Susanne Kriemann: P(ech)B(lende) – Library for Radioactive Afterlife
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Lamp

At this very moment, light is falling onto the page at hand, making the letters visible to your eyes. When reading, letters become words and sentences and the thin skin of black ink on paper transforms itself into text. In this act of metamorphoses, light—presumably emitted from a desk or reading lamp—plays a central role. Or rather, we should say, emitted from a light fixture since, from a technical perspective, the word "lamp" simply describes the replaceable component that produces light. And, so too, this text has to do with a moment of illumination: "fiat lux!"

Both literally and figuratively, light must be brought upon something invisible to the eye: the phenomenon of radioactive irradiation. And it is precisely the effective depiction of this phenomenon that Susanne Kriemann seeks in her multi-layered body of work entitled *Pechblende*. In order to achieve this however, darkness was required. In both the Natural History Museum of Berlin as well as in the American Museum of Natural History in New York City, Kriemann worked in complete darkness in order to capture traces of radioactivity in her photographic images. Today, the pitchblende specimens that are housed in museums—those very specimens that were once mined under great physical strain in dark mountain interiors—are kept behind closed doors.

For *Pechblende (Chapter 1)*, Kriemann transformed the exhibition space into a darkroom—a kind of camera obscura—in which lamps generate images with light drawn upon the wall. The eye quickly becomes accustomed to the new condition of darkness, even if various light sources compete for attention. At first one's gaze falls upon a small Plexiglas-cube, at eye-level across from the entrance, which contains a pitch-black stone. Illuminated from below, it is presented just as effectively as the minerals in the cases of the geology branch of the Natural History Museum. Then, the diffuse light illuminates a group of

letters that have been placed above the stone: individual letters of old lead type form the title *Library for a Radioactive Afterlife*. The phrase, as we read it here at the entrance to the exhibition room, is read in reverse.

Pb (plumbum) is the symbol for the chemical element of lead, a poisonous heavy metal that, after millions of years, is one of the end results of the three natural decay chains of radioactive elements. This is another way of saying that, at some point, uranium turns into lead. (Ill. 2) Today it is understood that lead is toxic, but until the middle of the 20th century this remained unknown. Lead poisoning was a typical occupational hazard of painters who, by the licking of their brushes, unknowingly consumed great amounts of it. In the exhibition at the Schering Stiftung, the lead letters sit upon a wooden rail out in the open, while the pitchblende displayed at the Natural History Museum is protected from any potential contact by a Plexiglas case. Is the case protecting us from the stone?

Two qualities of light dominate the exhibition: the cool shimmer of the screens of the digital tablets and the warm light of the analogue projections. Each example is a type of lamp, gradually revealing the exhibition space to be a library. Everywhere the light shines, pieces of information and parts of stories are revealed. Light thus plays a supporting roll in the narrative of the story of uranium mining in the former GDR. Images of objects that the miners used when going into the shafts are projected onto three walls of the exhibition room: a helmet, a mining lamp with a battery, tools for working the stone, a water bottle, and the so-called life-saver, which in an emergency could briefly transform nitrogen into oxygen. In contrast to objects in a display case, however, the images are inverted. The effect of such a reversal is significant. Kriemann works with the principle of the camera obscura and spins it even further in favor of her narrative. Instead of bringing the exterior world into the room through an opening, she projects the world of mining onto the gallery's walls. Images stream out of three wooden boxes, illuminated from the inside, which have been placed in the space like freely standing bookcases. Functioning as bright, clear beacons within a dark chamber, the wooden boxes are instruments in the process of creation, producing images that only appear to the observer when he or she adjusts to the darkness of the exhibition space. Kriemann takes advantage of this mechanism of projection—the inverted image of the camera obscura—and has filled the illuminated chambers with workers' gear from the mines in order to make the history of pitchblende visible. Through the use of light, a correlation between image and

object is created, which lifts them both out of the darkness and illuminates them so that they can be grasped in all their distinctness.

According to American art historian Kaja Silverman, the image quality of the camera obscura was already acclaimed in the 18th century as an achievement. At that time, the camera obscura was considered an "instrument of self-knowledge,"[1] for—as commentators claimed—it released the individual thing from the monotony of the world and thereby made the act of seeing more conscious: "The camera obscura is the agency through which we learn to see the world differently."[2] In the case of pitchblende, this discourse plays a central role, but the exhibition goes beyond it. For there is another layer inscribed in the tools that were used for uranium mining in the GDR and whose images grace the walls: the objects are irradiated. So, by removing the tools from the mountain and bringing them into the gallery, Kriemann implicitly puts radiation itself on display, with the help of these particular mechanisms of light production. (Ill. 3)

The live-image, which is created through the analogue relationship of lamp and object, is based on the fact that the lamp throws unbroken light onto the object so that the latter, now radiating with light, becomes an image. The effect of continual charging as a condition of creation thematizes—indirectly—the radioactive charging of objects. And, finally, the objects also suggest the destiny of those who used them, those who were exposed to the toxic effects of radiation without any protection, as the conditions of mining and the nearly 60-degree celsius tunnels made the wearing of protective clothing impossible.

Kriemann brings the ambiguity and intangible nature of radiation into the bright rooms of the exhibition space. We typically associate radiation with light—in particular, the warmth of the sun and well being—and thus often think of it as the light that is the prerequisite for life itself, and not of those rays that can also destroy it. In general, radiation refers to the process of the spread of particles and waves that cannot be captured by the naked eye. But radioactivity most certainly leaves traces behind; by means of photochemical processes, it can become visible as photography. Scientific research employed photographic recording methods after the atomic tests on the Bikini-Atoll and the Marshall Islands since, with the help of autoradiography, the radiation of objects and living creatures could be documented. The traces of radiation,

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[1] Kaja Silverman: *The Miracle of Analogy or The History of Photography, Part 1.* (Stanford: Stanford University Press, 2015), p. 24.
[2] ibid.

however, became a problem for the American photo industry: after the first atomic tests in the USA in the 1940s, companies like Eastman Kodak had to contend with the radioactive contamination of their paper.

In the course of her research for her *Library for a Radioactive Afterlife*, Kriemann looked at photographs and other archival material held in the National Archives in Washington, D.C. This material reveals the traces of the irradiated bodies of birds, frogs and fish, and makes evident the catastrophic effect of atomic tests on flora and fauna. For *Pechblende*, she added these images to her own autoradiographs: if one browses through the series of images contained in her virtual library, it becomes clear how, with increasing exposure times, pitchblende— as a visually realized and radiant structure— dissolves into fluorescence. (Ill. 4)

The images were produced during Kriemann's work in the darkrooms of the Natural History Museums in Berlin and New York, where she lay numerous specimens of pitchblende on large-format negatives and allowed these to be exposed for various periods of time. Here the radiation of pitchblende is formally evident, even if it is hardly to be compared to the black spots that the French physicist Antoine Henri Becquerel obtained when, in 1896, he laid uranium salts on a photochemical glass plate and thus generated a "spontaneous photograph of radioactivity."[3] In the photo negative, the stone transforms itself into an aureate light, which dissolves shapes and fixes the invisible content of the stone—its radiation—into an image that is as aesthetically fascinating as it is eerie.

In the name itself, oppositions emerge: the darkness contained in "pitch" and the suggestion of light in "blende" (German for aperture). Thanks to the latter you can control the level of brightness in analog photographs. In the early mining industry, "blende" referred to "being blinded" in a metaphorical sense: it meant a mineral that was suspected of having a high metal content but which, because of the methods of the time, could not be extracted. "Blende is sparkling, mountain-like, black and yellow at the same time, but it does not produce metal and often blinds and deceives the miner."[4] The truly deceptive

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[3] Charlotte Bigg / Jochen Hennig: "Spuren des Unsichtbaren. Fotografie macht Radioaktivität sichtbar" ("Traces of the invisible. Photography makes radioactivity visible.") In: *Kultur & Technik*, 02 / 2007, pp. 20-25, here p. 23

[4] *Grosses vollständiges Universal-Lexicon aller Wissenschafften und Künste*, Vol. 4. Halle and Leipzig: Johann Heinrich Zedler 1733, p. 80

nature of pitchblende was only to be clarified with modern methods of measurement—the darker the stone, the higher its radioactive content.

Uranium mining in the Erz Mountains served the atomic armament of the USSR. The pitch-black stone contains clusters of energy that could only be released through the interaction of humankind in the atomic age. For it is through the induced splitting of the atom—the moment in which all energy is simultaneously freed—that what is usually invisible, manifests itself as blazing light. Atomic light is of such enormous brightness that it can cause temporary or even permanent blindness, even at great distances. Only complete darkness can follow such a blaze, the type of darkness miners know from their time spent deep within the tunnels of the mountain.

Kriemann's visits to the archives and her trips into the Erz Mountains become, in *Pechblende (Chapter 1),* artistic research which makes use of the photographic principle of analogy. This analogy comes into effect through both the imaging processes of the live pictures as well as the mode of presentation—whether it is the pitchblende specimen displayed as if it were in a museum or the miners' objects that disappear inside the case-like chambers just as they once disappeared within the interior of the mountain. Kriemann's history of pitchblende thus becomes itself a projection, a self-reflexive image of her own research. In the end, her work is like the lamps that, for the duration of the exhibition, bring light to the darkness of pitchblende.