

**SMOKELESS HEATER**—One of the recent developments in home-heating is this smokeless heater under test in the Champion Coal Company's laboratory at Pittsburgh.

less and smokeless.

In basic principle, it was developed by the Anthracite Institute, Wilkes-Barre, Pa., but the creation of practical household units was carried out by commercial furnace manufacturers. It is known as the Anthratube. One claim is that it saves from 15% to 38% of the fuel bill. Anthra-Flo is the newest development in equipment, and utilizes the general principles behind the Anthratube.

The Anthratube bears little resemblance to ordinary furnaces, being relatively small in size, and having a horizontal tubular combustion chamber from six to eight inches in diameter. Coal, from a chute, is forced in one end in a continual stream by a screw propeller, similar to that in the familiar household meat grinder. The same pressure forces the ashes out the other end.

Combustion takes place in the half of the tube nearest the ash end. The coal is preheated in the approaching stretch. Air for combustion is drawn through the tube in the opposite direction to the movement of the coal. The same suction draws the gases of combustion through the unignited fuel in the tube and out into the chimney. The heat from the combustion is picked up by air or water in a chamber surrounding the combustion tube.

Coal is still by far the most important fuel used in America in spite of greatly increased installation of oil and gas furnaces. It will probably always remain the most widely used home fuel because there is enough unmined coal in the country to last for many centuries, while known deposits of natural petroleum and gas are approaching exhaustion.

But wood promises to become more important. Much wood now wasted in logging operations may find its way into the fuel market in the present campaign to save wood wastage.

Foreseeing wide use of wood as fuel, the Northeastern Wood Utilization Council, New Haven, Conn., has had a furnace developed to deliver more useful heat from the wood. The new furnace is called the Woodomat, and it is now in commercial production. In it the wood is first heated enough to break it down into charcoal and gases. These products are then mixed with additional air and burned. Complete combustion is the result, and there are no deposits of creosote and soot.

Science News Letter, October 8, 1949

## PSYCHIAIKY

## Alcohol Addiction Comes From Five Sources

► FIVE things combine to make an alcohol addict, Dr. Robert V. Seliger, Baltimore, Md., psychiatrist, told the American Prison Association's Congress of Correction in Milwaukee, Wis.

The five are: 1. Ancestry. 2. Early and later emotional hurts, likes and experiences, both conscious and unconscious. 3. A physical ingredient including the alcoholic's neurological system and the reactions associated with his glandular make-up, blood chemistry content, biological rhythm and metabolism. 4. Emotional and personality difficulties with other people and in coping with situations. 5. A lack of or inadequate basic philosophy, faith and conviction in the essential and profound worthwhileness of life.

Science News Letter, October 8, 1949

## MATHEMATICS-AGRICULTURE

## Slippery Statistics Studied in Paris


► IN an attempt to remove some of the slipperiness from the elusive science of statistics, European governmental experts are going to a three-month "school" in Paris sponsored by the Food and Agriculture Organization.

The "students" are government statisticians. The objective is to bring all agriculture and population statistics into uniformity, so that the figures from one government may be readily compared to those of all others.

This venture, which will run until Dec. 22, is called the European Center of Applied Agricultural and Demographic Statistics. A successor to previous statistics seminars held by FAO in Baghdad and Mexico, the Paris center was organized with the help of the United Nations Statistical Office and the French Government, and with the cooperation of UNESCO.

Science News Letter, October 8, 1949

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