from The Field

"Beings of Light" p. 39 to 49

Fritz-Albert Popp and Bio-photons

Popp performed tests on 37 chemicals, some carcinogens, and some not. After a while, he could predict which substances could cause cancer: those which absorbed UV light (at 380 nanometers), and emitted it with a changed frequency. The reaction only ocurs for light at 380 nm Those substances which were non-carcinogenic would re-emit the UV light with unchanged frequency. (p 39)

It is well known from biological lab experiments that if you blast a cell with uv light so that 99% of the cell, including DNA, is destroyed, you can almost entirely repair the damage in a single day just by illuminating the cell with the same wavelength of a very weak intensity.

Pop was shocked to learn that photo repair works most efficiently at 380 nm, the same wavelength the carcinogens would react to and scramble. (pg 40)

Popp deduced that if carcinogens only react to this wavelength, their effect must somehow be linked to photo-repair. If so, this must mean that there must be some light in the body responsible for photo-repair. A carcinogen must cause cancer bcause it blocks and scrambles the light frequency, so it cant do photo repair. He wrote a paper on his results.

A prestigeous journal on cancer agreed to publish his paper. At the time of his discovery, Popp was already celebrated among his peers for being a whiz kid. Popp was celebrated for his paper. He was invited to speak to the world's leading cancer researchers. Popp's science was unassailable, except for one detail: it ssumed that a weak light of 380 nm was being produced in the body.Most of the researchers thought this was some kid of joke. Only one researcher believed him, a photochemist from Madame Curie Institute.

Popp agreed to supervise Bernhard Ruth for his PhD, if he could show there was light in the body. Ruth thought it a rediculous suggestion. Of course there was no light in the body. "OK" said Popp; "show me evidence that there isn't light in the body".

Ruth developed a machine that could count photons. The photomultiplier picked up photons of high intensity from cucumber seedlings. Then they tested potato sprouts grown in the dark. In this case, the photomultiplier registered an even stronger intensity of light. Popp also discovered the photons in the living systems he had examined were more coherent than anything he had ever seen. (p 42)

In quantum physics, coherence means that subatomic particles are linked by bands of common electromagnetic fields, so they can 'communicate'. They are like a multitude of tuning forks that all begin resonating together. As they get into phase, they begin acting like one giant wave.

Usually this level of coherence , called a Bose-Einstein candensate, is only observed in superfluids and superconductors, a few degrees above absolute zero.

Light of course, is present in plants, the source of energy in photosynthesis.

Popp found with experimentation that molecules in the cells would respond to certain frequencies and that a range of vibrations from the photons would cause a variety of frequencies in other molecules of the body. The most important question was, where were the photons coming from? (pg 44)

From experiment, Popp showed that one of the most essential sources of biophoton emission was DNA.

One of the greatest mysteries of biology is how we take physical shape. How do the cells know exactly where to place themselves in each stage of the growing process? Geneticists appreciate that cell differentiation depends on cells knowing how to differentiate and then somehow remember that they are different and passing on this info to later generations of cells.

In biophoton emissions, Popp believed he had an answer to the question of morphogenesis. Popp showed in his experiments that these weak light emissions were sufficient to orchestrate the body. (pg 47)

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Previous researchers had suggested that a field of EM radiation somehow guides the growth of the cellular body. The Russian Alexander Gurwitch had to be credited with first discovering what he called "mitogenetic radiation" in onion roots in the 1920s. Gurwitsch postulated that a field, rather than chemicals alone, was probably responsible for the structural formation of the body. Later researchers were able to show that a weak radiation, from tissues stimulates cell growth in neighboring tissues of the same organism.

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Harold S. Burr of Yale studied and measured electrical fields around living things. He discovered that salamanders possess an energy field shaped like an adult salamander, and that this blueprint even existed in an unfertilized egg. He studied energy fields in all sorts of organisms, and found that changes in the electric fields appeared to coorelate with growth, sleep, light, water, storms, the development of cancer, and even with the waning and waxing of the moon

Elmer Lund, of the University of texsas, showed that he could control regeneration of hydra heads by passing a weak electric current thru the body.

Orthopedist Robert O. Becker attempted to stimulate or speed up regeneration in humans and animals. He also demonstrated "current of injury" in which salamanders with amputaated limbs develope a change of charge at te site of the stump, whose voltage climbs until the new limb appears.

Herbert Frohlick introduced the idea that some sort of collective vibration was responsible for getting protines to cooperate and carry out instructions of DNA. He predicted thst certain frequencies (now called "Frolich frequencies") are generated in cell membranes. He had shown that once energy reaches a certain level, molecules begin to vibrate in unison, until they reeach a high level of coherence. they exhibit the "non-locality" of quantum particles.

Italian Renato Nobili of Padua showed that electromagnetic frequencies occur in animal tissue; these correspond to wave patterns picked up via EEG in the brain.

any notions of radiation in cellular communication were swept aside with the discovery of hormones and the birth of biochemistry.

pg 49
Popp showed that all living things emit a permanent current of photons. The higher on the evolutionary scale, ; the more complex the organism, the fewer photons are emitted.