

form this system from within. We have come to this crisis juncture not because what we have been doing is all "bad" or all "good" but because, as in all other ages and with all other peoples, we are human and fallible.

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**MEASUREMENT AND EVALUATION IN THE CLASSROOM**, by Clarence H. Nelson. 1970. Collier-Macmillan Ltd., London. 138 pp. \$2.25.

The author intends this book as a convenient source of practical procedures for the novice classroom teacher confronted with problems in measurement and evaluation. Indeed, it does contain many informational tidbits. Since the text is brief and the narrative generally fluid, a once-over-lightly treatment by the teacher could have some positive results. The test items furnished as examples deal primarily with science content. The author claims that the principles implicit in the items are transferable to other content areas. Chapter headings include the nature of measurement and evaluation; the objective test; composing, duplicating, administering and scoring the test; and standardized tests and classroom performance.

The opening chapter presents a clearly delineated list of frequently occurring problems in the areas of measurement and evaluation. Unfortunately, these problem areas are not referenced in the text, nor is an index provided. This greatly reduces the value of the book as a teacher resource.

Nelson's book has no special value for the science teacher. It does not reflect the most recent trends in evaluation in science teaching. Evaluation in the affective domain is given very limited consideration. Emphasis on item construction stresses the knowledge level. The chapter on the role of instructional objectives lacks substance, is misleading, and is devoid of concrete examples representing either the cognitive or affective domain.

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**EFFECTIVE COLLEGE TEACHING: THE QUEST FOR RELEVANCE**, ed. by William H. Morris. Published for American Association for Higher Education by American Council on Education, Washington, D.C., 1970. 162 pp. \$3.50.

This is a compilation of chapters on college teaching, most of which focus directly on classroom concerns. It is the direct descendant of an earlier study, *The Quest for Relevance: Effective College Teaching*, sponsored by the

Joint Committee on College Teaching of the American Association for Higher Education.

Most of the chapters deal with the teaching of certain disciplines, but there is a chapter dealing with the problems, issues, and conflicts of higher education as a profession and another chapter on campus administration and politics. The writers have been objective and realistic and have provided highly pertinent considerations for the beginning college teacher in such areas as campus governance, research and publications, committee work, and activism.

In regard to college classroom teaching, the most valuable chapter is by Stanford Erickson, who provides an excellent discourse on student interest and motivation, relevance, goals and change, and evaluation. Although some of these sections should be more specific, the treatment is effective and the selection of topics highly appropriate for the teacher who is concerned about his teaching effectiveness.

There is a chapter on the teaching of science, and scientific literacy as a major goal of science-teaching is argued. Nevertheless, in this reviewer's opinion this is not the most valuable chapter for the college science-teacher. Rather, the entire volume is appropriate reading for any college teacher who is interested in improving his classroom effectiveness.

As a whole, the volume is excellent. It should be among the basic readings required of all prospective college teachers before they assume full instructional responsibilities.

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**BLACK PIONEERS OF SCIENCE & INVENTION**, by Louis Haber. 1970. Harcourt, Brace, & World, Inc., New York. 189 pp. \$4.50.

This book points up the contributions that black Americans have made to industry, medicine, and agriculture. The personal and professional lives of 14 men are described in 10 to 15 pages each (with portraits). The well-known George Washington Carver is here; so are the less celebrated Benjamin Bannaker, Granville T. Woods, Charles R. Drew, and Percy L. Julian.

From this book students will learn of advances made by black men, even in the face of unequal opportunities. In addition, they will see how scientists are trained and how science progresses through interaction with government and society. The comprehensive bibliography encourages further study. I strongly recommend this book for addition to secondary-school libraries.

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## Heredity

**THE ORGANIZATION OF HEREDITY**, by Kenneth R. Lewis and Bernard John. 1970. American Elsevier Publishing Co., New York. 250 pp. \$11.75 hardback, \$5.95 softback.

Probably no area of biology is better served by a diverse array of textual materials than genetics: there are encyclopedic compendia on things hereditary and there are succinct introductory texts; there are paperback series and there are selected and annotated collections of original papers. The volume under review does something quite different from any of the foregoing.

In nine tightly organized chapters the authors present a selective review of heredity. This is done by examining the chemical, genetic, and functional organization of the genotype. Throughout, the emphasis is on microorganisms and fungi, with various references to *Drosophila* and occasional ones to higher plants and mammalian genetics. A student viewing genetics from this perspective would be directed to biochemical and microbial genetics with a limited awareness of the genetics of higher organisms. This bias is further reinforced by the fact that the following subjects are omitted from treatment in this volume: probability, karyotypes and changes therein, genetics of domesticated forms, human genetics, and population genetics.

What does such an emphasis achieve? One very positive answer is, "A very pure view of genetics." That means the user of this book would learn what genetic material is, how it is organized chemically, something of its chromosomal organization, and how it controls protein synthesis; and he would learn this in terms of those key organisms that contributed the most to these studies over the past three decades. This no-nonsense point of view is reinforced by a style of writing that is appropriate to technical review articles: spare and humorless.

What does this approach not achieve? Fundamentally it lacks flexibility. It does not present enough detail to invoke the excitement of exploration through experimentation, nor (except for an excellent prelude) does it have the intellectual range to embed genetics in its parent science of biology. It is not a beginner's text. Furthermore, there are no problems to aid the student in the practice of genetics, and references are given as in a technical article and, hence, give little guidance to an inexperienced user. Most important: beyond the rhetorical gesture on the final pages—quoting Bateson, who says that "an exact determination of the laws of heredity will probably work