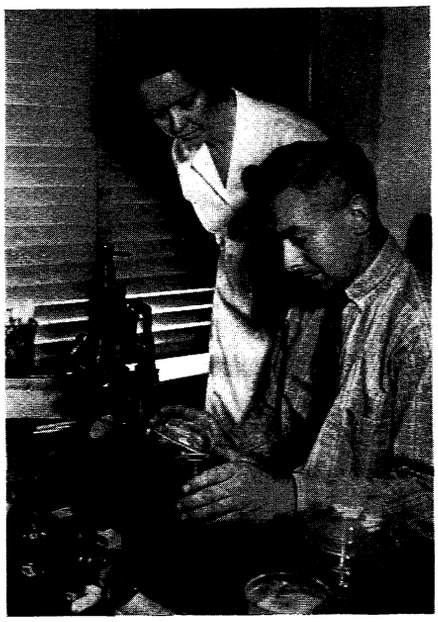

*STERILIZING*

***Miss Ruth Elmquist and James Kettering of the Bureau of Home Economics, with Harry Humfeld now of the Bureau of Plant Industry, developed a process for sterilizing wool blankets without damage to the fiber itself. It is welcomed by hospitals. (See SNL, Nov. 13)***

ENGINEERING

## Ancient Assyrian Scheme Protects Mississippi Banks

KING Sanherib, of Assyria, never heard of the Mississippi River. He died 2500 years before white men ever saw the Father of Waters, but today, engineers are applying a modification of one of his ideas to the problem of flood erosion of the Mississippi's banks. Asphalt and bricks, in a sloping bank, helped the ancient Semitic king to fight floods on the Tigris. Today, asphalt and woven wire help army engineers control the Mississippi.

Concrete blocks, tried with little success to prevent bank erosion on the Mississippi, were extremely costly and short-lived. Twenty years ago, Lt. Col. George M. Derby, Army Engineer, started experiments with asphalt mats, which he believed would be cheaper and more satisfactory than concrete. Today, on an immense barge, mats 300 by 50 feet, reinforced with woven wire, are manufactured and installed in the river bed. Unlike concrete blocks, the asphalt mats bend without breaking, fitting themselves to each small inequality in the river bed.

*Science News Letter, December 25, 1937*

PHYSICS

# "Empty" Space Not Empty; Is Filled With Many Things

"EMPTY" space, out between the stars, is anything but empty. Research by astronomers of the Carnegie Institution of Washington shows that all sorts of things are rattling around in it. Although it is much closer to a perfect vacuum than anything human means can produce in a laboratory, an average cubic yard of it is stocked with:

Twenty million free electrons.
Twenty million hydrogen atoms.
Five sodium atoms.
One potassium atom.

Four hundred thousand photons, or "light-darts."

In addition, there is one calcium atom for every ten cubic yards of inter-stellar space, and one titanium atom for several hundreds or thousands of cubic yards.

Larger units of matter, averaging perhaps the size of a smoke particle, also float about, as cosmic dust. One such grain might be filtered out of each 1,000,000,000,000,000,000 cubic yards of interstellar space.

*Science News Letter, December 25, 1937*

METEOROLOGY

# Twelve Kinds of Snow Recognized By Science

TO MOST of us to whom snow only means a job of shovelling, it may help a bit (at the next siege of back-breaking exercise) to learn that scientists classify snow into at least 12 different varieties. Right off, there is falling snow and fallen snow. That's easy. And some of us have recently learned about powder snow through the present trend to ski-ing.

But did you ever hear of sand snow, or wild snow, or sun crust or rain crust snow?

Let's start with falling snow. It is precipitation frozen into some type of crystalline form. When it hits the ground it becomes fallen snow. At first fallen snow is powder snow, soft, fluffy and feathery and not unchanged from its in-the-air condition. Skiers look for it.

But powder snow, if it comes to earth at very low temperatures, may form sand snow on which neither a ski nor sled will glide. Greenland explorers have reported sand snow. Wild snow, is another form of powder snow which falls in a complete calm at low temperature and is immensely unstable.

Following first contact snow enters the stage of settling snow. It becomes settled snow which can take the close-lying powdery form which makes the best of all ski-ing.

The next stage in snow's evolution is to pass from the new to the old snow classification and the state of new firn snow is reached, where the snow is becoming granular and compacted. Variations of firn snow include the sun crust and rain crust forms where melting occurs, and then freezing, with a crust resulting.

Finally advanced firn snow arrives which turns either into firn ice or glacier ice.

*Science News Letter, December 25, 1937*

GEOLOGY

## Odd Trick of Dripstone Builds Santa Claus Image

**See Front Cover**

SANTA CLAUS is traditionally supposed to live in a vast cavern-workshop at the North Pole, yet something that looks very much like him can be seen in a cavern in our own Southland. In the limestone formations known as Aladdin Cave, in Madison County, Alabama, stalactites dripping from the ceiling and stalagmites slowly mounding from the floor have met and merged, in such shape and markings that even the least imaginative of mortals can easily see (at any rate just before Christmas) a rough but recognizable image of the children's favorite saint.

If you have trouble recognizing the saint, just turn the picture upside down