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BOOK REVIEW

F. G. Sulman: The Effect of Air Ionization, Electric Fields, Atmospherics and other Electric Phenomena on Man and Animal. Ch. Thomas Publ., Springfield 1980. 398 pp. ISBN 0-398-03929-1 (cloth); 0-398-03930-5 (paper). US $ 24.75/18.75

The book is divided into two main parts. Part I deals with the causes and part II with the effects of atmospheric electrical phenomena. In the introductory chapter of part I, definitions concerning bioclimatology and biometeorology, such as climate, weather sensitivity and climatic changes, are explained. Chapter 2 gives a short survey of the history of biometeorology and bioclimatology. In chapter 3 the meteorological parameters affecting atmospheric electricity, namely the effects of cold and heat, solar radiation and flares, atmospheric pressure and winds as well as humidity and condensation, are discussed in detail. The different climate zones, the Coriolis effect, weather fronts and different types of winds and clouds are also described and illustrated with photographs. Ch. 4 contains a discussion on atmospheric layers and ch. 5 a description of the electrical properties of the atmosphere, especially electric conductivity, types of air ions, atmospherics, electric potential gradients, thunderstorms and lightning.

Part II of the volume starts with a report on the author's own research work: viz. a study of the effects exerted on weather-sensitive patients by different atmospheric electric parameters, i.e. sferics, small air ions and electrical fields (chapter 6). The results are shown in a number of curves, but without indicating which curve relates to which parameters. It is found that in conditions associated with sharav-depressions, high counts of sferics and of positive air ions occur, which are supposed to be the underlying cause for the sufferings of weather-sensitive people, and known as "serotonin irrigation syndrome". The second part of chapter 6 is devoted to the influence of atmospheric parameters on stress reactions and biological rhythms, and a third part to the biological effects of ionization, electric and magnetic fields, atmospherics, electro-aerosols, solar and cosmic radiation as well as gravity.

Chapter 7 is concerned with "electric" air pollution", including the production and biophysical effects of microwaves. The effects of ozone and radioactive fallout on atmospheric electricity are also considered. The next chapter depicts the different procedures to prevent ill effects of air electricity and the methods of ionotherapy. The text is illustrated with photographs of commercially available devices for ion measurement and generation. Chapter 9 delineates therapeutical methods for weather-sensitive people, especially electroaerosol therapy, electrotherapy and drug therapy. In chapters 10 and 11 the medical and ecological impacts of air electricity, for instance in psychiatry, neurology and in cases of psychosomatic deseases, suicides, accidents and thromboembolism are outlined. Under ecological considerations, the effects of weather changes on agriculture, forestry, fishing, animal breeding, urbanization, housing, transportation, manufacture and commerce are briefly described. The book concludes with a presentation of the effects of "unhealthy" winds, for instance Foehn and Sharav. It is supplied with an appendix, containing addresses of some manufactoring companies, a glossary, a relatively small bibliography and a subject index for quick orientation.

The relationships between atmospheric-electric phenomena and living organisms are manifold and complex. The size of the book did of course not allow a detailed scientific analysis of all such relationships, and represents rather an informative survey of our knowledge in this field. It is therefore of great value to all those who are looking for an easily readable introduction into biometeorological processes associated with atmospheric electricity. Special knowledge in meteorology, medicine, biology or electricity is not necessary for the reader, because all scientific conceptions are clearly explained and easy to understand.

Munich, 11.5.1982 J. Eichmeier.