LETTERS

Occupational Lead Exposure: What Are the Risks?: W. C. Cooper; W. R. Gaffey; Is Evacuation the Best Policy?: M. Levenson and F. J. Rahn; Scanner Development: J. B. Kruskal

EDITORIAL

Energy Policies of the United States and U.S.S.R.

ARTICLES

Breeder Reactors in France: C. P. Zaleski
Blue Light and Bilirubin Excretion: A. F. McDonagh, L. A. Palma, D. A. Lightner
International Politics and Science: Frank Press in Venezuela: M. Roche and L. A. Ordoñez

NEWS AND COMMENT

Latest Saccharin Tests Kill FDA Proposal
MX on Land or Sea?
Briefing: Controversial Scientist Considers Leaving NCI; Proxmire Reenters the Ring After Scientist Lands a Hit; SST Supporters Fly Above the Economic Fray
Texas Puts Together Winning Fusion Team
East Coast Maps to Alert Industry to Ecology Conflict
R & D Will Share in Budget Cuts

RESEARCH NEWS

The 1980 Pittsburgh Conference: A Special Instrumentation Report
Options for Preparative and Analytical HPLC
Portable Elemental Analyzers Pushed
IC Versatility Promotes Competition
Instrument Highlights: Video—A New Approach to Chart Recorders; New Tool to Monitor Sulfuric Acid Emissions; A New Interferometer for Inexpensive FT-IR; Fourier Transform Comes to Photoacoustic Spectroscopy

BOOK REVIEWS

Mass Loss and Evolution of O-Type Stars, reviewed by S. C. Wolff
The Thermal Theory of Cyclones, R. M. Friedman; The Biology and
Taxonomy of the Solanaceae. R. Ornduff; Stereoscopic Vision, J. A. Movshon; Books Received ........................................... 169

REPORTS
Convection in a Rotating Layer: A Simple Case of Turbulence: F. H. Busse and K. E. Heikes .................................................. 173
Evolutionary Implications of Pliocene Hominid Footprints: T. D. White .................. 175
Silicone Rubber Substrata: A New Wrinkle in the Study of Cell Locomotion: A. K. Harris, P. Wild, D. Stopak ........................................... 177
- "Transdifferentiation" of C6 Glial Cells in Culture: K. K. Parker, M. D. Norenberg, A. Vernadakis ........................................... 179
Differential Avoidance of Mimetic Salamanders by Free-Ranging Birds: E. D. Brodie, Jr., and E. D. Brodie, III ........................................... 181
High-Molecular-Weight Immunoreactive β-Endorphin in Extracts of Human Placenta Is a Fragment of Immunoglobulin G: J. H. Julliard et al. .................. 183
A Nonadrenergic Vagal Inhibitory Pathway to Feline Airways: L. Diamond and M. O’Donnell ........................................... 185
Inhibition of Cell Division and Growth by a Redox Series of Cyanine Dyes: S. Zigman and P. Gilman, Jr ........................................... 188
Phorbol Ester Action Is Independent of Viral and Cellular src Kinase Levels: A. R. Goldberg, K. B. Delclos, P. M. Blumberg ........................................... 191
Photoluminescent Thermometer Probes: Temperature Measurements in Microwave Fields: T. Samulski and P. N. Shrivastava .................. 193
Vertebrate Cells Express Protozoan Antigen After Hybridization: M. St. J. Crane and J. A. Dvorak ........................................... 194
Organelle Alteration as a Mechanism for Maternal Inheritance: K. C. Vaughn et al. ........................................... 196
Magnesium Deficiency Produces Spasms of Coronary Arteries: Relationship to Etiology of Sudden Death Ischemic Heart Disease: P. D. M. V. Turlapaty and B. M. Altura ........................................... 198
Faster Cholinergic REM Sleep Induction in Euthymic Patients with Primary Affective Illness: N. Sitaram et al. ........................................... 200
Preschool Programs and Later School Competence of Children from Low-Income Families: R. B. Darlington et al. ........................................... 202

PRODUCTS AND MATERIALS
Pulsed Molecular Beam Source; Cell Separator; Laboratory Freezer; Portable Temperature Scanner; Inductively Coupled Plasma Spectrometer; Pulse Height Analyzer; Clinical Microscope; Water Purification; Literature ........................................... 206

COVER
Pattern of radial stretching and wrinkling of a thin sheet of silicone rubber caused by the locomotion of fibroblasts spreading outward from an explant in the center. Using this method, the contractility of individual cultured cells can be studied. Dark-field illumination. Total width of field is 3.4 millimeters. See page 177. [Albert K. Harris, Department of Zoology, University of North Carolina, Chapel Hill]
Energy Policies of the United States and U.S.S.R.

The prestige of the United States has declined sharply during the past few years. In some circles these losses have been attributed to inept day-to-day conduct of foreign affairs. But there are other, more enduring factors behind the deterioration that have received little media or political attention. One factor is a decade-long, self-centered energy policy that has ignored legitimate needs and interests of the rest of the world. Another factor is abdication of world leadership with respect to nuclear energy.

During the 1970’s the United States massively increased its imports of oil, and this was a major cause of a tenfold increase in world oil prices. In 1972 imports of oil and its products were 4.5 million barrels per day; in 1973, 6.2; in 1977, 8.8; and in 1979, 8.1. In contrast, the Soviet Union did not compete for oil but instead became a supplier of energy to Western Europe.

Energy has become crucial in diplomacy and national well-being. We have come to be aware that we are vulnerable to a partial interruption of oil imports. For us imported oil represents only 19 percent of total energy consumption. Many other countries are far more dependent on energy imports. In 1976 the total energy dependence of France was 78 percent; West Germany, 54 percent; Italy, 81 percent; and Japan, 86 percent. In large measure their dependence rests on imports of oil from the Middle-East. When other countries adopt policies toward the U.S.S.R. and Arab countries that are different from those of the United States, one should not be surprised.

Oil is not the only energy import of Western Europe. Two years ago, while in Austria, I visited an impressive energy installation not far from the Czechoslovak border. The facility is the control center for the major pipeline that transports natural gas from the Soviet Union to Western Europe. Natural gas is dispatched to Austria, Switzerland, northern Italy, southern Germany, and southern France. Some gas is stored underground in Austria, but if the Russians stopped the flow of gas at the beginning of a heating season, many homes would be without heat.

In an effort to lessen dependence on oil, some of the countries of Western Europe—notably France—have begun to replace oil by coal. France has little coal, and what it has is expensive to mine. So coal must be imported. A major source of this coal is Poland.

Efforts of the Carter Administration designed to curb nuclear proliferation, while having a desirable goal, have been counterproductive. For many years the United States was practically the sole supplier of partially separated uranium for use as fuel in nuclear reactors. But in 1977 the Administration attempted to enforce regulations that other countries found onerous. Austria, Belgium, Finland, France, Italy, Spain, Sweden, and West Germany have obtained or are obtaining all or part of their separated uranium from the Russians.

Understandably, the French do not enjoy being vulnerable to sudden changes in policy of others and they have urgently sought to lessen their energy dependence. They have programs for conservation and solar energy, but have concluded that they must rapidly expand their use of nuclear energy. They have progressed far with a total nuclear program that includes a major isotope separation plant, many light-water power reactors, successful breeder reactors, successful commercial fuel reprocessing, and radioactive waste disposal. The isotope plant, which is already partially on stream, will have a capacity equal to that of our Oak Ridge facility. In the breeder reactor program (see this issue) the French have had several years of successful operating experience and are world leaders.

The United States has lost leadership in nuclear energy and much of its ability to influence the nuclear energy policies of others. We have opened the door wide for an enhancement of Russian influence in Europe. Simultaneously, our drain on world oil has caused severe financial problems for us and even greater ones for the rest of the world. It is time that we considered where such a performance is taking us.—PHILIP H. ABELSON.