Man and the physical universe
insights and outlooks

M. Taube

Evolution of Matter and Energy

on a Cosmic and Planetary Scale

1985. 136 figures, 34 tables. Approx. 288 pages.
Hard cover DM 76.–. ISBN 3-540-13399-2

Contents: Matter and Energy. The Interplay of Elementary Particles and Elementary Forces. – The Universe: How is it Observed Here and Now? Its Past and Possible Future. – The Origin and Nuclear Evolution of Matter. – Chemical Evolution and the Evolution of Life; The Cosmic Phenomena. – The Eternal Cycle of Matter on the Earth. – The Flow of Energy on the Earth. – The Biosphere: The Coupling of Matter and the Flow of Free Energy. – Is the Future Development of Mankind on this Planet Possible?. – The Distant Future of Mankind; Terrestrial or Cosmic? – Bibliography. – Index.

Looking back at more than 25 years of research and teaching experience in this important field, the noted physicist M. Taube discusses the most important scientific insights into matter and energy, both cosmic and terrestrial. His simple language – with a minimum of mathematics but a maximum of numerical data – makes it accessible to a wide audience as a standard reference in the environmental sciences. The unifying description of our present (qualitative and quantitative) knowledge of Nature serves the author as a basis for analysis of the relation between Man and his Universe. His basically optimistic message is that our present scientific knowledge points toward a long period of human development on this planet; the real danger for mankind is mankind itself. Many of the questions he raises will certainly stimulate further research in the most vital problems of mankind's survival, making this original work required reading for both students and international policy makers alike.

B. d'Espagnat

In Search of Reality

1983. IX, 182 pages.
Soft cover DM 45,–. ISBN 3-540-11399-1

Contents: Introduction. – From Democritus to Pythagoras. – Philosophy of Experience. – Nonseparability. – Unkind Artless Interlude. – Comments on Scientism. – Einstein's Objections to the Philosophy of Experience. – Other Approaches: Elements for Skepticism. – Veiled Reality. – Myths and Models. – Science and Philosophy. – Nonseparability and Counterfactuality. – Glances. – Conclusions. – Appendix 1: Explicit Proof of the Theorem in the Case of Bar-Magnet Pairs. – Appendix 2. – Glossary. – References. – Index.

From the reviews:

"... Bernard d'Espagnat is a leading authority on the conceptual foundations of quantum mechanics. In a subject notorious for emotional prejudice and tendentiousness, d'Espagnat has always remained open-minded and dispassionate. His works are therefore a reliable and balanced guide to most controversial and occasionally bizarre topic. ... Despite the esoteric and technical nature of this subject, there has been a remarkable amount of interest by the general public in the implications of quantum physics. For the reader interested in a careful and scholarly, rather than a popular, treatment this book is highly recommended."

New Scientist

"D'Espagnat is a respected philosopher-scientist and his response to recent experiments illuminating the axiomatic foundations of quantum mechanics (via "Bell's Inequalities") has been eagerly anticipated. It is delightful that he chooses a nontechnical tone (ably translated from the French) to describe the problems ("locality" and "separability" of "correlated" objects), and it is true that his "general audience" needs no extensive background in mathematical physics. ... Selected reprises and interludes, a short glossary, extended analogies, and a minimum of technical notes, references, and index entries mitigate the difficulty of this work, and it should be available to ambitious undergraduates at colleges with facilities for intermediate-level European philosophy, epistemology, and the philosophy of science."

Choice

7487/5/1

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