

the biological effects of the factors considered. There follows a 48-page section on population ecology (intraspecific relationships). The next 100 pages treat interspecific relationships, the community, and succession and fluctuations. Trophic levels, productivity, and the ecosystem concept are taken up in the final 42 pages.

I would call the balance among the major elements adequate, since balance in an ecology course is largely a matter of personal leaning anyway. I regretted some missed opportunities to offer concrete examples of physiobiological interplay—there are not enough animals in the book to satisfy me. There are a number of statements with an oddly anthropocentric cast, especially in the preface; and some may believe that there is a disproportionate use of examples from the marine environment. Such criticism as this is mostly personal bias, and so, perhaps, is my notion that the idea of the life-web should have been developed at the earliest possible opportunity, and that the section on the community should have been expanded, because the community is the smallest closed interspecific system and the best place in an ecology course to show the reality and intricacy of life-web operations.

The book is admirable in its general rejection of the dreadful jargon of ecology. A disappointing feature is the failure to pare, integrate, and set logical bounds to the intractable subject treated. The execution or reproduction of a few of the illustrations is inferior. Otherwise the book is sound and informative and reflects the wide experience of the author and his long conviction that there really is a teachable ecology of the land, sea, and fresh waters.

ARCHIE CARR

Department of Biology, University of Florida

Der Scharlach und seine Behandlung. W. Pulver. Hans Huber, Bern-Stuttgart, 1954. x+209 pp. Illus. Paper, DM 19.80.

This thoroughly documented volume, by the chief of medicine at the Kantonsspital of Lucerne, reviews the complex problem of scarlet fever and its treatment and reports Pulver's experience in treating more than 700 cases of scarlet fever with penicillin during a period of eight years. Basing his conclusion on the successful results obtained with penicillin, Pulver emphasizes the paramount significance of group AB-hemolytic streptococci in the etiology of scarlet fever. Treatment with penicillin leads in a few days to the disappearance of the organisms from nasal and pharyngeal swabs, and most cases of scarlet fever take a much milder course.

The author believes that scarlet fever serum should be employed only in very severe and moderately severe cases in combination with penicillin. In such cases the serum is employed as an antitoxin. According to Pulver, the most recent type of depot penicillin—he refers specifically to Bicillin—has simplified and improved the treatment of scarlet fever. He deals extensively with the prevention and successful treatment of the complications of the disease by

means of penicillin. Noteworthy is his conclusion—this treatment reduces not only the complications caused by bacteria but also sequelae resulting from allergic reactions. A prerequisite for success is early and active treatment with penicillin over an adequate period. Treatment should be coupled with strict isolation.

Although the American reader will not find anything remarkably new in this volume, it does offer a good picture of progressive thought and practice concerning scarlet fever in the German language area. The author has collected a bibliography of 520 references that will be useful to anyone interested in the subject. There is also a subject index.

GEORGE ROSEN

School of Public Health, Columbia University

The Psychological Variables in Human Cancer.

Symposium presented at VA Hospital, Long Beach, Calif., 23 Oct. 1953. Joseph A. Gengerelli and Frank J. Kirkner, Eds. Univ. of California Press, Berkeley, 1954. 135 pp. Illus. \$3.

This is the report of a symposium presented at the Veterans Administration Hospital in Long Beach, Calif., at which were presented and discussed six papers having to do with the effects of emotional attitudes on the genesis of cancer or the longevity of cancer patients. Three papers present theoretical considerations, one presents case material anecdotally, and another presents work in progress, but not sufficiently advanced to permit conclusions, on autonomic functions in neoplastic diseases.

The major presentation, "Results of the psychological testing of cancer patients," by Eugene M. Blumberg, reports work done to test the clinical hunch of Frank Ellis and Philip West that longevity and responsiveness to treatment are related to psychological factors. A group of 50 patients with miscellaneous advanced cancers were studied by means of the Wechsler-Bellevue, the Minnesota Multiphasic Personality Inventory, and Rorschach tests. By the use of certain scores of the MMPI, Blumberg concluded that

... characteristics of the fast cases are greater defensiveness, more anxiety, and less ability to release tensions through motor discharge, either verbal or physical, when compared to the slow cases. Defensiveness is representative of the patient who is motivated to appear "good" and refers to his motivation to give an impression that he is less disturbed than he really is. . . . The fast cases show an inability adequately to defend themselves against anxiety or successfully to reduce their tensions through action.

There are many points of question in this paper.

- (i) It is "76 percent accurate" in prediction for "fast cases," but only 54.5 percent accurate in slow cases.
- (ii) No attempt was made to control the inherent variations of behavior in cancers of different sites.
- (iii) The antichymotrypsin and antirennin relationship in the blood serum is by no means generally accepted as an accurate indicator of disease activity.

(iv) No attempt was made to control the impact of the disease process or the knowledge of the diagnosis on the various individuals. It is stated that the patients were given time to adjust to this knowledge. The criteria of "adjustment" are not given. (v) No allowance is made for the impact of previous surgical or other therapeutic procedures or for the family or social setting. (vi) There is an assumption made, not clearly justified, that the factors selected in the MMPI indicate anxiety. High scores on the factors selected are classically used to indicate a hysterical syndrome rather than anxiety, and indeed hysteria may function to diminish anxiety. "Defensiveness" was evaluated by a scale that merely taps attitudes toward taking the test, and the inferences are apparently applied to many other or all life-experiences.

Outlining psychological factors operative in either the cause or the course of cancer presents problems of enormous magnitude, since medical ignorance in both oncology and psychiatry are monumental. Attempts by West, Ellis, Blumberg, and the others are praiseworthy, but they have not demonstrated their findings beyond question. The foreword to this volume states:

The subject is a difficult one and particularly liable to misinterpretation and error. It is of the utmost importance that findings of this very vital area of investigation be subjected to careful scrutiny. Therefore, data reported here should be looked upon as in the nature of preliminary results subject to future corroboration and in a new and growing field of research rather than as secure findings ready for clinical exploitation.

Although this volume does not live up to its title, it should certainly stimulate further research in this area.

ARTHUR M. SUTHERLAND

Department of Psychiatry,
Memorial Hospital, New York

Progress in the Chemistry of Organic Natural Products. (*Fortschritte der Chemie organischer Naturstoffe*). vol. 11 (in English and German). L. Zechmeister, Ed. Springer, Vienna, 1954. viii + 457 pp. Illus. Paper, \$17.20; cloth, \$18.

The 11th volume of the *Fortschritte der Chemie organischer Naturstoffe* is a continuation of the excellent series started in 1938. Its success can be attributed in great measure to the efforts of its editor, L. Zechmeister, whose influence and wide scientific contacts enable him to convince eminent organic chemists and biochemists throughout the world of the need to contribute articles on the advances in their special fields. Since the *Fortschritte*, containing contributions from many countries, is printed and published in Austria in three languages and is edited in the United States, it can be considered truly cosmopolitan in character. Of the eight articles in the present volume, two come from Germany, two from the United States, two from Australia, one from North Wales, and one from Switzerland.

Inasmuch as the subject matter differs widely and a critical appraisal by one person is not possible, I have limited myself to a brief review of the contents of each chapter.

The first article by S. Peat, entitled "Starch," is a comprehensive review of the recent developments pertaining to the structure and synthesis of this important carbohydrate. A major part of the discussion is devoted to its biochemical aspects. The role of the various enzymes involved in synthesis and degradation of the starch fractions, amylose and amylopectin, and the mechanisms of their formation are thoroughly discussed.

The chapter on "Neuere Ergebnisse auf dem Gebiete des Lignins und der Verholzung," by K. Freudenberg, deals with the constitution and origin of lignin that occurs in great abundance in nature. The author is concerned with the problem of whether lignin is a mixture of a number of related components or whether it constitutes a single polymer built from an elementary unit according to a definite plan, similar to starch or cellulose from glucose. He believes that the experimental evidence is in favor of the latter assumption.

Under the topic of "Probleme und neuere Ergebnisse in der Vitamin D-Chemie," Von H. H. Inhoffen and K. Brückner are concerned with the chemistry of precalciferol (a new isomer in the series of irradiation products of ergosterol), the constitution of vitamin D₂, the tachysterols, and other aspects of vitamin-D chemistry.

The chapter "Natürlich vorkommende Chromone," by H. Schmid, is a compilation of the chromones (derivatives of benzo- γ -pyrone, mostly colorless compounds), which occur naturally in many plants.

In an admirable review, "Configuration of polypeptide chains in proteins," L. Pauling and R. B. Corey discuss the recent achievements in the determination of structure of amino acids as related to proteins. They consider the problem of the configuration of polypeptide chains, their helical and layer configurations as revealed by x-ray studies, and the developments in the determination of the sequence of amino acid residues in the protein molecule. The review is illustrated with numerous excellent diagrams and models, showing the configuration of the atoms in space.

The subject of "Column chromatography in the study of the structure of peptides and proteins" is well summarized and detailed by W. A. Schroeder. The following broad aspects are reviewed: (i) the separation of amino acids and the determination of the amino acid composition of peptides and proteins; (ii) the determination of amino acid sequence in proteins in terms of identification of terminal residues and of the fractionation and identification of peptides; and (iii) the separation and purification of proteins themselves.

R. Lemberg's article on "Porphyrins in nature" deals with the structure, occurrence, and biosynthesis of porphyrins, and A. Albert's article concludes the volume with a discussion of "The pteridines." Albert