and chemical laws throughout the universe, Dr. Spencer Jones consequently infers that the formation of similar large molecules with chainlike structure and of feebly stable molecular groups must be possible wherever living matter is to exist, although the living matter need not necessarily be of a type familiar on Earth. A study of the physical, meteorological and geological conditions and their evolution on the Earth make it evident that the requisites for the existence of life (especially regarding atmospheric composition and temperature) are rather narrowly defined. Spencer Jones, discussing at length all the planets and the principal satellites of the solar system, finds evidence for vegetation on Mars, but no evidence anywhere for animal life. With the possible exception of Mars, the Earth is, he contends, the only planet on which animal life can have developed.

Speculatively the author also takes us beyond the solar system. Considering the nicety of conditions required for the existence of life, may we egotistically assume that we are the only men in the universe, or must we modestly admit that our Earth is but one among innumerable similar satellites to other suns? That, according to the Astronomer Royal, depends very much on how the solar system originated. Many theories have been proposed, but all, on careful examination, have been found wanting. The most promising theory requires such specialized accidental circumstances that our egotism is encouraged. On the other hand, he points out, the immensity of the number of galaxies of stars and the theory of an expanding universe combine to suggest that ours is not a unique world.

"Life on Other Worlds" gives a fairly complete survey of the present state of knowledge on the subject. It is fluently and clearly written. In general, the treatise is not only instructive but entertaining (notably where the fates of would-be rocket exploring-expeditions to the Moon are commented upon) and it is definitely provocative of thought. The reader is left impressed with the quantity of research in numerous fields of science that has been accomplished in an approach to the solution of the problem of life elsewhere in the universe. "Life on Other Worlds" is sincerely recommended to all astronomically and philosophically minded laymen. For the astronomer it will provide an enjoyable "busman's holiday."

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MEDICINE IN AVIATION

Grundriss der Luftfahrtmedizin. By SIEGFRIED RUFF and HUBERTUS STRUGHOLD. viii + 191 pp., 103 figs. Leipzig: Johann Ambrosius Barth, Verlag. 1939.

THE preface to this book is written by Dr. E. Hippke, "Chef des Sanitätswesens der deutschen Luftfahrt." Chapter I reviews the problems which meet the aviator and alpinist as higher and higher altitudes are reached. Chapter II contains an analysis of different factors affecting the organism in high altitude: the low pressure of oxygen, the low temperature, the ultra-violet radiation, etc. A short review of the general physiological and physical background necessary for understanding the special physiology of high altitude is given in the first part of the chapter; later follow descriptions of the effects on organs and functions and of ways for investigating and combating the impairing forces. Problems of practical importance, as acclimatization to high altitude, high altitude tolerance, oxygen administration, etc., are given special consideration. Chapter III deals with acceleration. In this field, new as it is, the Germans are specialists in research and in the application of research. Centrifugal force has been studied both "artificially" by means of great centrifuges and "naturally" in various kinds of diving, "pull-outs," "looping," etc. Air-sickness is considered in this chapter. Chapter IV covers the psychophysiology of aviation, especially sensory physiology. In Chapter V the reasons for accidents in flying are analyzed and devices apt to diminish them described, and in Chapter VI is given a short but inclusive review of the comparative physiology of flying.

The book is offered as a supplementary text for students of medicine and as a source of orientation and information for practical men—aviators, military men, physicians and people interested in the problems of the man in the air force. Most figures, tables, curves, etc., are taken from German sources. An English translation might properly include a supplementary chapter or appendix containing data from American and other sources. A revision of the bibliography along the same lines also would seem advisable.

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CHEMISTRY IN WARFARE

Chemistry in Warfare. By F. A. and M. S. HESSEL and WELLFORD MARTIN. With a foreword by Colonel Crosby Field and a Technical Appendix. New York: Hastings House, 135 Front St. 164 pages; numerous illustrations and diagrams; price, $2.00. 1940.

THIS popular treatment of the subject is clearly and interestingly written. Its purpose is to give the layman a concise and reasonably comprehensive review of the manifold ways in which modern warfare is dependent upon chemistry and the chemist, with such illustrations, diagrams and collateral information as will enable any one to see for himself the significance of chemistry's rôle and the indispensability