

Book Reviews

American Citizenry and International Affairs

Undergraduate Education in Foreign Affairs. Percy W. Bidwell. King's Crown Press, New York, 1962. vii + 215 pp. Paper, \$5.

Percy Bidwell has investigated the course offerings bearing directly or indirectly on international relations at some 200 colleges, universities, and technical schools in the United States; the proportion of students majoring in the social sciences, the humanities, the natural sciences, and engineering who have been exposed to such courses; the academic records of 1645 seniors at 36 representative colleges and universities in various parts of the country to ascertain the time devoted by these students to such courses; and the results of an examination on international relations and foreign countries given to 2000 seniors in these colleges and universities. As a result of this investigation, he concludes:

"The typical undergraduate is not well informed on foreign affairs. When he emerges from college, his knowledge of foreign countries and his understanding of basic principles and the current problems of American foreign policy are inadequate for the performance of his responsibilities, either as a plain citizen or as a community leader. His ignorance of the international scene is a handicap to possible employment abroad, either in public or private operations. Finally, it restricts his enjoyment of life as a liberally-educated person" (p. 110).

It appears that the courses directly bearing on international relations are usually open to undergraduates only if they have met specified prerequisites and that such courses are taken by only some eight percent of the students. Certain courses—in history, government, literature, and other fields—that might include material on international relations usually miss the opportunity. They proceed from a nationalistic, rather than a world, point of view. General

education courses, often required of undergraduates, usually include a historical survey of Western civilization, but they seldom deal with non-Western civilizations or with contemporary international relations. Undergraduates are offered very few courses dealing with such areas as Asia, Africa, Latin America, and the Middle East, and very few take those that are offered.

As a result, about 20 percent of the graduates have had no exposure, either direct or indirect, to international relations and 75 percent have had less than ten semester hours of direct exposure to the subject. Social science majors have had the most such exposure and natural science majors the least. Humanities majors are intermediate. Among the more professionally oriented students, those in education and business have had more exposure to international relations than those in engineering. It is surprising, therefore, that on the test examination, the mean score of engineers was the highest, that of students in business and education the lowest, and that of liberal arts students intermediate. Social science students were the best of the latter group. The high standing of engineers, despite their low exposure in the field, may be because that group is selected for its general competence or because the engineering schools have generally high standards.

The general ignorance of geographic facts about and social conditions in foreign countries was surprising. Thirty percent of those who took the examination thought hot, dry summers more typical of London than of Algeria. A large proportion did not know that Yugoslavia was not adjacent to the Soviet Union, and 43 percent thought the Soviet Union had a greater population and a greater gross national product than the whole of Western Europe.

Educational deficiencies in mathematics, physics, and engineering have received much attention, especially in

Congress: "But," Bidwell comments, "ignorance of foreign affairs, on the part of several hundred thousand young men and women, who each year join the ranks of so-called educated citizens, is a dangerous deficiency in the present crisis of American foreign relations, has received hardly any attention, and practically no remedial action" (pp. 6 and 7).

Bidwell points out that the problem of better education in international affairs concerns not only the colleges. Both elementary and secondary education in geography and world history need improvement. More adult education would also be useful, not only to the adults themselves, but because parents might then arouse their children's interest in the subject. The general apathy of students to international relations is one reason why few enroll when elective courses in the field are offered.

Among the remedies proposed by the author are the reduction of prerequisites to international relations courses so that freshmen and sophomores may enroll; better student counseling; the introduction of more material on international relations in general education courses; and the establishment by all colleges of a general introductory course in international relations "dealing in fundamental fashion with problems of American foreign policy, the causes of international conflicts, and the means of avoiding or alleviating them," which is open to lower-division students. The quality of instruction would be improved, he suggests, if fewer courses were taught by graduate assistants and more by senior staff members and if ROTC courses in the field were taught by regular staff members, not by temporary military officers, who are usually inadequately informed and too much interested in indoctrination.

Bidwell especially recommends provision for a coordinator on education in foreign affairs, selected from the senior staff of the college or university, whose business it would be to discover all the resources in the institution pertinent to the field—not only courses in all departments which do, or might, throw light on the subject, but staff members who have had foreign experience, foreign students, and extramural activities. Such a coordinator would advise student counsellors as well as students themselves on these opportunities. He would soon discover weaknesses in the field, and he might encourage more and better instruction and student exposure in the field, not only by making sugges-

tions but also by creating an atmosphere conducive to interest in the field among the administration, staff, and students.

Bidwell obviously feels that good education in international relations is important, and he amply demonstrates that the present situation is deplorable. His proposed remedies deserve careful consideration by academic administrators, and indeed by everyone interested in a responsible American citizenry, an adequate American foreign policy, and a less dangerous world. Educated leaders are needed, as are educated followers, because "the quality and effectiveness of leadership in foreign policy will in large measure depend on the response of an educated public opinion" (p. 145).

QUINCY WRIGHT

University of Virginia and
Columbia University

Negentropy and Living Systems

Life: Origin and Development. Gösta Ehrens-värd. University of Chicago Press, Chicago, 1962. ix + 164 pp. Illus. \$4.50.

Life in the Universe. Francis Jackson and Patrick Moore. Norton, New York, 1962. ix + 140 pp. Illus. \$3.95.

The origin and evolution of life and its distribution in the universe are inseparable problems, involving extrapolations far into time and space which are both fascinating and risky. If we start from different basic concepts, very different conclusions may be reached. From a strictly "deterministic" point of view, the emergence of life may appear as a necessary outcome of the accumulation of molecular species, following, in some way, a kind of "law" that also governs the accumulation of those species. From what might be called the "opportunistic" view, life seems to have emerged and evolved as the result of chance events taken advantage of by selective processes. Both approaches have weaknesses—the truth may lie somewhere between.

Both Ehrens-värd's *Life: Origin and Development* and Moore and Jackson's *Life in the Universe* follow closely the deterministic approach. It is important that the reader keep this in mind, the more so because both books are well and convincingly written. Within the limits of their approach both books are critical, particularly the first, which has been long in preparation.

Ehrens-värd's predominantly biochem-

ical treatment emphasizes the seemingly continuous evolution of the kinds of molecular species that characterize life, from the clearly nonliving primordial environment on through the evolution of living organisms themselves. He stresses eloquently the apparent continuity of this record, where one sees no distinct boundary between the nonliving and the living. His admittedly deterministic argument finds its support in this apparent continuity which, viewed from a great distance in time, may suggest a continuously flowing process.

Moore and Jackson are at their best in the astronomical realm. Although they point out that the planets of our solar system, other than earth, seem to offer very unfavorable environments for the kind of life we know, they entertain the idea that life—even intelligent life—may occur in other parts of the universe. This is a logical outcome of the deterministic point of view, and one gains the impression that these authors tend to lean in that direction, although remaining properly uncommitted. They reject the idea that life has been seeded about the universe from some unknown source, which might also accomplish a wide distribution. Implications of the opportunistic approach, which would suggest that the array of living forms we know on earth might find little parallel in life evolving elsewhere, or even that life is unique to our planet, are barely touched upon.

Neither book indicates that the authors have considered their problems in terms of information theory, yet this would seem a cogent means of approach. It would seem that the origin and evolution of living systems, or even the evolution of the organic compounds that became ultimately incorporated into them, must have entailed the accumulation of a vast amount of negentropy. This does not, of course, represent a denial of the second law of thermodynamics, there having been a tremendous increase in entropy in the sun-earth system. But does not the strictly deterministic point of view reflected in these books tacitly assume that the accumulation of negentropy follows a directing principle, and thus inject a note of finalism? The question is far from trivial, and that it is not posed may evidence a limited perspective. But, faced with so troublesome an enigma, may we not be tolerant in this regard?

HAROLD F. BLUM

National Cancer Institute, National
Institutes of Health, and Department
of Biology, Princeton University

A Reader for Chemists

The Nature of Biochemistry. Ernest Baldwin. Cambridge University Press, New York, 1962. xiii + 111 pp. Illus. Paper, \$1.45; cloth, \$2.75.

The authoritative soundness of Ernest Baldwin's work cannot be questioned, and with his previous books, particularly *Dynamic Aspects of Biochemistry*, he has performed a notable service to the profession.

In the present volume, 111 pages in length, Baldwin seeks to present a picture of what biochemistry is about, and the book is intended, as the author says, ". . . to be read, not studied." His use of language is excellent, and his ability as an expositor is commendable. Even before the reader gets very deep into the book, it becomes obvious that he must be able to read meaning into the complex formulas of organic chemistry in order to comprehend the book. Clearly this book is for those who have some considerable proficiency in organic chemistry and who want to supplement this with introductory knowledge about biochemistry. To such readers the work is recommended.

Some idea of the contents can be gained from the chapter headings: "The constancy of the internal environment," "Respiratory function of the blood," "Proteins," "Physico-chemical behaviour of proteins," "Enzymes," "Fate of amino acid nitrogen," "Carbohydrates," "Fuel for the machine: Carbohydrates," "Fuel for the machine: Fat," "The powerhouse of the cell," and "Nucleic acids and nucleoproteins."

It is not a criticism to say that Baldwin emphasizes the portions of biochemistry that particularly interest him. Every author has a right, indeed an obligation, to present his own point of view; otherwise his book will be dull and unimaginative and of little value. However, it may be said in this case, by way of criticism, that the writer has left out several chapters of biochemistry which to me and to many laymen are of unusual interest, from the standpoint of both science and practical application. Although there is some material on the functioning of amino acids in nutrition, the general subject of nutrition is not treated—that the word *vitamin* is not found in the index is evidence of this. While the vitamin field, as such, is not as active an area of investigation as it was a decade or two ago, there is evidence that these entities were crucially im-