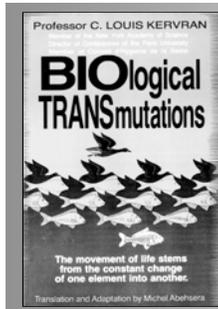


Book Reviews



Biological Transmutations

by C. Louis Kervran
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Happiness Press, 1980
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Review by Eugene Mallove

Reading this translation and compilation of a number of Prof. Louis Kervran's pre-1970 works is very disturbing, producing the disorientation that accompanies a possible deep paradigm shift in science. Kervran (1901-1983), a medical scientist and engineer with a high official position in the French research and occupational health community, had a life-long interest in the possibility of biological transmutations. His curiosity apparently began in his youth when he watched the hens pecking at specks of mica in the farmyard. His later professional observations concerned (in one small part) the anomalous reappearance of robust calcium-bearing eggshells in calcium-deprived chickens that had been administered dietary mica (a potassium-rich mineral). Over a century earlier (in 1799), French chemist Louis Nicolas Vauquelin had noted this. The Kervran bio-transmutation story and its background is summarized eloquently in "Alchemists in the Garden," a chapter of the best-selling book *The Secret Life of Plants* by Peter Tompkins and the late Christopher Bird.

If Kervran's thesis is true, how could mainstream researchers, through the era of sophisticated modern biochemistry and molecular biology, have missed the omnipresence of biological nuclear transmutation? The critics' answer is simple: biological transmutation is delusion or fabrication—just as cold fusion remains, from their perspective. Post-1989 cold fusion critics, in fact, used the Kervran story to mock Fleischmann and Pons by linking them with a man they said believed in "nuclear powered chickens." But for those who seriously examine the evidence for inorganic, low-energy nuclear reactions and heavy element transmutation on electrodes in cold fusion experiments, there is sufficient reason to take Kervran's hypothesis seriously. If non-biological low-energy nuclear reactions (LENR) exist in the laboratory, why not in the natural world?

Indeed, with the backdrop of the cold fusion/LENR experience of the past eleven years, Kervran's work acquires far more significance. It may well turn out that cold fusion studies, pregnant as they are with revolutionary science and technology, may be but a late-blossoming appendage to a much greater truth about what Mother Nature herself has developed. This possibility may offend some cold fusion investigators,

who perhaps fancy that they "got there first." We know how uncomfortable some cold fusion researchers are with the copious evidence for heavy element transmutation in modern experiments. Eventually it may be recognized that pioneers, such as Prof. Kervran, were on the low-energy nuclear reaction pathway long before the Utah announcement.

Kervran's thesis is that the transmutation of elements, in particular by reactions among the first few dozen of the periodic table, occurs regularly in biological systems—both in microbes and in multicellular organisms such as human beings. Transmutation is inherent to biology. He concluded that hydrogen and oxygen nuclei primarily, by adding or subtracting from other nuclei, is the essence of transmutation in biology. Some examples: ${}_{11}\text{Na} + {}_8\text{O} \rightarrow {}_{19}\text{K}$; ${}_{19}\text{K} + {}_1\text{H} \rightarrow {}_{20}\text{Ca}$; ${}_{20}\text{Ca} - {}_1\text{H} \rightarrow {}_{19}\text{K}$; or ${}_{12}\text{Mg} + {}_8\text{O} \rightarrow {}_{20}\text{Ca}$. Carbon might also participate, e.g. ${}_{14}\text{Si} + {}_6\text{C} \rightarrow {}_{20}\text{Ca}$. Kervran did not suggest how such exothermic and endothermic bio-nuclear reactions might be facilitated at the nuclear-atomic level (others would do that later¹), but he did collect and correlate many anomalous biochemical observations from nineteenth and twentieth century researchers. He claimed these supported his conclusions, but he also made original observations and conducted his own experiments. If Kervran's thesis is correct, the natural world may teem with countless bio-alchemical factories, which, in turn, work profound alterations in the mineralogical composition of the planet. Geophysics Prof. M. Camberfort wrote to Kervran in 1974, "I have spoken of your work in my most recent book, because I consider that your hypotheses, largely confirmed in certain cases, are the only ones susceptible of explaining a number of facts noted by geologists, so far explained (in geological circles) by fairy tales and old wives' tales." Astronomer Carl Sagan, on the other hand, wrote to Kervran in 1962: "The types of reactions which you are proposing are quite impossible in ordinary chemistry. . . I would strongly suggest that you read an elementary textbook in nuclear physics." Sagan died in 1996, never having come to terms with cold fusion or Kervran.

In papers and books from 1959 through 1983, Kervran synthesized his biotransmutation ideas. Notable among his books, all published by Librarie Maloine in France, are: *Biological Transmutations* (1962), *Proofs in Geology and Physics of Weak Energy Transmutations* (1973), *Proofs in Biology of Weak Energy Transmutation* (1975), and *Biological Transmutations and Modern Physics* (1983). For the softbound English edition under review, translator Michel Abehsera compiled and adapted an apparently small but representative portion of Kervran's work prior to 1970. In his Foreword, Abehsera describes a meeting with Kervran: ". . . he showed himself such a dragon in

science that nothing but science was discussed. . . he knew his subject well; he seemed to have read all the scientific books and articles published all over the world, to know the work of every living scientist. And when I told him that he had given to science a new direction and hope, he answered, his face growing red, 'I simply pointed out what has always existed.'"

During his lifetime Kervran received support for his work from several mainstream scientists who conducted biotransmutation experiments. Prominent among these was Prof. Pierre Baranger, chief of the Laboratory for Organic Chemistry at the École Polytechnique in Paris. Prof. Baranger in the late 1950s repeated the seed growth experiments of von Herzelee (conducted and published from 1876 to 1883), in which elements appeared to be *produced* in seeds sprouted in distilled water alone (based on analysis of the ashed seeds and plants). Von Herzelee had found that phosphorus went to sulfur, calcium to phosphorus, magnesium into calcium, etc.—many of the findings that Kervran would later ratify. Baranger reported his work in January 1958 at a prestigious scientific institute in Switzerland. In an interview with the magazine *Science et Vie* in 1959,² he said:

My results look impossible, but there they are. I have taken every precaution. I have repeated the experiments many times. I have made thousands of analyses for years. I have had the results verified by third parties who did not know what I was about. I have used several different methods. I changed my experimenters. But there is no way out; we have to submit to the evidence: plants know the old secret of the alchemists. Every day under our very gaze they are transmuting elements. . . I have been teaching chemistry at the École Polytechnique for twenty years, and believe me, the laboratory which I direct is no den of false science. But I have never confused respect for science with the taboos imposed by intellectual conformism. For me, any meticulously performed experiment is a homage to science even if it shocks our ingrained habits. Von Herzelee's experiments were too few to be absolutely convincing. But their results inspired me to control them with all the precaution possible in a modern lab and to repeat them enough times so that they would be statistically irrefutable. That's what I've done.

No matter how solid the experimental evidence, biological transmutation, like cold fusion and inorganic low-energy transmutation, flies in the face of a paradigm that began at the very foundation of chemistry in the late eighteenth century: elements retain their identities—they do not change into other elements. Antoine Laurent Lavoisier (1743-1794), widely consid-

ered to be the "father of chemistry" or even the "Newton of chemistry," according to Isaac Asimov,³ is responsible for that paradigm. We may regard this as a brilliant insight that was perhaps necessary to help make sense of the bewildering facts that emerged from centuries of alchemical experimentation. Moreover, the paradigm is ordinarily true, but the problem with the dogma launched by Lavoisier (ironically at the very time his contemporary Vauquelin was questioning the origin of calcium in chicken egg shells!) is that it has been too powerful, too rigid, and too enduring.

Lavoisier's scientific career ended on May 8, 1794, when he was guillotined during the French Revolution for having ties to "tax farmers."³ His paradigm of element immutability survived the discovery of radioactivity in 1896 and the host of other conventionally accepted nuclear reactions. Unfortunately, it has grown so strong over two centuries that resistance to cold fusion, low-energy nuclear reactions, and especially biological transmutation remains intense. However, prior to the explosion of biochemical knowledge in the mid to late twentieth century at least one significant voice was raised in support of greater circumspection. Louis de Broglie, one of the luminaries of modern quantum mechanics is quoted by Kervran: "It is premature to reduce the vital process to the quite insufficiently developed conceptions of nineteenth and even twentieth century physics and chemistry."

Perhaps it is time to return to the wisdom of de Broglie. Kervran's work may have been a beginning in that direction. This book, though limited in scope and in places lacking the detail that is surely available in Kervran's original material, is a very useful introduction and overview of Kervran's ideas and the field of biological transmutation. This area seems destined to grow, especially with the recent founding of a formal society for the study of bio-transmutation, according to the announcement by French cold fusion researcher Dr. Jean-Paul Biberian.⁴ Experimenters from France to Japan are now hard at work on this exciting new frontier. Others have already published contemporary scientific works.^{5,6,7} We occasionally even hear rumors that certain biotechnology companies may be working in this area!

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C. Louis Kervran, 1980

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