

Book Reviews

The Unleashing of Evolutionary Thought. Oscar Riddle. Vantage Press, New York, 1954. xxi + 415 pp. \$4.50.

This is a scholarly examination of popular resistance to human self-appraisal on a basis of our accumulated store of verifiable knowledge and insight. The resistance is quickly found to be essentially unrelated to the sharp academic contest between science and theology—a battle already won and ended. The meaningful and enduring warfare is now between a genuinely modern society, still struggling to be born, and the organized religions. Through dominant majorities, in all advanced Western nations, religious tradition and power now suppress or mask vital fact and modern thought concerning the supernatural. Thus no society dedicated to human purposes, rather than to supernatural purposes, can come into existence.

The first six chapters (148 pages) scan, in an orderly sequence, those areas of process and product that tell the reader what evolutionary fact and thought are. Their titles are "From earth-cloud to man," "First principles," "The problem of creation," "Evolution and ethics," "Social inheritance," and "The biological inequality of men." The sixth and longest chapter is especially noteworthy; it can be read with profit by any scientist and by all citizens.

The core of the volume (Part II) is concerned with the extent to which and the means by which, at community and national levels, the religious influence excludes cardinal evolutionary thought from schools, news disseminators, movies and theaters. Emphasis is always placed on conditions now prevailing in the United States, but usually the survey does not end there. Concerning our own high schools, a part of one chapter provides both solid information and incisive comment. In those schools, enforced silence or adroit hedging on the liveliest of all thought on personal and social issues is found to prevail. And this widely predominant circumstance tends to convert schools of still higher and lower levels into "sepulchers of the intellect" and to

involve a covert threat to democracy, social advance and personal attainment.

The concluding chapter, "The broader battle," although it is nonprophetic and not wholly optimistic, is a well-written comment on what seems to lie ahead in this contest of society versus tradition. It is stated that men—or surely those who lead men—will have to make up their minds on how much they care for truth; that many religions render notable services to man at the same time that they frustrate or misdirect the capacity and aspiration of modern man; that mankind's big and grossly unfinished task of self-appraisal is to replace presumed supernatural purposes with definitely human purposes. Oscar Riddle here renders superior service to the human race.

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The Nucleic Acids: Chemistry and Biology. vol. II. Edwin Chargaff and J. N. Davidson, Eds. Academic Press, New York, 1955. xi + 576 pp. Illus. \$14.50.

The first volume of this major compendium in the field of nucleic acids was reviewed in a previous issue of *Science* [122, 248 (1955)]. The second volume has maintained the general level of excellence indicated by the reviewer of the first volume. The first portion of the second volume deals with analytic findings, and the second portion covers the metabolic aspects of the nucleic acids and the smaller components thereof. The volume closes with a chapter on each type of nucleic acid that takes an over-all view of these compounds in the functioning of living systems.

Nucleic acid analysis has been a fashionable occupation in the biochemical world during the past decade. I. Leslie has encompassed and organized in a thoughtful manner the tremendous body of numerical data concerned with the nucleic content of tissues that has arisen during this period. Leslie's discussion of the numerical data is carefully presented

with frequent instances of personal interpretation of seeming disparities or unexpected coincidences in findings by different authors. It is hoped that more future contributors to this field will heed Leslie's comments on the distinction between concentration and content.

The following chapter by Swift is a detailed discussion of recent efforts to extend empirical histological staining methods to qualitative and quantitative analysis for nucleic acids within single cells. This discussion concerns primarily the effect of inherent methodological variables on analytic results. Evidence for the validity of such results is also presented. No effort is made to deal with instrumentation. The contribution of the short histological formulary that is appended to the chapter is of dubious value.

In Chapter 18, Alexander Dounce has reviewed the methods for isolating cell nuclei and nucleoli and has discussed the results of analysis of such isolated organelles. The extensive experience of the author in this field is reflected by the exhaustive detail with which the methods for isolation are described and by the many helpful suggestions that are intercalated. The discussions are phrased in a personal style spiced with numerous expressions of personal conviction.

In the following two chapters, the deoxynucleic acid (DNA) content of the nucleus is reviewed from two particular points of view. R. Vendrely makes a concise presentation of the evidence for the concept of the constancy of the DNA content of the nucleus. It is interesting to compare the viewpoint of this chapter with that expressed in Chapter 27. Vendrely's chapter is followed by a short review and discussion by Bo Thorell of the results of analytic and metabolic studies of the "nucleic acids in chromosomes and mitotic division." The analytic portion closes with a beautifully written and meticulously detailed chapter by Hogeboom and Schneider. The biochemical studies of the morphological components isolated from the cell cytoplasm have played an important part in the formation of current knowledge of the properties of these components and their place in the over-all function of the cell. This literature has been critically reviewed, and the methods for the isolation of the major cellular components are described in sufficient detail to permit one to use the text as a laboratory guide. A relatively small portion of the chapter deals directly with the nucleic acids. Indeed, its organization shows no evidence of preoccupation with this particular field. Its inclusion in the volume is a tribute to the wisdom of the editorial policy.

The next four chapters take up the biosynthesis of the nucleic acids and the small components thereof. Gertrude