LETTERS
SIPI Expansion: A. McGowan; M. Mead; Hayflick’s Achievements: D. E. Harrison; PCB’s: How Toxic?: K. L. E. Kaiser; Membrane Protein Assay: D. S. Papermaster, C. A. Converse, S. S. Coppock; Cell Bank Established: W. W. Nichols and D. G. Murphy

EDITORIAL
Cost-Effective Health Care

ARTICLES
The Financing of National Health Insurance: B. M. Mitchell and W. B. Schwartz
Social Impact of Pollution Control Legislation: W. H. Johnson
Viruses, Polymerases, and Cancer: D. Baltimore

NEWS AND COMMENT
Anatomy of a Decision: How the Nation Declared War on Swine Flu
Senate Forms Special Panel to Study Committee System
Wetlands: Denial of Marco Permits Fails to Resolve the Dilemma
Congress Confronts Wetlands Issue

RESEARCH NEWS
DNA Sequencing: A New Era in Molecular Biology
Marihuana: A Conversation with NIDA’s Robert L. DuPont
Reassurance from Foreign Studies
BOOK REVIEWS

The American Style of Science: A. Thackray; other reviews by B. Sinclair, D. S. Woodruff .......................................................... 650

The Early Days of the Bomb: R. Rosecrance; other reviews by R. V. Jenkins, J. J. Beer .......................................................... 655

Racial Attitudes: R. M. Williams, Jr.; other reviews by R. M. Kanter, L. H. Loftand, J. Scholper .................................................... 660

The Tasks of Sociology: G. E. Swanson; other reviews by J. J. Conger, J. C. Stanley, W. Shepard ................................................... 665


Origins of a Neuroscience: J. M. Davidson; other reviews by C. G. Beer, D. L. Hull .......................................................... 677

Economic Archeology: R. H. Dyson, Jr.; other reviews by M. M. Voigt, N. B. Millet, C. S. Smith ..................................................... 680

Qualities of a Discoverer: B. Campbell .................................................. 685

Seismology and the Test Ban: C. Kisslinger; other reviews by A. Nur, D. L. Anderson .......................................................... 687

Seventeenth-Century Studies: reviews by P. M. Rattansi, W. Coleman, J. L. Larson .......................................................... 689

Books Reviewed in Science: 23 May 1975 through 7 May 1976 ................. 694

PRODUCTS AND MATERIALS

Stable Tracer Analyzer; Chemical Light; Automatic Clinical Analysis; Alternating-Current Air Stirrers; Oxyhemoglobin Analyzer; Multiple Harvester; Ultracentrifuge; Literature ..................................................... 704

COVER

The “Greene Lyon” devouring the sun. “One of the most famous of all alchemical illustrations,” this picture first appeared in print in 1572, in a tract called Rosarium philosophorum. Newton owned a copy, still extant, included in a 1610 edition of the alchemical collection Artis auriferae. The lion, representing raw antimony ore, “draws in vivifying mercury, the living or ‘actuated’ character of which is symbolized by blood.” [Reproduced in The Foundations of Newton’s Alchemy, reviewed on page 689, with permission from the Stadtbibliothek Vadiana, St. Gallen]
Cost-Effective Health Care

Private and government expenditures for health are now devouring a substantial part of the gross national product. In spite of considerable evidence that the health care system is not cost-effective, the prospect is for continued growth. In 1950 funds spent for health were $12 billion. In 1975 they reached $118.5 billion. Until 1965 the government spent only nominal amounts for health care. With the advent of Medicare and Medicaid, the federal treasury became an engine of inflation of health costs. Federal expenditures rose rapidly to $34 billion in 1975, and this led to enhanced costs for the private system also.

Articles have appeared in which authors seek to identify specific causes for the increase—for example, soaring hospital costs. For the most part they miss the main point. When the major fraction of medical costs is borne by a third party, demand for care is practically infinite. Patients urgently seek treatment, even surgery, on the basis of trivial symptoms. Distraught relatives hope to prolong the lives of moribund loved ones. Fearing malpractice suits, many physicians practice medicine defensively, ordering more tests and procedures than they otherwise would.

The public assumes that large expenditures for health care will bring better health. This assumption is questionable. During the early part of this century life expectancy in the United States steadily increased, but it reached a plateau in 1954. In 1967 W. H. Forbes explored the relation between national expenditures in behalf of health and actual results. He concluded that we could halve or double the total expenditures without changing longevity.* This was in a year when only $42 billion was spent.

Since 1967 others have pointed out that most of the deaths in the age range 10 to 70 either are due to degenerative diseases or are fatalities arising from accidents, suicide, or homicide. The big killers are coronary heart disease, cancer, and stroke. Treatment of these diseases is often costly. Their incidence is related in part to lifestyle, for example, sedentary living, poor diet, obesity, smoking.

Because treatment of degenerative diseases is not uniformly successful and since the course of some of these can be altered by changes in the patient's behavior, there is increasing interest in preventive medicine. Frederick C. Swartz, M.D., has stated that "our greatest health problem is in the physical fitness of the Nation. Here the answer is the simplest and the cheapest, has the greatest application, and its reflection on the reduction of morbidity and mortality rates would be immediate and tremendous. It is entirely possible that a well-practiced physical fitness program begun early in life would increase life expectancy by 10 years..."

Studies seem to show that longevity depends on a combination of factors. Prominent among them are good nutrition, weight control, abstinence from excessive drinking of alcohol and from cigarettes, and getting enough exercise and sleep. Faced with the prospect of giving up smoking and engaging in vigorous exercise, many people would just as soon take their chances. However, others would like to pursue a more prudent course. They would be encouraged to do so if they had specific information about the effort required to increase their life span.

Substantially better health cannot be bought with $118.5 billion. Isn't it time the nation began to pay more attention to approaches that promise great improvement at little cost?—PHILIP H. ABEelson

*Cited in E. J. Burger, Jr., Journal of Medical Education 49, 928 (October 1974). \(^{1}\)Hearing before the U. S. Senate, Subcommittee on Aging of the Committee on Labor and Public Welfare, 23 April 1975. \(^{2}\)For further information see Physical Fitness Research Digest, Ser. 6, No. 2 (April 1976).