

The Body Electric (book)

This article is about a book on bioelectromagnetism. A book on Kirlian photography by Thelma Moss has a similar title.

The Body Electric: Electromagnetism and the Foundation of Life is a book by Robert O. Becker and Gary Selden in which Becker, an orthopedic surgeon at SUNY Upstate working for the Veterans Administration, described his research into “our bioelectric selves”.^[1]

The book was first published by William Morrow and Company in 1985.

1 Overview

The first part of the book discusses regeneration, primarily in salamanders and frogs. Becker studied regeneration after lesions such as limb amputation, and hypothesized that electric fields played an important role in controlling the regeneration process. He mapped the electric potentials at various body parts during the regeneration, showing that the central part of the body normally was positive, and the limbs were negative. When a limb of a salamander or frog was amputated, the voltage at the cut (measured relative to the central part of the body) changed from about -10 mV (millivolts) to $+20$ mV or more the next day—a phenomenon called *the current of injury*. In a frog, the voltage would simply change to the normal negative level in four weeks or so, and no limb regeneration would take place. In a salamander, however, the voltage would during the first two weeks change from the $+20$ mV to -30 mV, and then normalize (to -10 mV) during the next two weeks—and the limb would be regenerated.

Becker then found that regeneration could be improved by applying electricity at the wound when there was a negative potential outside the amputation stub. He also found that bone has piezoelectric properties which would cause an application of force to generate a healing current, which stimulated growth at stress locations in accordance with Wolff's law.

In another part of the book Becker described potentials and magnetic fields in the nervous system, taking into account external influences like earth magnetism and solar winds. He measured the electrical properties along the skin surface, and concluded that at least the major parts of the acupuncture charts had an objective basis in reality.

In the last chapters of the book, Becker recounts his ex-

periences as a member of an expert committee evaluating the physiological hazards of various electromagnetic pollutions. He presents research data which indicate that the deleterious effects are stronger than officially assumed. His contention is that the experts choosing the pollution limits are strongly influenced by the polluting industry.

In 1998 Becker filed a patent for an iontopheretic system for stimulation of tissue healing and regeneration (US 5814094 A).^[2]

2 Response

Library Journal called it “a highly informative book ... for educated lay readers”.^[3] However *Kirkus* complained that “speculative and heated” conclusions “vitiates much of the interesting, well-documented material”.^[4] *Sciences* found that it was superficially well-told but with basic scientific errors and showing a lack of knowledge about recent biology.^[5]

3 See also

- Regeneration (biology)
- Harold Saxton Burr
- L Field
- Electrotherapy

4 Sources

- *The Body Electric. Electromagnetism and the Foundation of Life*, by Robert O. Becker and Gary Selden. Morrow, New York 1985, ISBN 0-688-06971-1
- Book review in New York Times

5 References

- [1] Howe, LM (2000-05-15). “British Cell Phone Safety Alert and An Interview with Robert O. Becker, M. D.”. Council on Wireless Technology Impacts. Retrieved 2012-04-06.

- [2] <http://www.google.com/patents/US5814094>
- [3] Reiser F, Fletcher J, Fialkoff F, Schwarzer A, Sutton J, Cameron J. The Body Electric (Book). Library Journal [serial online]. February 15, 1985;110(3):174. Available from: Academic Search Complete, Ipswich, MA. Accessed May 28, 2012.
- [4] “THE BODY ELECTRIC: Electromagnetism and the Foundation of Life”, Kirkus Reviews, 1984, <https://www.kirkusreviews.com/book-reviews/breyten-breytenbach-3/the-body-electric-electromagnetism-and-the-foun/>
- [5] Adey, W. (1986). THE ENERGY AROUND US. Sciences, 26(1), 52.

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6.1 Text

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