AERONAUTICS

Ram Jet Planes by 1966

➤ PASSENGER PLANES powered by ram jet engines and capable of speeds reaching 1,900 miles per hour will be produced in France within the next ten years.

This was the optimistic prediction made by a French rocket expert at a conference at the German Research Institute for the Physics of Jet Propulsion, Freudenstadt, Germany. Jacques Dupin of the National Aircraft Construction Society of the North expects the planes will fly at two and one-half to three times the speed of sound and at altitudes of from 60,000 to 90,000 feet.

He also reported that turbojets would assume a "secondary role" in some airplanes in the "near future," and would be used as boosters for the ram jet-powered aircraft.

Atomic Rockets Foreseen

➤ ATOMIC ROCKETS using light elements propelled with great heat will be more efficient than the liquid-fuel rockets used in high altitude research today, it was predicted by Dr. Eugen Sanger, director of the German Research Institute for the Physics of Jet Propulsion.

Although there is no practical application of this type of rocket at the time being, Dr. Sanger is strongly convinced of its feasibility.

They would enable higher exhaust speeds than chemical propelled rockets for the same temperature in the combustion chamber.

"The great advantage of the thermal atomic rocket will be that one can use two different substances, one for energy production and the other for exhaust," he said. "In the chemical-propelled rocket, both are inevitably the same."

Exhausted gases in a chemical rocket have a high molecular weight, while in a thermal atomic rocket, any gas with a low atomic weight, like hydrogen, could be used.

The lower atomic weights would mean faster exhaust velocities and, therefore, greater top speeds for rockets within the temperature range that can be handled in combustion chambers.

Airplane Boosters

➤ A STARTING DEVICE for airplanes, the hot water rocket, which produces thrust by emitting steam from a high-pressure vessel through an exhaust nozzle, was described at the meeting.

Dr. Christian Seebohm, the German Minister of Transport, said German research had reduced the operating costs of the hot water rocket from $25 per ton per second to 12 cents per ton per second. This will probably be decreased still further to two cents.

W. Michely of the Institute, who made the calculations and carried out experiments with this new take-off assistance, is convinced hot water rockets can compete with solid and liquid-propelled boosters in every respect.

He expects the actual fuel expenditures to be almost a fiftieth of that of other liquid-propelled rockets.

Although some early experiments were done on hot water rockets during World War II by a research team in Germany, this is the first time reliable information has been gained on the feasibility of this type of booster.

The scientists concerned with the project do not suggest, however, connecting hot water rockets with the airplanes for easing their take-off. Their idea is to put the plane onto a wagon, which would be accelerated by hot water rockets up to a velocity where ram jets could take over. The plane would then take off, leaving the wagon behind.

French Research Rocket

➤ THE FRENCH liquid-propelled research rocket "Veronique" has reached an altitude of 81 miles, the conference was told.

The rocket development center at Vernon, France, reported the rocket, designed to carry scientific instruments, is propelled by a mixture of nitric acid and alcohol.

A modified model of the "Veronique" is expected to reach an altitude of 162 miles.

The U. S. Army's Corporal rocket has gone as high as 250 miles.

Science News Letter, February 25, 1956

MEDICINE

Antibiotic Fights Resistant Diseases

➤ AN ANTIBIOTIC that fights diseases resistant to older antibiotics has been discovered.

The new antibiotic, trade-named Bryamycin, was found by Bristol Laboratory scientists in New York in soil from Hawaii.

In laboratory tests, Bryamycin was found to be active against gram-positive bacteria that cause such diseases as pneumonia, meningitis and endocarditis. Two deadly germs the new antibiotic fights are *Micrococcus pyogenes* and *Diplococcus pneumoniae*, both of which have developed strains resistant to older mold remedies once effective against the diseases.

In reporting the discovery, M. J. Cron, a Bristol scientist, said mice were protected against streptococcal and diplococcal infections, whether the antibiotic was given 18 hours before or six hours after the infection.

The Bristol research team included D. F. Whitehead, I. R. Hooper, B. Heinemann and J. Lein.

Science News Letter, February 25, 1956

• RADIO

Saturday, March 3, 1956, 2:05-2:15 p.m. EST

"Adventures in Science" with Watson Davis, director of Science Service over the CBS Radio Network. Check your local CBS station.

Dr. Walter O. Roberts, director of the High Altitude Observatory of the University of Colorado, Climax, Colorado, will discuss "The Halo of the Sun."

GEOPHYSICS

Italians to Propose European Satellite

➤ THE ITALIAN ROCKET SOCIETY will propose to the European nations that they sponsor an earth satellite program.

The proposal will be made at the annual convention of the International Astronautical Federation to be held in Rome in September, Dr. C. Partel, adviser to the Italian Rocket Society, told SCIENCE SERVICE.

Representatives of 20 countries will attend the one-week September meeting. Special attention will be given to the problems of space jurisdiction, Dr. Partel said.

It is a problem both the United States and Russia are facing in their satellite programming, he stated.

Other problems to be tackled are the technical aspects of both the U. S. satellite project and a manned flight to the moon.

Science News Letter, February 25, 1956

BIOLOGY

Man-Killing Jellyfish Is Right- or Left-Handed

➤ THE PORTUGUESE MAN-OF-WAR is either right-handed or left-handed.

The difference, which possibly helps the giant, man-killing jellyfish to survive, is reported in *Nature* (Feb. 11) by Drs. A. K. Totton of the British Museum, London, and G. O. Mackie of the University Museum, Oxford.

Under the influence of the wind, the British scientists state, the left-handed jellyfish moves to the right of the downward direction and the right-handed one to the left. This movement in only one direction with the wind, they state, has survival value in that it prevents an entire brood from washing up on shore.

At birth, Drs. Totton and Mackie explain, it seems the two forms, which are alike in every other way, divide almost equally between right- and left-handers.

Originally, it was thought the Portuguese man-of-war in the Southern Hemisphere mirrored the one in the Northern Hemisphere, thus accounting for the right- and left-handedness.

It has been found, however, Drs. Totton and Mackie state, "that the proportion in which the two forms are found varies in particular localities not according to the hemisphere but according to the position of adjacent land and the direction of the wind."

Science News Letter, February 25, 1956