held to consider the advisability of establishing a science news service in Great Britain, and after discussion a small committee was appointed to carry the matter further. For some time such a service has existed in the United States, and the success achieved in that country encourages the belief that there is room in British newspapers also for accurate information on scientific subjects, narrated in such a manner as to be interesting to the average educated but unscientific reader. Matter which is suitable for the American reader is not necessarily suitable for the British: each nation has its own idiom and its characteristic outlook. But what American science can do for America, British science should be able to do, in its own appropriate way, for Britain. Already the *Morning Post* and one or two other British papers make a feature of admirable reports on scientific subjects, while a few specially gifted men of science are doing excellent work by furnishing the press with informative articles: but apart from these exceptional cases it is a commonplace that the great majority of newspapers fail to distinguish between science and magic in anything but name, that the space they allot to science, as distinct from sensational charlatanism, is negligible, and that such paragraphs as they do devote to scientific topics are for the most part meaningless and in many cases untrue. The sporadic efforts of a few gifted journalists are not adequate to meet the situation. What is needed is a systematic supply of news the accuracy of which shall be guaranteed by recognized scientific organizations, while its form renders it easily digestible by at least the better educated newspaper readers.

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The committee which has been formed will be confronted with a number of difficult problems, which will have to be solved before success can be achieved. Perhaps one of the most difficult will be that of guarding the news against mutilation by unscientific sub-editors. On the other hand, there is little to be feared from the alleged hostility of the pioneer journalists who are already in the field. It is to the interest of all concerned to cooperate in creating an increased demand for science news, and it is therefore reasonable to hope that the parties in the case will agree to pool their assets, which are, on one side, experience and an established reputation, on the other, the prestige of scientific authority.

Without the willing assistance of scientific workers and institutions, no organization for the preparation and distribution of science news can possibly be successful, and even with it, there is little hope that the agency would be self-supporting for several years. As regards finance, it may be mentioned that the American service pays for itself to the extent of about 60 per cent. of its expenses, the remaining 40 per cent. being provided by endowment. It has been estimated that a British service, selling news at standard rates, would need an endowment of at least £5,000 to ensure its being able to run for three years, at the end of which time it should be possible to decide whether the support secured was sufficient to justify the continuance of the service. One of the questions before the committee which has been set up is that of the possibility of raising this sum by contributions from public-spirited donors or other sources. It is unnecessary to discuss here the contrivance of machinery for obtaining and supplying news, but on the assumption that this and the other tasks confronting the committee can be successfully carried out, the scheme in its broad outline is one which must commend itself to every man of science who appreciates the significance of the discipline with which he is associated.

C. W. H.

SCIENTIFIC BOOKS

Astronomical Physics. By F. J. M. STRATTON. New York, E. P. Dutton and Company.

WHILE "Astronomical Physics," by F. J. M. Stratton, can not be recommended for light reading to one unversed in the background and general principles underlying the subject of astrophysics, in it every student in this and related fields will find much in the way of information and considerably more in the way of inspiration. It distinctly fills a long-felt need in its field.

The treatise is advertised as "a condensed account of modern views of the physical conditions that obtain in the stars." Especial emphasis should be placed upon "condensed" and "modern." In his attempt to present the subject in but 181 pages of text, the author was forced to limit his descriptions of early work, instruments and methods of attack to bare statements, and to present much of the modern work in little more than outline form. In all parts of the book, however, copious references to sources of information are given and the student who consults the articles cited should obtain a comprehensive insight into the present state of our knowledge of the subject.

The subject-matter is up to date, in so far as present-day rapid developments in the study of stellar physics permit. Successive chapters are devoted to the more productive instruments, to the laboratory investigations leading up most effectively to the interpretation of stellar conditions, to the sun, solar system, stellar radiation, radial velocities, stellar classification, giant and dwarf stars, nebulae, novae,

variable stars, stars with peculiar spectra and cosmogony. The chapters on the sun and stellar classification are more extensive and more nearly complete than the others, and properly so, and they are essential to the interpretation of the physical characteristics in the stars. These interpretations are based largely upon the Bohr theory of the construction of the atom, with its application to the study of thermal ionization by Saha, and the latest researches of Jeans and Eddington on stellar evolution. The author is to be commended for the manner in which only the essential facts and the more generally accepted theories are presented and for his discrimination in the presentation of points under controversy. In fact, one could wish that the author's own comments upon some of these subjects had been more extensive.

In eight appendices the author has collected a considerable amount of data, most of it relating to wave-lengths, in a form and place for handy reference. It should be pointed out, however, that the international secondary and tertiary standard wave-lengths given in Appendicies IV and V have already been shown to be affected by appreciable systematic errors and have been largely superseded by new values. The corrections are small but of sufficient size to become important in refined investigations.

The illustrations have been selected with discrimination and are exceptionally well reproduced. They effectively enhance the value of the book. With its condensed form, its excellent outline and its copious system of references, "Astronomical Physics" is to be highly recommended to the student and teacher as a text-book and to the investigator as a handy and inspiring work of reference.

RALPH E. WILSON

DUDLEY OBSERVATORY,
ALBANY, N. Y.

Bats, Mosquitoes and Dollars. By CHARLES A. R. CAMPBELL. 1925. Boston, The Stratford Co. viii + 3 + 1 − 262 pp., numerous illustrations.

THIS book sets forth (pp. 36–175) the personal views of its author respecting the supposed service of bats in the control of malaria by feeding upon malarial mosquitoes. The remainder of the volume deals with dragon flies, bedbugs and smallpox, and the function of the spleen. For more than fifteen years Dr. Campbell has been interested in the construction of "bat roosts" designed to house colonial bats, particularly *Nyctinomus mexicanus*. Following the construction of a successful roost at Mitchell Lake near San Antonio, Texas, he has been instrumental in having other "roosts" erected near San Antonio, at Gulfport, Texas, at Tampa, Florida, and in Italy on the Pontian Marshes and in Terracina. The author has devoted much time to studying the habits of bats, in and about the limestone caves of Texas and at the bat roosts, and the book sets forth in considerable detail his experiences with bats and in the construction of the roosts. No details are given as to the manner of construction of the roosts, as these have been patented by the author. Among the suggestive items mentioned in the text are the following: That bats, upon arriving in the vicinity of their abode, seem to follow down the ammonia-laden currents of air arising from the roosts; that chemical changes in the guano masses of caves sometimes lead to spontaneous ignition of the accumulations in the larger caves; that bats have been captured by "chicken hawks," by sparrow hawks, and on one occasion a barn owl took to capturing bats at the Mitchell Lake roost; that individual bats, marked with chalk and released at a distance of twenty-eight to thirty miles from their home roost, returned "home" in as short a time as fifty-eight minutes.

Unfortunately, the subject-matter of the book can not be relied upon in many places. As the reviewer will shortly show elsewhere the fundamental premise, that bats feed upon mosquitoes, remains to be verified. No satisfactory evidence on this important subject is adduced in the volume under discussion. The book abounds in non-critical "depositions" and "testimonials" from many sources, ranging from illiterate Mexicans to various medical organizations. The nature of much of the contents may be indicated by one illustration—that of the gold pen with which the governor of Texas signed the bill protecting bats in that state.

The reviewer has no desire to criticize the book save in the interests of scientific accuracy. Would that the author were right in the supposed service of bats in suppression of mosquitoes! The entire world, scientific and lay, would welcome any additional agency in the suppression of mosquitoes or malaria.

Some computations on pages 249 to 251 relative to the amount of iron in guano and the consequent amount of human blood used as mosquito food would be alarming if true, but since they are founded on the supposed mosquito diet of bats they are of no significance. Furthermore, the blood and tissues of insects contain certain small amounts of ferric salts (as also phosphorus which figures prominently in the value of bat guano as fertilizer) and this is not allowed for sufficiently in the computations.

Naturalists are under considerable obligation to Dr. Campbell for his services in attempting to correct some of the popular misconceptions concerning bats, for his efforts in having bats protected by law in San Antonio and in Texas, and for his ingenuity