



AERIAL PHOTOGRAPHY—The giant 200-inch lens camera developed by the Army Air Forces at Wright Field takes pictures from 30,000 feet in the air.

AERONAUTICS

Rocket Engine Powers XS-1

Engine has four units, each of which produces a static thrust of 1,500 pounds. Alternate engine will be used in tests of plane, in attempt to fly faster than sound.

See Front Cover

► **POWER** for the Army's Bell XS-1, a plane designed to beat the speed of sound, will be provided by rocket engines built by Reaction Motors, Inc., it was revealed to the American Rocket Society by Harry W. Burdett of that company. The U. S. Army Air Forces picture on the cover of this *SCIENCE NEWS LETTER* shows the Bell XS-1 in flight.

The plane, now at the Army Muroc Flight Test Base, California, has proved its air-worthiness as a glider after being towed aloft by other aircraft and released at high altitudes. It has now been tested under its own power at medium speeds; later the attempt will be made to travel faster than sound, 760 miles at sea level.

The plane is designed to fly at a top speed of 1700 miles an hour at an altitude of 80,000 feet. It is not a military airplane, but a piloted flying research laboratory to determine the effect of transonic and supersonic speeds on an

aircraft. It is the product of a cooperative program of the Army Air Forces, Bell Aircraft Corporation, and the National Advisory Committee for Aeronautics.

The details of the rocket engine for the XS-1 were not revealed by Mr. Burdett. He did, however, describe a similar engine built for the U. S. Navy. This is the Reaction Motors model 1500N4C which is a 6,000-pound thrust engine operating on liquid oxygen and a mixture of ethyl alcohol and water. It is constructed of welded stainless steel and weighs less than 210 pounds.

The Army states, however, the XS-1 engine consists of four units, each of which produces a static thrust of 1,500 pounds. Power output is controlled by selection of the number of cylinders to be fired at the same time.

In the first tests to be made under its own power, an engine of alternate design will be used, the Army states. The original power plant requires a fuel system wherein alcohol and oxygen are

forced into the burner chambers by a specially designed turbo pump. In the alternate design, a pressurized system is employed, with gaseous nitrogen being used to force the liquid oxygen and alcohol into the burners. As a consequence, the XS-1 with the alternate engine can operate at full 6,000-pound thrust for only 2.5 minutes.

Science News Letter, December 28, 1946

ASTRONOMY

Amateur Star-Lovers Form National Organization

► **AMATEUR** star-lovers from almost all parts of the country have united together in a national organization, the first of its kind in the country. This federation of amateur societies will be known as the Amateur Astronomers League.

The organization is expected to promote the science of astronomy and to encourage and coordinate the activities of amateur astronomical societies. It is believed that the league will foster observational and computational work, and opportunities for craftsmanship in the various fields of astronomy. It will provide a medium for correlating amateur activities with professional research.

At the convention of amateur astronomers in Detroit last summer it was suggested that a nation-wide federation of amateur astronomers be formed. In accordance with plans made at that time, the proposed by-laws were submitted to all known organizations, and came into being when 10 organizations accepted the by-laws.

Science News Letter, December 28, 1946

BIOLOGY-MATHEMATICS

Paris Doctorates Given Two Americans

► **TWO AMERICAN** scientists were honored with the prized degree of Doctor Honoris Causa by the University of Paris at the celebration of that institution's 50th anniversary of its reorganization. Those receiving the degree were:

Dr. Herbert M. Evans, director of the institute for experimental biology of the University of California, discoverer of the growth hormone and vitamin E.

Dr. Marston Morse, professor of mathematics at the Institute for Advanced Study, Princeton, N. J., who is known for his theory of analysis in the large.

Other Americans holding this degree are Dr. Albert Einstein and Dr. Robert A. Millikan.

Science News Letter, December 28, 1946