

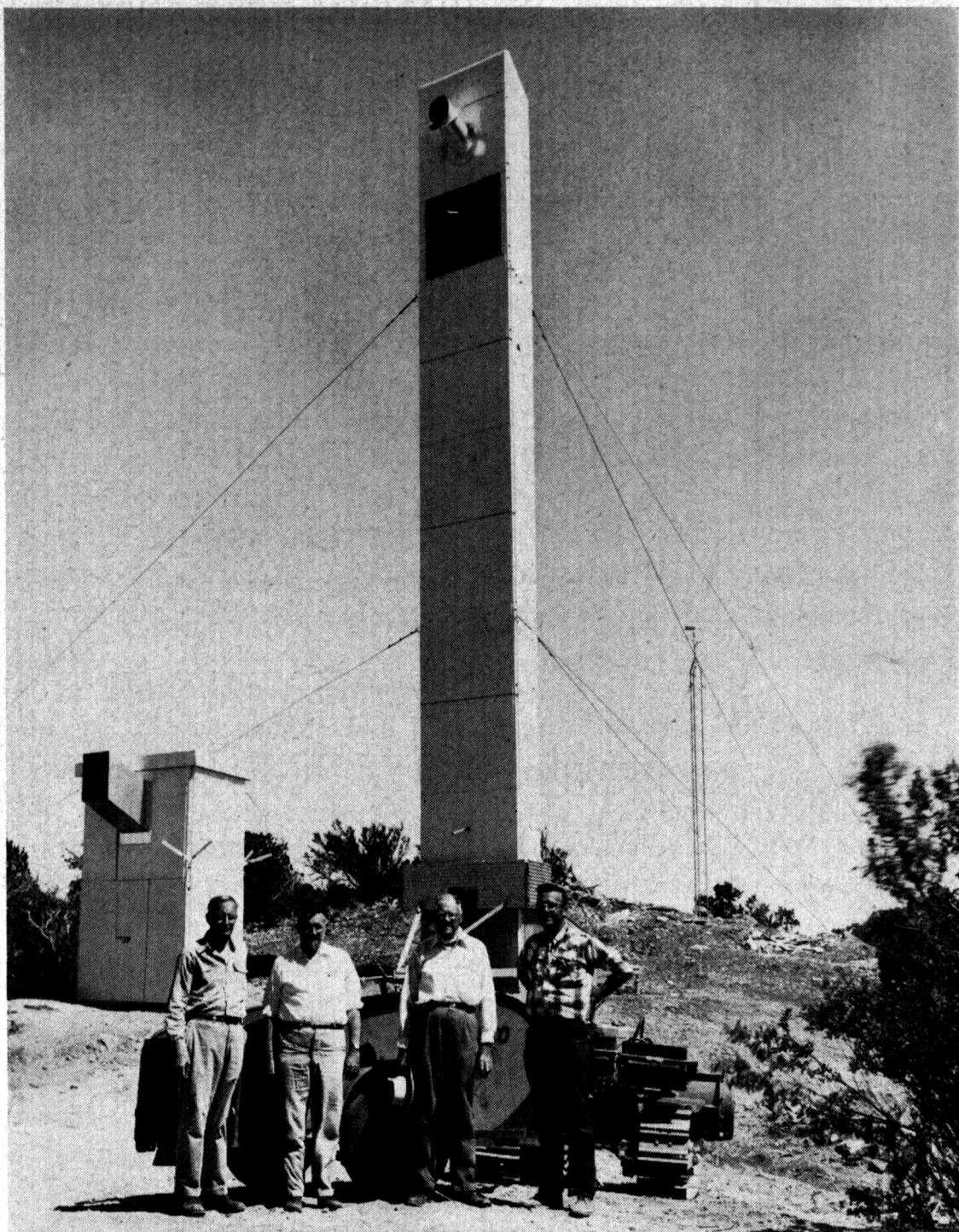
A

Photographic

Sampling of

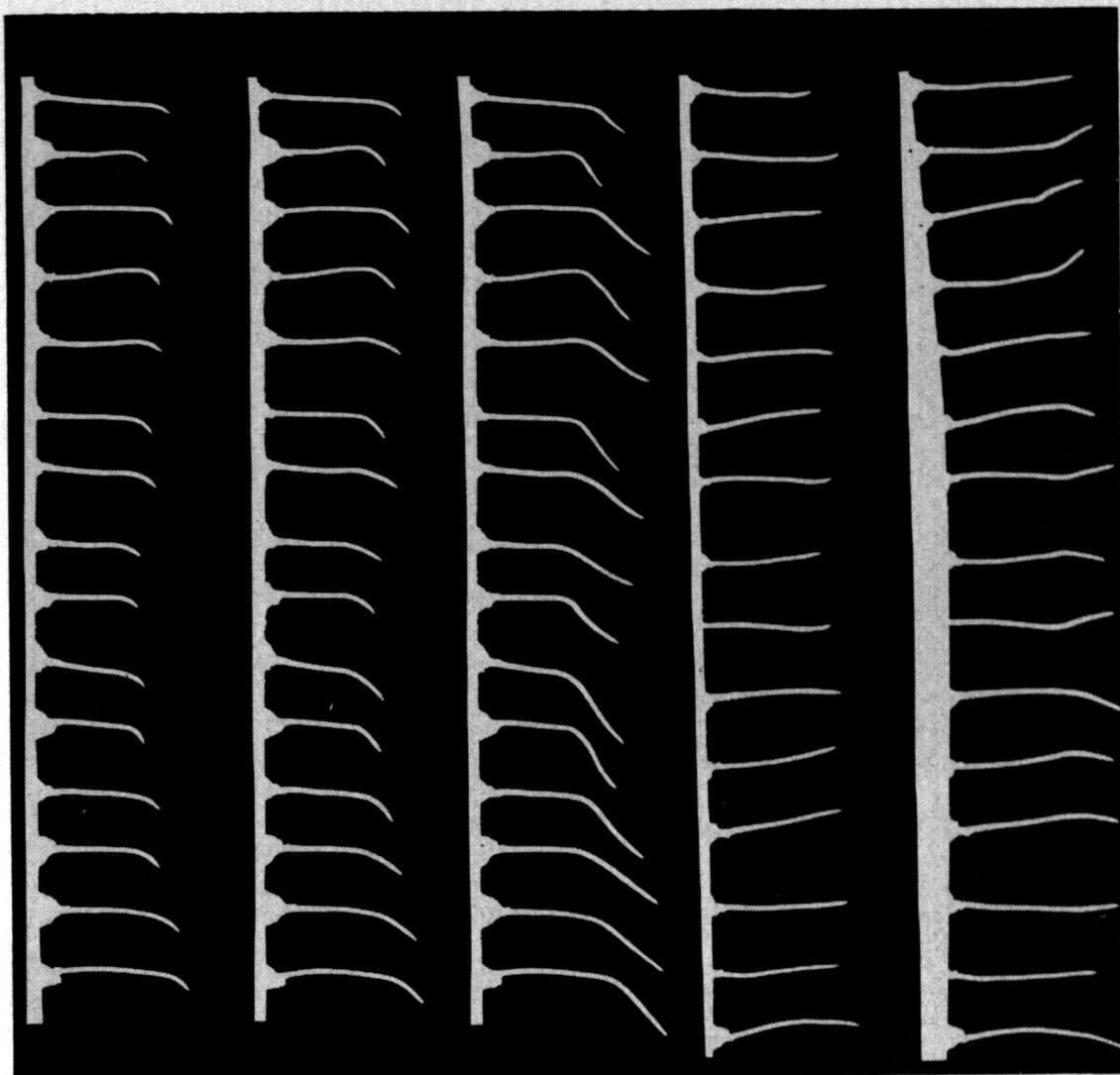
Foundation-Supported

Activities



LOCATING SITE FOR OPTICAL ASTRONOMICAL OBSERVATORY

The 60-foot "seeing" tower is located on top of Kitt Peak, Ariz., and is 1 of 4 so far erected for the purpose of determining the most suitable site for the construction of an optical astronomical observatory in the Southwest. The tower is a triple-shelled steel structure equipped with a telescope that continually measures the turbulence in the atmosphere by gaging the size of the image of the star Polaris. This information, along with wind and temperature data, is transmitted to recording instruments located at the base of the tower. (See p. 49.)



CONTROL
2 hours

CONTROL
4 hours

CONTROL
12 hours

N-1-P
4 hours

N-1-P
12 hours

INTERFERING WITH PLANT ROOT RESPONSE TO GRAVITY

These are time-lapse shadow graphs of corn roots showing loss of geotropic sensitivity following treatment with minute concentrations of N-1 naphthylphthalamic acid. The seedlings were maintained in a horizontal position in a moist incubator for the indicated time. Downward bending was obvious in the controls after 1 hour and continued to increase until 12 hours. As is evident from the shadow graph, the treated seedling grew but did not know which way was down. (See p. 38.)



"FLYING" FLIES TO EXHAUSTION

One of the interesting techniques used to study the physiology of insect feeding, a subject of great practical importance to man's health and economy, is that of using a turntable to "fly" flies to exhaustion in order to deplete their carbohydrate reserves. They were then fed a highly stimulating but nonnutritional sugar to test their hunger reactions. (See p. 39.)

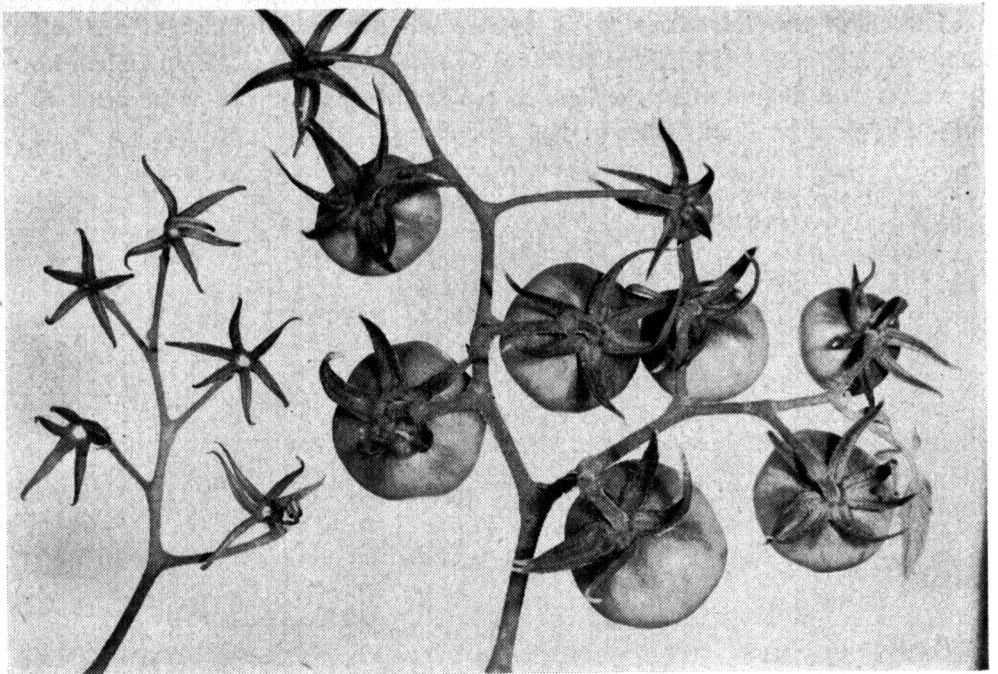
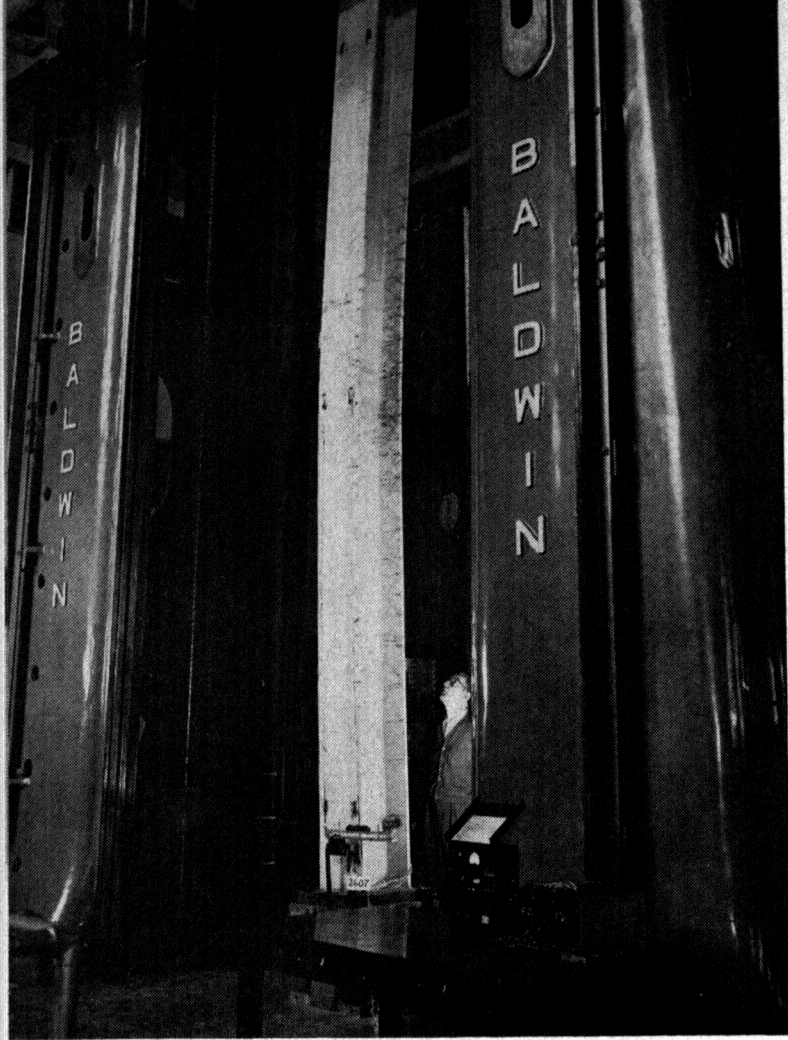


45,000-YEAR-OLD SKULL UNCOVERED DURING EXCAVATION OF SHANIDAR CAVE IN NORTHERN IRAQ

This 45,000-year-old skull belonged to an adult Neanderthal man and was uncovered during excavation of Shanidar Cave by a Smithsonian Institution-sponsored archeological expedition, partially supported by the National Science Foundation. The cranium had been struck by stones and displaced at the time of accidental death. The neck vertebrae can be seen in their original position. (See p. 43.)

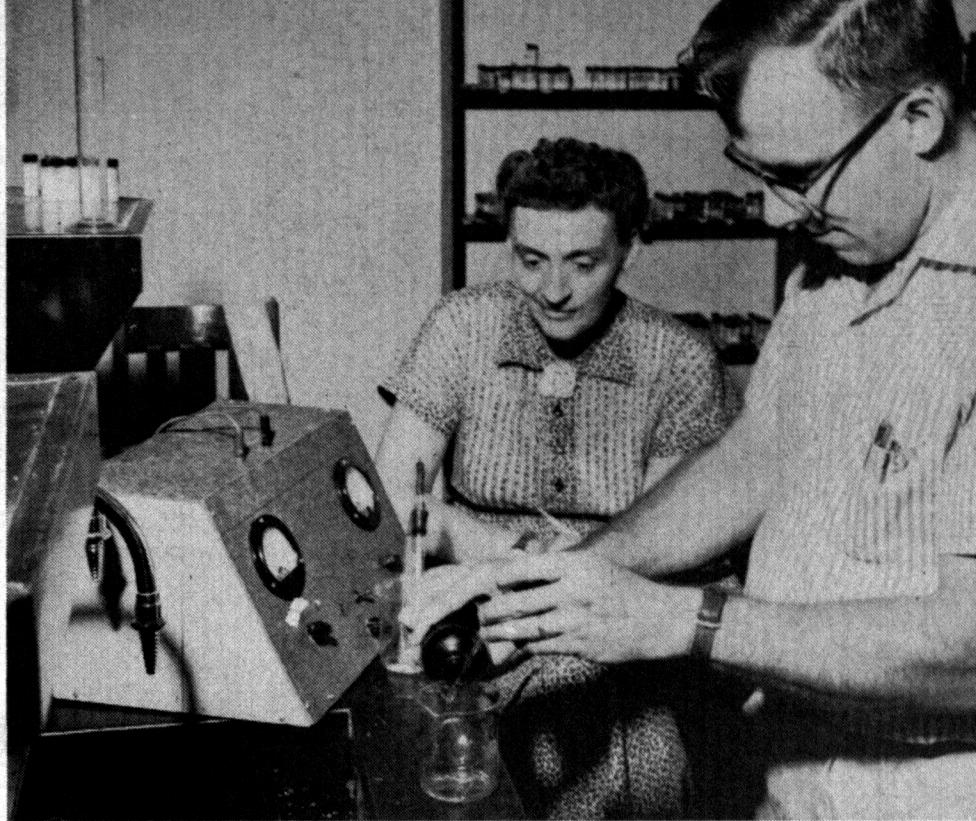
LARGEST HYDRAULIC TESTING MACHINE IN THE WORLD

Major contributions in the field of plastic and "ultimate" design of structures now revolutionizing the civil engineering profession have been made possible by means of the above-pictured hydraulic testing machine. This machine located at Lehigh University is capable of exerting pressures up to 5 million pounds per square inch. The Foundation in sponsoring research on the effect of residual cooling stresses and cold bending stresses upon the ultimate strength of rolled wide-flange columns. Note the bend in the column as it is about to buckle near its capacity load.



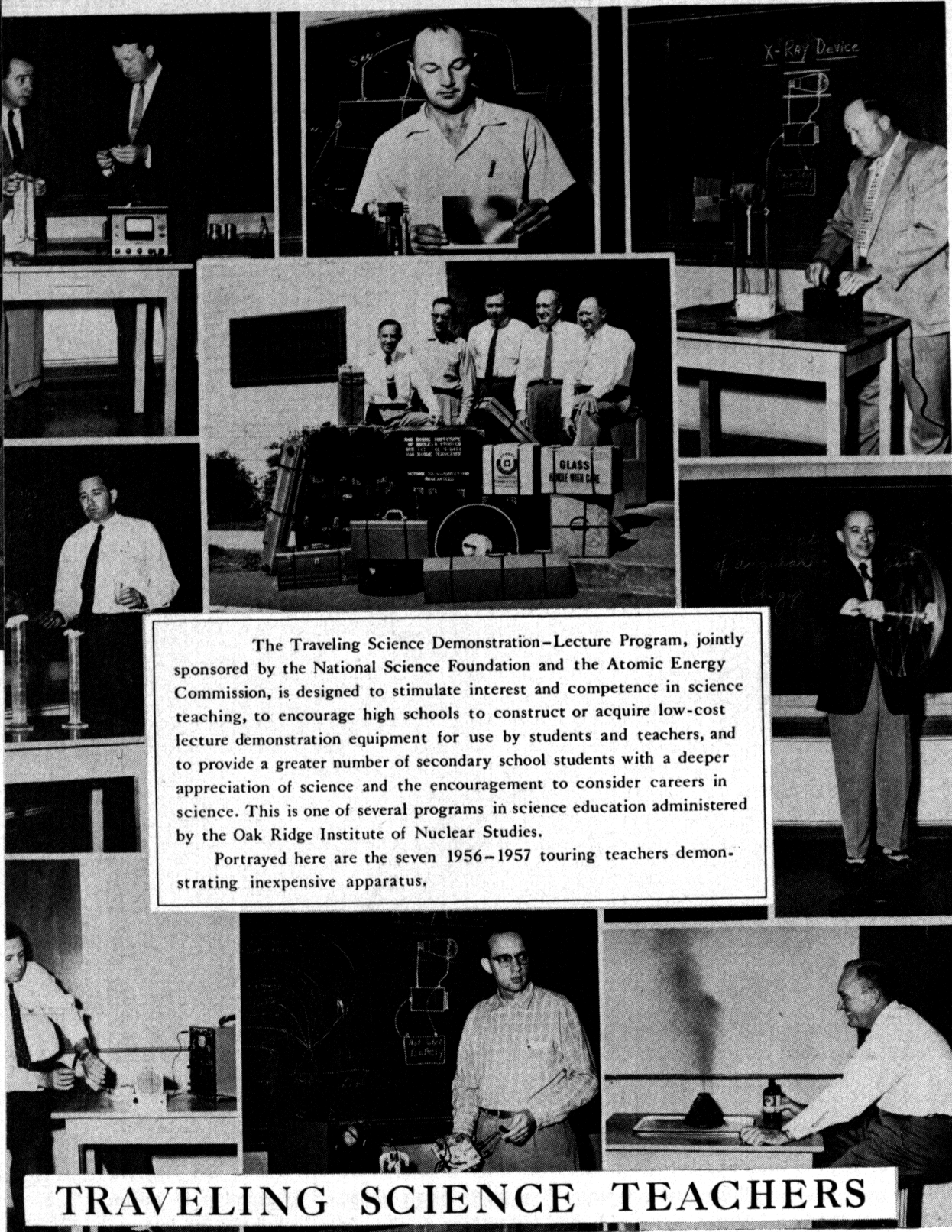
OVERCOMING SUMMER DORMANCY IN THE GROWTH OF TOMATOES

The tomato plant at the left shows the arrested fruit growth which normally occurs during the hot, bright Texas summers. The plant at the right, however, shows the effect of spraying a similar tomato plant with gibberellic acid. The condition of summer dormancy is broken, permitting normal growth. (See p. 37.)



RAISING THE STANDARDS OF HIGH SCHOOL SCIENCE TEACHING

Typical of the Foundation-supported program of summer institutes for improving the competence of high school and college teachers of science and mathematics was the institute held at Iowa State College last summer. The participants obtained knowledge in scientific subjects through lectures, symposia, and laboratory work. Also included was instruction in the building of training aids for use in the teachers' own classrooms. The upper photograph shows teachers using a pH meter constructed during chemistry laboratory sessions. The lower photograph shows other teachers with some of the models constructed during biology laboratory sessions. (See p. 71.)



The Traveling Science Demonstration-Lecture Program, jointly sponsored by the National Science Foundation and the Atomic Energy Commission, is designed to stimulate interest and competence in science teaching, to encourage high schools to construct or acquire low-cost lecture demonstration equipment for use by students and teachers, and to provide a greater number of secondary school students with a deeper appreciation of science and the encouragement to consider careers in science. This is one of several programs in science education administered by the Oak Ridge Institute of Nuclear Studies.

Portrayed here are the seven 1956-1957 touring teachers demonstrating inexpensive apparatus.

TRAVELING SCIENCE TEACHERS