

ASTRONOMY

Planetarium for Home Use

► STARS are now being brought into the classroom and home so that people can more easily learn to identify the constellations and brightest stars. A portable instrument for projecting the heavenly bodies and an inexpensive dome make this practical.

One type of dome can be built for as little as \$25. Designed by astronomers at Pennsylvania State College, it is to be used in connection with the planetarium developed by Dr. Armand N. Spitz, lecturer at Fels Planetarium and educational director of the Franklin Institute, Philadelphia.

The Spitz planetarium produces results strikingly similar to those used in large planetariums. A compact unit only three feet high, it weighs about 25 pounds. A light in the center of a 12-sided plastic box shines through holes punched in the vinylite sides to represent stars. The instrument currently sells for \$720.

The planetarium for home use projects on any surface the images of most of the stars usually seen with the naked eye. Constellations are immediately recognizable and the stars may be reproduced as seen from any location on the earth.

But when the planetarium is used in a room of conventional shape, the heavens as flashed near the corners of the room are distorted. Several inexpensive or quickly-assembled domes have been devised to avoid this difficulty.

In one model, plywood ribs are covered with a parachute. This cloth makes an ideal surface for projecting the stars. Another uses molded plywood that, unassembled, can be carried on top of a station wagon. It may be set up in a few minutes.

The \$25 dome built at Penn State has a framework of plywood. The paper surface upon which the stars are projected is cemented or fastened to the ribs with tacks.

In addition to short bolts and rubber cement or thumb tacks the following are needed:

Three pieces of quarter-inch plywood, 8 by 12 feet.

110 sheets of 24 by 38 inch blotting paper.

Strips of plywood about two inches wide, cut from the large pieces, are arched to the center, forming the ribs for the dome. They are bolted to a circular disk of plywood that forms the dome's top. Other strips of plywood, placed on the framework several feet from the floor form the bottom of the planetarium dome. Blotting paper, cemented to the plywood ribs, forms the surface on which the stars are projected. The portable planetarium is installed on a low table within the dome.

"A ten-foot dome of this construction can be knocked down in about an hour, reassembled in less than three hours," says Dr. Henry L. Yeagley, associate professor of physics at Penn State.

Science News Letter, June 19, 1948



DOMES FOR SKY STUDY—Plywood ribs for the Penn State Dome are bolted to a circular piece of plywood as spokes are bolted to the hub of a wheel.

developed the disease and died.

Now a search is on to find the right insecticide and spraying methods to protect street, lawn and park elms against this new-found enemy.

Science News Letter, June 19, 1948

GENERAL SCIENCE

UNESCO Plans Program For Occupied Germany

► A FOUR-POINT program to extend the work of the United Nations Educational, Scientific and Cultural Organization to occupied Germany has been announced by UNESCO headquarters in Paris.

The program adopted by a subcommittee includes:

1. Distribution of UNESCO publications, documents and other materials in Germany.
2. Facilitating the exchange of publications between Germany and other countries.
3. Studying the question of textbooks for Germany.
4. Surveying the opportunities and problems of exchanges of persons between Germany and other countries.

UNESCO's program in Germany will be carried on in cooperation with Allied occupation authorities. A similar program is being planned for Japan.

Science News Letter, June 19, 1948

FORESTRY

Insect Spreads Elm-Killer

► A small insect of the rather numerous group known as the leaf-hoppers has been convicted of carrying the virus of a disease that kills many elms in Midwestern and Southern states, by research workers of the U. S. Department of Agriculture.

The western elm-killing disease, called phloem necrosis, is quite different from the better-publicized tree malady commonly but incorrectly called the Dutch elm disease, which is known at present only east of Ohio. Phloem necrosis has been found from Ohio and parts of West Virginia west to Nebraska and Oklahoma, and south to Mississippi. The causal organism of the Dutch elm

disease is a fungus carried by a beetle; phloem necrosis is caused by a microscopically invisible virus which is carried, it is now demonstrated, by a leaf-hopper.

The particular species pronounced guilty by the entomologists is so small and inconspicuous that it never has had a common English name; its scientific title is *Scaphoideus luteolus*. They proved their point by letting a number of specimens feed first on the leaves of elms known to have the disease, then on healthy young seedling elms carefully protected against other possible insect carriers by cheesecloth cages and subsequent DDT spraying. The seedlings