



SPACE

## Miniature Laboratory Will Probe Life on Mars

➤ A FULLY miniaturized space laboratory, shown unfolding as it would after landing on Mars, has been developed to determine if life has existed or exists on the Martian surface.

Called the Automated Biological Laboratory by its developer, the Space and Re-entry Systems Division of Philco-Ford Corporation, Newport Beach, Calif., the space capsule is designed to conduct a series of highly sophisticated tests under on-board computer command or under command from earth scientists via radio link.

The top photo in this simulated landing shows ABL just after impact.

The second shot shows ABL after it has deployed its legs and is preparing to deploy its mast and other scientific equipment.

In final sequence, ABL has raised the mast, which also contains photographic and other sensing equipment, and has deployed devices which can sample the soil immediately surrounding ABL or from ranges as distant as 1000 feet.

Note sampling device on pulley at top of mast and sampling device prepared to make tests on soil on right side of capsule.

(Photographs by Ford-Philco.)

MEDICINE

## Another Aortic Valve Ready for Heart Patients

➤ ANOTHER MAJOR aortic heart valve has been developed by three open-heart surgeons at Georgetown University Medical Center, Washington, D.C.

The heart valve, culminating eight years of research, is known as a "unit tri-leaflet valve." As its name suggests, the new valve is a device which appears to be three leaves. It can be sewed into the human heart to replace a diseased or disabled valve, that part of the heart which regulates the outflow of blood.

Its developers were Drs. Charles A. Hufnagel, John F. Gillespie and Peter W. Conrad.

Made in a single unit, the tri-leaflet valve is easy to insert and has a high degree of reliability of closure to prevent blood from gushing back into the heart, Dr. Hufnagel said. It also diminishes the threat of thrombosis because of the development of "Hepacone," an anticlotting chemical.

The coating on the new valve is siliconized rubber, impregnated with Hepacone. Experiments have demonstrated that the coating prevents clotting successfully in all valves, thus eliminating the major cause of heart failure, the researchers said.