Book Reviews

America's Resources of Specialized Talent. A current appraisal and a look ahead. Report of the Commission on Human Resources and Advanced Training; Dael Wolfle, director. Harper, New York, 1954. xvii + 332 pp. Illus. $4.

This book is the report of the study begun in 1949 by the Commission on Human Resources and Advanced Training and financed by the Rockefeller Foundation. Its 332 pages are crammed with valuable and fascinating factual material on the intelligence, education, and utilization of men and women with unusual talents in the sciences, arts, social studies, and other professions.

The purpose of the volume is well summarized in the concluding chapter:

> America is ambivalent toward the scholar. It wants rocket ships and atomic-powered submarines, a cure for cancer and bigger television screens. . . . But it mistrusts the people who have the ability and education that might lead to these desired end products.
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> These doubts limit the extent to which the nation can capitalize on its intellectual resources and thus limit its progress. but the limitation is unnecessary and can be overcome. . . . The practical problem becomes one of devising the best names of nurturing the talent which lies in the population.

Since 1900, says the report, the number of specialists in the U.S. has grown twice as fast as the population. The demand is certain to increase; and college graduates, who constitute almost the sole supply, will double in number in the next 15 years. This doubling could take place today with no loss of quality if all those in the upper quartile in intelligence could be motivated to go to college—and could afford to do so. The present shortage will have to be filled by better use of existing specialists. In the long run, the greatest hope lies in the early identification and the encouragement of specialized talent.

Dael Wolfle's volume stands as a unique summary of the facts and problems in the whole field of specialized talent. It will be indispensable to the educator, the counselor, and to government and private manpower agencies.

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Fundamentals of Psychoanalytic Technique. Trygve Braatøy. Wiley, New York; Chapman & Hall, London, 1954. xi + 404 pp. $6.

Trygve Braatøy was possessed of a clinical intuition which enabled him to give his patients the full benefit of his own thorough training in medicine, psychiatry, and psychoanalysis. This ability to communicate his experience is evident in this book in which, on a base of standard psychoanalytic theory, he describes the application of theory to daily practice and the technical modifications and fresh approaches he has evolved. For the most part, these modifications aim toward the fuller expression of affects related to the body and bodily processes in the analysis and consequently toward furtherance of a unified psychosomatic growth.

Important sections deal with the emotions of the analyst, the indications and analytic contraindications for psychoanalytic therapy and the science of interpretation. Regarding the controversial short-term methods of analysis, Braatøy believes that criticism and mistrust have been too hasty and, had the reported clinical histories been studied, some of the most orthodox analysts would have agreed with the treatment methods advocated.

Throughout the author pleads for taking time in clinical description and in studying the descriptions of others. He avoids dogma in his own teaching and seeks rather to help the student develop his individual art and science, leaving to the student, as to the patient, the last word.

With its fresh approach and its rich originality, Braatøy's book is a contribution to the psychoanalytic literature and will be of great use to students, practitioners, and teachers.

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The Technical Report. Its preparation, processing, and use in industry and government. B. H. Weil, Ed. Reinhold, New York, 1954. xii + 485 pp. Illus. $12.

Weil and his 22 collaborators have attempted to put together a handbook on the preparation, processing, and use of technical reports in industry and government. On the whole they have succeeded. There is here much good advice for the report writer, editor, and librarian.

The authors deal mostly with research reports as a means for exchange of scientific information. In a few instances, however, technical reports are treated as active management tools, useful in research direction and planning, production control, market research, personnel administration, and even morale building, that is, the writing of a report lifts the cloak of anonymity from the man on the bench. He is stimulated to do better work and is better satisfied with his job.

At least one-third of the book is devoted to the organization, classification, storage, and retrieval of reports. This is appropriate, for as Vannevar Bush vigorously points out, our inability to make full use of the record is "the region of greatest moment, in which our ignorance and ineptitude are most serious, which will slow down our progress if it continues in its present state."

The authors describe an imposing array of mechan-

ical and clerical aids which suggests that much thought has been given the problem. This is true. The documentalists can point with pride to such heroic reference achievements as the catalogue of the Library of Congress, the decennial index to *Chemical Abstracts,* the U.S. Patent Office classification system, and the many devices, manual and automatic, that now serve the scientist and librarian.

Unfortunately, the automatic features of such aids apply only after the arduous intellectual labor of analysis, classification, indexing or coding is completed. These tasks are semiroutine but by no means semiskilled. They call for scientifically trained, well paid workers and the production rate is agonizingly low.

Some authorities insist that such work will never be relegated to machines, that the human brain will continue to be the central element in the organization and processing of information. This seems unduly pessimistic, but to solve the problem will require scientific thinking of an extraordinarily high level in fields often neglected and by some not considered scientific at all. It will require the combined best efforts of the logicians, information theorists, communications engineers, grammarians, and semanticists, and no doubt others. The need, however, is real and the search will be rewarding.

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The Mechanism of Economic Systems. An approach to the problem of economic stabilization from the point of view of control-system engineering. Arnold Tustin, Harvard Univ. Press, Cambridge, Mass., 1953. xi + 161 pp. Illus. $5.

Arnold Tustin, head of the Department of Electrical Engineering, University of Birmingham, explores the relationship that exists between the feed-back mechanism of engineering control systems and the behavior of economic systems. For example, the simplest Keynesian model in which investment is exogenous and consumption is a linear function of income is analogous to an electric generator that is partly but not wholly self-exciting, the closed sequence income-consumption-production-income being analogous to the feed-back of the dynamo. This leads Tustin to suggest that "perhaps in this electrical age, the conventional metaphor of 'priming the pump' might be dropped in favour of 'exciting the dynamo.'" In other words, the rapid progress in the development of automatic control systems (automatic pilots, thermostats, and so forth) in the engineering world may contribute to the solution of problems of economic stabilization.

To demonstrate this a series of economic models, particularly those of Hicks, Kalecki, and Goodwin, are discussed in an attempt to outline the characteristics of a model that will produce fluctuations similar to those observed in the real world. Linear systems are rejected since the oscillations produced by them either explode, die away, or continue with constant amplitude and period. The introduction of erratic shocks (for example, exogenous investment) into the model to explain why the fluctuations continue with varying amplitude and period is not entirely satisfactory since the theory remains incomplete if the shocks are not explained. The conclusion is drawn therefore that economic models must contain both nonlinearities and complex time dependencies. The difficulty of computing the solutions of such systems can be overcome, it is suggested, by constructing physical systems that are analogous to the economic systems under study. A physical analog computer will then produce the results as graphs of the variations of the principal variables. To assist the economist in understanding the properties of engineering systems, over one-third of the book is devoted to a geometric, rather than the usual algebraic, analysis of the behavior of systems in terms of sinusoidal components of variation.

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Radiation Biology, vol. I: *High Energy Radiation,* Parts I and II. Alexander Hollaender, Ed. McGraw-Hill, New York–London, 1954. ix + 1265 pp. Illus. $17.50.

This comprehensive volume, in two parts, deals with the radiation biology of high energy radiations. It is the first of a three-volume set, the latter of which are to deal with ultraviolet and related radiations and visible light. Its 18 chapters have been contributed by authors of national and international reputation for their contributions in the fields with which they individually deal.

The material and the arrangement initially cover the principles of radiologic physics, measurement, and chemical effects of radiation, as well as basic actions on biological systems. These subjects are dealt with in complete and well-organized form and, although much of this material could be obtained from other sources, it is fundamental for the understanding of the later chapters.

The next group of chapters deals with genetic, mutational, and chromosome aberration effects. The authors have rendered a considerable service in bringing a large mass of material into accessible form, documented by excellent bibliographies. As a reference book this has many advantages, but as a textbook it might have been improved by more editorial commentary and reorganization for readibility.

The last group of chapters deals with radiation effects on the group cellular level of pathological physiology, hematology, histology, and carcinogenesis. The considerable amount of work in these fields has been summarized with commendable thoroughness; it suffers largely because of the incompleteness of knowledge in this rapidly changing field rather than from lack of diligence of the authors in trying to include