

to the editor

Coal's comeback?

Your article entitled "The competitive comeback of coal" (SN: 1/30/71, p. 84) and your cover headline "Coal's road toward acceptability" ignore the basic fault of the coal industry. Coal is most certainly an industry of marginal profit. Thousands have died in my native state of West Virginia, and in Kentucky and Pennsylvania, due to, depending on the historical period, nonexistent or lax safety measures. Most recently the Farmington, W. Va., tragedy was probably due to failure of the coal company to comply with safety regulations (coal dust in this case). This failure was subsequently explained by many as a simple matter of excess cost of safety equipment and operations. Past failure and present delay in reclamation of strip-mined areas is due mostly to the low profit margin of coal mining. Many subsurface mines have closed down in the presence of a coal shortage! Why? Because subsurface operation is even less marginally profitable as pointed out in the article. Attention should be given to coal price regulation in an effort to place coal on a competitive basis with oil and to raise coal's margin of profit. Since the oil companies largely control the coal industry, this would seem an easy matter. How many miners need die, how many mountain communities remain impoverished, and how much ecological damage need occur in "Coal's road to acceptability?"

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(The new technologies described in our article have the purpose of converting coal into environmentally acceptable fuels. Needless to say the new fuels would also have to produce sufficient economic return to repay costs, including those of mine safety, and provide a competitive level of profit to the coal and energy companies. A main emphasis was that because of shortages and higher costs of other fuels, coal-based fuels may begin to have an edge. Ed.)

I would like to offer one comment on the coal resources story. The Office of Coal Research's project with the Institute of Gas Technology includes an electrothermal reactor. This reactor uses power input to a fluid bed as a means of providing energy for the reduction of the steam with carbon to produce carbon monoxide and hydrogen. While akin to electrolysis, the

process does not depend on the electrolysis of water.

We believe that our program for converting coal to a clean solid, liquid, and gaseous fuel is achieving some success.

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This letter concerns your article "The competitive comeback of coal."

The figure on the right on p. 84 is without either a title or an explanation of the vertical scale. An appropriate title would be "United States residual fuel consumption" and the scale should be "millions of barrels per day."

The statistics given in the article for coal production for 1947 and 1970 of 630 million and 590 million tons respectively are only for bituminous coal production. In 1947 57 million tons of anthracite was produced but by 1970 this had declined to about 10 million tons.

While western United States coals are generally of lower sulfur content than many Eastern coals much of the reserves are in the range of 0.8 to 1.0 percent. Moreover a lignite with 0.6 percent sulfur emits as much sulfur oxides per unit of heat generated as a bituminous coal with about 1.1 percent sulfur.

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Lunar model

It is impossible using any reasonable lunar thermal model for the temperature to "increase and then decrease again" (SN: 1/23/71, p. 61). Accordingly, it is the conductivity which displays a change in gradient. Furthermore, our measurements have been analyzed to a depth of about 900K. Conclusions regarding deeper layers are deduced from the expected behavior of a responsive moon, but so far the deepest depth has not been completely analyzed.

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films OF THE WEEK

POPULATION AND POLLUTION. 16mm, color, sound, 17 min. Describes today's environmental crisis and urges corrective action. Focusing on North America, the film shows that the problems of pollution are caused both by misuse of the environment and by the great demands of a constantly growing population. Emphasis is placed on the need for changes in attitude and for a commitment to finding both short-range and long-range solutions to the problems of air, water and land pollution. The film concludes positively with specific suggestions for what the individual might do. Audience: high school, college, general. Purchase \$225 or rental \$12.50 from International Film Bureau, Dept. SN, 332 S. Michigan Ave., Chicago, Ill. 60604.

AN APPROACH TO THE PREDICTION OF EARTHQUAKES. 16mm, color, sound, 27 min. Every day, in one small village in Japan, a hundred or more small earthquakes hit, small shocks usually, but some hitting with a swift devastation. To this town come scientists from all over the world to study the earthquakes, their possible sources, their frequency and their possible prediction. The village is a unique "earthquake laboratory." The film focuses on methods of earthquake study and the possible prediction of earthquakes. It shows the people who live in the village, their lives, their help to scientists and their reaction to the daily threat of violence and devastation. Audience: high school, college, general. Purchase \$350 or rental \$35 from American Educational Films, Dept. SN, 331 N. Maple Dr., Beverly Hills, Calif. 90210.

ANIMAL NAVIGATION. 16mm, color, sound, 13 min. Some birds migrate long distances, always managing to find their ways to the same nesting areas. Ants that stray some distance from the nest find their ways home with little difficulty. Bees return to the hive after foraging for food and describe their travels to other residents of the hive. A series of experiments suggest that all of these animals orient themselves by means of the sun. Audience: elementary, high school. Purchase \$175 or rental \$10 from BFA Educational Media, Dept. SN, 2211 Michigan Ave., Santa Monica, Calif. 90404.

THE COMMUNICATIONS REVOLUTION. 16mm, b&w, sound, 22 min. Presents Edgar Dale, Marshall McLuhan, Gilbert Seldes and I. Keith Tyler in a discussion of the impact of the information explosion and the mass media on Western civilization. McLuhan talks of "hot" and "cool" media of a global culture made possible by radio. Questions are raised of a new distribution of power through a redistribution of information and the inevitable need for discrimination in teaching media. Audience: general. Purchase \$38.50 or rental \$7.50 from National Audiovisual Center, Dept. SN, National Archives and Records Service, Washington, D.C. 20409.

SOUTH SEA ISLAND LIFE: THE DOLPHIN HUNTERS. 16mm, color or b&w, sound, 18 min. One of the important activities on the island of Malaita, one of the several large islands which make up the Solomons, is the hunting of dolphins. Although this island is densely populated, tribal organization is unknown and over 18 languages are spoken on this one island. The film shows how these once warring islanders have been brought together out of economic necessity, and the different natural resources and special skills that have been developed which lead to trade. Audience: high school, college. Purchase color \$227.50 or b&w \$113.75 from Coronet Films, Dept. SN, 65 E. South Water St., Chicago, Ill. 60601.

Listing is for readers' information of new 16mm and 8mm films on science, engineering, medicine and agriculture for professional, student and general audiences. For further information on purchase, rental or free loan, write to distributor.