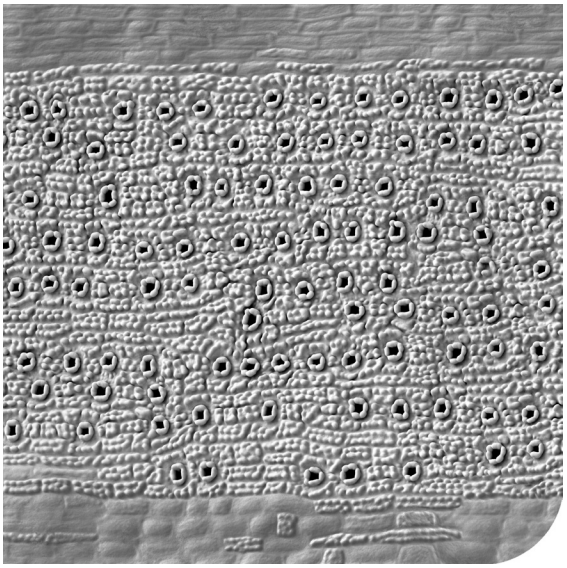

Fig. 1 *Yew*, 2007, FR 013, SEM photo ISI-60

Win Labuda

Microphotography – a Source of Continuing Amazement

Thoughts and Stories about the Microphotographic Works of Yuko and Win Labuda

2011

Fig. 2 Win Labuda in 1983 at the Ultraphot microscope...

The year 2010 can be viewed as a "year of microphotography". A major highlight was an extensive exhibition of photomicrographs in the Museum of Photography near Bahnhof Zoo in Berlin. At the centre of this highly acclaimed exhibition was the 75th birthday of Manfred Kage, the doyen of German microphotography after 1970. Coinciding with the exhibition in the Berlin Museum of Photography, the small but exquisite Alfred Ehrhardt Foundation presented a Kage retrospective in its exhibition space.

The Berlin exhibition "Microphotography – Beauty beyond the Visible" will probably remain unsurpassed for the entire field of microphotography for a long time in terms of its communicative density, the selected quality of the exhibits and its incomparable exhibition architecture. I say this not without thinking of the valuable catalogue, which Ludger Derenthal and Christiane Stahl put together with care, love and skill. Just hours after publication it had become an icon of photomicrography. With the most beautiful art of formulation, Dr Ludger Derenthal but of course also Dr Christiane Stahl placed the literary alongside the visual in a congenial way and reminded us, in a time of increasing linguistic poverty, that art criticism and art description at a high level first of all requires mastery of the art of language. Only those who are blessed with this prerequisite can bring art closer to us through the word.

It is not without joy and pride that we saw that some of Yuko Labuda's photomicrographs feature prominently in this valuable work. We owe Ludger Derenthal and in particular Christiane Stahl our special thanks for the opportunity to present Yuko Labuda's work, for her constant willingness to talk and for many valuable suggestions. Dr Jens Ehrhardt, the son of the microphotographer, photographer and filmmaker Alfred Ehrhardt (1901-1984), who in a touching way endeavours to preserve his father's work for posterity within the framework of a foundation, can take pride in his dedication to support this project.

Intoxicated by colour and light

When I became aware of his work with crystalline structures in polarised transmitted light through one of Manfred Kage's articles in a scientific journal – it was the end of the 1970s – I immediately wrote to him. I wanted to let him spontaneously share in the enthusiasm he had awakened in me with these coloured crystal pictures, which he had concocted in his witch's kitchen to my endless amazement. At the same time, I wanted to find out from him where I could get the chemicals with the hard-to-understand names, which, with the help of my microscope, were soon to put me in the presumed frenzy of colour. Manfred Kage demonstrated unforgettable noblesse: Although we didn't know each other, it only took a week and I held a

Fig. 3 ... and wife Yuko in 1991 at the REM.

Purchase a microscope, but please don't wear a windbreaker

package from him in my hand, in which I regarded the dark brown bottles with incredulous amazement, which reminded me of a passage in Faust:

"But why is my gaze fixed on that spot? / Is that little bottle there a magnet for the eyes? / Why does it suddenly feel lovely to me / As if moonlight were blowing around us in the night forest? / I salute you, you only vial / which I now take down with reverence! / In you I adore human wit and art."

I was now engrossed in the microscope for weeks, until a painful conjunctivitis put an end to the spook for the time being. With said microscope, however, it was not yet possible for me to capture the conjured up images permanently on film. So I called my friend Hans Palla, then head of analytical microscopy at Bayer in Leverkusen. He said that I first needed a "decent microscope", and he immediately recommended one that promised top performance, at least in terms of price: it was the Ultraphot III microscope from Zeiss. He said you could even make 9 x 12 colour slides with it, and that's exactly what I wanted to do. In any case, a research microscope was urgently needed at Clear & Clean, our small specialist clean technology company that I founded in 1979.

One grey autumn day, I had gone to Hamburg to go shopping, and in passing I noticed a company sign that said "Carl Zeiss Foundation, Hamburg branch." So I was again confronted with my desire for the microscope and spontaneously decided to pay the Zeiss people a visit. However, on that day I was obviously not dressed appropriately for a visit to a venerable company like the Carl Zeiss Foundation. The medium-blonde receptionist, to whom I had conveyed my desire for information about Zeiss microscopes, placed me on a distant bench with the words "First of all, sit down there!" and then unexpectedly went into an adjoining room. I politely waited for several ladies to end their coffee breaks there. After a good quarter of an hour she reappeared, the medium-blonde, startled by my presence and unpleasantly reminded that she had forgotten me. So she disappeared and then reappeared with a brochure in her hand, on which the word "student microscope" was written in large letters. She pushed the prospectus over the counter and gave me a stubborn look parallel to my visual axis and added "bitte", a word sparingly used in northern Germany which can also connote "go away". When I then suggested to her that I was not thinking of ordering a student microscope, but rather an "Ultraphot III", she repeated "Ul-tra-phot-three" in a long drawn-out way and, after a pause for breath, retorted: "You can't afford that." The microscope cost a little over 100,000 DM at the time and it clearly exceeded her ability to imagine that someone in a worn, slightly faded blue windbreaker and also appearing unannounced at the Zeiss Foundation in order to purchase an Ultraphot III was not at least a dangerous imposter.

Fig. 4 Christmas card 1995, conifer top © Yuko Labuda

Manfred Kage - primus inter pares

With revenge in mind, I immediately thought that her lack of people skills could be useful for price negotiations, and so I wrote a telex the same evening – there was neither fax nor email – describing what I had experienced and sent it to Carl Zeiss Microscopy GmbH in Göttingen. A week passed, and the expected call came announcing that two gentlemen would be visiting, who would resolve the embarrassing incident without much fuss. The two gentlemen soon appeared and asked how we could come to an agreement. I tried it with the requirement: "Demonstration model at half price." Like almost all salespeople, the two of them could not promise anything but said they would put in a good word with the management. Nothing happened for almost three weeks, and the matter was almost forgotten. Then they suddenly reappeared, the two of them, and informed me that they could now offer a device that actually belonged to the Shah of Persia, who unfortunately had just been overthrown. The device was already two-thirds paid for, but the new Persian government had cancelled all contracts with Zeiss, including the one for the microscope in question. So they offered the microscope for the remaining amount of 30,000 DM and also promised to give the necessary accessories free of charge. I agreed, promising in return that I would forget my grudge against the blonde receptionist. A month later I was the proud owner of a "decent" microscope, and of course I'm still grateful to the medium-blonde for her little faux pas.

I then got in touch with Manfred Kage again, during the course of which I again received crystalline compounds for interesting enamels and also some good advice from him. I spent nights gazing at these spectacular crystal images in polarised light and yet took few pictures because each new wonder I saw was even greater than the previous one. My expectation was that the next one would surpass anything that had gone before, even anything that I could imagine. Often I forgot to press the shutter button because of my amazement and indecisiveness. Over time, the crystal pictures became a visual drug for me, from which I had to free myself at some point. Nevertheless, some beautiful photos were taken, of which I am attaching a smaller selection to this essay.

One day my good friend of many years, Professor Wilfried Gunkel, who later became director of the German Biological Institute, told me that a micrographer had been to their institute on Helgoland to get specimens; he caused a lot of fuss, completely disassembled their Axiomat microscope, but in the end he got incomparable images of radiolarians – "just as beautiful as Haeckel's," he said. I already suspected that it was Manfred Kage who must have been at work there. So I went to the Gunkels on Helgoland to take some interesting radiolaria photos, but the radiolaria that had been given to me seemed extremely unspectacular, at least in my Ultraphot, and at that time I didn't have access to an electron microscope.

Fig. 5 Yuko and Win Labuda during the exhibition *Microphotography - Beauty Beyond the Visible*, in Berlin on September 30, 2010.

My fight for the electron microscope

Fig. 6 and 7 Prof. Manfred Kage on his 75th birthday in Berlin at the opening of his exhibition in the Alfred Ehrhardt Foundation, above with Win Labuda, below with Yuko Labuda.

It was Yuko Labuda who, in view of the name of Manfred Kage, which we kept mentioning, insisted that we should visit the maestro in his castle in Weissenstein. Kage had meanwhile gained a certain renown in Japan as a castle owner and micro-photographer. So it happened that in February 1988 we "made a pilgrimage" to Weissenstein and were warmly welcomed by Manfred Kage. He showed us interesting and spooky things from his daily work and also his electron microscope, with which he demonstrated the possibility of imaging the smallest structures with great depth of field. When we left Weissenstein late in the evening, the course was set for me to buy my own electron microscope. At the end of our visit, Manfred Kage, in a good mood, gave us his fascinating book "Die Siliziumwelt" and two original slides with his kaleidoscopic works, which we always cherish and look at from time to time.

What we most remember about Manfred Kage: At a time when we were still relative novices on this topic, he kindly accepted us and freely shared his knowledge with us. Through his example, he also taught us to leave the depicted nature in the morphology that grew out of the conditions of its creation. In his volume of essays The Elixirs of Science, Hans Magnus Enzensberger wrote: "The poetry of science is not obvious. It comes from deeper layers. ... Invisible like an isotope that is used for diagnosis and timekeeping, inconspicuous but hardly indispensable like a trace element, poetry is also at work where nobody suspects it." Manfred Kage has become a well-known proponent of this unexpected poetry. He is a "professor" in the best sense of the word and on his 75th birthday our thoughts are with him.

I didn't have the funds to buy a new electron microscope at the time, but I made the matter a central focus of our future investment activity at Clear & Clean and soon began phoning a horde of people asking whether they could provide our company with an electron microscope. In return, we would take pictures for the donor free of charge for five years.

At first nobody answered and many shook their heads, but one day Hans Zerle from Siemens Purchasing in Munich, an old friend from my youth, answered. He told me that Siemens AG would shut down the entire storage disk development and that, among other things, an electron microscope that was only two years old would be available, which, however, had been promised to the departing technical director without obligation, as a kind of going-away gift for the change to another company that had now become necessary. In the end, however, the highest bidder would win. So I wrote an official letter to Siemens AG in Munich, in which I expressed my interest in the device, but would like to see it first. Surprisingly, it was the said outgoing director who wanted to discuss the purchase with me. We met in Munich and the director acted very friendly and told me, probably to deceive me, that he would

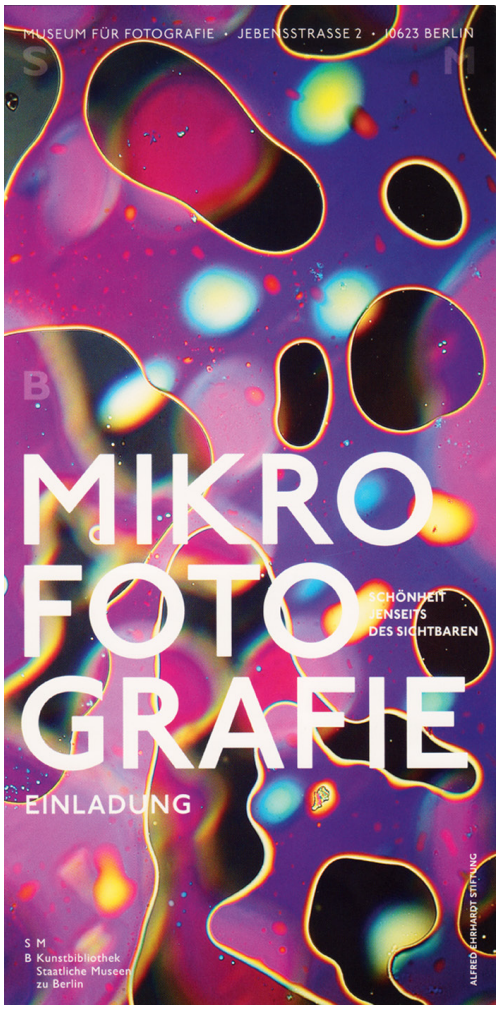

Fig. 8 Invitation to the exhibition *Microphotography / Beauty Beyond the Visible*, 2010.

New horizons for Yuko Labuda

really do his best for me to get the device and that I only had to offer a small purchase price, around 15,000 DM would probably be enough, then everything would be going in the right direction. He didn't know that I was well informed about his departure and about his own interest in the device. So I bid the agreed 15,000 DM and found out from another source that he had secretly outbid me by a lot with 20,000 DM. So he felt safe and there were still three months until his departure, so he paid no further attention to the matter.

I didn't really see any way of getting hold of the device, but just as a higher intuition had often helped me in such situations, so it did this time: I found out that, under German law, an offered deal acquires legal force if the seller of a product has been in possession of the highest bid for more than 14 days and has not objected to the transaction within this period. I speculated that with the structures of this Siemens factory being dissolved, there was no real coordination between the finance department, the outgoing director and the processing office for the machinery and equipment that had become superfluous. So I paid 22,000 DM and waited with burning patience for the 14th day after my payment. Lo and behold, I was lucky; the 18th day also passed without objection and the device now belonged to me.

I sent a special transport company to Munich with a copy of my payment order for 22,000 DM. The manager was called and there was a loud discussion with the transport company. So they called the processing office, the processing office called the accounting department, the accounting department confirmed the receipt of the money and the legality of the transaction at the highest bid amount and without regard to the person. The director fainted a little and the transport with an electron microscope set off in the direction of Lübeck, flanked by a column of Siemens employees shaking their heads and a pale director.

When the device arrived in September 1991, we didn't really know how to get it going and asked Hans Palla to come to Lübeck to assemble our Leitz-ISI 60 and to instruct us. Palla was an amiable person and an excellent REM professional. He put the device into operation without any problems and, assisted by Yuko Labuda, took the first pictures. We were happy to discover that the Siemens people had also given us their EDX system, which without a microscope was of no value to them anyway, but would have cost us another five-digit sum. This allows the elements that make up the microscopic sample to be determined. Yuko Labuda, originally a university lecturer in piano music, took a look at working with the electron microscope for a while and then said jokingly that the device had almost as many keys as her grand piano and whether she shouldn't look into it more closely in the future, she was interested in a new perspective. For two years she took private lessons from the chemist Dr Antje Dietrich and

Fig. 9 *Hooked Chamaleucium*, 2009, FR 028, SEM photo ISI-60 © Yuko Labuda

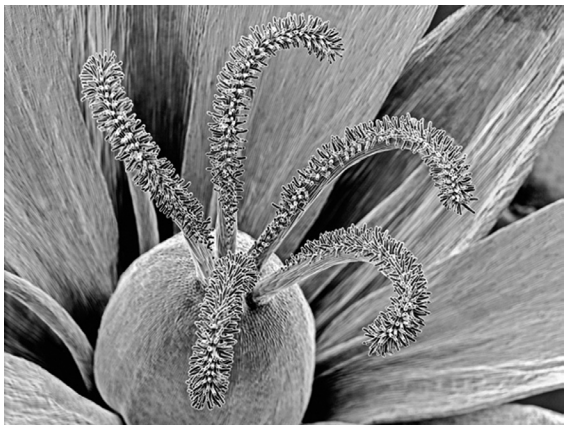

Fig. 10 *Prostrate Pearlwort,* 2005, FR 002
© Yuko Labuda

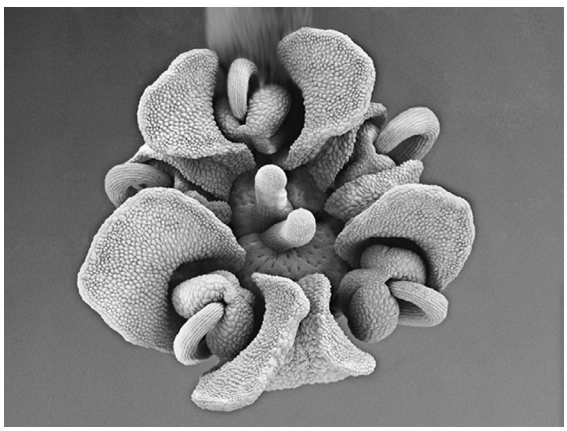

Fig. 11 *Dill,* 2009, FR 027, © Yuko Labuda

learned a lot about natural sciences during this time. It didn't take long before she was able to take the first pictures of the textile surfaces of our Clear & Clean products. As a result, our small specialist company gained a high level of attention in the industry and can today refer to significant research contributions in cleanroom technology, which are substantiated, among other things, by electron microscopy. At that time there was hardly anyone outside of the large corporate groups and the professional analysis laboratories who owned such a device and could also use it.

One of the indispensable guardians of the operational readiness of our electron microscope was the well-known service engineer Dieter Betz, who over the past twenty years has become something of a family friend. So far he has found every spare part, no matter how rare, and every upgrade that was available somewhere, so that even today, our device can still be used to make recordings of the highest precision.

Christmas 1995 was approaching and we thought about what we could do that year to give the friends of Clear & Clean something special as a gift. I had been making a graphic artwork for my friends and business associates for Christmas since 1972, and so Yuko Labuda suggested that the electron microscopic image of a conifer top be printed on a postcard, as a symbolic echo of a technology company to the symbol of the Christmas tree. Because it was well received, after a few years she made it a tradition and kept finding new plant motifs, which she then printed as a postcard and sent with our New Year's greetings. After a few years we were sitting together at Texas Instruments in Freising and one of the senior staff members mentioned that he really appreciated the wonderful pictures he had received from Clear & Clean over the past few years and had created a special folder for them. I thanked him politely and promised even better pictures in years to come when he frowned at me, shook his head and said "I didn't mean your pictures, I meant your wife's...". This unexpected encouragement then prompted Yuko Labuda to devote herself even more intensively to the artistic side of electron microscopy.

However, this required knowledge of advanced preparation methods, which we had only inadequately mastered to date. In this phase, a good friend introduced us to Andreas Gebert, at the time APL Professor of Anatomy in Lübeck and himself an excellent photographer and microphotographer. He taught Yuko Labuda the preparation technique for plant structures in the best possible way, which is invaluable today for her electron microscopic work, so we owe him our sincere gratitude.

Claudia Fährenkemper and Christiane Stahl

One day in 2007, I noticed a lecture announcement in an art magazine: Dr Christiane Stahl was to speak at the Kunstmuseum Bonn about Claudia Fährenkemper's electron microsco-

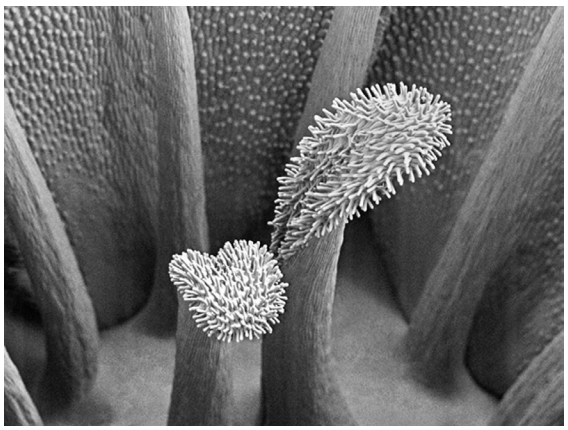

Fig. 12 *Moss Saxifrage,* 2007, FR 004, © Yuko Labuda

pic works, which we had never heard of before. "From Ernst Haeckel to Claudia Fährenkemper" was the somewhat weighty title of the lecture, accompanied by the subtitle: "The tradition of microphotography between nature and aesthetics". Bonn is not exactly located near Lübeck, but the announcement of the lecture included a print of a a work by Claudia Fährenkemper, which seemed so important to us that we did not hesitate making the trip to Bonn. So we travelled to Stahl's lecture and learned a lot about Claudia Fährenkemper's work. We were very impressed by them at first sight, because Fährenkemper obviously understood how to bring us closer to the microworld of beetles and larvae with their shells and shields in a way that suggested a world around them, these mute creatures, which reminds us of tragedy and doesn't leave us emotionless afterwards; this applies almost even more to her archetypal depictions of frog larvae. Claudia Fährenkemper also – just like Yuko Labuda – refrained from colouring her SEM pictures in a fashionable way. This made the microphotographer from Castrop-Rauxel even more likeable. At that time there was also a Fährenkemper exhibition in the Bonn Art Museum, unfortunately in a hanging that did not show many of Claudia Fährenkemper's truly impressive photographs to their best advantage. In Berlin, by contrast, the curators were apparently in a favourable mood, and Fährenkemper's pictures were given the optimal position that their works deserved.

What microphotography means to us

For Yuko Labuda, microphotography is arguably primarily a form of continuing amazement and reverence at the diversity and grandeur of God's nature. As a Japanese oriented toward Buddhism, she concentrates entirely on the electron microscopic imaging of the plant world. It would never occur to her to kill an insect. At the same time, she remains committed to black-and-white photography and refuses to be persuaded to fashionably colour her images obtained using an electron microscope. Yuko Labuda develops her themes slowly and carefully. From the countless collector's items that she brings back from her forays into the woods and fields, she selects only a very few. It's very rare for her to have more than a handful of new photographs a year, and every time she chooses a picture, it's a little family celebration for us.

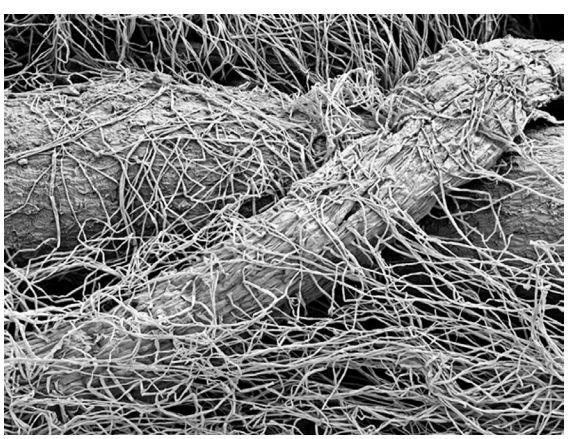

Fig. 13 *Radishes*, 2009, FR 025, © Yuko Labuda

It's completely different for me: I'm quickly enthusiastic and imbued with the desire to try new things, I like to take photos a lot, and I'm by nature less selective in the variety of my subjects and I also care less about the unfortunately legitimate concerns of art historians such as iconography, style and recognition. I see myself – in the spirit of most photographers of my generation – as a universalist. However, I do not feel supported by the zeitgeist in this role and therefore feel compelled to sacrifice the universality of my work to this unfriendly spirit. Microphotography is therefore only a part of my photographic work. Manfred Kage once said: "In the very broad sense, I'm interested in making things visible that are invisi-

Is microphotography "like art"?

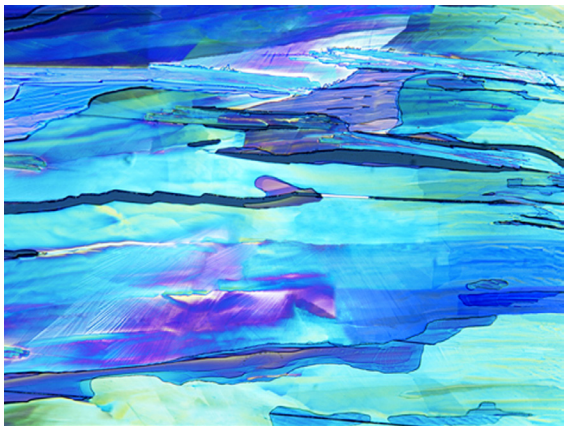

Fig. 14 *Crystal Pictures 5*, 1980, EK 07, © Win Labuda

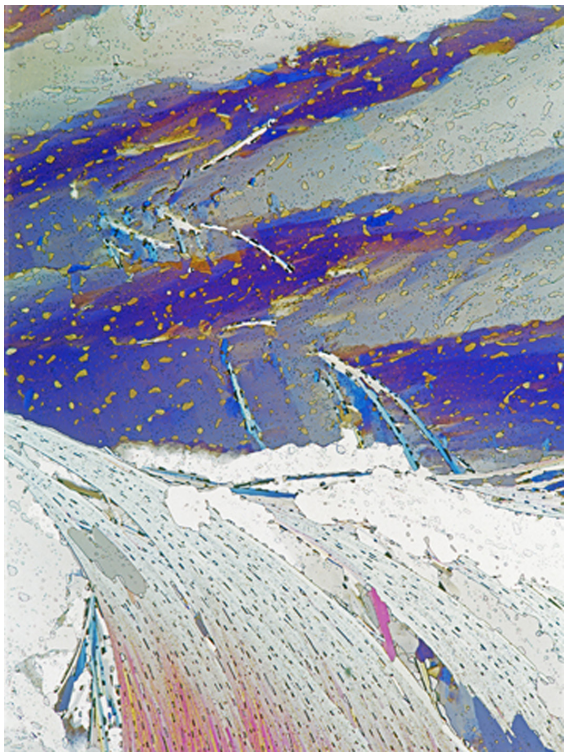

Fig. 15 *Crystal Pictures 8*, 1980, EK 04, © Win Labuda

ble." That doesn't apply to me to this extent. I only turned to microphotography at the time because I wanted to use it to create interesting and distinctive abstract images in polarised light. So I would say, "In a very large sense, I'm interested in creating abstract images with the aid of microphotography and nothing further." Manfred Kage taught me this, I think successfully.

Yuko Labuda had sent the exhibition catalogue of "Microphotography – Beauty beyond the Visible" with a small dedication to a good friend and promptly received a call that began with the enthusiastic words: "Yuko, I'm absolutely thrilled, this is like art!"

We had never experienced more spontaneous joy about a photo book, and yet the wording gives us food for thought: "like art..."
We were reminded of the age-old question: is photography art? Even we, who are constantly confronted with the problems of photography and art and have read countless essays on the subject, are at a loss when we are asked to say whether a certain photograph is art or "just a photo".

In the exhibition catalogue, the well-known science fiction author Herbert W. Franke has his say with his interesting essay entitled: "In the border area of art and science – the visual creations of Manfred P. Kage." Franke lets a few pages go by before he takes up exactly the topic that interests us in this section: Are microscope images art or documents? Franke thinks that the whole thing is actually very easy to decide, if one admits that not everything on earth can be classified into just a few categories. He posits the existence of a transition zone in which the characteristics of both phenomena, both those of art and those of science, are effective. To illustrate his thesis, he shows a so-called "Venn diagram" (see Fig. 19), which consists of two circles of the same size pushed into one another. The area in which the circles overlap, i.e. in the intersection area, could be spoken of as a transition zone for which both scientific and artistic classification would be possible. The difficulty of following this model in terms of a reliable classification arises from the fact that at least the term "art" is not clearly defined. In the following I will therefore try to define the terms scientist and artist:

A scientist is someone who, through the use of his or her mind, acquires new knowledge through research or disseminates it through teaching through his/her exceptional level of knowledge and thus contributes to increasing the level of knowledge of mankind.

An artist is someone who, by means of his/her extraordinary ability, through the use of his/her sensual feelings and the spirit, creates works that convey new truths in the best sense

Fig. 16 *Crystal Pictures 7*, 1980, EK 06, © Win Labuda

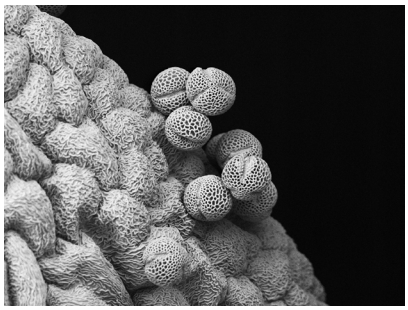

Fig. 17 *Lilac,* 2007, FR 020
© Yuko Labuda

Fig. 18 *Common Yarrow,* 2007,
FR 006, © Yuko Labuda

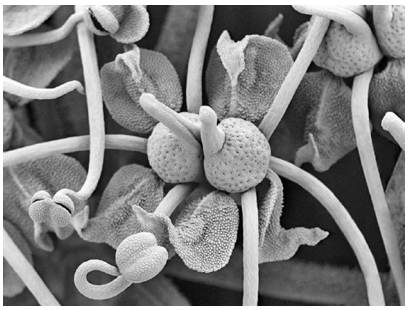

Fig. 19 *Goutweed*, 2009, FR 021
© Yuko Labuda

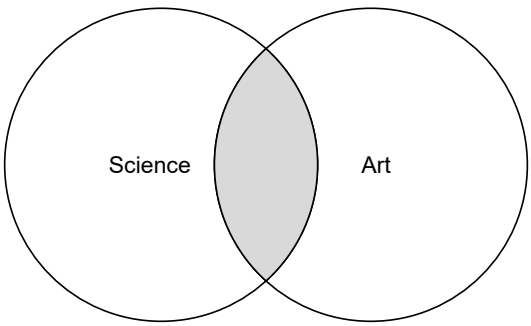

Fig. 20 Venn diagram according to H. W. Franke from the exhibition catalog *Microphotography / Beauty beyond the visible.*

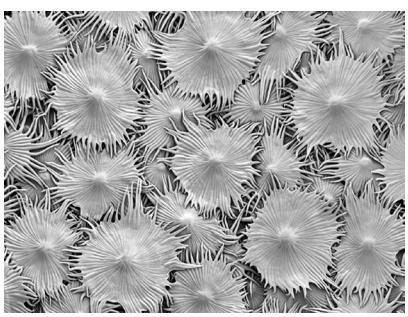

Fig. 21 *Sea Buckthorn,* 2008, FR 015, © Yuko Labuda

and thus lead people to a higher world view.
In the context of microscopy, according to the above definition, it is only possible to be artistically active if someone creates images that convey a new truth through the use of his/her sensual perceptions, in this case, for example, in the context of his/her choice of form and colour. Similar to the systems of general photography, the individual, pictorial design of a microphotographic image is limited to the choice of form and colour and above all to the image section, the viewing angle, the contrast and the depth of field. But taken together, these components are powerful imaging tools. Good artistic photography then combines the depicted reality with an idea.

In Claudia Fährenkemper‘s work, for example, it is the beetles that have come into focus, which, as objects of observation, can lead people to a new worldview. Because the animals, which are little known to us in terms of shape, are wrapped in tragic darkness and do not leave us emotionally unaffected, we may come to realise that the insect kingdom is an integral part of our “system earth” and is therefore a fauna to be protected.

In the work of Yuko Labuda, on the other hand, lesser-known structures from the plant world are the objects of observation. Both the diversity of the plant forms and the processes of floral reproduction in the broadest sense, which are rarely visualised, amaze us here. It is then the experience of astonishment that opens us inwardly, allows us to perceive the surrounding world of flora in a deeper sense and, finally, awakens a spirit of appreciation in us.

Usually it is a realisation coupled with an emotion that allows us to perceive a work of art as art. However, the emotions dwindle and their root causes are not permanent: the art critic Jürgen Raap wrote in his essay “Transitional Character – Changes in the Ideals of Beauty in Bourgeois Society” (Art Forum July 2008): “It (the beauty) embodies nothing absolute and nothing Eternal but it is tied to time and epoch, and accordingly every aesthetic form, be it floral-organic or angular-constructive, is linked to its respective, contemporary

appearance."
Is microscopy art? My answer: Art cannot be created per se with any technical system, not even with a paintbrush. The products of painting, drawing, modelling and photography are art only when people recognise individual works produced as art. This will only ever be the case when they touch us emotionally and spiritually. So what remains for us is the mystery of art and with it our latent insecurity.

A reflective epilogue

When I think of microscopy in general, it is always the position of the voyeur that I am forced to adopt, since nature did not intend our eyes to take a close look at the micro world, just like the macro world. So we have created tools with microscopes and telescopes to penetrate into the smallest and largest structures of matter and living things. The first, that is to say the innocent look through a microscope, is initially followed by amazement. But at the end of this amazement at the diversity of the grasped, meaningful structure, the analytical spirit already lurks, which organises, uses and, in the end, subjugates. Already Aristoteles, (384 - 322 BC), the best known student of Plato, stated in his Metaphysics "The origin of philosophical thought lies in our ability to be amazed." In this sense, amazement is the experience of the unexpected and one of the noblest origins of impartially received knowledge. For example, we use microscopy and microphotography to make objects or subjects visible that are not naturally intended for our visual cognition. With the help of the microscope, Robert Koch discovered the tubercle bacillus, among other things, and thus gave millions of people a longer life. In this context, however, we may also ask ourselves how nature is responding to the fact that millions of people are living twenty years longer. In asserting his interests, which are uncoupled from the cycles of nature, man will always place his reproduction in the foreground of all his actions and thought systems; but is that also in the sense of a natural equilibrium of the nature that surrounds us? Is there a deeper meaning in the fact that evolution has equipped humans with these visual organs, which do not allow natural, microscopic vision. It's

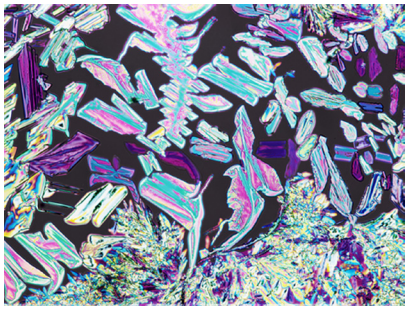

Fig. 22 *Crystal Pictures 2*, 1980, EK 09,
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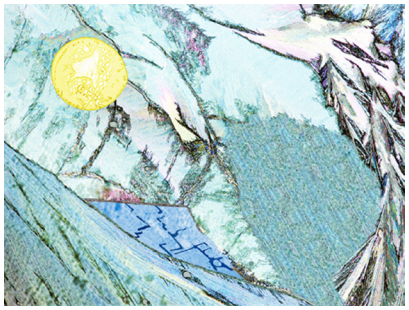

Fig. 26 *Crystal Pictures 6*, 1980, EK 05,
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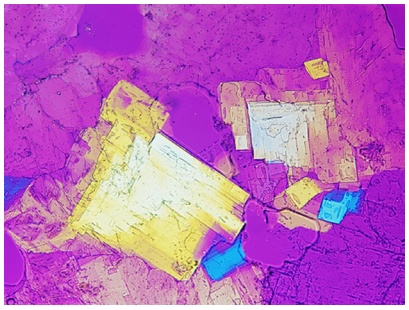

Fig. 23 *Crystal Pictures 4*, 1980, EK 02
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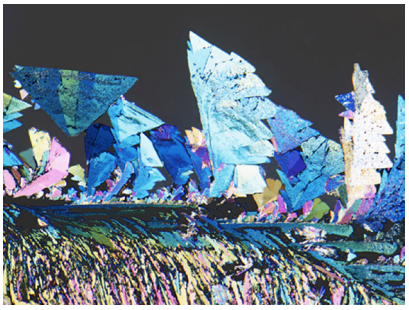

Fig. 24 *Crystal Pictures 3*, 1980, EK 08
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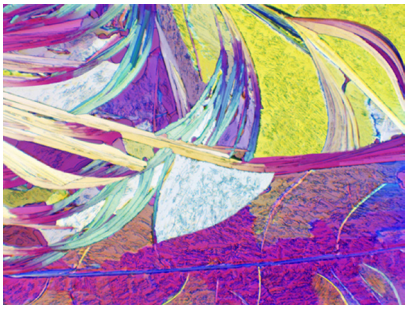

Fig. 25 *Crystal Pictures 1*, 1980, EK 10
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different with raptors: While the visual acuity of humans can theoretically reach values of 2.5, a visual acuity of 5...10 is possible for raptors due to the different optics of the bird‘s eye and a different macular structure. However, this is based on the fact that the visual acuity given to the raptor has existential significance for it. However, the microscope has no existential significance for humans, but first of all it serves them to be astonished at the phenomena of nature, second to understand the systems of nature and third to circumvent the recognised regulators of nature that limit their reproduction. However, because human beings are not naturally capable of creating and consistently maintaining a meta-equilibrium, it remains to be seen what corrective nature has in store to ultimately ensure compliance with the nominal values specified by it.

Translation: Carol Oberschmidt