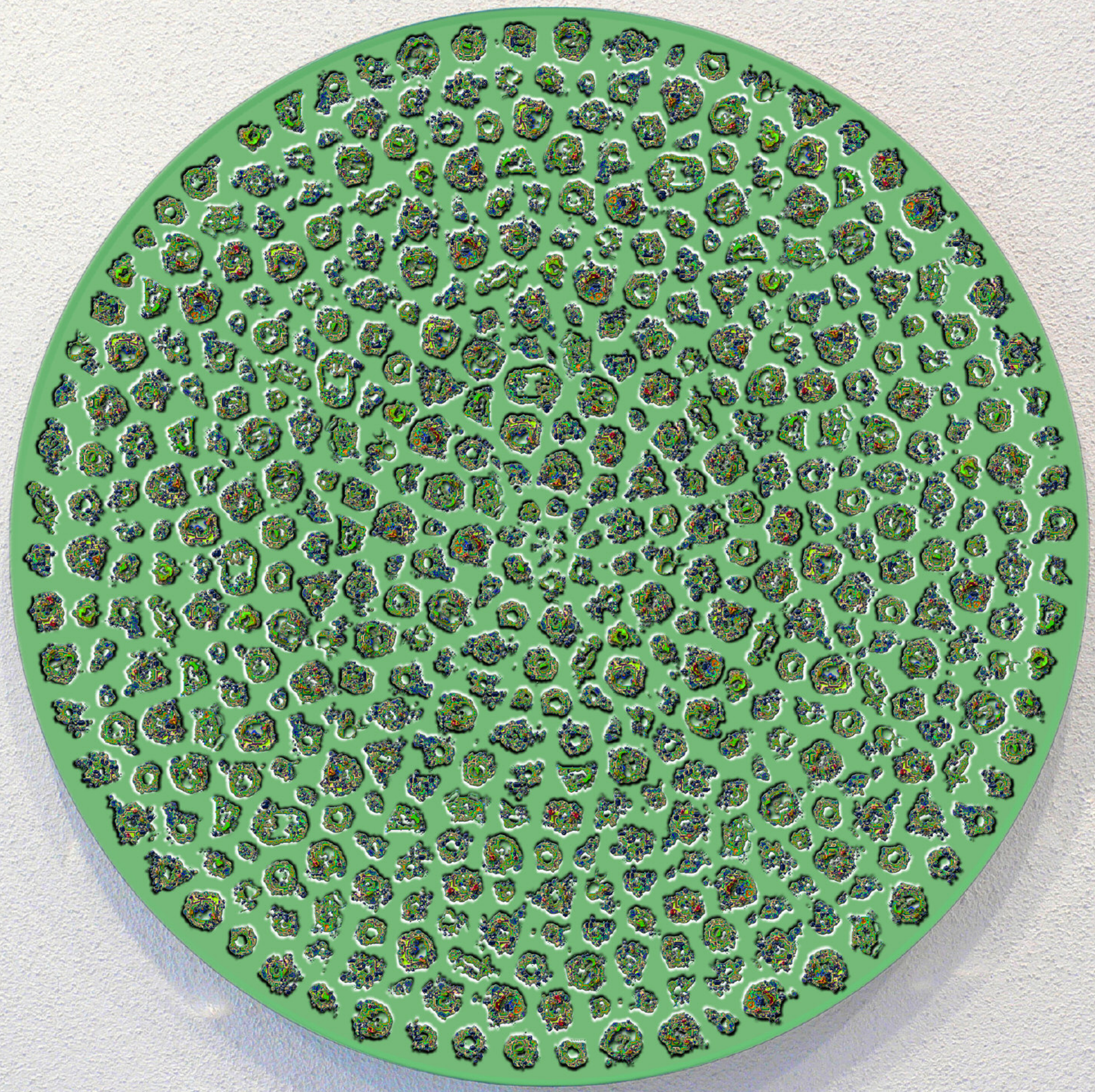
"swaying differentiated dish 2", 2011, Archival Pigment on Canson, facemounted onto 10mm Plexiglass, Ø 84,6cm, Edition of 3

Cultivated Algorithms

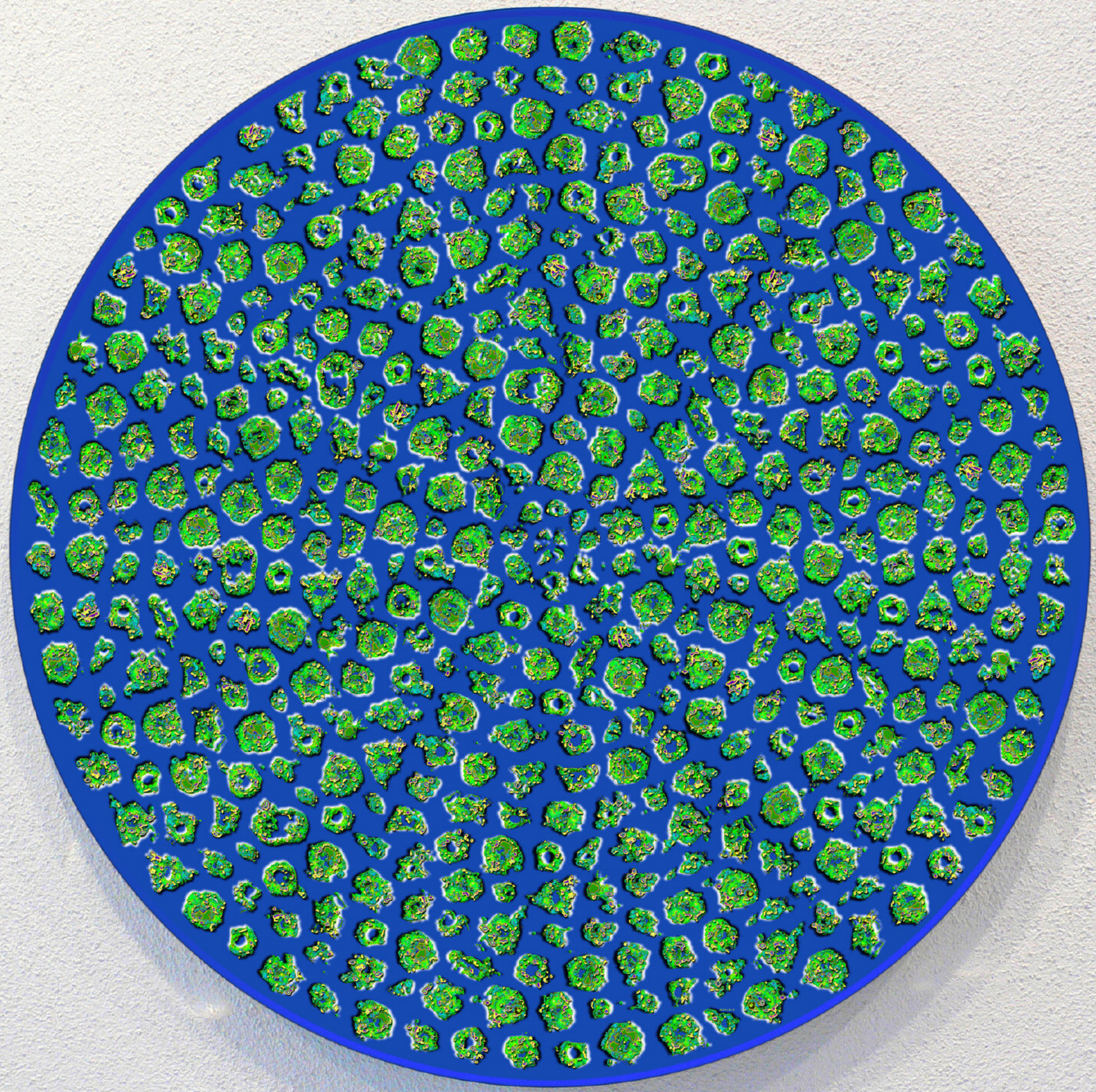
Zelluläre Arten, Augen-Blicke und Peripherie
[Cellular species, Blinks of the Eye, and Periphery]

"Cultivated Algorithms — Zelluläre Arten, Augen-Blicke und Peripherie" GALERIE MANFRED RIEKER, Heilbronn/Neckar, Germany, 2011

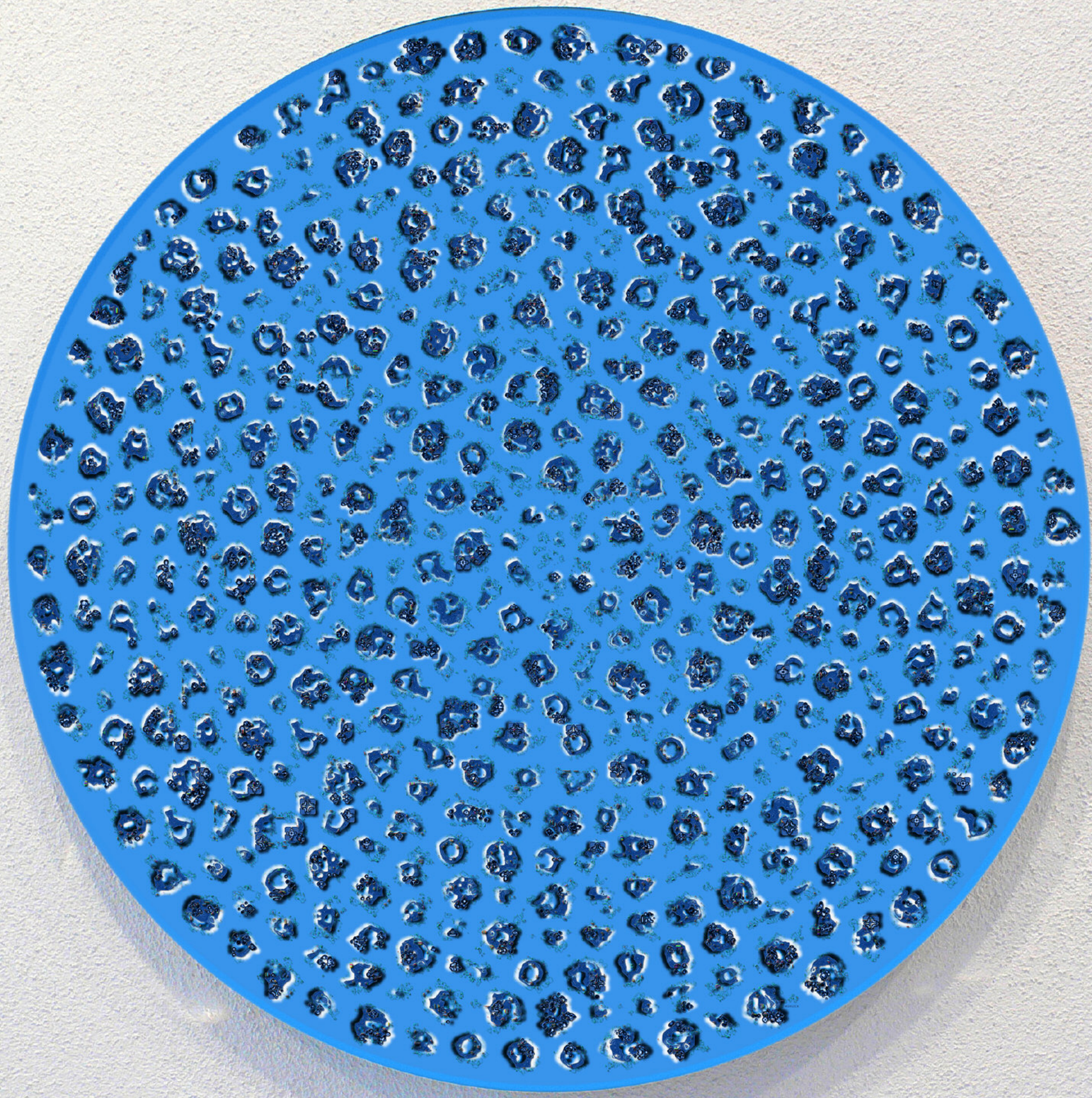
"imploding watchmaker" 2011, Archival Pigment on Canson, facemounted onto 10mm Plexiglass, Ø 84,6cm, Edition of 3



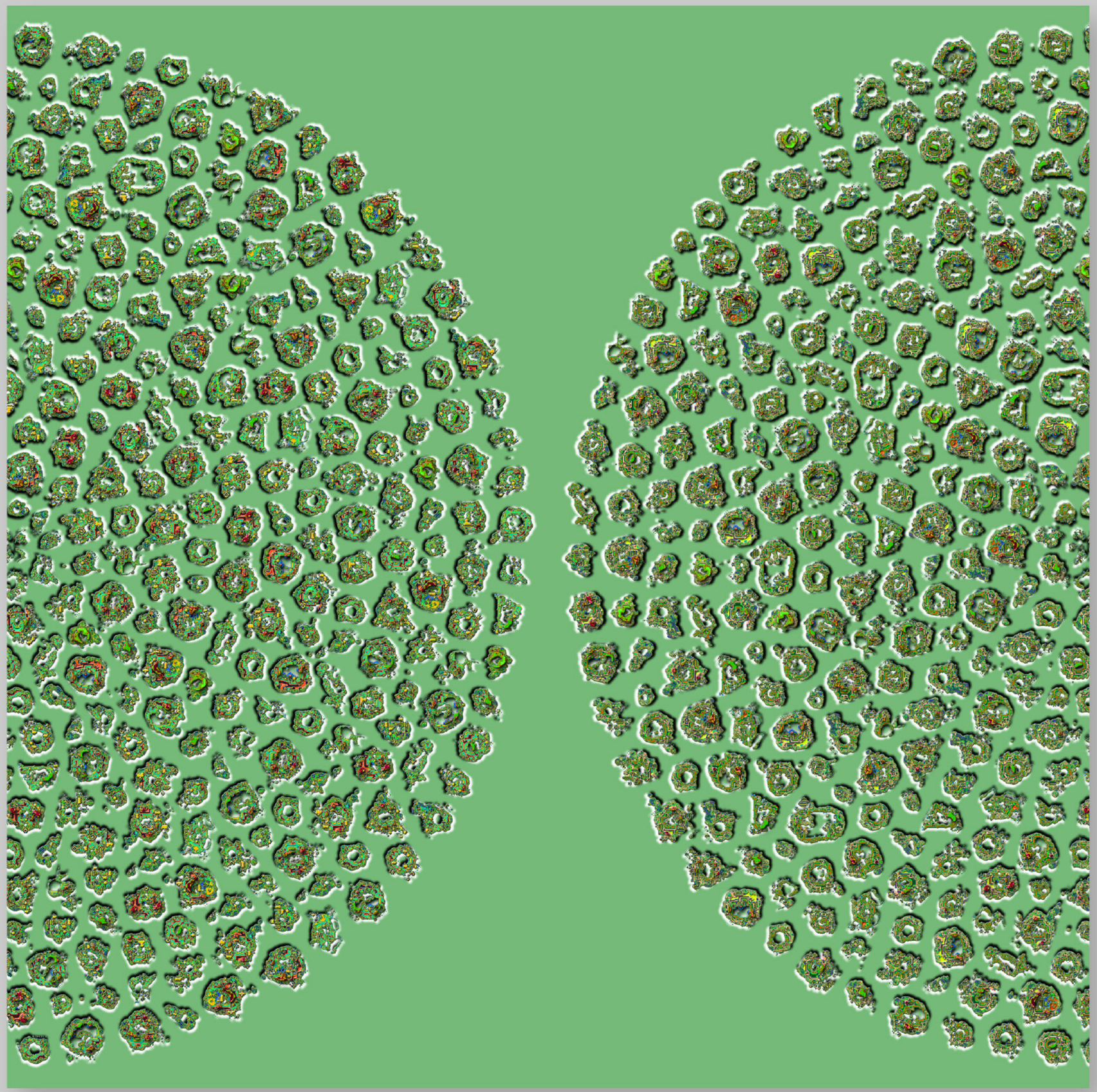
"breathing plate" 2011, Archival Pigment on Canson, facemounted onto 10mm Plexiglass, Ø 84,6cm, Edition of 3



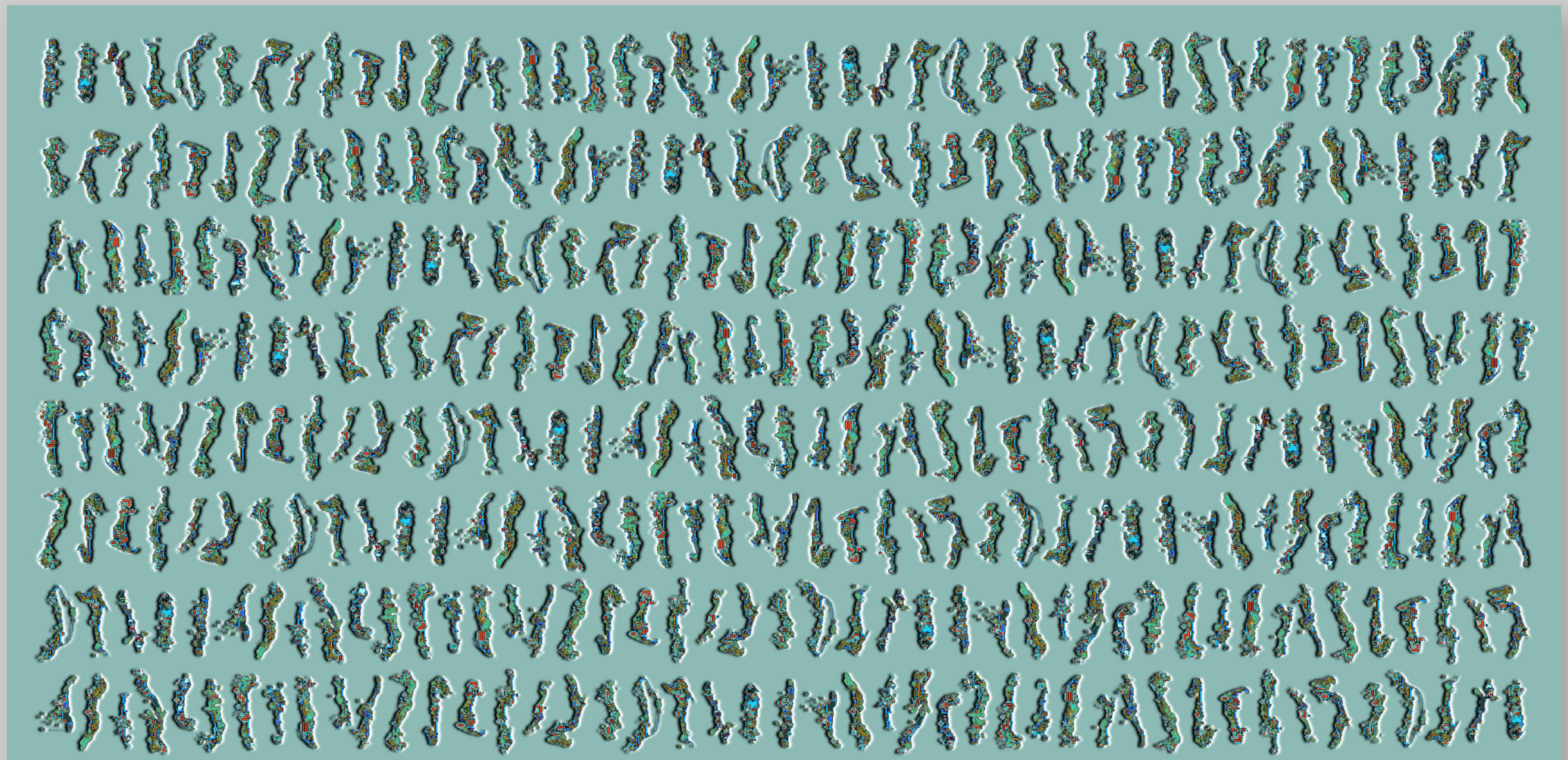
"swaying differentiated dish" 2011, Archival Pigment on Canson, facemounted onto 10mm Plexiglass, Ø 84,6cm, Edition of 3



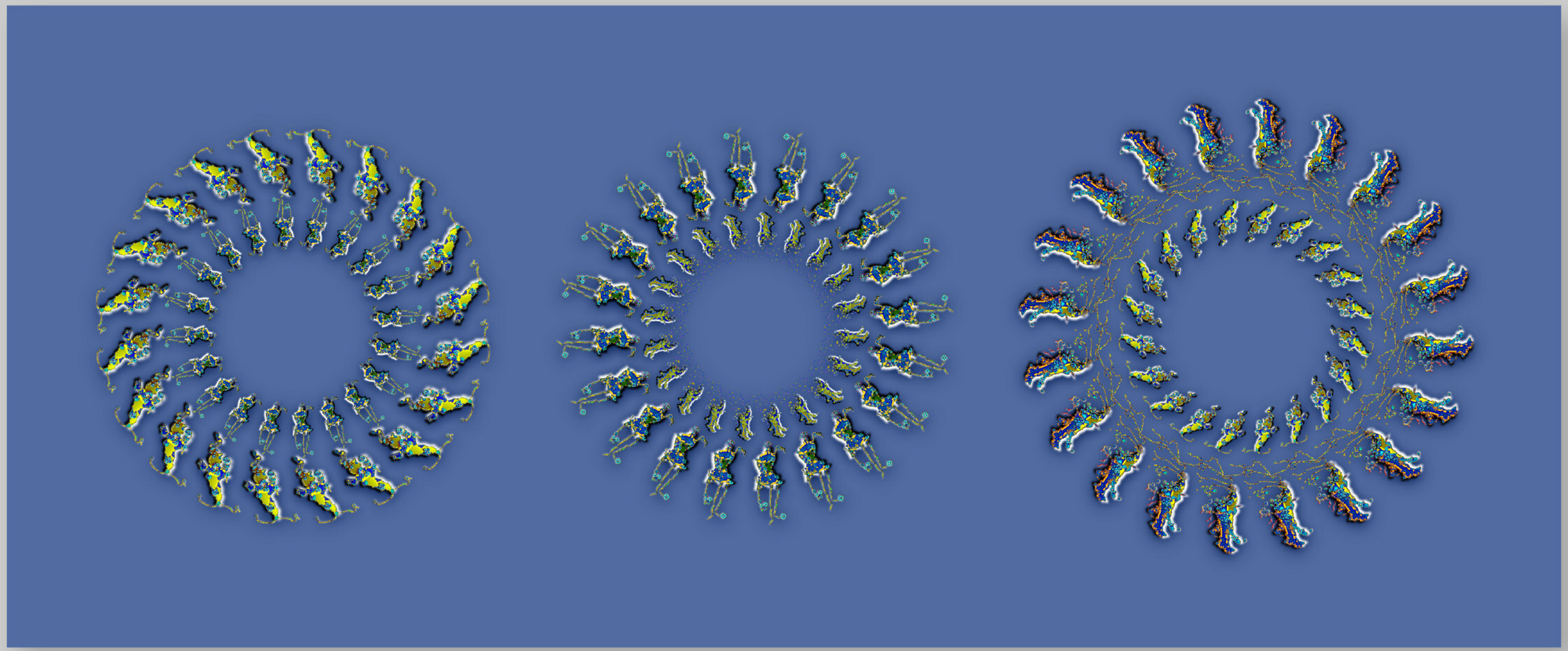
"semicircular colliders 1" (from a group of 3) 2011, Archival Pigment on Canson, facemounted onto 10mm Plexiglass, Ø 84,6cm, Edition of 3



"expanding matter" 2011
Archival Pigment on Canson
85,4 x 85,4 cm
Edition of 3



"banding" 2010, Archival Pigment on Canson 310g, 130 x 65 cm, Edition of 3



"Revolving around Zero" 2010, Archival Pigment on Canson 310g, 203 x 84 cm, Edition of 3

Dialogue between artist Georg Mühleck (G.M.) and art historian Bernhard Stumpfhaus (B.S.) on the occasion of the exhibition "Cultivated Algorithms — Zelluläre Arten, Augen-Blicke und Peripherie" [Cellular species, Blinks of the Eye, and Periphery] hosted by Gallery Manfred Rieker

Translation by Birgit Lamerz-Beckschäfer

B.S. .....

G.M. The 21st century's complex reality makes a lot of things in the world appear surreal. The terms "truth" and "reality" need to be reconsidered and redefined. It is in this field of tension that I see my artistic work.

B.S. This makes me think in particular of the title of the exhibition, "Cultivated Algorithms". After all, computer programmes create images by summarizing data relevant for advertising and other applications based on the calculation of social movements; images which appear to be mere patterns and, at first sight, are meaningless to us who simply look at them, but which carry crucial messages for those who analyze them. The mutations of the patterns derived from algorithms make important statements about the changes in peoples' behaviour. That is why forecasts are often based on algorithms, as if they had some kind of prophetical authority. The term "cultivated", in my view, calls attention to the fact that algorithms, although by nature time-phased and determined, are not manifest destiny but inherently aesthetic formations that can be shaped.

G.M. Your idea to relate "Cultivated Algorithms" to data visualization is certainly reasonable. While basically, my works are not mere transpositions of data pools collected from the internet, you could consider them as metaphors for this subject matter. I always enjoy hearing what people think while they are looking at my works. If I succeed in getting a little closer to the difficult construct that is our reality, this can only be useful. This is exactly what data-collecting companies such as Google and Facebook do, and also people who abuse data. The "machines" they use are "software agents" composed of algorithms. While looking for a title for this exhibition, the term "cultivated" came to my mind once Manfred Rieker had suggested considering the word "algorithm". I wanted to find an epithet describing the contents of my works more in depth. The title occurred to me for the first time when I saw the cell cultures Sylvia Niebrügge prepared for this collaborative project. The first result was the animation "CELL-CELL", followed by all the works in the series called "peripheral cellular cultures" (pseudo-movements). The starting material for these came from an image database I personally compiled using these biological cell cultures. Which, of course, means yet another data pool, only this time one we cultivated ourselves. In this context, you could also think of the DNA sequencing of the human genome. Its analysis was backed up by computer networks involving universities and private laboratories worldwide. Just imagine it were possible to derive an algorithm from these genetic sequences which includes all combinations a creature needs to be born as a human being. It's a dreadful prospect! We need to be very careful.

Your thought about a "cultivated" algorithm can also be seen from a visual angle. It was indeed a process stretching over years until these mathematical rules could be applied so that they worked not only in terms of content, but also visually. After all, I am not interested in their utilization as such, which could be handled by anyone working in this field. My intention is rather to implement them as a work of art claiming to offer the viewer an enticing picture surface able to hold his or her attention also in the distant future. If the algorithm was not "cultivated", you

could tag it as a "ready-made" of electronic art. Yet that is what we already achieved in the last century, albeit with objects.

B.S. Personally, I am particularly impressed with the works relating to gestalt-psychological phenomena such as "swaying differentiated dish" (2011), or "expanding matter" (2011). What I like about these works is the fact that these perceptually dynamic illusions brought about by the viewer's own sensory perceptions are not presented as an end in themselves. As the title suggests, they can assume a meaning which cannot be attributed to me, even though it results from my physical reflexes, but is a feature of the object I see. To think that this movement does not say something about me, but about the object, seems uncanny at first. But this totally corresponds to my view of the world: even though everything is subjective, something belonging to the object reflects on the subject in the guise of a reflexive movement which can be tracked and perceived. That is why every subject is still entitled to say "that's the way it is." After all, the world reveals itself to the individual in the shape of his or her subjective perception of it. The crucial point for me is that we can continue to talk "objectively". That is my idea of "cultivated" because I believe that the commitment to a shared object, to a shared perspective in a shared conversation, is endangered today by a rampant subjectivism which sophistically qualifies everything until you no longer know what you are really talking about. That is a very cheap way of shuffling out of responsibility: speaking, i.e. communication, becomes a set of natural – physical – noises no longer committing the speaker to anything. Yet as your works show, there is something in me – in this case my movement in terms of perception psychology – which is not part of me, but part of the object! This is certainly a humiliation, but once you have put this feeling behind you, then it is satisfying and encouraging to know that the world is part of me: it moves me at its own discretion, creating congruence between me and the world so that I can refer to the latter in a definite way. As human beings, we are all different, and therefore also the congruencies vary, but the fact that there is congruence is something we all share. And when I refer to myself with regard to the object of my imagination, then my words certainly reflect a subjective view, but at the same time, I speak in a definite way about an object which acts on me while not being part of me. I really thank you for transposing this into art! When people find they share a relationship to an object so that they cannot shuffle out of their responsibility, if they feel connected with regard to an object we can speak about in a matter-of-fact way — that is what I consider as cultivated in our time.

To generate your works of art you use cellular automata. What are they?

G.M. A cellular automaton produces a computer model mainly composed of identical cells arranged in a regular grid. Each cell can assume certain states and interacts with a definite number of neighbourhood cells. The basic components of such systems – the cells and the rules governing the calculation of the upcoming state of a particular cell – possess a very simple structure. When co-operating, however, they can generate complex systems.

Kenneth Karakotsios from San Jose, California, wrote in 1990: "In the late 1950's, the mathematicians Stanislaw M. Ulam and John von Neumann began exploring cellular automata. Ulam used the earliest computers to explore what he called 'recursively defined geometric objects'. von Neumann, on the other hand, was looking for something in particular. He wanted to create a 'self-replicating' object; that is, an object that can build copies of itself. This sounds simple, but it lies at the heart of the definition of life as we know it. von Neumann's goal was nothing less than to find a simple set of operations that would work on a simple set of building blocks to create a 'living' organism. He reduced the problem to its most abstract elements by creating a two-dimensional grid upon which a simple algo-

rithm, or set of rules, could be applied to uniform-sized cells of various 'substances'. These different substances were represented by numbers, which became the 'states' of the cells. — The field of cellular automata has spread across nearly every discipline of science, from biology to astrophysics."

B.S. This leads us straight to the next question: If such an automaton is visually active for you, then to what extent do you resort to the concept of peinture automatique as surrealism formulated it, up to and including a – partial? – abandonment of deliberate, autonomous authorship? After all, the video work "CELL-CELL" does show moving shapes that are quivering and swirling without your direct intervention. What effect does the interaction of artist and machine have for you in this context? As a matter of fact, the cellular automaton and the computer – are they two machines or just one?

G.M. In the video "CELL-CELL", you see firstly, the natural process in which cell groups develop from murine stem cells which are cultivated in vitro and therefore bodiless. At that point, they are 7 days old. In fast motion, a sequence of roughly one minute represents 12 hours. Secondly, you see a cellular automaton I set on these murine cells. It starts in the same position as the natural cells, but then evolves in different ways and (seemingly) reacts with the biological cells.

When I started working with cellular automata back in 1993, I tried automatisms along the lines of the peinture automatique concept you mentioned. Experiments have been made, by the way, also with respect to music, i.e. to use cellular automata for compositions. This is, of course, a remarkable step which deserves respect and has certainly secured itself a place as a significant concept. The question is, however, how much enthusiasm a person can develop while enjoying these often interchangeable results. And what comes next? After all, every mechanical construction is the result of human intelligence. In my case, what came next was the artistic (i.e. human) interference with the "machine". If I were a mathematician, the machine-generated results probably would have fascinated me sufficiently to accept them as final product: problem solved. From an artist's point of view, however, things seem quite different. We are looking here at the collaboration of art and science. The scientist as "artist" and the artist as "scientist": maybe this is a topic for yet another digression.

B.S. In your view, is this abandonment of authorship rather a social (political) phenomenon or is it caused by scientific progress, perhaps insofar as man – being a biological apparatus himself – is able to manipulate himself as such? How do you judge this automaton-like part of the viewer's reception of your works considering that in the gestalt-psychological sense, he or she interprets the shapes as being three-dimensional or pulsating rhythmically in one direction or another, which means the viewer him- or herself functions like an automaton?

G.M. Authorship is a tricky point, in art as much as in science. You have to consider, for instance, that there are companies trying to obtain patents on gene sequences. From a social point of view, it may well be desirable to waive one's authorship and dedicate one's work to humanity in general (think of Wikipedia or other non-commercial areas of the internet, or networking in science, even if the authors' names are often given).

When talking about the "pulsating" or "moving" shapes in my works from this year, wasn't your question rather meant to elicit a statement on whether or not man is a (bio) machine? In the field of artificial intelligence, there are some radical advocates of this theory such as Edward Fredkin or Jeff Hawkins. Personally, I tend to word the idea like this: Man is probably an extremely complex (bio) machine. But here we enter the realm of philosophy and religion, hence another digression.

B.S. Starting from the context of automatisms, and enlarging the perspective, what part does randomness play in terms of a creative principle? How do you apply the tea leaves to the scanner surface in works such as "connect 1+2", or "sei 1-3"? Do you just scatter them – like Hans Arp did with his shapes – and allow them to arrange themselves by chance? Or do you organise them consciously for scanning, like a deliberate composition? What part do you allocate to randomness in your works? Is it a variation of automatic writing/ painting? Is it some kind of secular mimesis of prophetic practices, as if one could "read" something in the spontaneous arrangement of the leaves? Or is it a variation in the sense of play, a manifestation of the artist as homo ludens, perhaps in the remote tradition of Schiller?

G.M. You are probably aware that I lived in Britain for a number of years, so I shouldn't be surprised you are asking me about reading the tea leaves, but I beg to differ. It is not fortune-telling I am interested in. The tea leaves are deliberately placed. They are a metaphor for the neuronal network in our central nervous system. Regarding randomness in working with cellular automata, the answer is that the results are random only to the extent looked for by the programmer. Whether or not you use a random generator, and just how "random" it actually is, depends on its quality. In other words: the algorithms permit a more or less sophisticated figuration. In terms of tea cups, this means: the tea leaves do not find their place by coincidence either. If you investigated in detail what their shape, weight, friction surface, temperature, and phase of the moon are like, then you could very well calculate how the tea leaves are going to scatter, couldn't you?

B.S. Your remark about calculable tea leaves reminds me of "Laplace's demon". If anyone can claim to have provided an adequate reply to this concept, then it must be the Brothers Grimm. Just imagine Snow White had not found a Prince so clumsy he had to stumble and drop her in order to save her from her ordeal! Maybe there are algorithmic counterparts for the moronic ideas of the Valiant Little Tailor?

With respect to the interaction of biology and art that is such a crucial feature of your projects, I should like to ask if you see your art as a "different" type of scientific work. Would you conceive your works as some kind of (more or less) targeted research using methods analogous to science? Maybe comparable with Goethe, since the methodology he used in his scientific research in indistinguishable from the one he used for his poetry. As it were, a poetic science instead of a mathematical/ analytical one?

G.M. My work has always been guided by concepts the contents of which I unlock by doing research (i.e. technical, social, artistic, scientific research, in no particular order). I explore until I succeed in developing a comprehensive series of works that appear worth public viewing. The results of my research often raise new questions demanding different approaches which I then follow up in order to transpose those new questions into an artistic form. In this way, a structure with a fairly wide range of contents has developed over time, a structure which, on the surface of things, is difficult to retrace. As to the potential algorithm for the Valiant Little Tailor's antics, I will have to look into that in more detail (provided the topic appears pressing to me). However, your questions confirm that the viewer can still have a pretty good grip on my works (which of course is not always the case). If someone fails to recognize any of the contents which constitute my works, I hope that at least I am able to show him or her a piece of imagery that fires his or her imagination and is so exciting it deserves to be looked at again and again.

B.S. Finally, what about the ludic element of your works? After all, movement – which is of course arranged, but at the same time spontaneous – has a big part in your work without

possessing a direct symbolic meaning, at least that is how I understand it. Playfulness in the way leaves dance or waves roll? A lovely game which is neither functional nor purposeful and therefore free to unfold amidst aesthetic pleasure? Or a game in the subversive sense, as it were, that consists in misappropriating the mathematical, useful machine that is the computer by not employing it to calculate stock markets, consumption, science – all the algorithmic calculations impacting on our actions and our self-concept –, but using it instead to generate aesthetic products appealing to the "free play of cognitive powers"?

G.M. Misappropriation is probably the most fitting term, although in a contingent way. In the 1980s, I spent a whole decade using photocopiers to produce art, which means I used an apparatus built to copy originals to produce originals (which were also exhibited and sold in the commercial art market). When it comes to using a computer, the abuse of the machine is not quite so obvious since this type of apparatus covers a fairly wide spectrum of construction features and possible uses. If art is supposed to be authentic, then it is much more complicated to achieve this with a machine which can be employed by just anybody in the same way. Still, this is exactly what I demand of myself, and I work intensively at achieving it.

P.S.:

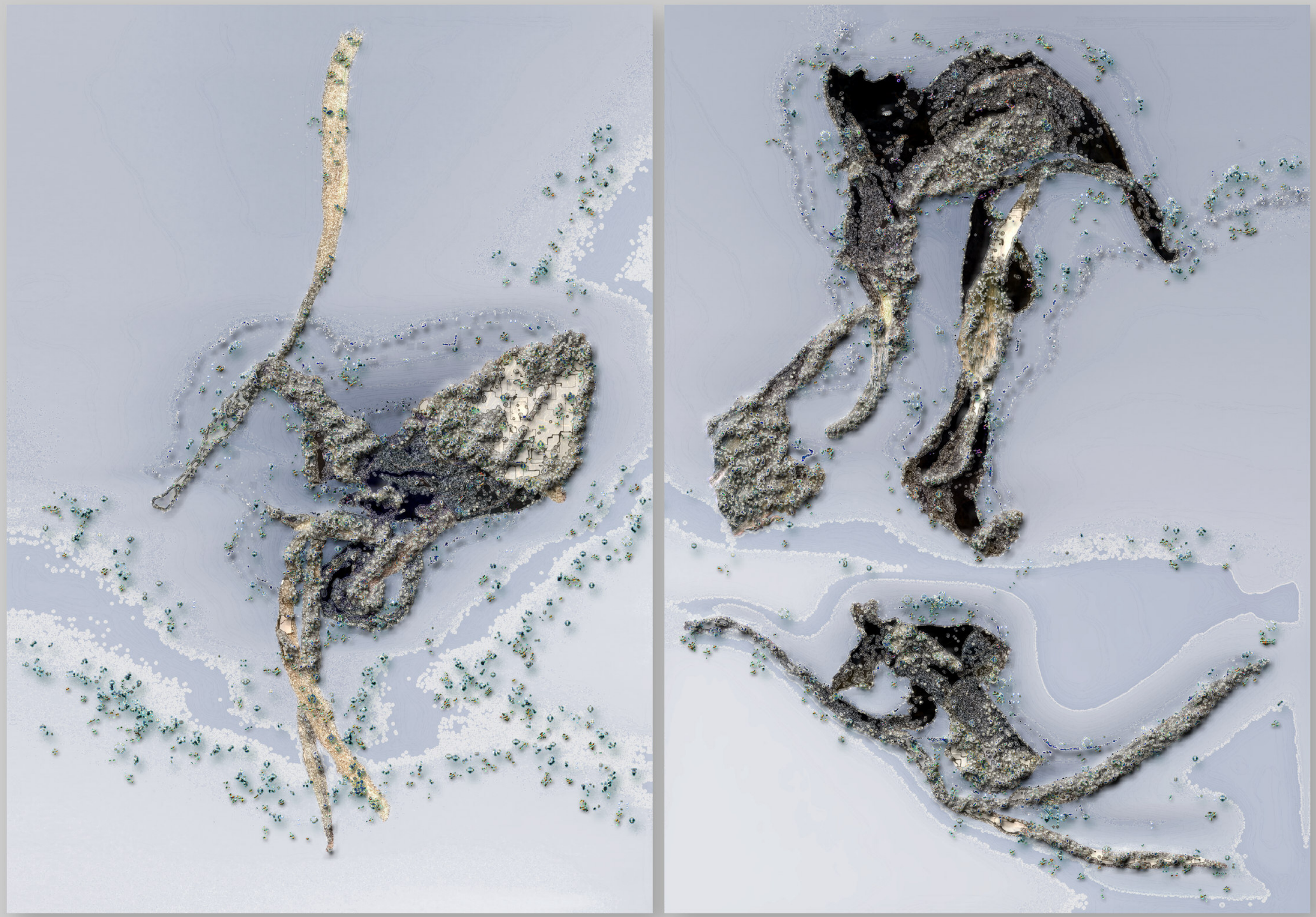
B.S. Considering that your replies have reflected a very state-of-the-art scientific view, I am glad that my questions motivated by my experience as an art historian obviously did not convey something old-fashioned hollered at you from a distant shore. Our conversation has rather resembled that of two people on different ships taking turns at calling out (which may also be due to the use of e-mails as medium of communication). To me, the text conveys the impression that using the old experience one can in fact get a hold on your work, albeit without grasping every aspect of it. On the other hand, your works are based on art-historical experience and cannot dispense with them while extending beyond them. In a nutshell: I get the impression that in this strict sense, there is actually no spectacular rupture, but no mere, gentle continuation either.

Heilbronn/Berlin/Toronto, fall 2011

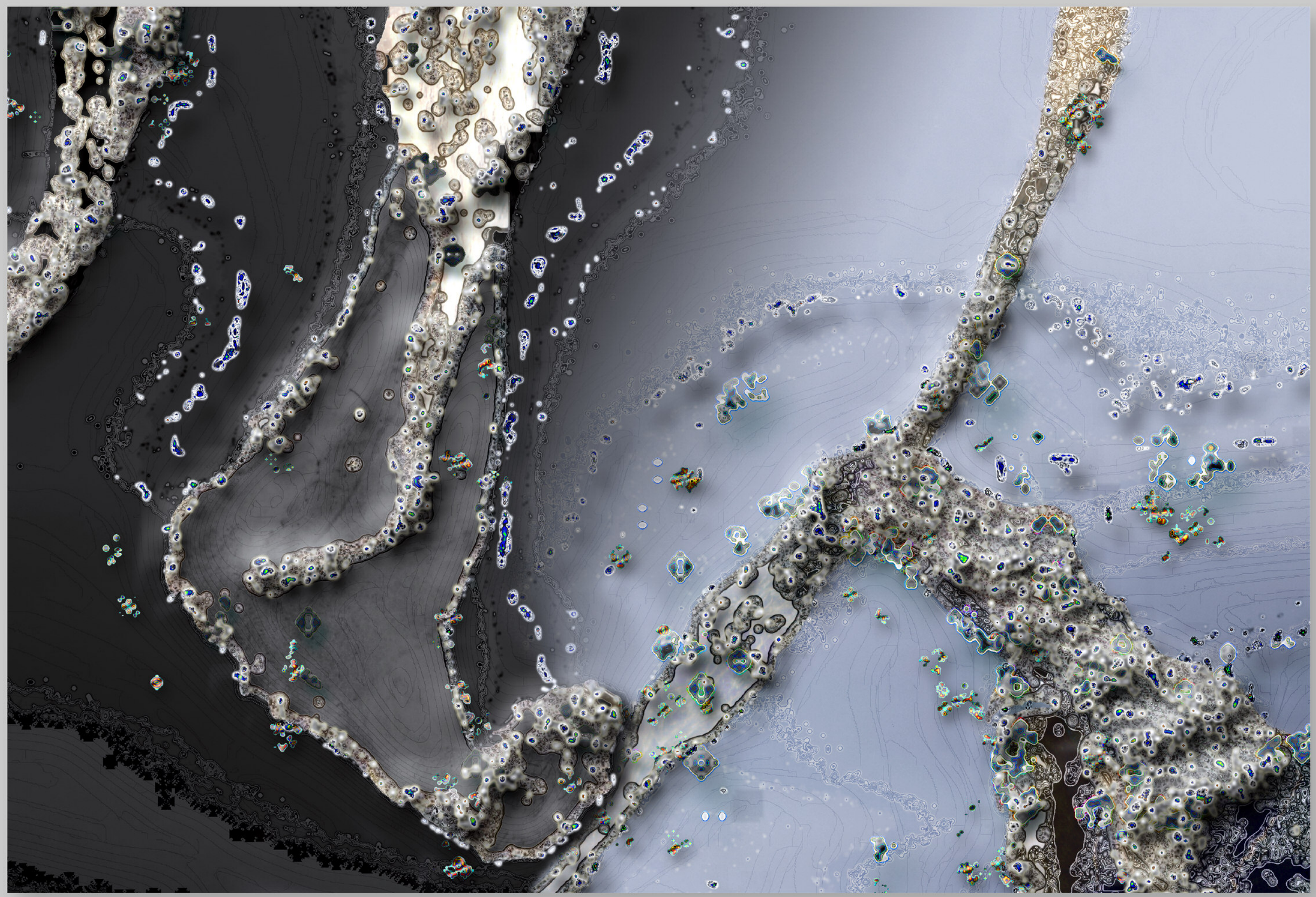
The authors of this text must be named should its contents be quoted or adopted.

"Cultivated Algorithms — Zelluläre Arten, Augen-Blicke und Peripherie" GALERIE MANFRED RIEKER, Heilbronn/Neckar, Germany, 2011

"sTEAmulus pond 2" 2008
Archival Pigment on Arches 315g
108 x 151 cm
Edition of 3



"Metasystem transition I+II" 2008, Archival Pigment on Arches 315g, 108 x 151 cm each, Edition of 3

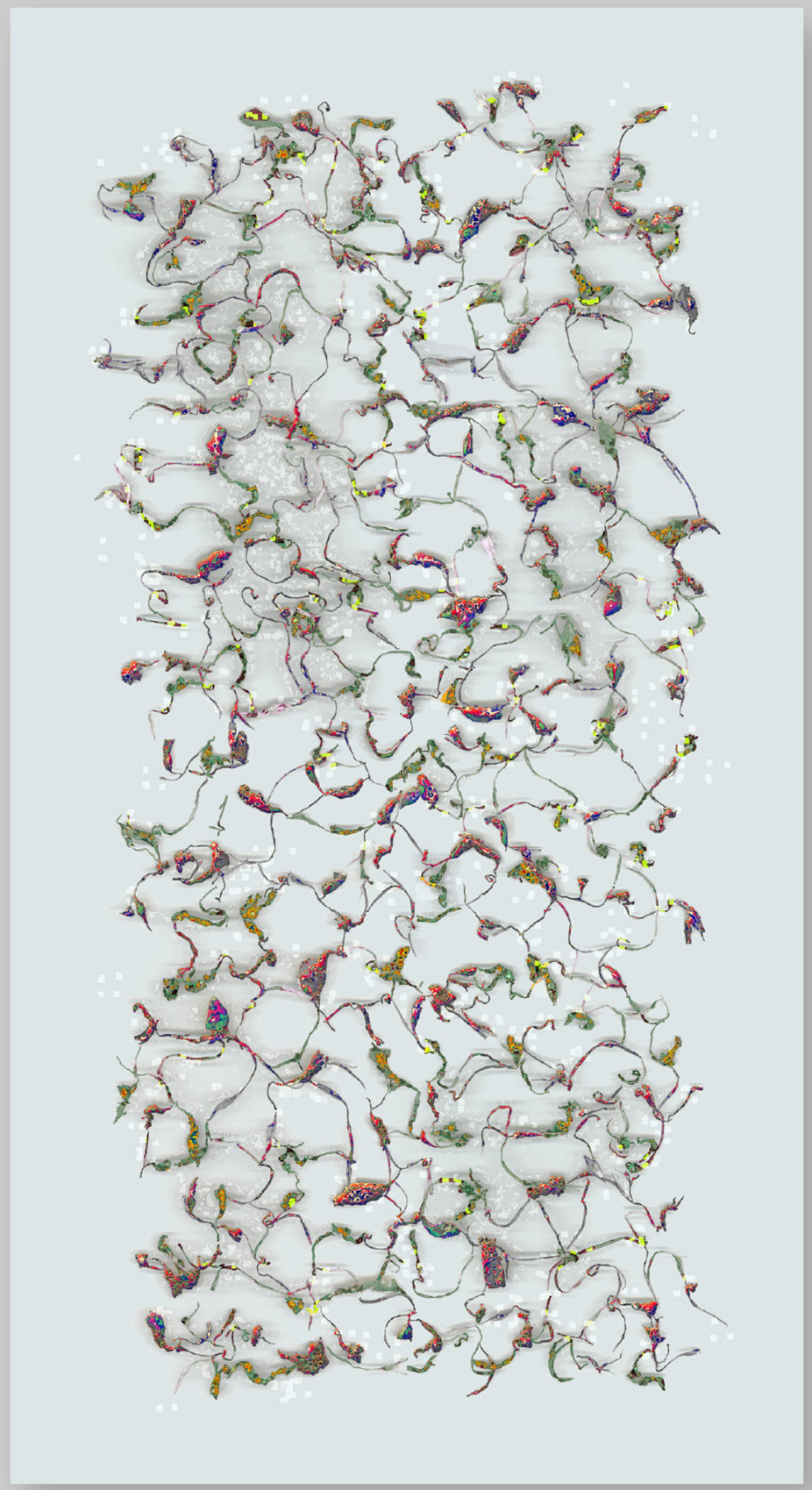


"Metasystem transition: subculture 1" 2009, Archival Pigment on Arches 315g, 70 x 52,2cm, Edition of 3

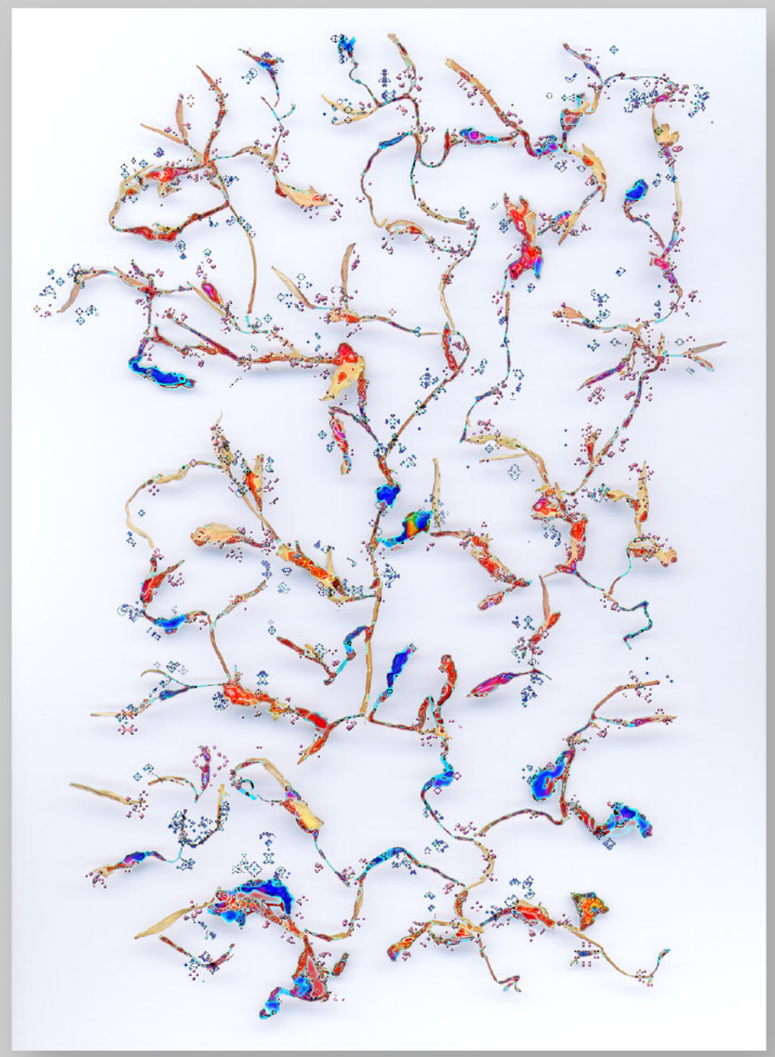
"new bark" (Detail) 2007, Archival Pigment on Arches 315g, 108 x 151 cm, Edition of 3

"altered attractors" 2005
Archival Pigment on
Somerset 255g, 108 x 151 cm
Edition of 3

"Cellular Cultures (T)" 2009
Hardcover artistbook
Cloth over boards, hot stamping,
open slipcase
Hand sewn binding
88 pages 24.7x32.7cm, 1500 Grams
Printed with archival pigments on
acid free Cotton Mould-made
paper 190g
Printed and bound in Canada
Edition of 3
ISBN 978-0-9812286-0-0

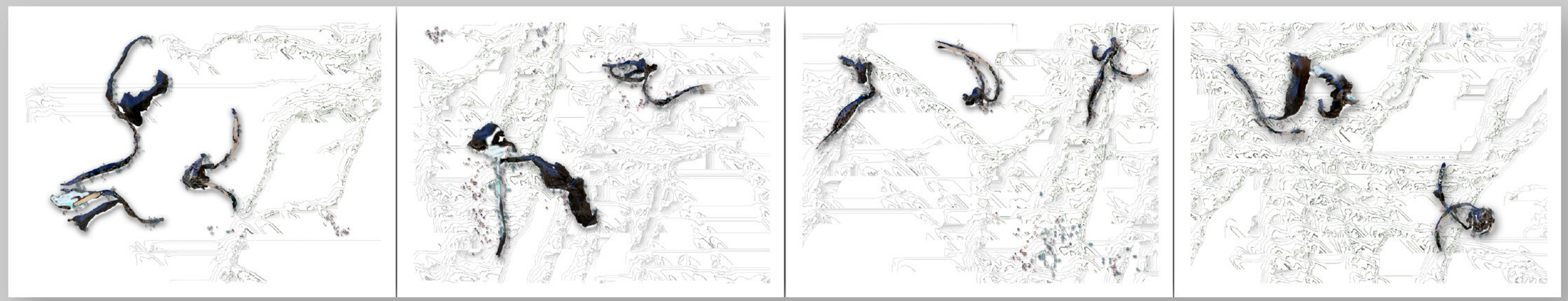


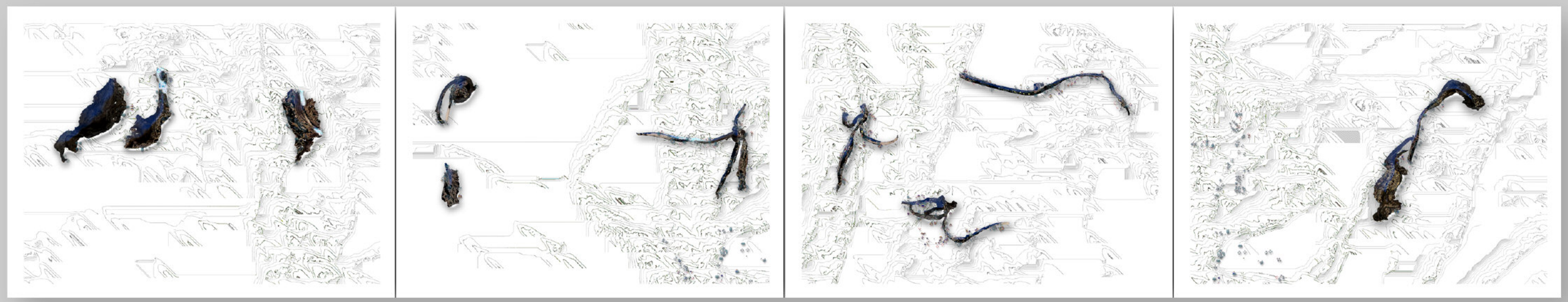
"connect 1+2"
2004-2008
Archival Pigment on
Somerset 255g
108 x 201 cm each
Edition of 3



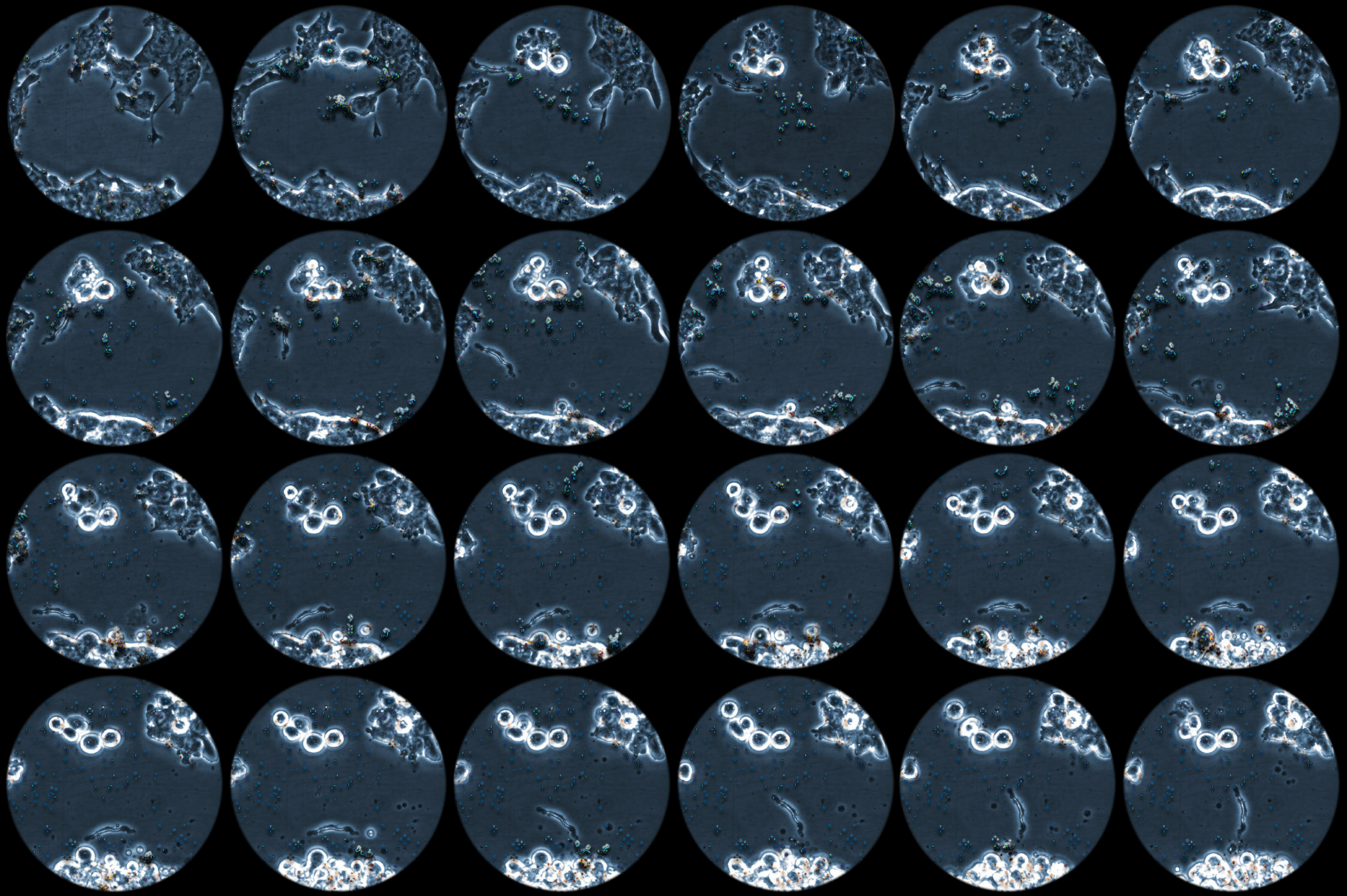
"sei 1-3" 2002, Archival Pigment on Arches 45,4 x 61 cm each, Edition of 5

"catching cellular dew 1" 2007, Archival Pigment on cold pressed Arches 300g, 76 x 56 cm, Edition of 4





"catching cellular dew 1-8" 2007, Archival Pigment on cold pressed Arches 300g, 76 x 56 cm each, Edition of 4



"CELL-CELL" 2010

DVD 1+1min loop, limited edition, Mühleck/Niebrügge, Toronto/Berlin

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