

THE NEW PARADIGM: A CONFRONTATION BETWEEN PHYSICS AND THE PARANORMAL PHENOMENA by John O'M. Bockris. College Station, TX: D&M Enterprises, 2004. Pp. xxxiv + 503. \$34.95 (paperback). ISBN 0-9767444-0-6.

The New Paradigm is an encyclopedic romp through all things paranormal as well as things otherwise disturbing. Its author, John Bockris, is a physical electrochemist who has served on the faculties of the University of Pennsylvania, Flinders University of South Australia, and most recently Texas A&M University. He has published 22 books and over 700 papers in fields related to physical electrochemistry.

The book opens with a foreword by Larry Dossey, a physician and well-known writer specializing in spiritual healing. Dossey laments the rise of scientism (the view that modern science knowledge and theories provide a more or less complete understanding of the universe). Dossey draws a distinction between *logos*, the practical and logical approach to understanding reality that he perceives as underpinning modern science, and *mythos*, the direct or mystical mode of understanding the nature of the universe and the purpose of life, which Dossey sees as underpinning the religious mode of understanding the world. Dossey notes that both logos and mythos derive from the common urge to understand the universe directly (in the case of mythos, the understanding is mystical, intuitive, and direct and is unmediated by religious authority). He observes that many important scientific discoveries have taken place during dreams, so that, in fact, science too relies on mythos. Dossey notes that under modern scientism, logos has been elevated to the lofty status once held by mythos during the era of widespread theocratic states.

In the main text of the book, Bockris notes that dissent from scientific orthodoxy is strongly suppressed, citing the examples of Ignaz Semmelweiss, Rupert Sheldrake, Wilhelm Reich, and his own firing by Texas A&M, which was prompted by his claim to have discovered an inexpensive process yielding hydrogen fuel, his support of claims of cold fusion, and his research on nuclear transmutation. He also cites Dean Radin's termination by the University of Nevada, which Bockris attributes to Radin's publication of a popular book on parapsychology.

Bockris provides a sweeping review of all things heretical to modern science, including cold fusion, intelligent design, UFOs, homeopathy, crop circles, morphic resonance, orgone therapy, and ESP, among many other topics too numerous to list here. The book includes discussions of sociological topics, such as teen pregnancy and affirmative action, as well.

He endorses Nietzsche's conclusion that "Science is the new Religion of the West" (p. 16). He predicts that many tasks now performed by humans will be taken over by computers in the near future. He further predicts that 90% of the human population will not have to work and that

most of the remaining jobs will be at the top and the bottom of the income hierarchy, which will have a negative impact on the displaced workers.

He asserts that affirmative action has weakened American culture and that the general population's knowledge of science has declined. However, he still sees science as the dominant force in modern culture, and he concludes that science has led to a materialistic, amoral, and hedonistic culture.

He discusses the anthropogenic deterioration of the environment, putting his emphasis on the role of the "third world" in creating this environmental degradation (although he does acknowledge the role of technologically advanced countries).

He discusses the decline of family values, sometimes making sweeping statements while providing little in the way of hard evidence to back them up. He proposes that the sale of certain types of music that are contributing to the corruption of young people be outlawed.

Toward the end of the book, Bockris concludes that democracy is not conducive to reversing the decline of the environment and the depletion of natural resources.

Bockris next turns to evidence for Intelligent Design. He reiterates the claim that the flagellum of microorganisms and the mammalian eye represent cases of irreducible complexity (i.e., the removal of a part destroys the function of the whole), indicating that such organs could not have been evolved from chance mutations. However, one can rather easily imagine how, say, light-sensing cells could evolve into the more complex form of the eye over time (indeed the evidence indicates that the eye has evolved several different times independently in the course of evolution on Earth). Similarly, one can easily imagine a rudimentary flagellum serving as a "rudder" prior to evolving into a whip-like propulsion device.

Bockris also presents the somewhat lesser known example of the "backfire beetle," which possesses two sacs, one of which contains H_2O_2 and the other anthroquinone. The two chemicals are harmless by themselves but when mixed upon expulsion become scalding hot as they are squirted at an enemy.

Somewhat later, Bockris essentially denies that species evolve from one another. Bockris asserts that there is no evidence of transitional forms in the fossil record. He notes that the accepted view is that modern humans have been around for only 100,000 years and disputes this by citing anthropological evidence that *homo erectus* existed millions of years ago. The obvious place where this argument breaks down is that modern humans are not members of the species *homo erectus*. He cites evidence put forth by J. D. Whitney that modern tools found in a California gold mine are 9,000,000 years old, noting that Whitney's paper was rejected for publication by establishment journals because his findings were inconsistent with the orthodox time line. On a related note, he states that the creatures known as Sasquatch (more popularly termed Bigfoot) "are surely the remaining

Neanderthals," who have retreated into the wilderness to hide from modern humans (p. 84).

Bockris next directs his wrath at Einstein's theory of relativity. He appropriately laments the deification of Einstein at the expense of other leading physicists and mathematicians who made crucial contributions to the development of this line of reasoning. He notes that several experimental findings contradicting the Michelson-Morley experiment showing the absence of absolute motion have been suppressed by the scientific establishment. In his presentation of the mathematics of Einstein's theory, central equations are omitted and some equations occur out of order in the text.

He next rejects the Big Bang theory, noting that galactic redshifts can be accounted for in terms of the loss of photon energy produced by collisions with particles in "empty space." On page 137, he asserts that photons have mass, whereas photons are regarded as massless particles in modern theories of physics. He notes the establishment's denial of telescope time to Halton Arp, a prominent astronomer who challenges the Big Bang theory. Bockris also notes that the apparent age of many galaxies is greater than the amount of time since the Big Bang. This certainly was a problem for cosmological theory a few years ago (and possibly even in 2004 when Bockris wrote the book), although the most recent estimates indicate that the universe is slightly older than the galaxies that inhabit it (which is a good thing if you are rooting for the truth of modern astrophysics).

Bockris notes that there are many obstacles to a scientific explanation of the origin of life, claiming that the evolution of DNA by chance is impossible. He states on page 144 that DNA is constructed of chains of four types of amino acids. In this, he is incorrect. DNA is constructed of four types of nucleotides. A sequence of three nucleotides comprises a codon. Each of the 64 possible codons corresponds to an amino acid during the synthesis of proteins. He cites Chandra Wickramasinghe's argument that the age of the universe is too short for even a five-amino acid protein to evolve. Incidentally, Wickramasinghe's name is spelled as "Wickrisingam" on page 146, as "Wackrisingham" on page 147 and as "Wackrasingham" on page 150 (and to the best of my memory never spelled correctly). As discussed in more detail later, this is just one example of the numerous typos and other errors in this poorly edited and proofread book.

Bockris next turns to parapsychology. He cites favorably studies in which practitioners of transcendental meditation (TM) have ostensibly reduced death and crime rates and have enhanced quality of life in large populations, as well as claims that TM adepts can levitate. He cites favorably (and uncritically) research on psychic surgery, the alleged phenomena of Ted (PK-man) Owens, appearances of the Virgin Mary, the claims of Carlos Casteneda, electronic voice phenomena, the SORRAT minilab, the claims of astrology, and the materialization phenomena of Sai Baba (whom he compares to Christ on page 396). He presents the lesser-known case of the

Brazilian pharmacist Thomaz Green Morton, who allegedly can change Brazilian currency into American currency or change the denomination of a bill (a handy talent indeed). Morton has also allegedly been observed to change a hunk of raw beef into a collection of live crickets.

Bockris describes his own personal encounters with a poltergeist. Among the phenomena observed were a ringing of Bockris's door chimes in Australia that coincided with the death of his wife's former husband, spontaneous fires breaking out on his property, strange jets of water, sightings of a strange large black dog, and, perhaps most ominously, the apparent materialization of a half eaten ham sandwich (complete with plate) on Bockris's bathroom floor. No ham was ever purchased for use in Bockris's house.

In describing the research on dream telepathy at Maimonides Medical Center, he states that the judges were asked to score every dream as either a 0 (a miss) or a 1 (a hit). In fact, the judges rank-ordered all the pictures in the target pool. In connection with out-of-body experiences (OBEs), Bockris proffers the unwarranted conclusion that "when a person says she had an OBE, she has control of an entity with the ability to read and bring back new data" (p. 304). Bockris hypothesizes that the purpose of OBEs and UFO sightings is to challenge us to reject materialism.

Bockris concludes that "Consciousness cannot be centered in the brain because of the finding that persons who have suffered removal of large portions of the brain retain memory and are intellectually able" (p. 463).

Bockris next turns his attention to cosmology. In connection with the Anthropic Principle (the notion that the universe was designed to support the presence of conscious observers), he cites a calculation by Roger Penrose that the probability that a universe with randomly selected properties could support life is 10^{-121} . With regard to quantum nonlocality, he states that experimental results prove that "an immaterial entity" passes between correlated (i.e., quantumly entangled) electrons at the time of measurement (p. 441). However, the results on quantum entanglement are generally attributed to the nonlocal nature of the quantum mechanical wave function and the particles it governs. In fact, the "immaterial entity" proposed by Bockris seems more material than does the by-now "orthodox" position that quantum objects have nonlocal properties (not that anyone really understands the ontological implications of this "orthodox" model).

Bockris states that the evolution of plants and the resulting emission of oxygen into the atmosphere leading to the formation of a protective ozone layer is a "significant example of purposefulness and design" (p. 446). Bockris concludes that the "Creation has the purpose of making an environment suitable for the development of human beings" (p. 446). However, not even the most ardent proponents of the Anthropic Principle (with the obvious exception of Bockris) subscribe to such a species-centered interpretation.

On the last page of the text, Bockris states: "In writing rather overconfidently about such matters, I may be going a bit too far too fast" (p. 484). This sentence sums up the primary problem of his book. He endorses a great number of outlandish hypotheses in telegraphic fashion without thoroughly presenting the empirical evidence for them and, more importantly, without discussing the reasons why most scientists reject these claims. He states hypotheses baldly and expects the reader to accept their veracity solely on the basis of his word. He jumps from topic to topic throughout the text, often repeating himself. While he exhibits exposure to vast regions of knowledge, the evidence suggests that he has made too great a sacrifice of depth while expanding the breadth of his knowledge. A small sampling of the errors strewn throughout the book appears below:

- He systematically misspells biologist Richard Dawkins's name as "Richard Dawkin" (e.g., p. 75).
- He misspells the philosopher George Berkeley's last name "phonetically" as "Barclay" (e.g., on p. 122).
- The astrophysicist Martin Rees's last name is spelled "Reece" (p. 154).
- Cepheid variables are called "cephed variables" (p. 155).
- The hypothetical astrophysical entities called "branes" are misspelled as "brains."
- He uses "ECG" in his description of an OBE experiment by John Palmer, whereas "EEG" is clearly meant.
- Hubert Pearce, one of Rhine's most notable subjects, is called "Hunter Pierce" (p. 220).
- Alan Vaughn's first name is misspelled as "Allan" (p. 287).
- The Russian psychic Nina Kulagina's first name is given as "Galina" on page 377.
- He states that membership in the American Association for the Advancement of Science is open only to elite scientists with outstanding publication records, whereas this organization is open to anyone willing to cough up the modest membership fee; here, Bockris must be thinking of the National Academy of Sciences.

This list covers only a small fraction of the errors in this book. Bockris has obviously read far and wide, yet his knowledge seems stretched thin in places. He flits about from one topic to the next, with discussion of particular topics broken into pieces and strewn throughout the book. He telegraphically states the findings of paranormal research without much discussion of the possible weakness and shortcomings of this evidence. As a result, this book does not provide the reader with a well-balanced and

detailed examination of the evidence for the paranormal claims being put forth.

The book contains footnotes for each chapter (in lieu of a bibliography) and provides a very sketchy index.

For the reader seeking a comprehensive introduction to paranormal topics, I would recommend looking elsewhere. For the scholar, Bockris's book does not delve deeply enough into the pros and cons of the hypotheses he discusses (and proclaims true by fiat), and the large number of errors render it an unreliable resource for the serious scholar.

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