

BOOK REVIEWS

Beyond the Big Bang by Paul LaViolette. Rochester, Vermont: Park Street Press, 1995, \$32.50.

This is a most unusual book. It is written by a “Systems Theorist,” a man whose mentors reach back to von Betanlanfy, Defay, Boulding and Prigogine. Thus, he is concerned with ideas which spring from concepts of irreversible thermodynamics and is preoccupied throughout with ideas of the creation of order from chaos by means of fluctuations, along lines well known from Prigogine.

The unusual part is that the author applies these ideas to look at basic physics, at relativity and quantum theory, finding each to be deeply flawed — and goes on to give his own substitutive speculation. The author shows enormous chutzpah in expounding on the unclothed state of the emperor — and the publisher has evidently heard there exists a sufficient audience willing to hear a new tune.

As if this direct challenge to the established wisdom were not enough, the author then presents his readers with historical speculation of a breadth and heretical character at least equal to his demolishing both relativity and quantum theory. He seizes certain discoveries, and finds that they justify the assertion that the *known* civilization of the ancient Egyptians is a remnant of an antedeluvian culture showing signs of advanced engineering. He comes to the climax of such speculations by seeing in Egyptian mythology, in the tales of the battles of Horus and Set, a suggestion of Order and Chaos and a hint that the thermodynamical laws were known to a high civilization which existed more than 12000 years ago — and perhaps even as far back as 40,000 years ago.

From the point of view of acceptability, it is a great pity that the author presents his tale backwards. He *starts* (Chapter 1) with a discussion of Egyptian Civilization and gives his explanation for the sudden appearance of enormous buildings, a sophisticated calendar and extraordinary astronomical knowledge around 4,000 years ago. He thinks these great buildings constitute the remnants of a much older development.

In Chapter 2, he connects his concepts of the mythological Egyptian figures of Horus (good) and Set (bad) with order and chaos, with synthesis and entropy. He suggests that the myths are in fact coded information from an earlier (advanced) science.

LaViolette stresses “open systems” as a fundamental of a successful understanding of the development of civilizations. They can bring in matter from “outside” and thereby defeat the entropic tendency of the Second Law. The tendency to consider closed systems was commenced by Aristotle, and is

being continued by the particle physicists and their systems. It is open systems which allow the creation of order from chaos.

Chapter 3 contains suggestions which LaViolette fans into a theory of cosmology. The Chi and Prana of the ancient Chinese civilizations are not religious fantasies, but refer to the basic building block of LaViolette's Universe. These are the etherons, particles of less than 10^{-14} cm in radius, which constitute the ether, and, eventually, are the source of everything else. For it is fluctuations among the etherons which give rise to the continuous creation (along with the constant destruction) which forms the steady state universe. Here, in Chapter 4 ("the Transmuting Ether") LaViolette makes connection to Bohm's interpretation of the quantum theory. There is an unobservable realm and in it exists "the implicate order."

Chapters 5-9 develop these thoughts. However, the credibility in the content of these chapters is decreased by the introduction of a concept called "genic energy." It is difficult to pin down this concept and relate it to some earlier thought. It is reasonable to say that the author invents it as a given (perhaps as Clausius first expressed entropy on the ratio of a heat change and the temperature), and applies it where needed, particularly in his idea on cosmogenesis. The intermingling of speculations which depart so far from the main stream with the frequent return (Chapters 7, 8, and 9) to the Egyptians and the meaning of their symbolism, is less than helpful to the credibility of either.

From Chapter 10, the author turns back to where some would think he should have begun — with his multi-faceted attack on present physics. As might be expected from a Systems Theorist, LaViolette is preoccupied with defeating ideas of a particle Universe, which he puts down as "fragmented." Lorenz and Mie, not Einstein, were the originators of quantum field theory — and of the concept of material particles as "energy clusters." He drops back again to the Ancients and speculates that their (presumed) great knowledge came either extraterrestrially or paranormally. Here, he refers to the very remarkable papers published by Charles Leadbetter and Annie Bessant in 1909-1920 in which "Yogic Principles" were applied and yielded diagrams of atoms which (though found strange at publication) bear a stunning resemblance to modern ideas of the nuclei developed since the introduction of quarks.

But now comes the best part of the book. It begins with Chapter 10 — with the most lucid discussion of the Michelson-Morley experiment known to this Reviewer. It is, of course, the alleged invariance of the velocity of light to the direction of the motion of the earth which is cited as the main reason for the rejection of the concept of the ether (if light swam in ether, the argument goes, it would go faster when moving with the rotation of the earth than against it). Of course, things are not so simple. By a thorough discussion, with figures to explain the complex original experiment, and by an excellent presentation of continuing modern and sophisticated work on the movement of the earth in space. LaViolette demonstrates that there are no grounds (from such measure-

ments) for rejecting the presence of an ether (which in any case underlies our accepted theory of electromagnetism).

LaViolette then describes the work of Ives who, between 1938 and 1951, published an analysis of special relativity which reached a clear negative conclusion: what remains constant from one reference frame to another is not the velocity of light but a very complex mathematical function. The maintenance of special relativity past 1950, Ives describes as “ritual” and LaViolette then goes on to describe the 1987 work of Ernest Silvertooth — and his definitive result that the velocity of light in one direction varies with that direction.

LaViolette continues with an impressive and disturbing discussion of the redshift. It appears that Hubble — having made the suggestion that it was due to a Doppler effect (arising because the outer galaxies traveled faster than the nearer ones) — spent the rest of his life trying to take back his suggestion. Rather, Hubble (and others) suggest that light “gets tired” on its multimillion light year journey (a theory originated by the physical chemist Nernst in 1921 and elaborated by Zwicky). The main support for the resulting idea of the Big Bang (the 3°K radiation) was gathered first by LaRoux in 1955, and resuggested without acknowledgment to the earlier author by Alpher and Herman of Bell Labs. But LaViolette quotes explanations in terms of interaction of radiation with cosmic dust.

So, no Relativity and no Big Bang or expanding Universe or curved space! But LaViolette brings a withering criticism to many other subjects within the present physics. There is no convincing explanation for pulsars. A plot of intrinsic luminosity against mass of the stars unfortunately turns out to include some of the planets, disconcerting indeed. But the most damning criticism comes from work which would suggest each cc of space to contain up to 10^{45} ergs of energy. Would not the resulting mass per cc be 10^{25} grams?¹ Humpty Dumpty has fallen all right, LaViolette thinks, and the remarkable thing is — why is not the realization more widespread and admitted?

To expect this Systems Theorist to have an answer to all the anomalies described would be to expect very, very much. However, he tries. He has etheron, reaction — diffusion waves are at the basis of the universal yin and yang of nature, and, finally, there is genic energy which is brought in whenever needed. These suggestions seem too flimsy and vague to merit much description.

Finally, this Reviewer questioned whether he should submit a review of this book to the JSE. Professional physicists with positions to protect, will ridicule it; and, of course, become angry at the parts which have serious scientific content questioning central theories. However, there *is* mounting evidence from numerous directions that the following is true: Classical Physics was good as far as it went. Of the two great contributions of the 20th Century, Relativity and the Quantum Theory, Relativity and the Big Bang are faltering and even

¹ The Chapters 10-14 are really excellent and provide challenging material for those few who have professional positions which allow them to think freely to a new paradigm in Physics.

Maddox thinks the latter will be out by 2,000. As to the Quantum Theory, it is very difficult to understand what it means. Feynmann said that, if you really understood it, you *know* it has to be wrong.

It is in this climate of doubt and waning confidence (no real “advance” since 1926) that LaViolette’s very highly speculative book should be regarded as suitable reading for scientists whose minds are open to the new. How much better it would have been had the author written two books — one on the defects of modern physics and possible new ways of thinking; and one on the theory that Egyptian mythology can be interpreted to carry information from an antedeluvian High Civilization. At present, the far out edges of the two theses add to diminish the credibility of either.

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Project Delta: A Study of Multiple UFO by Richard F. Haines. Los Altos, CA: L.D.A. Press, 1994, Illus, Index, 250 pp. \$9.95.

When Kenneth Arnold spied his UFOs on that fateful day in 1947, he set in motion a controversy that has lasted for over fifty years. The UFO controversy was first played out in the debate over the reality and anomalousness of the sightings of objects. In recent years, the controversy has branched into different areas. Abductees have testified about the phenomenon’s goals, motivations, and procedures of the beings inside the objects and added depth and knowledge about the phenomenon. The meaning of the testimony has been hotly contested by opposing groups of researchers. Charlatan “contactees” who allegedly had ongoing contact with benevolent space brothers have proven to be case-studies of the culture’s popular reaction to the sightings. They muddied the waters in the 1950s and, much to the UFO research community’s relief, disappeared in the 1960s (only to resurface in a New Age and/or spiritual guise in the 1990s). UFO researchers forged ahead developing sighting analyses and discovering the abductions.

Since the early 1980s, the abduction phenomenon has changed much of the direction of UFO research, and it has shifted the debates from the UFO phenomenon’s existence to the motivations of the intelligence behind it. Sighting analysis suffered as the abduction controversy changed the content and context of UFO research.

In spite of the change, the sightings of the outside shells of objects have provided the “backbone” of the UFO phenomenon and the primary way that researchers and the public have confronted it. Researchers have attempted to categorize sightings, debunkers have ridiculed them, investigators have scrutinized them, and they have prompted innumerable witnesses to say, “I don’t