LETTERS

EDITORIAL
Education and the Job Market: C. R. Wharton

ARTICLES
Arene Oxides: A New Aspect of Drug Metabolism: D. M. Jerina and J. W. Daly
Immigration Composition and Population Policy: C. B. Keely

NEWS AND COMMENT
American Medical Students Abroad: Group Finds Way in French System
Social Science at NSF Needs Pruning, Says Proxmire
Robert L. Heilbroner: Portrait of a World without Science
The Destroying Angel: A Story of a Search for an Antidote

RESEARCH NEWS
Uranium Enrichment: Laser Methods Nearing Full-Scale Test
Control of Protein Synthesis (II): RNA in the Nucleus

BOOK REVIEWS
The Use of Time, reviewed by H. Hymnan; Gamma-Ray Astrophysics, M. Harwit; Currents in Hadron Physics, A. Zee; Symbiosis in the Sea: E. R. Noble; Genetics and Mutagenesis of Fish: J. W. Atz
Ammonia Flux into the Atmosphere from a Grazed Pasture: O. T. Denmead, J. R. Simpson, J. R. Freney .................................................. 609

Photosynthetic Mechanisms and Paleocology from Carbon Isotope Ratios in Ancient Specimens of C4 and CAM Plants: J. H. Troughton, P. V. Wells, H. A. Mooney .................................................. 610

Genetic Variation in Coumarin Hydroxylase Activity in the Mouse (Mus musculus): A. W. Wood and A. H. Conney .................................................. 612

Sex Pheromones and Reproductive Isolation of the Lesser Peachtree Borer and the Peachtree Borer: J. H. Tumlinson et al. .................................................. 614


Chromosomes of the Chocolate Gourami: A Cytogenetic Anomaly: M. S. Calton and T. E. Denton .................................................. 618

Control of Membrane K+ Permeability in a Hyperpolarizing Photoreceptor: Similar Effects of Light and Metabolic Inhibitors: A. L. F. Gorman and J. S. McReynolds 620

Blepharomone: A Conjugation-Inducing Glycoprotein in the Ciliate Blepharisma: A. Miyake and J. Beyer .................................................. 621

Neurochemical Correlate of a Spatial Preference in Rats: B. Zimmerberg, S. D. Glick, T. P. Jerussi .................................................. 623

Enduring Learning Deficits and Cerebral Synaptic Malformation from Exposure to 10 Parts of Halothane per Million: K. L. Quimby et al. .................................................. 625

Technical Comments: Interpreting the Failures to Confirm the Depression of Cerebellar Purkinje Cells by Cyclic AMP: F. E. Bloom, G. R. Siggins, B. J. Hoffe; The Tuned-Receptor Paradigm: P. Hillman; G. S. Wasserman; Mitochondrial Morphology: G. W. Grimes, H. R. Mahler, P. S. Perlman; H.-P. Hoffmann and C. J. Avers .................................................. 627

"... Give me your tired, your poor, Your huddled masses yearning to breathe free, The wretched refuse of your teeming shore, Send these, the homeless, tempest-tossed, to me: I lift my lamp beside the golden door." See page 587. [Drawing by Richard Pellicci, Pelham, New York]
Education and the Job Market

Every time the job market stiffens we face an argument concerning the relationship between education and employment, and whether our young people are being properly trained for the existing job opportunities. In this debate, it usually is general education or "liberal arts" that takes a beating. Part of the problem stems from inflated expectations brought on by a strong job market in recent years. In the 1940's and 1950's, no one expected a student to receive more than one or two job offers, and the mathematics graduate who ended up in retailing seldom felt betrayed by his alma mater. But the frantic recruiting of the 1960's gave rise to expectations of plentiful opportunities within nearly every chosen field. When these opportunities abruptly declined, the clamor began.

The critics of educational institutions ignored the fact that unemployment was more related to widespread economic malaise than to inadequate or inappropriate education. Some critics even suggested that manpower training and vocational-technical education ought to be the paramount responsibilities of colleges and universities. From a statistical point of view, such arguments were less than compelling. Between 1960 and 1970, jobs requiring professional and technical higher education increased 49 percent, while demand for "craftsmen and foremen" increased only 19 percent and nonfarm labor less than 5 percent.

Educational institutions have been providing as many or more career-training curricula than ever, but they cannot impose upon students particular courses of study, nor can they predict what the job opportunities will be 4 or 6 years after the student first enrolls.

The way out of our present troubles lies first in breaking down the false dichotomy according to which general and career education are seen as mutually exclusive. In fact, the two are complementary. Second, we must recognize that the development of lifelong education relaxes the constraints on time. Desired combinations of vocational and general education cannot be limited to a 4-year undergraduate period but can be decided in the context of education over a lifetime.

The case for general education is usually based on its great humanistic benefits—its capacity to give us a sense of place within our cultural heritage, while the benefits of career education are usually regarded as material gains. Yet, in a fundamental sense, general education itself is a crucial sort of job preparation.

In the United States there has long been a high degree of movement between jobs that are significantly different in nature, as in the case of the engineer who enters management. The career skills a man or woman learns prior to accepting a first or second position may be inadequate for a third, fourth, or fifth job.

General education, concentrating on developing a broad cultural perspective, analytic abilities, and communicative skills, enriches our personal lives and enhances our adaptability to new situations. Thus general education is as indispensable to the world of work as any program of vocational training.

I argue for the ascendancy of neither general nor career education. Only a dual approach can serve our purposes—a partnership operating within a context of continuing educational participation by people of all ages, each involved in the kinds of learning experiences appropriate to their various needs. In our future educational strategies, general education and career education must join together, lest either, in standing alone, prove an unfortunate societal liability.—CLIFTON R. WHARTON, President, Michigan State University, East Lansing 48824
SCIENCE

Index to Volume 185
July—September 1974

Editorial Board

ALFRED BROWN
JAMES F. CROW
HERBERT S. GUTOWSKY
N. BRUCE HANNAY
DONALD KENNEDY
SEYMOUR S. KETY
DANIEL E. KOHLAND, JR.

DONALD LINDSLEY
RUTH PATRICK
FRANK PRESS
FRANK W. PUTNAM
MAXINE F. SINGER
RAYMOND H. THOMPSON
GORDON WOLMAN

Editorial Staff

PHILIP H. ARELSON
Editor

HANS NUSBAUM
Business Manager

EARL J. SCHERAGO, Advertising Director

Published by the
American Association for the Advancement of Science
1515 Massachusetts Avenue, NW, Washington, D.C. 20005

Printed in Washington, D.C., by McCall Printing Company, Mid-Atlantic Division
Copyright 1974 by the American Association for the Advancement of Science