

## AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

*Science* serves its readers as a forum for the presentation and discussion of important issues related to the advancement of science, including the presentation of minority or conflicting points of view, rather than by publishing only material on which a consensus has been reached. Accordingly, all articles published in *Science*—including editorials, news and comment, and book reviews—are signed and reflect the individual views of the authors and not official points of view adopted by the AAAS or the institutions with which the authors are affiliated.

### Editorial Board

1973

H. S. GUTOWSKY	GARDNER LINDZEY
AUTHUR D. HASLER	RAYMOND H. THOMPSON
RUDOLF KOMPFFNER	EDWARD O. WILSON
DANIEL E. KOSHLAND, JR.	

1974

ALFRED BROWN	FRANK W. PUTNAM
JAMES F. CROW	MAXINE SINGER
SEYMOUR S. KETY	GORDON WOLMAN
FRANK PRESS	

### Editorial Staff

#### Editor

PHILIP H. ABELSON

#### Publisher

WILLIAM BEVAN

#### Business Manager

HANS NUSSBAUM

*Managing Editor:* ROBERT V. ORMES

*Assistant Editors:* ELLEN E. MURPHY, JOHN E. RINGLE

*Assistant to the Editor:* NANCY TEIMOURIAN

*News and Comment:* JOHN WALSH, LUTHER J. CARTER, DEBORAH SHAPLEY, ROBERT GILLETTE, NICHOLAS WADE, CONSTANCE HOLDEN, BARBARA J. CULLITON, SCHERRAINE MACK

*Research News:* ALLEN L. HAMMOND, WILLIAM D. METZ, THOMAS H. MAUGH II, JEAN L. MARX

*Book Reviews:* SYLVIA EBERHART, KATHERINE LIVINGSTON, ANN SELTZ-PETRASH

*Cover Editor:* GRAYCE FINGER

*Editorial Assistants:* MARGARET ALLEN, ISABELLA BOULDIN, BLAIR BURNS, ELEANORE BUTZ, MARY DORFMAN, JUDITH GIVELBER, CORRINE HARRIS, NANCY HARTNAGEL, OLIVER HEATWOLE, CHRISTINE KARLIK, MARGARET LLOYD, JEAN ROCKWOOD, PATRICIA ROWE, LEAH RYAN, JOHN SCHAUER, LOIS SCHMITT, MICHAEL SCHWARTZ, KENNETH SMITH, YA LI SWIGART

*Guide to Scientific Instruments:* RICHARD SOMMER

*Membership Recruitment:* LEONARD WRAY; *Subscription Records and Member Records:* THOMAS BAZAN

### Advertising Staff

#### Director

EARL J. SCHERAGO

#### Production Manager

PATTY WELLS

*Advertising Sales Manager:* RICHARD L. CHARLES

**Sales:** NEW YORK, N.Y. 10036: Herbert L. Burklund, 11 W. 42 St. (212-PE-6-1858); SCOTCH PLAINS, N.J. 07076: C. Richard Callis, 12 Unami Lane (201-889-4873); CHICAGO, ILL. 60611: John P. Cahill, Room 2107, 919 N. Michigan Ave. (312-DE-7-4973); BEVERLY HILLS, CALIF. 90211: Winn Nance, 111 N. La Cienega Blvd. (213-657-2772)

**EDITORIAL CORRESPONDENCE:** 1515 Massachusetts Ave., NW, Washington, D.C. 20005. Phones: (Area code 202) Central Office: 467-4350; Book Reviews: 467-4367; Business Office: 467-4411; Circulation: 467-4417; Guide to Scientific Instruments: 467-4480; News and Comment: 467-4430; Reprints and Permissions: 467-4483; Research News: 467-4321; Reviewing: 467-4440. Cable: Advancesci, Washington. Copies of "Instructions for Contributors" can be obtained from the editorial office. See also page xv, *Science*, 30 March 1973. **ADVERTISING CORRESPONDENCE:** Room 1740, 11 W. 42 St., New York, N.Y. 10036. Phone: 212-PE-6-1858.

## Importation of Petroleum

The United States, with 6 percent of the world's population, uses a third of the energy output. At one time, no special opprobrium was attached to this practice—we were squandering our own resources. The situation has changed. We are now importing a third of the petroleum that we consume. Our huge imports will eventually deprive others of a key commodity and are now forcing upward the price of oil for all, while undermining the value of the dollar.

This year, imports of oil and oil products will exceed those of 1972 by about 35 percent. They will cost about \$9 billion. A minor part of this sum will flow back into the United States in the form of profits of the international oil companies, but the imbalance of payments adds a heavy burden to an unstable dollar, with the situation exacerbated as imports continue to climb.

Elsewhere peoples are striving to enjoy some of the things that are commonplace to us. Governments everywhere are under pressure to provide more things and comforts for their peoples; this, in turn, translates into a demand for energy—largely in the form of hydrocarbons. In Western Europe, one encounters tremendous numbers of automobiles, seemingly darting in all directions. In Japan, with a population about half of ours, there are now 20 million cars. In many of the cities of Latin America, the automobile seems almost as ubiquitous as it is here.

Motor vehicles are, of course, only one mode of using energy. In many countries the consumption of hydrocarbons is essential to industrial activity and to meeting many basic human needs, such as that for space heating.

With time, some of the essential needs will probably be met by nuclear energy. Perhaps technology will supply needs in the year 2000, but what do we do to meet the problems of the next 5 or 10 years? If the United States is willing to endure a continuing series of dollar devaluations, with attendant inflation, it can probably continue for a while to import increasing amounts of petroleum. But our image abroad will surely suffer as we scramble to take more than our share of vanishing resources. We will earn the ill wishes of the rest of the world in the process, for there are many actions we could take to reduce our demand and increase domestic supplies.

We have only half-heartedly begun to think in terms of conservation. Some of the measures, such as better insulation for houses and the use of lighter motor vehicles, can only be effective after the passage of years. However, other measures could be helpful quickly. For example, wasting gasoline could be reduced through enforcement of highway speed limits. A sharp rise in the gasoline tax, now being discussed in Washington, would also tend to lower consumption. Demand for electricity this summer could be lessened if excessive air conditioning were avoided.

On the supply side, there are many measures that could be taken. The oil companies will continue to press for Alaskan oil and off-shore drilling, while improving secondary recovery. With current production practice, two-thirds of the oil in place is left in the ground.

Where we are curiously inert is in the utilization of our huge reserves of coal and oil shale. In comparison with the billions we spend on oil imports, the millions the government is devoting to liquefaction of coal is trivial. It can best be described as a phony commitment—a cosmetic effort whose purpose is to give the appearance, but not the reality, of action. A goal worthy of the world's leader in technology would be to construct in 2 years several plants, each costing about \$1 billion and each capable of supplying 1 percent of the liquid hydrocarbons we consume.—PHILIP H. ABELSON