PHYSICS

Radioactive Greenhouse

See Front Cover

➤ THE new greenhouse looks like all the others at the Department of Agriculture's huge plant industry station at Beltsville, Md. But around it is a seven-foot-high chain link fence. Signs on the fence, bearing the three-segmented red symbol of the Atomic Energy Commission, read: DANGER—Area Used For Radioactive Materials; Admission by Permit Only.

As equipment was being moved into the AEC-built, $250,000 greenhouse last week, the Commission and Agriculture Department announced they are ready for "one of the important peacetime projects made possible by atomic energy."

Radioactive tracer materials hotter than any used so far in plant research will be the principal tools in the specially-equipped greenhouse, where government scientists will track down secrets of growth from the soil.

"None of the work will be secret," said Dr. F. W. Parker, assistant chief of the Bureau of Plant Industry. Admission to the area will be restricted only because of radiation hazards, he explained. Research workers will be trained in taking needed precautions.

To protect workers on the "Radioactive Isotope Project," the greenhouse has many special features. Stainless steel plates line the doors to the basement section where tracer materials, mainly from the atomic energy plant at Oak Ridge, Tenn., will be received.

The photograph on this week's cover of SCIENCE NEWS LETTER shows the 18-inch-thick concrete "well" in an underground room beyond the greenhouse proper where cans of the radioactive isotopes will be stored. Dr. L. T. Alexander who heads the radioactive project is at the left in the picture, and Arnold MacKenzie, a project chemist, is at the right. All handling here will be by remote control. The floor, as in other rooms where contamination is likely, is of asphalt tile easily replaceable should radioactive materials be spilled on it.

There are special sinks in each section of the greenhouse, piped to carry contaminated wastes into a special receptacle. Exhaust systems from lead-lined hoods contain filters to catch radioactive particles in the air.

Previous uses of radioactive "tagged" elements have shown their value in plant science. The Department of Agriculture, together with AEC and many state agricultural experiment stations, have used tracer materials in studying plants and soils for more than three years.

The new greenhouse will permit new radioactive elements to be used, among them calcium, zinc and sulfur, Dr. Alexander said.

Both inside the greenhouse, where water flowing over the glass roof will aid in controlling temperature, and on the two-acre plot surrounding the new building, studies will be carried on to learn more of how plants draw nutrition from various types of soil.

By substituting for normal elements in the soil the same elements made radioactive, researchers will be able to trace with Geiger counters and other instruments of the atomic age the way in which crops absorb their food and flourish—or wilt and die—under various conditions of U. S. farming.

Science News Letter, July 8, 1950

Question Box

ASTRONOMY

What is the cigar in the Milky Way? p. 30.

Why is Mars red? p. 28.

ENTOMOLOGY

What are the main insect pests? p. 26.

MEDICINE

How do doses of the pure growth hormone affect rats? p. 21.

What are the effects of military nerve gases? p. 19.

What is the best remedy for aching joints? p. 28.

What is the local anesthetic now being used for heart trouble? p. 18.

What necessities may remain safe in the event of an atomic war? p. 23.

PHYSICS

Where is the new radioactive greenhouse located? p. 20.

Photographs: p. 19, General Electric; p. 21, San Antonio Zoological Society, Inc.; p. 23, Westinghouse Electric Corporation; p. 32, Tennessee Eastman Corporation.

● RADIO

Saturday, July 15, 1950, 3:15 p.m., EDST

"Adventures in Science" with Watson Davis, Director of Science Service, over Columbia Broadcasting System.

Mr. Davis will discuss "Our Atomic Future."

Growth or loss of *hair* depends upon heredity, the supply of sex hormones and on age.

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