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# SCIENCE NEWS LETTER



®

THE WEEKLY SUMMARY OF CURRENT SCIENCE

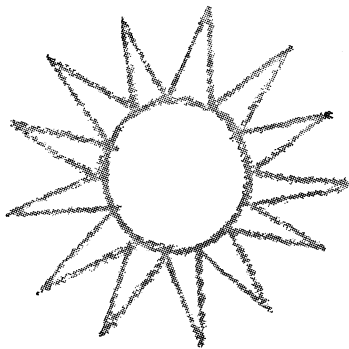
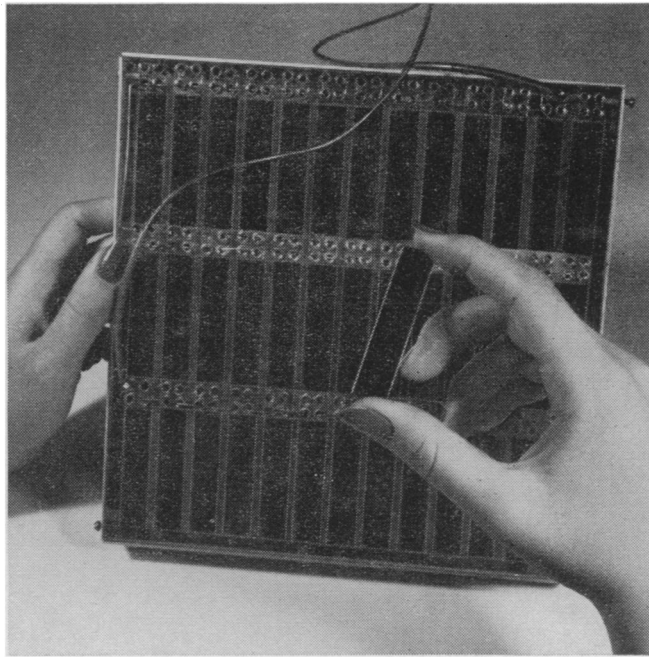


**Tasty Tidbit**

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A SCIENCE SERVICE PUBLICATION

*The Bell Solar Battery. A square yard of the small silicon wafers turns sunshine into 50 watts of electricity. The battery's 6% efficiency approaches that of gasoline and steam engines and will be increased. Theoretically the battery will never wear out. It is still in the early experimental stage.*



## Bell Solar Battery

Bell Laboratories scientists have created the Bell Solar Battery. It marks a big step forward in converting the sun's energy directly and efficiently into usable amounts of electricity. It is made of highly purified silicon, which comes from sand, one of the commonest materials on earth.

The battery grew out of the same long-range research at Bell Laboratories that created the transistor—a pea-sized amplifier originally made of the semiconductor germanium. Research into semiconductors pointed to silicon as a solar energy converter. Transistor-inspired techniques developed a silicon wafer with unique properties.

The silicon wafers can turn sunlight into electricity to operate low-power mobile telephones, and charge storage batteries in remote places for rural telephone service. These are but two of the many applications foreseen for telephony.

Thus, again fundamental research at Bell Telephone Laboratories paves the way for still better low-cost telephone service.



*Inventors of the Bell Solar Battery, left to right, G. L. Pearson, D. M. Chapin and C. S. Fuller—checking silicon wafers on which a layer of boron less than 1/10,000 of an inch thick has been deposited. The boron forms a "p-n junction" in the silicon. Action of light on junction excites current flow.*



### BELL TELEPHONE LABORATORIES

IMPROVING TELEPHONE SERVICE FOR AMERICA PROVIDES CAREERS  
FOR CREATIVE MEN IN SCIENTIFIC AND TECHNICAL FIELDS

# What General Electric people are saying . . .

## E. KEONJIAN

*Formerly an electronics scientist in Leningrad, Mr. Keonjian is now with the Electronics Division*

“ . . . There is considerable progress in science, particularly in applied fields, such as electronics, in Russia. There are several reasons for it.

First, the Soviet Government encourages development of applied science in every field which has any prospects of being useful for military purposes.

Second, in the atmosphere of strong political pressure and frequent “purges” in which every individual lives in Russia and in satellite countries, many people regard applied sciences as relatively “safe subjects” that often do not follow all the changes and zigzags of the Communist Party line, as in the case of social science. Consequently, more people devote themselves to applied sciences rather than to any other sciences or activities.

Third, the Soviet scientists have to study the foreign languages more intensely than we do here. They watch very closely all foreign scientific and technical developments and make more efficient use of them than we do.

Fourth, the Soviet Government has complete control over the school system in Russia. It determines their programs, number of students, and their assignments after graduation.

Fifth, unlike the Western world, the Soviet Government is able, without any limitation, to concentrate the selected manpower of the country, as well as the full effort of its technology, in few selected fields which it regards vital for increase of military potential.

There is a prevailing opinion among the Western scientists that we strongly underestimate Soviet science. With few exceptions this is, however, not true. The Western scientists should always remember that together with some real achievements, there is still a considerable amount of propaganda, outward manifestation, and even charlatany in most of the Soviet claims in science, and the tragic disgrace of

Prof. Lysenko’s “achievements” in Soviet genetics is not without parallel in other sciences behind the Iron Curtain.

*at the IRE, Pennsylvania Section*

## F. K. McCUNE

*Mr. McCune is General Manager, Atomic Products Division*

“ . . . We at General Electric believe that electric companies will be owning and operating a number of atomic power plants within the next ten years.

We believe some of these will be full-scale and, what is most important, they will operate electrically at competitive costs, possibly within five, certainly within ten, years.

We believe that this will be accomplished without Government subsidy for production plant construction or operation, and that Government-supplied fuel will be priced at cost-of-production levels.

We believe that two nuclear reactors best suited for earliest and most effective competition with conventional fuel plants in this country are (a) the light water-moderated and cooled boiling reactor, and (b) the graphite-moderated water-cooled reactor. These we think hold greatest promise in the years just ahead.

In saying these production plants will operate without Government subsidy, I do not wish to detract from the immeasurable significance of knowledge developed through A.E.C. contracts. Of course, the Government’s large expenditures for research and development of plutonium production reactors, mobile power reactors, and other power reactors form the base from which private industry can proceed. But, the important thing here is that we

believe production size atomic power plants can be made economic. They will stand on their own feet. They may sell products to the Government. They will certainly buy nuclear fuel from the Government. But, trading with the Government need not be a subsidy.

*Atomic Industrial Forum Panel  
Washington, D. C.*

## W. S. HILL

*Mr. Hill is Manager—Technical Recruiting Services, Engineering Services Division*

“ . . . In the matter of educating the technical graduate, what industry is trying to say to educators concerning the engineer and the scientist is this:

Give us well-rounded men.

Cultivate habits of mind that will enable them to seek out unsolved problems, to systematically explore, and where possible to add to useful knowledge.

Give them basic tools in the form of fundamental knowledge for this task, but above all show them how to acquire more tools for themselves as they reach the limits of their past training.

Encourage qualities of initiative and responsibility.

Make them aware of the economic evaluation society will inevitably put on their contributions.

Help them toward attitudes of cooperation with their associates in work and community because much of their lives will be spent in working with and for people.

Prepare them to better adjust to people, situations, and the changing complexities of our society.

Foster alertness to broad social trends and the implications these have to their field of work.

*G. E. Review*

*Progress Is Our Most Important Product*

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