

Book Review

The Science of Photomedicine

edited by J. D. Regan and J. A. Parrish; published by Plenum, New York, 1982; xxi + 658 pp.; price, \$75.00; ISBN 0-306-40924-0

A belief in the beneficial effects of solar radiation on the human body has persisted among sun worshippers of different persuasions from ancient times to the present day. It was reinforced by observations, originating in the nineteenth century, that sunlight, or more specifically its UV component, was capable of curing rickets and cutaneous tuberculosis. However, consolidation of these early discoveries in the form of a systematic scientific exploration of the interactions between light and human tissues was slow to develop until about 20 years ago. Then, in common with other areas of photobiology, it became the focus of intense research activity. The ensuing investigations, ranging in scope from molecular photochemistry to clinical trials, have contributed enormously to our understanding of how UV and visible light affect the human system in health and disease. As a result the role of UV radiation in the aetiology of skin cancers (which comprise between one-third and one-half of all reported cancers in the U.S.A.) has been more closely defined and mechanisms responsible for the photosensitization of human skin have been unravelled. Other important medical applications include the introduction of new treatments for neonatal jaundice and psoriasis, based on phototherapy, and the use of lasers in surgery.

The Science of Photomedicine provides a timely and well-organized survey of the development and current status of the interface between photochemistry and medicine. All aspects of the subject are covered except those concerned with the function of the eye. The book contains 23 chapters by a number of authors and is divided into six sections. The first two sections indicate the scope of photomedicine and explain the photochemical and photobiological principles on which it is based. Next, two sections deal with normal and abnormal responses of human skin to light; they include accounts of photocarcinogenesis and the various photodermatoses. The penultimate section is devoted to photoprotection by carotenoids and synthetic agents. For those contemplating a holiday in the sun, the chapter on the latter topic contains expert advice on how to acquire a healthy tan and the efficacy of many commercial sunscreen preparations! In the final section the therapeutic uses of UV and visible radiation are discussed from a clinical standpoint. There are authoritative articles on the phototherapy of neonatal jaundice and the photochemotherapy of skin diseases as well as

detailed discussions of the photoinactivation of viruses and the prospects for lasers in medicine.

This work will serve as a valuable source of reference and inspiration to photochemists and photobiologists with an interest in clinical research. Its contents provide an excellent illustration of the benefits to be gained from interdisciplinary collaboration and also draw attention to the vast opportunities for further fundamental studies in this field. Inevitably, there is some variation in the quality of the individual contributions but the general standard is high and errors, none of them serious, are few and far between. The literature coverage extends to 1980 in most chapters and (neglecting some duplication) more than 2500 references are cited throughout the book.

The Science of Photomedicine is the first in a planned series of treatises on the various subdivisions of photobiology. If the subsequent volumes achieve the same level of presentation, coverage and integration of their subject matter, the success of the series should be assured.

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