SCIENCE

VOL. 102 FRIDAY, DECEMBER 14, 1945 No. 2659

SCIENCE: A Weekly Journal, since 1900 the official organ of the American Association for the Advancement of Science. Published by the American Association for the Advancement of Science every Friday at Lancaster, Pennsylvania.

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Communications relative to membership in the Association and to all matters of business of the Association should be addressed to the Permanent Secretary, A.A.A.S., Smithsonian Institution Building, Washington 25, D. C.

Annual subscription, $6.00 Single copies, 15 cents

BAL (BRITISH ANTI-LEWISITE)*

Compiled by Dr. L. L. WATERS and Dr. CHESTER STOCK

IN a recent issue of *Nature,* Professor R. A. Peters of Oxford has announced the discovery and development during the war years of an effective antiarsenical, 2,3,-dimercaptopropanol.[1] This substance has been called BAL (British anti-lewisite). As its name suggests, BAL is of interest in war medicine as an effective therapeutic agent against both the local and systemic action of certain arsenical war gases. Clinical trials of BAL, conducted as a part of the program of war research, have shown further that the compound is of value in the treatment of types of arsenical poisoning encountered in civilian medicine. Beyond this direct clinical application, the study of the action of BAL has resulted, as stressed by Professor Peters, in an important advance in the understanding of fundamental biochemical mechanisms.

Full details concerning BAL, its chemistry, method of preparation and basic biochemical actions were promptly and graciously transmitted to the United States by Professor Peters and his associates through official channels. BAL itself was received in this country late in 1941. Thereafter an intense program of study, including preparation and manufacture, biochemistry, toxicology, pharmacology, experimental therapeutics and clinical application, was undertaken jointly by the Government agencies concerned. Cooperating in this program were the U. S. Army, the U. S. Navy, the Office of Scientific Research and Development, the National Research Council, the Federal Security Agency.

It is the purpose of this review to give a brief summary of the information on BAL, particularly as it was developed in the United States. As in England, more detailed papers based on the original confidential reports are being prepared for early publication.

* Many of the investigations included in the footnotes have not been published in open literature and the date given is the year in which the work was carried out.

[1] R. A. Peters, *Nature,* November 24, 1945.

The illustrative material has been selected, when possible, because it is found around most homes, and can be examined by the reader."

Written for the layman, this book describes processes of plant growth from the time of seed germination through the fruiting stage. It contains morphological descriptions of the organs of the plants with a brief account of their functions. The main portion of the book deals with the physiological relations of the plant to its environment. Material on the absorption of water and minerals, photosynthesis and transpiration, is handled in a standard way with practical suggestions. The practical aspects of grafting, budding, propagation, mulching, soil improvement, weeds, entomology and plant diseases are described. The author endeavors to give the reader an intelligent approach to his own problems and an appreciation of scientific aspects of plant study.

A comprehensive account of Mendel's work on the pea introduces genetics and aids in the following discussion on heredity and variation of plants. In fact, this part is well told in succinct detail. To each chapter is attached a list of references that may interest the individual who is more curious about the various phases of the plant. These not only include the standard botanical texts which are found in high-school and college classrooms and libraries but the *Botanical Review* and the publications of the U. S. Department of Agriculture which bring the references up to date. The book is readily understandable and will be welcomed by lay readers interested in a non-technical description of recent advances in our knowledge of plant growth. This book promises to be a very successful member of the publisher's series of texts for popularization of science. The format is attractive, the text is accurate and the style is interesting, dignified and free of the all too frequent attempts to sensationalize the importance of recent research.

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BOVINE TRICHOMONIASIS

Bovine Trichomoniasis. A Monograph on *Trichomonas foetus.* By BANNER BILL MORGAN. 150 pp. Illustrated. Minneapolis, Minn.: Burgess Publishing Co. 1945. $3.25.

Trichomonas foetus infects the bovine genital tract of both sexes and lowers fecundity. Thus the disease has an immediate effect on milk production and eventually limits the supply of beef. In view of war-time experiences with rationing of these foods the timeliness of the author's monograph needs no emphasis. In addition, the disease is venereal and from the cattle raiser's standpoint this is its most serious aspect since the bull, having a value "equal to that of half of the herd" must be sacrificed with the consequent loss of invaluable hereditary qualities.

A remarkable feature of the literature on *T. foetus* is its recent appearance. Of 408 citations by the author of the monograph all but 3 were published since 1925. Failure to discover the importance of genital trichomoniasis prior to that time was due in part to a general misconception concerning *Brucella abortus* (Bang, 1897), which was regarded as the sole causative agent of bovine infectious abortion. Success in demonstrating the importance of the trichomonad infection was attained by several veterinary practitioners in Switzerland and alpine regions of Germany who were confronted with problems of abortion and sterility in "Bang-free" cattle. When these men examined fresh genital exudate with reduced illumination under the low powers of the microscope they found the fluid teeming with *T. foetus.* This parasite had escaped detection by numerous experts in examinations of stained smears under oil immersion. Since 1925 the distribution of the genital trichomonad infection has been found world-wide and, as indicated in the monograph, has been the subject of many investigations.

The monograph, comprising 12 chapters, is an accurate, unbiased discussion of all available literature on the subject. The work might have been improved by more attention to the plan of its organization. For example, the chapter on "Morphology and Life Cycle" contains practically nothing concerning the life cycle of the parasite. This topic is discussed under "Transmission" in the chapter on "Symptoms and Lesions." It appears also that the data in the chapters on "Cultivation" and "Hydrogen-Ion Concentration" might well have been discussed in a chapter entitled "Physiology." As the volume stands, "Cultural Physiology" is discussed in a chapter entitled "Miscellaneous."

These criticisms do not detract markedly from the value of the monograph, and the present writer is in full accord with the following statement in the "Foreword" by Dr. W. L. Boyd: "Students of veterinary medicine, practitioners of veterinary medicine, and all others interested in developing a more healthful and therefore a more prosperous animal husbandry will find this contribution most helpful."

CHAS. W. REES

BOOKS RECEIVED

FENICHEL, DR. OTTO. *The Psychoanalytic Theory of Neurosis.* Pp. x + 703. W. W. Norton and Company, Inc. 1945.

BERGSON, HENRI. *The Creative Mind.* Pp. 9 + 307. Philosophical Library. 1946.

STIEGLITZ, DR. EDWARD J. *A Future for Preventive Medicine.* Pp. xvi + 77. The Commonwealth Fund. $1.00. 1945.