

is on physical principles, and the treatment throughout is mathematical—where this is appropriate—rather than simply descriptive.

In his preface the author directs the book to students of meteorology, rather than to physicists or chemists, and to this end he includes a chapter on the thermodynamics of phase equilibrium to provide necessary background material. At the same time, there is an introductory chapter on the thermodynamics of moist air; although meteorologists might be expected to be familiar with this topic, the chapter gives a convenient summary for those whose training is in pure physics.

After these introductory chapters the book follows a familiar and logical pattern. A treatment of nucleation processes is given, which is well balanced between oversimplification and the complexity of a thoroughgoing mathematical discussion. Having established the importance of soluble particles in condensation and of insoluble solid particles in ice crystal formation, the book goes on to examine the sources, distribution, and behavior of these particles in the atmosphere.

The next two chapters discuss the growth of droplet populations and of ice crystals in clouds and the way in which the droplet size distribution is

modified by collision and coalescence. It is in the development of precipitation that the interaction between macro- and microphysical processes becomes of prime importance, but the discussion here is confined to the microphysical scale.

The final chapter on cloud dynamics is a brief, self-contained survey of some important models for convective clouds. This is useful material, but the treatment is very brief and no indication is given of the success of these models in describing real clouds.

Topics purposely omitted by the author are cloud electricity and radar studies. Some may be surprised to find no more than passing reference to cloud modification, but the present confused situation in this field justifies its omission from this relatively short book.

Byers has produced an authoritative and readable account of his subject, which should prove a very useful textbook for courses in meteorology and cloud physics. The book itself is attractively presented, with numerous figures, an adequate index, and a useful set of up-to-date references.

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Meyrick's Microlepidoptera

Catalogue of the Type Specimens of Microlepidoptera in the British Museum (Natural History), Described by Edward Meyrick: vol. 5, Timyridae, Hyponomeutidae, Ethmiidae, Metachandridae, Cosmopterigidae, Walshiidae, Blastodacnidae and Scythridae (British Museum, London, 1965. 581 pp. Plates. £15), by J. F. Gates Clarke, continues the publication of Clarke's study of the enormous Meyrick Collection, and the material from which Meyrick named thousands of species of microlepidoptera, chiefly from the tropical regions of the Old and the New World. Meyrick used external taxonomic characters exclusively, paying little, if any, attention to the genitalia, which are now known to be almost all-important. During Meyrick's time, moreover, different and varying rules of nomenclature were followed. This made subsequent study such as that carried out by Clarke imperative to avoid complete chaos

in the classification of these large, worldwide groups. Type specimens are fixed, where necessary, and other type material listed. Dissections of the genitalia (whenever possible of the type) are figured, as well as the pattern and, in many instances, the head, palpi, and venation. The type species of Meyrick's genera are given. Some generic synonymy is given where Meyrick species fall into other genera, or are junior synonyms of other authors' species. With Clarke's studies the way is cleared for taxonomic work on the groups; without it, such work would be gravely handicapped. The present volume covers about 163 genera and 653 species. The majority are Ethiopian, Indo-Australian, and Neotropical, only a small number being Nearctic. Future volumes will complete the series; the final volume is to include an all-important index.

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Medicine

Studies in Epidemiology: Selected Papers of Morris Greenberg. Fred B. Rogers, Ed. Putnam, New York, 1965. xxviii + 418 pp. Illus. \$8.50.

The collection of papers here presented is a splendid tribute to the remarkable ability exhibited by Morris Greenberg, long-time epidemiologist and director of the Bureau of Preventable Diseases of the New York City Department of Health. This teeming city of many races and many cultures constituted an unlimited source of pathogenic influences and disease. Greenberg's purpose was to reduce that potential by identifying the mechanisms at play and applying corrective or specific, preventive measures. As practicing epidemiologists, Greenberg and his colleagues were perforce committed to the investigation of outbreaks of many kinds, illustrated by the now famous 11 blue men with sodium nitrite poisoning, by food infections, and others. One series of unusual cases led to the initial recognition of rickettsialpox, a mite-borne disease almost unique to apartment life in New York City. The excellent system of reporting disease and of diagnostic confirmation in the city provided unusual opportunity for Greenberg's inquiring mind. He hewed to the mainline problems of infectious disease, polio, hepatitis, measles, and rubella, studying trends, modes of spread, and effects of preventive measures.

Greenberg's other career as a clinical pediatrician clearly influenced his epidemiological studies, with attention centered on the effect, on the fetus and infant, of maternal disease during pregnancy. Many of these efforts were to clarify moot points raised by inadequate observations. He designed and prosecuted the studies with careful attention to the biases and the numerical difficulties. Smallpox vaccine did not affect the outcome of pregnancy; poliomyelitis in early pregnancy was associated with evidence of increased fetal death; repeated studies of improving design were conducted to obtain acceptable data on the frequency of rubella effects, supporting a conclusion that the influence was generally limited to early pregnancy with the total of congenital anomalies more nearly 10 to 15 percent than the widely bruited 90 percent. (It is of interest that the data were difficult to