

10 March 1939 **“Observations on the Radiation Phenomena of SAPA Bions (BEOBACHTUNGEN über Strahlungsphänomene bei SAPA-Bionen, ms Box 9)**

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Observations of the Radiation Phenomena of SAPA-Bions

I. Mixture origin:

Several bion-incandescent-solutions were started in my laboratory on January 15, 1939. Among them was one which was created from sea sand. A spatula-tip of the sand was heated over a gas flame until it was red hot, more or less lit up to incandescence, and was then immediately added to an autoclaved mixture consisting of meat broth + 0.1 n KCl. (The preparation solutions are always kept in a temperature-controlled environment at 37°C to enable excretion of unsterile substances). After the usual five day interval, re-inoculation on egg medium IV occurred. (see attachment 1). After 48 hours, the medium in question displayed an intense yellow, creamy growth. A microscopic examination showed bions of the packet amoeba type.

However, these bions differed from the otherwise common packet amoeba and bions through their different size and a relative immobility when compared to other cultures. The cultures grew well when re-inoculated onto blood agar or simple agar. I studied them under a microscope almost daily for four weeks. I had the impression that I could see unusual light phenomena when using a dark field condenser (Reichert Co) at a magnification of 2000X-3000X. Only under a specific dark field condenser setting, one could see peculiar streaks of light similar to rays, sometimes appearing as continuous lines, which regularly appeared and seemed to originate from especially bright, glowing places inside the bions. These radiations moved in rhythm with the bion movements, and their position could not be influenced by repositioning the reflecting mirror. A gradual reduction of the microscope's light completely weakened the radiation; however, the tiniest ray of light caused them to light up again. Likewise, it is noted that, with correct light and dark field condenser settings, the bions were filled with light and dark lines at regular intervals. (See photo).

I did not consider the possibility of radioactive micro-rays, although I had been asked two months prior by a Dutch physicist, who had read the Bion Book, whether I had observed any radiation.

After four weeks, my eyes began to hurt. They felt tight, I could hardly use the microscope because they were so sensitive to light, and my eye pressure was increased. An ophthalmologist in Oslo diagnosed conjunctivitis and ordered rest. For several days, I wore black-lensed safety goggles until my eyes improved.

I then filmed the SAPA bions through a one-tube lens barrel using my right eye. After about 1.5 hours, that one eye began to hurt and to display the same symptoms. Following extended periods of microscopic observation, previously unknown and strange looking, deep-blue images appeared until whenever the eye left the eyepiece.

The reproduction of the SAPA-bion-culture from the second sand-preparation succeeded in February, 1939. During the next month, four more reproductions from sand preparations succeeded.

Three fundamental questions must be answered:

1. If, at all, the radiation truly exists.
2. Which type it is.
3. How intense it is under specified measurement parameters.

I, personally, could only answer both the first two questions. Personally, I could positively only answer the first question, the second only very vaguely. This is still the case to date. The answer to the third question must be left to the professional physicists.

Proof of the fact that the SAPA I (Evin) and SAPA II (Lorin) bion cultures emit radiation:

A. Synopsis of subjective evidence:

1. People, whose hand palms have a high electrical charge, perceive a subtle prickling in their palms and sometimes warmth when exposed to SAPA cultures in agar tubes held steadily at a distance of 2-5 mm for 2-5 minutes. The same reaction results from smearing an eyelet of the culture on a quartz specimen slide and placing on the skin. This experiment is unreliable because results depend on the electrical charge of each individual's skin and on each subject's ability to perceive the prickle. On the other hand, the reddening of the skin, which usually occurs within 5-10 minutes, can be seen as an objective proof. Tingling on the palm of a hand can also be felt at a distance of approx. 3 mm from the copper wall of a Faraday cage after it has been filled with SAPA culture and left for several hours, or, better still, several days.

2. In total darkness, preferably inside a Faraday cage, one can observe a diffuse, pale, bluish glow that is boundless and unstable (like patches of fog). After about half an hour (when one is accustomed to the darkness and can perceive the glow), putting on a pair of black-tinted glasses will decrease the intensity of the pale radiance. On the other hand, the glow on the copper walls of the cage and on metal objects can be seen more clearly until when the glasses are removed.

Wearing the glasses and staring at a metal wall in total darkness for an extended period of time, one sees deep-blue-violet points of radiation rhythmically emerge. This phenomenon can be intensified by holding up a sheet coated with zinc sulfide.

The same happens when one holds a strong magnifying glass between one's eyes and the shiny glow, adjusting the distance until the shiny glow appears denser. The violet points of light can then be clearly observed, especially if the magnifier is connected to a focusing screen at the correct distance.

If two people sit in the dark, the second person, totally without prompting, will report that the same pale glow appears and is denser around the white lab coat, the head, and the hands, etc. It was possible to reach for the glowing objects. By repeatedly putting on and taking off the black-tinted glasses, one is convinced of the accuracy of the observations. One must differentiate between a general pale glow and the deep-blue-violet radiance.

One afternoon, after I had been sitting in the dark room for 5 hours with the preparations, the fingers and palms of my hands glowed. This shimmer diminished after a few days. However, the palm of my left hand retained a feeling of warmth accompanied by tingling, alternating whiteness and redness, and a bright glow visible in the dark room exactly on the spot where I had regularly held the test tubes containing the preparations during subjective tests of the emissions.

3. After one-half to one hour in the Faraday cage, the air was perceived to be "dense", "heavy", "oppressive", depending on the individual. If one remained in the Faraday cage too long, two to three hours, one felt compelled to leave it again. Once outside of the room, one could breathe a sigh of relief. If one is exposed to air influenced by the preparations for longer periods of time, one becomes tired and listless. Fresh air quickly dispels such conditions. One feels strangely fresh and strong. This impression, though subjective, was also reported by other people.

4. Mice and guinea-pigs clearly reacted with unrest when placed in the Faraday cage at a distance of ten to twenty cm from the wall.

5. Examining the SAPA-bions under a microscope only with one lens barrel for longer than approx. one half hour by strong magnification (again varying with the individual), results in pain in that one eye but not in the other one. Bluish afterimages appear. Rest and dark glasses relieve the sensitivity to light, the eye pressure, and from the from case to case conjunctivitis. Thus, the SAPA-bions should be examined under a microscope very cautiously. That is, as long the nature and intensity of the radiation are unknown.

B. Objective findings based on these first subjective discoveries.

1. Light sensitive plates are placed in cardboard boxes wrapped in black paper and, without removing the wrapping, placed at a distance between 5-10 cm parallel to the copper wall of a Faraday cage. The preparations are positioned so that the emanation and the radiance must pass through the plates to the copper wall. The radiation results are tested by developing the plates after 4, 8, 12, 24, 48, etc. hours by way of removing one plate from the box in total darkness each time. The plates can also be directly exposed to the preparations by placing agar plates, agar tubes, or cultures on a glass slide rubbed with a bit of NaCl on the boxes containing the plates. Similarly, one can position x-ray film for about 15 minutes at the focal point of a microscope's ocular tube. As a control, do not use an unexposed plate that was in the same room as the plate being tested. The experiment showed that, since emanation apparently occurs, even such plates that are in the same room with the preparation located some distance away are exposed. A roll of x-ray film intended for the control experiment and coincidentally left in the room was consequently no longer usable. Control plates should be stored away from the trial location, such as at the place where they were procured. All plates must be from the same series.

I was able to get a picture of the beams once using a Leica apparatus by focusing the microscope eyepiece pointer on the center of the field at the edge of the culture and exposing overnight using a focal plane shutter.

2. Evidence of emanation is the fact that covering parts of light sensitive plates with metal pieces or rods did not protect them from exposure. The radiation is dispersed throughout the room containing the preparation. Having metal in close proximity plays a large role because it is very difficult to expose packed plates located in the room without a lot of metal present. Note that further trials are necessary to explain this.

3. Dark field micro photography of radiation at pronounced magnification (2000X to 3000X)

I switched on a dark field condenser instead of a bright field condenser (using the Reichert darkfield condenser). I screened out residual light as much as possible and adjusted to a 2000X and then a 3000X magnification (80X objective lens, 16X and 25X ocular respectively, tilted binocular tube, which magnifies 50% more). I focused on an individual SAPA bion formation as sharply as possible. The vesicles of living organisms and glowing beams alternating on a regular basis between bright and dark appeared clearly in the image. One can control that these are not spherical aberration phenomena because they remain constant when the incident light is shifted. One time I was able to adjust the focus so sharply that I saw straight beams of radiation emanating from the brightest glowing parts of the bions. These beams interfused the dark field in straight lines at times interspersed with dark spaces. They moved with the same rhythm as the bions and were not disturbed when the reflex mirror and the dark field condenser's adjustment screw was fine-tuned. At such a high magnification, I use what I call water immersion, meaning that the zoom lens is immersed directly in the droplet. It is necessary to use a very small droplet, otherwise the preparation blurs. Direct immersion simplifies this meticulous work exceedingly because it is extremely difficult to obtain these types of images when using a cover glass. The camera is equipped *with an interior sighting tube [inblickrohr-no translation found]*. The length of exposure time using various magnifications in a dark field has, as of yet, not been experimentally

determined. Under the intensive shine of a point light, an exposure time of one second or even half a second is sufficient. If the exposure time is too long, the image of wavy lines blurs, and, by too short of an exposure time, the linear beams do not emerge.

4. Reddening of the skin through the object slide.

A specimen slide, preferably out of quartz glass, is smeared with an eyelet full of fresh culture, so that a round or quadratic shape is formed. The culture is evenly saturated with a minuscule drop of 0.1 n KCl or 0.9% NaCl, so that it does not dry out too quickly. The object slide will be placed on the back of the hand without exerting pressure with the moist side up and the other side down. After a few minutes, between 5 and 10 minutes depending on the individual, it begins to tingle. The skin reddens after 5-15 more minutes of exposure exactly in the form of the culture's shape on the object slide. Sometimes the edges are red and the center is whitish (central anemia). It is of utmost importance to patiently wait until the reaction appears. Vasomotoric and easily excitable individuals react quicker and more noticeably than people whose skin carries a poor electrical charge.

5. Magnetic deflection in the Faraday cage

At first, I attempted to cause a deflection of the magnet's needle solely through direct contact with the preparation. This did not produce clear results. It became evident that the beams showed a strong attraction to metals (cast iron, nickel, etc.). Metallic objects in the room became magnetized, and they appeared to strongly reflect the radiation. I then tested the magnetism in the Faraday cage close to the copper walls, as shown on the sketch. If the preparations are in the well-contained cage for at least 24 hours, one already notices magnet needle agitation at a distance of 20-30 cm, at times even 50 cm from the wall. The wall exactly opposite the earth's magnetic north deflects the most, that is, it completely draws the north pole of a magnetic needle to it, the opposite direction of magnetic north. The needle showed no influence when placed in the center of the 2.5 meter long and wide cage. There was no deflection on the north wall and only a shaky indicator that wobbled more and more. Deflection was apparent on the east and west walls, but only one-half to one-fourth as intense as on the south wall. These phenomena can probably be explained by the influence of the parallelogram of forces formed on the one side by the earth's magnetic fields and on the other side by the effect of the charged walls. The cage is grounded.

The cage has not been used without the prepared cultures because those cultures do not tolerate being stored elsewhere for the time being. However, interferences during experiments using an oscillograph or other sensitive magnetic needles near the wall were never observed. It is necessary to perform control experiments using a completely discharged cage.

6. The oscillograph (a three-tubed direct current amplifier connected to a magnetic mirror-galvanometer) shows an increase in anode voltage and a decrease in grid voltage when the grid electrode makes contact with the cage wall. It is a certainty that anode open-voltage occurs in radiation areas without wall contact. However, the grid voltage shows strong, mostly positive fluctuations, which have not, as yet, been thoroughly studied.

7. SAPA I killed amoeboid crawling cancers at a distance. These events were filmed. Unadulterated, deep-reaching ulcers similar to x-ray ulcers appeared on two mice, which had been re-inoculated with T-bacillus cultures. SAPA I prevented the otherwise fatal effect of the T-bacillus. (T-bacilli are organisms about 0.25-0.5 or 0.6 μ in size, which are formed through bion degeneration or by growing them from cancer tissue or cancerous blood. A report about this will follow shortly).

Preliminary Findings:

1. Both of the SAPA-bion cultures on hand emit an active photochemical electromagnetic radiation.
2. A hazy glow can be distinguished from the deep-violet point radiation during observation.
3. The type and quality of the radiation have not yet been evaluated.
4. Shielding has not yet been determined. A Faraday container appears to be the best means of deflecting rays towards grounded metal; however, it does not stop emanation.
5. An electroscope placed in close to distant proximity registers electromagnetic phenomena. A decision to conduct a closer examination and evaluation of these phenomena has not yet been made.
6. Harm to blood and tissue has not been ascertained.
7. It must be determined whether this radiation is of a known type or if it is a new form.
8. At this time, a theoretical interpretation of the described phenomena cannot be given. However, the creation of SAPA-bions from Norwegian sea sand and their functions align with the theories of physics regarding matter waves and particles of energy and with the basic theory of bions that Life is created from matter through swelling and electrical charge and functions accordingly (tension-charge-discharge process of tension release).

Directions for the Preservation of SAPA-bions 1 (Evin) and 2 (Lorin)

The SAPA-bions are inoculated every 3-4 days on light, or, even better, blood agar. Following the inoculation, they remain in a heat governor for 10-20 hours and then at room temperature. Occasionally, they decompose resulting in tissue shrinkage and the appearance of bacteria rods observable under a microscope.

Control at a magnification of 2000X.

It is sometimes possible to regenerate them by swelling with a solution of 0.1 n KCl and using rhythmic pulses of voltage at 10 volts.

It is best not to use infected cultures in radiation trials. Because the types and intensity of the radiation are unknown and must first be determined, it is difficult to implement adequate

Protective Measures

The following protective measures have been implemented at this time:

- a) All of the cultures are located in the Faraday cage to limit the effect of the radiation. The cage is in the basement; however, it is connected to the living area through a radiator system.
- b) There is continuous ventilation in the basement and living areas to counteract any radiation that might come through.
- c) Microscopic observations are held to a minimum.
- d) The possibility of obtaining equipment for eye protection was raised with a firm specializing in such equipment.
- e) Lab coats and clothing are immediately exchanged and aired following contact with the preparations.
- f) To start with, consideration is being given to using asbestos, lead-lined protective aprons, and radium protective gloves when working.
- g) A radium-lead container was procured for the preparations. However, it is not certain whether this container will provide enough protection given the intensity of the radiation.
- h) After two weeks, the animal experiment on 7 mice has caused no life-changing damages so far. However, one must wait longer before passing judgment concerning this experiment. Injected were 0.7 ccm of SAPA-suspension, 1 eyelet full onto 3 ccm NaCl.

Preparations SAPA 1 and SAPA 2 have been sent to an institution specializing in radiation for closer physical analysis.

This report goes to:

The Director of Medicine, Oslo, Norway
The Radiation Institute in Holland mentioned above
Dr. Emil Walter, chemist and physicist, Zurich
Dr. Philipson, Copenhagen
A New York institution
Odd Havrevold, Oslo

Oslo, March 10, 1939

Wilhelm Reich

Enclosure 1

Culture medium IV (egg white base)

38 gr.	Potatoes	(thickly peeled and chopped small)
75 ccm	Bouillon	
3 gr.	Flour	(potato starch)
1/2 gr.	Pepton	(Witte brand)

Boil for one hour. Stir for the first ten minutes until a mush forms, then close the glass flask.

Cool down to about 50°C, and then add:

10 ccm	KCl 0.1 n
1/2 gr.	Lecithin
10 ccm	Ringer solution
6 ccm	glycerin

2 to 3 eggs, depending on the size (sterilized and moistened with alcohol)

7.4 pH

Filter the complete mixture through gauze. Fill into sterilized glasses; let it gel in a dry sterilizer at 80-90° C for two hours.

On the next day, repeat this process in the dry sterilizer for two hours at the same temperature.]