



UNIFORM FOR STRATOSPHERE—Dressed in protective clothing for the extreme temperatures encountered during a manned flight to the stratosphere are Lt. Comdr. M. L. Lewis, U.S.N., left, and M. D. Ross. Under the Office of Naval Research Stratolab program, a laboratory in the stratosphere is provided for observers to perform research that cannot be done by other means. The men are seated in a fiberglass basket that attaches to a plastic balloon for the high altitude flights.

SURGERY

Coronary Heart Attack

➤ AN OPERATION to help 10% to 20% of the victims of a coronary heart attack, such as President Eisenhower suffered last year, was announced by Dr. Alan Thal of Minneapolis at the American Heart Association meeting in Cincinnati.

The operation detours blood around a clot in the coronary, or heart, artery. Such a clot stopping the blood supply to part of the heart muscle can cause the familiar heart attack. The operation offers a new approach to the problem of getting more blood to the affected part of the heart muscle.

To by-pass the blocked segment of the artery, Dr. Thal grafts an artery from another part of the chest. So far he has performed the operation only on dogs. Studies six and seven months after the operation show about half of the arterial detours still open.

If such operations become feasible in humans, they will succeed only, Dr. Thal stressed, if the obstruction in the coronary artery is confined to a single short segment and the rest of the coronary network is healthy.

This is probably the situation in about 10% to 20% of human cases of coronary heart disease.

In other cases the coronary shutdown is associated with generalized hardening of the arteries. This would rule out benefit from the by-pass grafting.

In an effort to develop an alternative route to the heart for supplies of oxygen and food carried by the blood, Dr. Thal tried embedding one of the body's numerous rib muscles, together with its extensive capillary network, in the big pumping muscle of the heart.

Preliminary findings in dogs, he reported, show that the small vessels of the two cut surfaces readily link up with each other, opening many new channels for nourishing the heart.

To make the operations feasible for humans, the surgeons must be able to locate exactly where in the coronary system the obstructing clot occurred. Dr. Thal described a technique for getting X-ray pictures of the heart's arteries with fine enough detail to make this possible.

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An *International Cloud Atlas* will soon be published in two volumes, one having some 200 pages of text and the other 247 photos.

A low-cost AM radio receiver, which by the flick of a switch becomes an automatic air attack warning device, is now available.

Silicosis, a lung disease caused by inhalation of silicate or quartz dust, continues to be a significant health problem.

ENDOCRINOLOGY

Tell Early Pregnancy By Hormone Pills

➤ PREGNANCY can be diagnosed as early as the first week after a woman suspects she is pregnant by a simple test made with hormone pills.

The test was accurate in every one of 62 cases of pregnancy. It ruled out pregnancy in every one of 32 women, Dr. G. Douglas Matthew of the University of Edinburgh, Scotland, reports in the *British Medical Journal* (Oct. 27).

On each of two days the woman being tested takes five tablets, or pills, containing two female hormones, progesterone and estrogen. If bleeding follows, she is not pregnant. In the 32 found non-pregnant by the test, the bleeding occurred in 21 within one week.

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CARDIOLOGY

Heat, Humidity Make Heart Work Harder

➤ SCIENTIFIC EVIDENCE that heat and humidity make even healthy hearts work harder was presented by Drs. George E. Burch and Albert Hyman of New Orleans at the American Heart Association meeting in Cincinnati.

The added burden to a sick heart may be serious, they pointed out.

Healthy hearts, however, work harder as heat and humidity increase, showing their inherently greater capacity.

In the tests three healthy persons and four with mild to moderate heart disease rested on comfortable beds while temperature and humidity were gradually changed from 73 degrees Fahrenheit and 60% relative humidity to 111 degrees Fahrenheit and 86% relative humidity.

In every one of the seven, the volume of blood pumped by the heart and the output per heart beat increased as the atmosphere got hot and humid.

The increases in the healthy persons ranged from about five to 20 liters per minute. In those with heart disease the increase ranged from five to ten liters.

One of the healthy men had a relatively small increase that may have been the result of acclimatization, since he worked in a boiler room that was even hotter than the experimental room.

A person lying flat in bed can increase his heart's work without exercise and without movement if atmospheric conditions change, the doctors said.

"Relatively mild exercise in a hot and humid environment would be expected, from these studies, to produce more cardiac work than strenuous exercise in a cool and dry environment," they said. "A balmy climate, with adequate consideration of physical exertion and air-conditioning, appears to be most conducive to cardiac rest."

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