

# SCIENCE

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# *The Collected Papers of* **PAUL EHRLICH**

*Compiled and edited by Dr. F. HIMMELWEIT, Director of the Department of Virus Research, The Wright-Fleming Institute, St. Mary's Hospital Medical School; with the assistance of the Late MISS MARTHA MARQUARDT, and under the editorial direction of SIR HENRY DALE.*

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Volume 4. Index and Bibliography.

'I believe that the publication of this comprehensive edition of Ehrlich's writings will even increase the stimulating effect of his ideas; that it will make a valuable and permanent contribution to medical history; and that . . . it will help to place the fame of Paul Ehrlich upon the pinnacle which it ought to occupy in the regard of a grateful world.'

—Sir Henry H. Dale.

This work is published with the co-operation and assistance of the Trustees of the Wellcome Trust. Most of the papers are in German, many in English, and some few in French. Volume 1 was published in 1956. Volume 2 will be published in the summer of 1957. Volumes 3 and 4 will appear in late 1957 or early 1958.

Vols. 1-3, \$34.50. Vol. 4, \$14.00. (not sold separately, can be purchased only with one other volume).

## **MORPHOGENESIS IN THE MOLLUSCS**

*By* CHR. P. RAVEN, *Professor of Zoology  
in the University of Utrecht*

This is a survey of the present state of our knowledge on development in the molluscs, both descriptive and experimental. It is mainly centered on the casual analysis of morphogenesis. Comparative-embryological points of view have hardly been taken into consideration, but the cytological and cytochemical aspects of development have been especially emphasized. Since the author has been working for nearly 20 years in this field, the researches of his own laboratory take a great place in this book. The literature on cytochemical and experimental embryological investigations on molluscs has been covered as completely as possible.

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## **5-HYDROXYTRYPTAMINE**

*Edited by* DR. G. P. LEWIS, *National Institute  
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## **METABOLISM of the NERVOUS SYSTEM**

*Edited by* DR. DEREK RICHTER, *Neuropsychiatry Centre, Cardiff*

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Shown at Bell Laboratories, Murray Hill, N. J., are, left to right, F. J. Herr, S. T. Brewer, L. R. Snoke, E. E. Zajac and F. W. Kinsman.

## They're wiring the seas for sound

These five Bell Labs scientists and engineers may never "go down to the sea in ships." Yet, they're part of one of the most exciting sea adventures of modern times. Along with many other specialists, they are developing the deep-sea telephone cable systems of the future.

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**F. J. Herr, M.S.**, Stevens Institute, is concerned with systems design and analysis. He studies the feasibility of new approaches and carries out analysis programs to select optimum parameters for a proposed system design.

**S. T. Brewer, M.S. in E.E.**, Purdue, communications and electronics engineer, explores new designs for sea-bottom amplifiers needed to step up power of hundreds of simultaneous telephone conversations.

**L. R. Snoke, B.S. in Forestry**, Penn State, is the team biologist. He investigates the resistance of materials to chemical and microbiological attack in sea water. Materials are evaluated both in the laboratory and in the ocean.

**E. E. Zajac, Ph.D. in Engineering Mechanics**, Stanford, is a mathematician. He studies the kinematics of cable laying and recovery. Cable's dynamic characteristics, ship's motion, the mountains and valleys in the ocean bottom—all must be taken into account.

**F. W. Kinsman, Ph.D. in Engineering**, Cornell, solves the shipboard problems of storage, handling and "overboarding" of cable. New machinery for laying cable is being developed.

Deep-sea cables once were limited to transmitting telegraph signals. Bell Labs research gave the long underseas cable a voice. New research and development at the Labs will make this voice even more useful.



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cerned with the limited problems of old people past retirement age. The contributors here give reasons for emphasizing that this period of life is but one part of a continuous development and that studies are therefore needed throughout the adult years as a complement to the extensive knowledge we already possess of childhood and adolescence.

Fourth, and perhaps most important, the outlook of the contributions makes them a concise example of a tendency in psychological thought which is returning to prominence after some years of relative disfavor. The statements have a certain refreshing directness and "elegance" in their approach to the study of human behavior. The sterile arguments of so-called "learning theory," the doctrinaire half-truths of the "schools," the panacea treatments of "systems," and the high-sounding, empty technical terms often found in psychological writings are conspicuous by their absence.

The book is essentially a guide to future work rather than a record of past findings. It is like a stiff *aperitif* which promises a fine meal to follow. How far this will be realized depends, as more than one contributor pointed out, on the provision of research support. I venture to disagree with the editor when he suggests that this can well be given in the form of short-term grants. Research on aging will attain the standards and the quality of mind displayed by the contributions to the present symposium only if substantial permanent opportunities are accorded for work in this field.

A. T. WELFORD

Cambridge University

**Ageing in Industry.** An Inquiry, Based on Figures Derived from Census Reports, into the Problem of Ageing under the Conditions of Modern Industry. F. Le Gros Clark and Agnes C. Dunne. Philosophical Library, New York, 1956. 150 pp. \$7.50.

As stated in the subtitle of the book, this is "an inquiry into the problems of ageing under the conditions of modern industry" in Great Britain. The purpose of the study is to determine, as far as possible, the number of workers physically able to continue in their various occupations beyond their middle 60's. Tables on age and occupation published in the *Census Reports* for 1921, 1931, and 1951 are the basis for the study.

Thirty-two occupations were selected for analysis. These included about 25 percent of the male workers in 1951. Most of the report is devoted to a detailed study, from the viewpoint of the older worker, of the occupations and of a representative number of modern industries.

The concluding chapter groups the occupations according to percentage of "survival rates." These represent the percentage of men considered to be physically capable of remaining at their accustomed occupations into their late 60's and beyond. These findings are qualified on the basis of conditions prevailing in modern industry and do not presume to reflect new methods which could make a profound difference.

The report has been written on a practical level and provides an interesting comparison of a wide variety of occupations, conditions of work, and opportunities for modifying the work process and the retirement practices. While few positive conclusions are drawn, challenging possibilities have been revealed which can lead to a growing appreciation of the capabilities of the older worker.

WILLIAM C. FITCH

*Special Staff on Aging, U.S. Department of Health, Education, and Welfare*

**Limited War.** The Challenge to American Strategy. Robert Endicott Osgood. University of Chicago Press, 1957. xi + 315 pp. \$5.

Robert E. Osgood, in *Limited War*, undertakes to cast some light on the problem which currently confronts American leadership—namely, if the present nuclear stalemate has made total war less likely, how does one limit and fight the wars which may still occur? He attempts to do this primarily by the use of historical material, some old and some very recent. While maintaining that Americans traditionally have been pacific yet pugnacious, he states that we have never understood the proper relationship of power to policy or, in Clausewitzian language, how to use the military as an instrument of national policy. The Communists, on the other hand, have an excellent understanding of the relationship of means to end, or of force to policy. The theme of this book is the power-policy relationship, an understanding of which Osgood considers essential to a solution of our current problems.

In a section entitled "The Lessons of History," he attempts, on the basis of the very scanty historical research in this field, to show the factors which have limited wars in the past. He argues that political, social, and moral restraints accounted for the limited wars of the 18th and 19th centuries, the French revolutionary era excepted. Statesmen sought to attain only limited objectives, while social, economic, and technological considerations limited the capabilities of nations for waging war. Furthermore, no ideological conflicts raged, and this made possible a calmer approach to interna-

tional conflicts. The 20th century saw an end to these old restraints and an improvement in the national capacity to wage war. From Osgood's account, it is not entirely clear to what extent the limitation lay in the nature of society and to what extent it was wilfully imposed by enlightened statesmen.

This book is primarily concerned with events that occurred and problems that arose after World War II. The author accepts the containment of communism as a valid national objective but states that more than the concept of massive retaliation is necessary for its achievement. The Indo-China crisis is cited to show the shortcomings of this concept as an instrument of policy as well as to reveal the difficulties of waging limited war in that area. The Korean war—an agonizing experience in limited war for the United States—is discussed at some length, but the analysis of the reasons for its limitation is superficial and disappointing.

While the book provides many helpful insights and asks pertinent questions, it leaves the reader feeling a bit frustrated. The questions do not probe as deeply as they might, and there is too much superficial treatment of important aspects of the problem. The notes reveal that the author might well have read more than he did of the appropriate civilian and military periodical literature on the subject. However, this is a courageous and useful work on a very complex subject.

GEORGE K. TANHAM

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## Miscellaneous Publications

(Inquiries concerning these publications should be addressed, not to Science, but to the publisher or agency sponsoring the publication.)

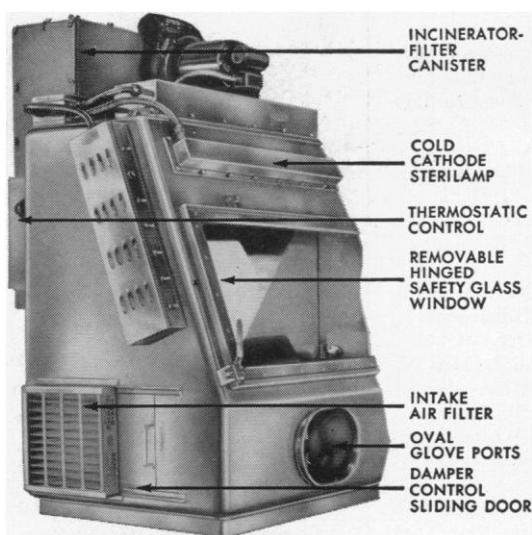
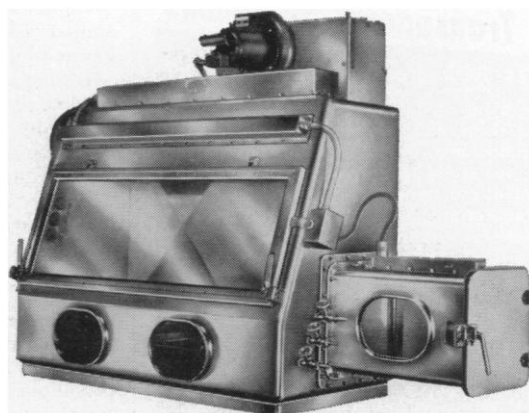
*Beach Erosion Board, Bulletin.* vol. 11, No. 1. 62 pp. *Effect of Bottom Roughness on Wind Tide in Shallow Water.* Tech. Memorandum No. 95. 31 pp. *Factors Affecting Durability of Concrete in Coastal Structures.* Tech. Memorandum No. 96. 50 pp. *Hurricane Wave Statistics for the Gulf of Mexico.* Tech. Memorandum No. 98. 95 pp. *Laboratory Study of the Effect of an Uncontrolled Inlet on the Adjacent Beaches.* Tech. Memorandum No. 94. 19 pp. Beach Erosion Board, Corps of Engineers, Washington 25, 1957.

*Bibliography of Medical Reviews.* vol. 2. National Library of Medicine. Public Health Service, Washington, 1957 (order from Supt. of Documents, GPO, Washington 25). 111 pp. \$0.60.

*A Review of the Rockfishes of California* (family Scorpaenidae). State of California, Fish Bull. No. 104. Julius B. Phillips. Department of Fish and Game, Marine Fisheries Branch, 1957. 158 pp.

*Specific and Intraspecific Delimitation.* C. G. J. Van Steenis. Botanic Garden of Indonesia; Foundation Flora Malesiana, c/o Rijksherbarium, Leyden, Holland, 1957. \$2.50.

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