

## BOOK REVIEWS

**Psychoenergetic Systems: The Interaction of Consciousness, Energy and Matter**, (eds) Stanley Krippner and M. L. Carlson, (Published by Gordon and Breach Science Publishers, London, New York, Paris), 1979, pp. xxvi + 262, Price: not given.

The 1970s witnessed an admission of the existence of phenomena in nature not fully explainable in terms of modern scientific paradigms and attempts by scientists to explore possibilities of finding means of understanding them. The occurrence of psychoenergetic systems tending to bridge the gap between interactions of the mind with the biological, biochemical and biophysical pathways was one of the outstanding results of this inquiry, and while the existence of psychoenergetic phenomena was in itself interesting, the processes involved in these events acquired special importance. Parapsychology regained prestige and position and the question 'HOW?' became not only reasonable but also respectable. It is not always easy for the scientific community to accept parapsychology and paranormal research as valid areas of inquiry. Reductionism has been such a powerful tool of investigation, especially in biology, that it seems hard to attain a holistic view of the results of human experience. The compulsive and often mindless application of the reductionist method to human problems has yielded only casuistry and fallacious argument. Only a recognition of the complexity of the human organism as well as the relevance of a holistic and integrated approach to human experience is likely to be useful.

Parapsychology, paranormal phenomena are often irritating, uncomfortable and contrary to scientific laws as we know them. Here is an interesting point. Scientific laws are made by man. Science is in effect, a human endeavour and it is up to man to change them if he finds evidences for such a change. In this context, one recalls the dilemma of Einstein when it was pointed out to him that his relativity theory predicted an expanding Universe, though he was reluctant to countenance it and found it 'irritating', though in the end, confronted with convincing proof, he had to accept the eventuality which he in effect had discovered.

Human experience is often irritatingly inaccessible to scientific analysis and experimentation. But then, why should all phenomena of man be

explained on scientific grounds and by scientific methods? Apotheosis of science in the second half of this century has reached such dimensions as to be deemed meaningless. It has cumbered man's thinking, stifled his imagination and resulted in the fixation that scientific inquiry is the only valid one and scientific methods (as we know them) are the only ones to approach Reality. This is in spite of modern physics's contribution to a better and more rational understanding of objectivity. But then, what is rational can be irritating too, as it clearly was to Einstein.

*Psychoenergetic systems* puts together a number of papers, on a variety of subjects, almost all dealing with human experience, once considered scientifically unfounded but now regarded as explainable through new approaches.

Dreams are a good example. The association of dreaming with REM (Rapid Eye Movements), first discovered in 1953 by Aserinsky and Kleitman, which held out so much promise, has belied expectations and in the words of Eisenbud, 'The dream's basic function remains hardly less obscure to us than to the ancients'.

But why should we always look for functions? Why this obsession with function? To look for survival value in dreams and dream experience appears to many absurd. And it is likely that other approaches would be needed to understand dream experience. And at the moment, there seem to be none which promise such an understanding.

Understandably psychic healing gets an important place in any discussion of psychoenergy and a whole series of papers deals with this currently important phenomenon.

A general acceptance of psychic healing has involved some basic problems. One asks, what is important — results or methods, ends or means? In a matter of life and death, or even in suffering, pain, or relief from them, what is the option? It is a myth created by the so-called scientifically-oriented, materialistic societies that a method is acceptable only if scientifically tested and verified. The truth is, even in these societies which so vaunt science, results, relief, are prime factors for acceptance. 'Healing', by whatever means, is what the suffering subject craves, not the method underlying such healing or its rationale.



Acupuncture is a good example. It will be recalled that the U.S. Food and Drug Administration in 1974 declined to endorse acupuncture devices on the ground that the biological mechanisms of acupuncture had not been scientifically established. That did not, however, prevent their extensive employment. Indeed, the current position is, the procedures originated in China have, during these years, pervaded extensively over the entire world, to such an extent that intensive studies on acupuncture for analgesia, anaesthesia, in addition to its applications in specific ailments have been initiated in many countries outside China.

Kirlian photography gets special attention in view of its importance as a tool in psychoenergetic research. High voltage discharges from inanimate objects are well known but that subtle changes in physiological and emotional states in living organisms can be studied by this method is the distinctive contribution of the Kirlians in 1961, and has since been extensively applied to a variety of organisms. In addition to the original paper by Semyon and Valentina Kirlian included here, part IV has the important 'phantom leaf' effect under discussion. While the 'phantom leaf' remains elusive even today, it recalls to our minds the striking and original transplantation experiments of Jagadish Chandra Bose who by administering an anaesthetic like chloroform was able to obtain positive results in transplantation. Recent experiments have revealed a consistent 'phantom leaf' effect after anaesthesia — yet another enigma in Kirlian photography.

Perhaps the most important contributions to psychoenergetic research deal with the environment of man and the influences of this environment on his functioning. It is not often recognized that the electromagnetic environment has changed through the employment of electrical power and communication devices over the past two centuries and the E M environment, particularly of industrialized nations, is not the same today as it was. The concept that this changing E M environment could have profound biological effects is no longer regarded as invalid. It is well known that magnetic fields of even low intensities can evoke changes in human reaction times, and generally in overall neural and other physiological responses.

The extent to which natural physical phenomena in the environment, like E M changes, sound, etc., can affect the human body and the bodies of animals is not well known, often ignored and many times ridiculed, because the 'mechanism' is not known. The physical environment is an immense energy

source. Some individuals are able to tap this reservoir better than others.

*Psychoenergetic systems* puts together important contributions on the interaction of consciousness, energy and matter, especially in the decade of the seventies and marks a designed attempt to focus attention on the so-called paranormal phenomena. That these attempts are by scientists should be convincing proof that science is now prepared to admit into its fold areas of inquiry which until recently were beyond its laws. That human experience, human responses, human reactions, are not always predictable and do not always obey scientific laws are verities which the scientific community is slowly coming to accept and this series of papers marks a distinctive contribution to this major understanding.

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**Annual Review of Immunology**, Vol. 6, 1988, (ed.) W. E. Paul, (Published by Annual Reviews Inc., 4139, El Camino Way, Palo Alto, California 94306, USA), pp. 710, Price US \$ 34/- Elsewhere \$ 38/-.

There are 26 papers in this volume and cumulative title and author indices for volumes 1–6. A list of some related articles in other annual reviews is appended. Elvin A. Kabat starts off with an account of his scientific career and associated problems after the first twenty-one years of his career. Suzanne Cory and J. M. Adams briefly summarize how transgenic animals are produced, and then consider our current state of knowledge concerning the effects of the different classes of oncogenes in transgenic mice. The mechanisms of kinin formation and their role in inflammatory disorders are dealt with by David Proud and A. P. Kaplan. A critical examination of older as well as recent studies pertaining to the B cell membrane structure(s) to which C3 fragments and EBV bind and an analysis of the functional consequences of these interactions are made by N. R. Cooper, M. D. Moore and G. R. Nemerow. P. J. Fink, R. P. Shimonkevitz and M. J. Bevan discuss, veto cells, their characteristics and functions. One mode of viral persistence in which normal replication of the agent can occur in the functionally competent immune environment is examined in relation to antigenic variation in



lentiviral diseases by J. E. Clements, S. L. Gdovin, R. C. Montilaro and O. Narayan. Structure, organization and regulation of the complement genes are discussed by R. D. Campbell, S. K. Alex Law, Kenneth B. M. Reid, and R. B. Sim. Kyoko Hayakawa and R. R. Hardy discuss available evidence for understanding the generation of chronic malignancy and autoantibody specificity from the view that CD5 expressing cells constitute a separate lineage of B cells. Opioid peptides and opioid receptors in cells of the immune system are reviewed by N. E. S. Sibinga and A. Goldstein. The current state of knowledge of the structure and function of the heterogeneous family of the FcγRs of mouse and human are focussed by J. C. Unkeless, E. Scigliano and V. H. Freedman in their review. The immunological and biological characterization and clinical significance of melanoma antigens are dealt with by M. Herlyn and H. Koprowski. Harald von Boehmer reviews the developmental biology of T lymphocytes. The molecular and phenotypic characteristics of V genes encoding auto-antibodies are discussed by C. A. Bona. The role of the M.H.C complex class I antigens in tumour growth and metastasis is reviewed by K. Tanaka, T. Yoshioka, C. Beiberich and G. Jay. The structure and functions of the immunoglobulin superfamily molecules are discussed by A. F. Williams and A. Neil Barclay. N. L. Paul and N. H. Ruddle review the structure, gene organization and linkage, cells of origin and induction signals, biological activities and mechanism of action of lymphotoxin. Tadatsugu Taniguchi summarizes the currently accumulated information on the regulation of cytokine gene expression. Hans Schreiber, P. L. Ward, D. A. Rowlew and H. J. Strauss evaluate critically the evidence for the existence of tumour specific antigens, and also discuss the major problems that have hampered rapid progress in this field. The molecular structure, biological function and regulation of expression of the factors regulating B lymphocytes response, concentrating on BSF-2 are reviewed by T. Kishimoto and T. Hirano. K. Ishizaka deals with the IgE binding factors and regulation of the IgE antibody response. The physico-chemical and biological properties of asymmetric, coprecipitating or nonprecipitating antibodies are summarized by R. A. Margni and R. A. Binaghi. The three-dimensional structure of antibodies is discussed by P. M. Alzari, M. B. Lascombe and R. J. Poljak. The recent advances in gene transfer as they relate to the progress towards gene therapy for immunodeficiency diseases, specially for adenosine deaminase

(ADA) deficiency as a cause of severe combined immunodeficiency (SCID) are dealt with by P. W. Kantoff, S. M. Freeman and W. F. Anderson. A. E. Davis III reviews knowledge related to C1 INH and points out various areas in which current research tools should be able to answer important unresolved questions. The T cell receptor/CD3 complex, its structure, biosynthesis and assembly, and activities are discussed by Hans Clevers, Balbino Alarcon, Thomas Wileman and Cox Terhorst. M. F. Good, J. A. Berzofsky and L. H. Miller trace the development of a subunit vaccine for the sporozoite stage of the life cycle of the malarial parasite, in the last article.

Works in the various fields of immunology has been so rapidly progressing and so extensive that researchers in these areas and general microbiologists are hard put to keep abreast. This volume caters to this felt need by highlighting the most important advances. It is thus an indispensable book for all libraries catering to the various fields of medical and biological sciences.

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**Forest Vegetation Characteristics of Indian Hills** by S. S. Bir and G. S. Chatha, (Published by Today and Tomorrow's Printers & Publishers, 24B/5, D. B. Gupta Road, New Delhi 110 005), 1988, pp. 136. Price: Rs. 295.00; US \$ 45.00.

The book has an attractive jacket with an impressive title. The Foreword refers to the "beautiful photographs" and recommends that it is a "model for similar studies". The preface indicates that the work forms part of a doctoral dissertation of the junior author. The introductory part gives a brief account of the classification of Indian forest types. The aim of the present study, the area surveyed, its geology and soil and climate are then briefly referred to, followed by a general account of the vegetation of the Palni Hills and the floristic composition of the forest types seen. The phenology, distribution and uses of the woody taxa of the Palni Hills are tabulated in appendices I and II. Some of the rare and endangered species of Palni Hills as also the introduced and acclimatized species are listed in appendices III and IV. There are 104 photographic illustrations and a map of the area



surveyed. A list of references and an index complete the volume. It is an expensive buy even for affluent libraries.

While, no doubt, considerable effort has gone into the gathering of material in the field, the same effort and care have not been exercised in preparing the matter for publication. A critical reading of the book belies the high expectations held out by the ambitious title on the cover and the adulatory references made in the Foreword. The book deals with only one hill range of our vast country and it abounds in mistakes not only in printing but in its scientific content as well. The reviewer has counted as many as 450 printing mistakes (there may be more)! The language also needs tidying up in many places. Nomenclature of taxa included has not been checked as also the spellings of family names, binomials, etc. Accuracy of spelling of botanical names, validity and legitimacy of the names used and a critical review of synonymy are basic to any worthwhile floristic study. There can be no compromise in this regard. Family names used by the authors like Anonaceae, Cannabinaceae, Malpighiaceae, Melastomaceae, Simarubaceae do not conform to the 'Nomina Familiarum Conservanda' of the International Code of Botanical Nomenclature, nor are Bixineae, Hypericineae, Tamariscineae valid as names of families. Apart from these, printing errors resulting in distortions of family names stare you in the face as they appear in bold capitals (see pp. 49, 54, 61, 64, 68, 77, 98, 104, 111). Wrongly spelt names like *Albizia*, *Cedrella*, *Cytissus*, *Spicta*, *Toddalia* are seen throughout. The geographical region, Konkan appears as Konakan till page 86 when it changes over to its correct spelling! Names *antiquorum* and *aquilinum* consistently appear with a 'g' instead of a 'q'.

No effort has been made to check the validity of binomials included in appendices I and II. Nearly 50 species out of the 172 listed have undergone name changes in recent years based on taxonomic revisions, application of Rules of Priority, Homonymy as prescribed by the Code, wrong determination in the past, etc., yet they are included here under their old incorrect/invalid names. Synonymy has not been looked into and this has resulted in synonymous names appearing as if they are different species (e.g. *Hiptage benghalensis* & *H. madablota*; *Dendrophthoe falcata* & *Loranthus longiflorus* var *amplexicaulis*; *Lannea coromandelica* & *Odina wodier*; *Syzygium arnottianum* & *Eugenia arnottiana*).

Regarding the illustrations, half-tone reproductions of black and white photographs are not

suitable for depicting the individual components in a vegetational complex unless the printing is of the highest quality. Here many of the illustrations are unsatisfactory from this point of view. As an example, one has to stretch the imagination to see the banana plantation in figure 61.

The book in its present form, instead of being a "model for similar studies in other areas", should serve to caution prospective authors and publishers to exercise the greatest care in the preparation of such manuscripts for publication. The reviewer regrets having to make these critical comments but he felt helpless in the face of such defects in the book.

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**Plant Cell and Tissue Culture of Economically Important Plants**, (Proceedings of National Symposium), (ed.) G. M. Reddy, (Published by Department of Genetics, Osmania University, Hyderabad 500 007), 1987, pp. 461, Price: Rs. 300/-.

The book is based on the proceedings of the three-day National Symposium on plant cell and tissue culture of economically important crop plants held from July 24 to 26, 1986. The book includes contributions from more than 100 participants representing 35 Universities/Institutes. The volume comprises the major research results in the areas of protoplast culture, and genetic transformation, anther culture and haploid production, cell culture and selection of mutants, micropropagation of fruit and forest trees, somatic embryogenesis, variability in tissue culture and somaclonal variation, morphogenesis and study of gene action in tissue culture, secondary metabolites in tissue culture including gene cloning and genetic transformation. The book is an important document of reference which provides up-to-date information through citations of literature. It will be useful to researchers, students, teachers engaged in the discipline of education, agriculture, forestry, horticulture and pharmaceutical industry.

Special mention can be made of the few articles included in the book without affecting the good qualities of other articles. They include: (i) Plant genetic transformation dealing with the mechanism of DNA uptake particularly of electroporation accepting *Agrobacterium* as an example. The article

is supported by up-to-date citations. Other articles on, "Gene cloning and transfer to plants; Promoter sequences for the expression of foreign genes in plant cells need special mention. Similarly articles entitled, Regeneration of blast-resistant plantlets from irradiated rice calli; Micropropagation of certain fruit and timber trees through tissue culture regeneration and establishment; Excised root culture—a novel method for germplasm preservation; *In vitro* multiplication of Oil palm (*Elaeis guineensis*); Involvement of polyphosphoinositide cycle and calmodulin in cell proliferation and *in vitro* regeneration

of plants in *Amaranthus paniculatus*, and Effect of cultural parameters on the growth of cell cultures and production of B-C-3 sterols and guggulsterone in *Commiphora wittii*; are a few of the outstanding ones which provide interesting information on the subject of tissue culture.

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## NEWS

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### INDO-BRITISH WORKSHOP ON RABBIT FUR TECHNOLOGY

Dr Farooq Abdullah, the Chief Minister of Jammu & Kashmir, inaugurated a workshop on 'Rabbit Fur Technology' at the Regional Research Laboratory in Srinagar. The workshop will provide a unique opportunity not only to rabbit breeders to learn pelt processing technology but also enlighten the fur dressers with improved and scientific techniques of fur processing.

The workshop will be conducted by the staff of Regional Research Laboratory (Branch), Srinagar, and the Overseas Development Natural Resources Institute, London. A number of guest speakers and demonstrators with specialized experience will also share their knowledge and expertise with participants from various parts of India.

Captive rabbit breeding as an alternative source of meat production has been recently started in some parts of India. However, the skins, which could be profitably used by the fur dresser, go to a complete waste, as the breeders are not aware of the technology of preserving the skins and processing them into value-added finished products. On the other hand, raw rabbit pelts worth about Rs. 50 lakhs are annually imported to feed the local fur industry. Therefore, harvesting of entire pelts raised through rabbit breeding would go a long way towards making India self-sufficient in fur production and save valuable foreign exchange spent on import of skins. (BIS. B. 322; Published by the British Information Services, British High Commission, Chanakypuri, New Delhi 110 021.)

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### NEWLY ELECTED IAEA BOARD OF GOVERNORS

The 32nd regular session of the IAEA General Conference has elected 11 Member States to the IAEA Board of Governors, the 35-member policy-making body.

The 11 Member States newly elected to the Board are Algeria, Argentina, Cote d'Ivoire, Denmark, German Democratic Republic, Ghana, Malaysia, Mexico, Netherlands, Pakistan and Peru. The members were elected for 2-year terms expiring at the end of the regular session of the IAEA General Conference in 1990.

The other remaining 24 Member States of the Board are Australia, Brazil, Canada, China, Colombia, Cuba, Egypt, France, Federal Republic of Germany, Hungary, India, Indonesia, Japan, Republic of Korea, Kuwait, Libyan Arab Jamahiriya, Senegal, Spain, Switzerland, Turkey, Union of Soviet Socialist Republics, United Kingdom of Great Britain and Northern Ireland, United States of America, and Yugoslavia. (IAEA-PR 88/39 dated 22nd September 1988; Issued by International Atomic Energy Agency, Wagramerstrasse 5, P.O. Box 100, A-1400, Vienna).