



SMOKELESS FURNACE—Scientists of the University of Illinois are checking its efficiency with technical laboratory instruments. With the same amount of coal it gives an estimated 50% more heat than a standard furnace.

are promising. One problem in using solar energy is the storage of the heat. This may soon be solved.

Solar Heating Experiments

A number of American technical colleges and universities are experimenting with solar heating. Among these are the Massachusetts Institute of Technology, Illinois Institute of Technology, Purdue University and the University of Colorado. All have experimental houses, and all have succeeded with satisfactory heating in winter periods of sunny weather. None of them, however, have solved the problem for economical storage of daytime heat for night and stormy days. None have yet developed an inexpensive installation making the cost of all-season heating less than by the use of coal. The future, however, is promising.

One principle employed in some of these experimental structures is that used in greenhouses. A glass roof covers the regular roofing with an air space between through which air can circulate. Within this space, in the Colorado experiment, glass plates one-third blackened are laid like shingles. The black absorbs the heat, which is then passed to the circulating air and through the house-heating air ducts.

In one MIT house, a blackened copper sheet under three air-spaced glass plates

covered much of the building roof. Copper tubes, soldered to the copper plates, circulated water to a giant storage tank in the basement.

Another type of building has an all-glass wall on its sunny side. Double sash is used. Cement floors within absorb much of the heat and hold it for night use. Over the windows of these houses are projecting roofs that cut out the direct rays of the sun during the summer when the sun is high, and admit them during the winter months when the sun is low.

The focus on the solar heating problem at the Massachusetts Institute of Technology is directed toward economical storage of the heat collected. Water has been the most widely used storage material, but iron, concrete, marble and other materials have been successfully employed. Now, Dr. Maria Telkes of the MIT staff has found something that seems superior.

It is a chemical stored in sealed tanks which is a solid at ordinary temperatures but becomes a liquid at high summer weather. It takes a lot of heat to convert it from a solid to a liquid. This is what was once called latent heat but now known as the heat-of-fusion. It changes the physical condition but does not change the temperature.

One chemical found suitable for this purpose is Glauber's salt, a form of so-

dium sulfate. Its melting point is about 90 degrees Fahrenheit. When its stored heat is needed, air is circulated around the containers. The chemical begins to solidify, at the same time giving up its heat-of-fusion to the air.

The heat accumulation and depletion may be repeated indefinitely because the chemical is within a sealed can and never has to be replaced. The chemical compound can store at least seven times more heat than an equal volume of water. The tanks to hold it cost about the same as tanks for water.

Science News Letter, November 15, 1947

GENERAL SCIENCE

Finnish Institution Needs U. S. Scientific Books

➤ AN appeal for scientific and technical books and periodicals to rebuild the bomb-destroyed library of a Finnish institution has been made by Arthur E. Morgan, former president of Antioch College, Yellow Springs, Ohio, who recently returned from a trip to Finland.

Mr. Morgan reported that loss of its technical library is handicapping recovery of Finland's technical institute, Teknillinen Korkeakoulu. Dr. Martti Levon, director of the institute, told Mr. Morgan that scientific and technical publications from the U. S. were needed to replace those lost in the war.

Gifts for the institute can be shipped to the Legation of Finland in Washington, D. C., for further shipment abroad, Mr. Morgan suggested.

Science News Letter, November 15, 1947

Zirconium and titanium may some day be used for tableware and jewelry; both of these so-called *rare metals* take a high polish and will not tarnish.

YOUR

HAIR

AND ITS CARE

By O.L. Levin, M.D. and H.T. Behrman, M.D.

Two medical specialists tell you what to do to save and beautify your hair, stimulate healthier hair growth, and deal with many problems, as:

Dandruff — gray hair — thinning hair — care of the scalp — baldness—abnormal types of hair—excessive oiliness—brittle dryness—hair falling out—infection—parasites—hair hygiene, etc., etc.

"A worthwhile book full of important information."

Ohio State Medical Journal.

Price \$2.00, incl. postage, 5-day-Money-Back Guarantee

EMERSON BOOKS, Inc., Dept. 981-C, 251 W. 19th Street, New York 11