

premonition that this drug might have additional effects to those exhibited during the first trial. This led me to produce LSD-25 again five years after the first synthesis and pass it on to the pharmacological department for further trials. This was unusual, because test compounds were normally struck from the research program once declared to be of no pharmacological interest." Later, Hofmann could neither find a rational explanation for his hunch nor for the rest of his life reconstruct why it was that he chose to resurrect that particular compound out of the many he had created. "It was more a feeling—the chemical structure appealed to me—that prompted me to take that extraordinary step." (Bröckers, Liggenstorfer 2006) Most chemists would have rejected such a diffuse feeling as irrational fantasy and forgotten the matter, but Hofmann trusted and followed his intuition.

Hofmann's lab scheduled the second synthesis of this compound for April 16,

The inquiring eye often found more than it had sought.

Gotthold Ephraim Lessing

Doubt is the beginning of science. Whoever doubts nothing, examines nothing. Whoever examines nothing, discovers nothing. Whoever discovers nothing, is blind and remains blind.

Teilhard de Chardin

1943. It was a matter of producing a few tenths of a gram. Again, things were orderly and clean and all the safety measures required for work with poisons were followed. Nonetheless, during the final phase of the synthesis, it seemed that Hofmann unintentionally must have come into contact with the substance: "While we were purifying and crystalliz-

ing the lysergic acid diethylamides, I began to feel unusual sensations." For the first time Hofmann became aware of this molecule's potency. He described the sensations in a report to Professor Stoll: "Last Friday, April 16, 1943, I was forced to interrupt my work in the laboratory in the middle of the afternoon and proceed home, being affected by a remarkable restlessness, combined with a slight dizziness. At home I lay down and sank into a not unpleasant intoxicated-like condition, characterized by an extremely stimulated imagination. In a dreamlike state, with eyes closed (I found the daylight to be unpleasantly glaring), I perceived an uninterrupted stream of fantastic pictures, extraordinary shapes with intense, kaleidoscopic play of colors. After some two hours this condition faded away." Hofmann had no idea that the experiment with the chemical compound had anything to do with this surprising effect since he was always so careful about keeping a clean workplace, and he was aware of the toxicity of ergot derivatives. However, the next day he thought that "perhaps some of the LSD solution got on my fingertips during recrystallization and a trace of the substance was absorbed into my skin." He realized at the same time that should his conjecture hold up, this compound had unknown and very strong properties if just a trace could cause such noticeable effects.

The First Trip

Albert Hofmann had to know and decided to undertake a series of experiments, beginning with a test on himself on April 19th, 1943. Again he proceeded with great caution and chose a dosage of 250 micro-

grams, the smallest amount of ergot alkaloid deemed to have a noticeable effect.

But once again, strange and, initially, decidedly frightening images overcame the chemist, this time more acutely than before. According to his lab journal, his experiment began at four twenty in the afternoon when he ingested "0.5 cc of ½ pro mil tartrate solution of diethylamide peroral = 0.25 mg tartrate. To be taken thinned with ca. 10 cc water." At five pm he notes: "Beginning dizziness, anxiety, disturbed vision, paralysis, urge to laugh." Two days later he adds: "Cycled home. Severest crisis from six to eight pm" and refers to a special report because he can barely record the last entry. He is at once certain that his experiences on April 16th stemmed from unintentional ingestion of a small amount of LSD-25. The experiences were the same, but this time more intense and profound.

During the war, fuel was difficult to find. Gasoline was rationed and available for very few private vehicles. Indispensable commercial vehicles such as tractors and trucks were fitted with wood gasifiers. At that time, even in Switzerland only a few wealthy could afford an automobile and taxis were not available. That is why Hofmann did not have someone drive him home; instead, his lab assistant, Susi Ramstein accompanied him by bicycle. He had the impression that they made little headway, but she later assured him that they cycled very fast and she had to pedal hard to keep



Hofmann with model of an LSD molecule in the early 1950s

up with him. The rows of houses took on threatening forms, the street seemed wavy, and the few persons they met changed into distorted shapes. The distance between the laboratory and his home was ten kilometers, with a few gentle inclines on the way.

Once they reached his house, Hofmann asked Ms. Ramstein to call his doctor and to bring him a glass of milk from the neighbor woman as an antidote: He feared a fatal poisoning. Dizziness and faintness alternated. Exhausted, he went into the living room and lay on the sofa. Just as on the way home, the familiar surroundings in the cozy home looked distorted and eerie. The walls and ceiling appeared to bend and arch, furniture took on grotesque forms and appeared to move. He asked for more

milk. He hardly recognized the neighbor who brought him more than two liters of milk. Instead, he perceived her as "a nasty, insidious witch with a colored mask."

Hofmann found the transformation of his inner world at least as unsettling as those in his surroundings: "All my efforts of will seemed in vain; I could not stop the disintegration of the exterior world and the dissolution of my ego. A demon had invaded me and taken possession of my body, my senses, and my soul. A terrible fear that I had lost my mind grabbed me. I had

I didn't look for LSD.
LSD came to me.
Albert Hofmann

entered another world, a different dimension, a different time." His body seemed to him without feeling, lifeless and foreign. "Was I dying? Was this the transition?" were the agonizing questions that pressed in upon him and persisted.

He thought of his wife and three children who, precisely on this day, had driven to visit his in-laws in Lucerne. Would he ever see them again? Would he die without being able to say farewell. How would posterity judge him? That a young head of a family had been recklessly careless and risked leaving his young family fatherless? Had his obsession with research driven him too far? Hofmann was certain that he had not acted carelessly, and had always conducted his research prudently. Did this mean the end of the career that had begun with such promise and meant so much to him and promised so much more? "I was struck by the irony that precisely lysergic acid diethyl amide, which I had brought into the world, was now forcing me to leave it prematurely." His situation struck him as a most appalling and terrifying, hardly comprehensible tragedy.

It seemed an eternity had gone by for him before the doctor arrived and Ms. Ramstein could report the self-experiment at the Sandoz laboratory. Although Hofmann believed the worst of his desperate experience was over, he was not able to formulate a coherent sentence. Dr. Beerli, who had come in place of Hofmann's regular physician, Dr. Schilling, found no indications of any abnormal condition or poisoning. Respiration, pulse and blood pressure were normal. He helped Hofmann move to the bedroom to rest, but refrained from prescribing any medicine as none seemed indicated. This

reassuring diagnosis had a positive effect. Within a rather short time, the anxieties and terrifying images subsided and gave way to "feelings of happiness and thankfulness." Hofmann began to enjoy his involuntary excursion into unknown and unfamiliar realms of consciousness. With closed eyes, he saw a wonderful play of color and forms: "a kaleidoscopic flood of fantastic images dazzled me; they circled and spiraled, opened and closed again as fountains of color, reorganizing and crisscrossing in constant flux. Particularly remarkable was how any acoustical perception, like the sound of a door handle or a passing car, transformed into optical perceptions. For each sound, there was a corresponding, vividly shifting form and color."

By late that evening, Hofmann had recovered sufficiently to describe his remarkable adventure to his wife, Anita. She had left the children with her parents and returned home after receiving a telephone call about her husband's breakdown. With the return of some tranquility to the Hofmann house, the exhausted chemist went to sleep. The following morning, he felt physically tired, but mentally refreshed and fit. "A feeling of well-being and new life flowed through me. Breakfast tasted marvelous, an extraordinary pleasure. When I went outside, the garden was still damp from a spring rain, and the sun made everything sparkle and gleam in fresh light. The world felt newly created. All my senses vibrated in a state of high sensitivity which lasted throughout the day." All in all, Albert Hofmann's experiment on himself, the first LSD trip in history, ended gently. He had discovered the most potent psychoactive substance yet known.

Hofmann's first experience contains many elements and descriptions that would be found in thousands of later reports of comparable trips. This first self-experiment contained two decisive factors in the course of any psychedelic experience, later designated as "set and setting" by the American psychologist Timothy Leary. "Set" referred to the mental and physical state and expectation of the consumer and "setting" to the atmosphere and surroundings during the session. Hofmann's experience



LSD crystals in polarized light

became a positive one after his doctor told him that he need not fear he was on the threshold of death or permanent damage from a life-threatening poisoning. He had no frame of reference for what was happening to him and no certainty that his condition would normalize a few hours afterwards. He at least remained aware the entire time that he had undertaken a self-experiment. "The most frightening thing was that I didn't know if I would regain my normal state of mind. It was only when the world slowly began to look normal again that I felt exhilaration, a kind of rebirth."⁹

Albert Hofmann was impressed by his discovery¹⁰ and by the intensity of his experiences during that first self-experiment with LSD-25 which would long resonate for him. He knew of no other substance with such profound psychological effects at such a low dosage that so dramatically

altered experience of the inner and outer worlds in human consciousness. Hofmann found it remarkable that he was able to recall details of his LSD intoxication and explained it with the hypothesis "that no matter how perturbed someone's worldview was at the height of the trip, the part of consciousness that registers experience was unimpaired." He was equally amazed that he remained aware of it as an experiment on himself yet was unable to voluntarily alter it and banish the "LSD-

induced world." Just as surprising and welcome was the absence of any noticeable hangover afterwards; rather he felt left in excellent physical and mental condition.

Three days later, Hofmann presented his detailed report to Arthur Stoll and Professor Rothlin, the director of the pharmacological department. "As might be expected, it met with incredulous astonishment," he recalled. They both immediately asked him whether he had made an error in dosage. It was clear to them that no psychotropic substance was known to be that effective at a micro dosage level. The last doubts were erased only when Rothlin and Stoll both cautiously tried dosages of LSD one-third the strength of Hofmann's trial dose and had nearly as impressive results. In subsequent trials, Hofmann never ingested a comparable dosage again and described 250 micrograms

as an “overdose.” He was astonished that the “tripping generation” of the sixties considered his first dosage to be the standard measure.

His spectacular bicycle ride from the Sandoz factory through the outskirts of Basel and on beyond the city limits to his house became the stuff of legends. Since 1984, April 19th has been celebrated as “Bicycle Day” among pop-culture LSD fans. It was initiated by Thomas B. Roberts, emeritus professor of educational psychology. Americans in particular found the idea of a bike ride while on LSD amusing and admirable. Back then, hardly anybody in that land of boundless possibilities used bicycles and certainly not in the condition Hofmann was in on his original trip.

Looking back, Hofmann thought about the circumstances and significance of his discovery: “From a personal perspective, without the intervention of chance, I think the psychedelic effects of lysergic acid diethylamide would not have been discovered. It would have joined the tens of thousands of other substances that are produced and tested in pharmaceutical research every year and are relegated to obscurity for lack of effect and there would have been no LSD story.

However, in light of other significant discoveries of the time in medical and technical fields, the discovery of LSD could be considered less a matter of chance than of being called into the world as part of a higher plan.

In the 1940’s, tranquilizers were discovered and proved to be a sensation for psychiatry. As their name expresses, tranquilizers cover up emotional problems whereas LSD is at the opposite pole

of pharmacology; it reveals problems, making them more accessible to therapeutic intervention.

About the same time, nuclear energy became technically usable and the atomic bomb was developed. A new dimension of threat and destruction had been created compared with earlier energy sources and weapons. That corresponds to the increase in potency in psychotropic drugs such as mescaline to LSD, of a factor of 1:5,000 to 1:10,000.

One might suppose that the discovery of LSD was not a coincidence but drawn to attention by the *Weltgeist*. From this perspective, that would make the discovery of LSD no longer a matter of coincidence. Further reflection might lead one to think that its discovery was predetermined by a higher force and emerged as people began to contemplate prevalence of the materialism of the past century; LSD, an illuminating psychotropic drug, appearing on the way to a new, more spiritual age.

All of this could suggest that my initial decisions leading up to finding LSD were not a product of free will, but were guided by the subconscious mind which links us all to the universal, impersonal consciousness.”¹¹

The Assistant

Susi Ramstein began her training as a lab assistant at Sandoz research laboratories at the age of seventeen after a year in French-speaking part of Switzerland as an *au pair*. She was born in Basel in 1922, had two brothers, and her father was an optician. Although she was a good student, she did not attend high school because