

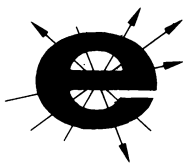
energy is not "free," he said, if installation of the necessary collectors is going to cost a substantial fraction of the price of a house. Competitiveness has to be demonstrated in purely economic terms. Example: Would or would not the cost of installation be better put in a bank to collect interest, from which fuel bills could be paid?

In computing these "real costs" of solar energy, he continued, environmental costs of alternative energy sources should, of course, be included. But, finding new, cleaner ways of burning coal also has to be considered as a high priority for limited R & D funding. Later, in an argument with some outraged solar proponents, he was even more blunt. New R & D funds can only move things just so fast, he said: "You can't produce a baby in a month by getting nine women pregnant!"

Several Congressional aides joined a panel discussion that pointed out the confusion and indecision on the Hill over solar energy. The Congress, it seems, is willing to authorize substantial new funds for solar research, but doesn't know quite where to put them, much less how to assure public acceptance of new technologies that are developed. Various conflicting bills on the matter are now wandering through the House and Senate, with no help from one of the Capitol's most powerful lobbies—the coal and oil interests. One aide warned the solar industrialists, "The more successful you get, the more you're going to be the target of these people."

Only one representative of a major potential buyer was present at the meeting, Frederick D. Hunt of the Mobile Homes Manufacturers Association. Like the speakers before him, Hunt addressed his audience of small businessmen bluntly: "Put up or shut up," he declared, complaining that all his initial efforts to buy a complete working solar heating system for thousands of mobile homes had met with some version of the response, "Just give me a million dollars and five years and I'll develop it for you." Members of his association want to start marketing solar-heated mobile homes within a year, he said, but cannot find any suppliers.

Whether the solar entrepreneurs can successfully move from considering purely scientific problems to the even more complex economic difficulties remains to be seen. But one of the silent, big-industry observers told *SCIENCE NEWS* that his company expects the small entrepreneurs to become merely component suppliers for the majors. □



Viruses and asthma attacks: A strong link

In recent years scientists have learned a lot more about what precipitates attacks of asthma, an ailment that afflicts nine million Americans. Three years ago Australian investigators followed 12,000 asthmatics and classified their attacks into two categories—those that occur at the same time as respiratory infections (mostly in young children and elderly adults) and those that are caused by allergies (mostly in older children and young adults).

A year ago, Denver investigators studied young children hospitalized for asthma attacks and found that if the attacks were precipitated by respiratory infections, the infectious agents were nearly always viruses, not bacteria.

Now Wisconsin investigators report similar findings relating viral infections and asthma attacks—this time for outpatient asthmatic children—in the Jan. 21 *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*.

Theodore E. Minor and his colleagues at the University of Wisconsin Medical School studied 16 out-

patient asthmatic children during 1971 and 1972. All the children's previous attacks had been associated with apparent respiratory infections. The children had 61 asthma attacks during the study, and 42 coincided with apparent respiratory infections. Asthmatic attacks occurred with 38 of 49 severe respiratory infections, but with only 4 of 22 mild respiratory infections. Asthma was precipitated during 21 of 23 severe respiratory infections of viral origin, but in only 1 of 6 severe respiratory infections of bacterial origin. Fourteen of 15 cold infections that resulted in severe respiratory infections and all episodes of Hong Kong Flu were associated with asthma attacks.

On the basis of these and other findings, Minor offers this advice to families with an asthmatic child: Keep him away from brothers or sisters who have a cold or the flu, and try to keep the infected child's hands as germ free as possible. Hands appear to be much better transmitters of colds and flu than talking, sneezing or even kissing.

Is climate influenced by earth's magnetism?

Similarity in the patterns taken by different natural phenomena often leads to scientific suggestions that the phenomena are somehow connected. J. W. King of the Appleton Laboratory in Slough, England, has noted a similarity between patterns of atmospheric pressure and the geomagnetic field near the poles of the earth. He suggests that the geomagnetic field may have an effect on the climate.

The atmospheric pattern is a plot (over the Northern or Southern Hemisphere) of the height at which the pressure is 500 millibars. The plot for the Northern Hemisphere in winter exhibits a kind of dumbbell shape with two low-pressure centers. One is near 80 degrees west longitude and one near 130 degrees east. Both are at about 60 degrees north latitude.

King points out that if one draws a plot of the earth's magnetic field for the same hemisphere showing contour lines of constant magnetic intensity, a similar dumbbell pattern emerges. The magnetic dumbbell is displaced from the atmospheric one by about 25 degrees. (The observations were made at different times so part of the discrepancy can be explained by westward drift of the magnetic field pattern dur-

ing the time between observations.)

A study of the patterns leads King to conclude that the earth's magnetic field possibly influences the average atmospheric pressure in the upper troposphere (about 20,000 feet) and that the average pressure system seems to move westward with the magnetic drift. What connects the two is not certain, but one suggestion is that the solar wind may have something to do with it. The geomagnetic field affects the arrival of solar-wind particles at the upper atmosphere; these particles may in turn have some effect on the pressure.

As the atmospheric pressure moves, the climate changes. King reminds us that in about 1660 the magnetic declination at London and Paris was zero, indicating a different magnetic configuration from what prevails now. At the time the European climate was experiencing a little ice age, which lasted from 1550 to 1700.

King's suggestions appear in the Jan. 18 *NATURE*. In an editorial in the same issue, *NATURE* comments: "Meteorologists have been shy—perhaps understandably shy—about suggestions of a linkage, let alone control . . . of the flow of the atmosphere by the magnetic field, that is, ultimately by the flow in the earth's molten core. But both phenomena could be registering parallel responses to some other aspect of the physical environment." □