

GENERAL SCIENCE

"Guinea Pig Club" for Human Volunteers

► "GUINEA PIG CLUB" is the name given informally to a new national medical organization formed in Chicago.

Membership will be limited to those men and women, whether doctors, students or non-professionals, who have ever served in any way as "guinea pig" or human test material for research leading to better health and longer life for mankind.

The purpose of the organization is not for recruitment of volunteers but for education. Plans include meetings at which papers will be presented describing experiences and results of "guinea pig" service. Citations or some form of honorary recognition for outstanding volunteer service are also planned.

An activity of the group will be to publicize the codified rules now in effect for the conduct of experimental procedures on humans.

At the meeting of the first chapter, at the headquarters of the National Society for Medical Research in Chicago, a committee to organize the club on a national basis was appointed under the chairmanship of Dr. Anton J. Carlson of the University of Chicago.

"Walter Reed Volunteers" was selected as the formal name of the organization, honoring the volunteers who helped Walter Reed and associates discover that yellow fever is spread by mosquitoes.

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TECHNOLOGY

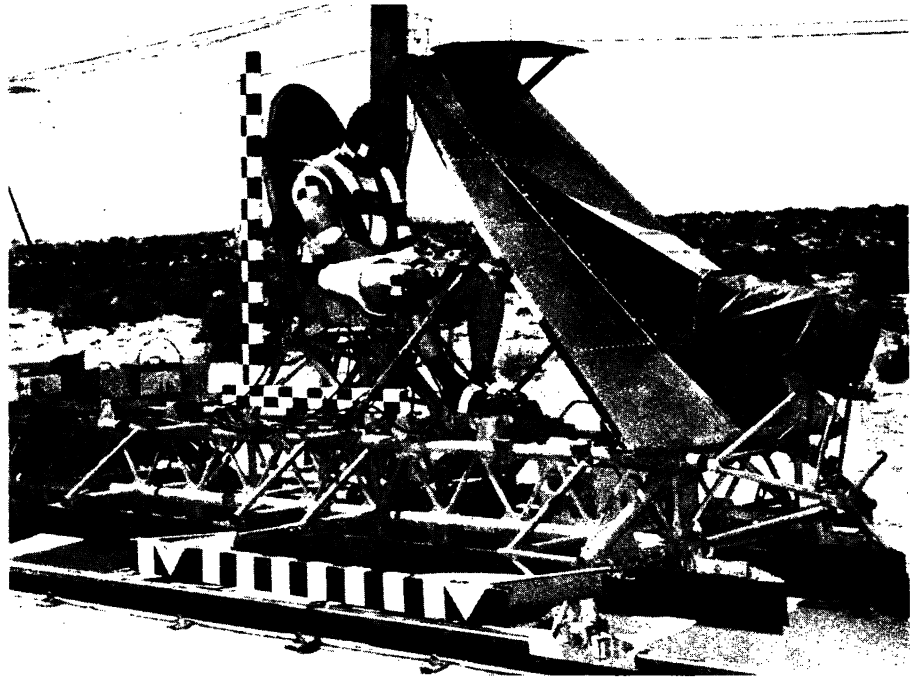
Combat Soldiers Get Hot Bath by Field Sterilizer

► MR. COMBAT SOLDIER in Korean front areas can now get an outdoor shower bath with sterilized warm water with the aid of a mobile trailer unit that can be towed by a jeep. Any local water supply may be used.

This small size, two-wheeled trailer, total weight less than two tons, picks up water from a nearby river or tepid pond, heats it to a scalding temperature to kill germs and other organisms, cools it to a comfortable bathing temperature and delivers it to 24 shower heads for the bathers.

A gasoline engine is used to pump the water and deliver it to the shower jets. Oil is normally used for fuel for the heating unit that does the sterilization, but any type of liquid fuel can be substituted. It requires about 14 gallons of fuel an hour. The device delivers water to the showers at a rate of 43 gallons a minute. Baths are ready for use about 20 minutes after the unit is parked beside the water supply.

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CLUB CANDIDATE—Eligible for the newly formed "Guinea Pig Club" is Maj. John P. Stapp, U. S. Air Force, shown here just about to subject himself to gravity forces of 45 G, the highest known voluntarily encountered by a human. Maj. Stapp is strapped into a rocket-propelled decelerator sled which reaches a speed of 170 miles per hour. He is an aero-medical scientist of the Air Research and Development Command.

AVIATION MEDICINE

Weight Loss in Space

"Possibility that weightlessness is followed by a kind of space-sickness which would easily incapacitate the crew of a space ship" cannot be excluded.

► MAN MAY soon have to contend with a new disease—a sort of occupational ailment. This is "space-sickness."

It may come from the weightlessness to be experienced by crews of space ships.

We cannot exclude "the possibility that weightlessness is followed by a kind of space-sickness which would easily incapacitate the crew of a space ship," said Dr. Heinz Haber, of the Department of Space Medicine at the Air Force School of Aviation Medicine, Randolph Field, Tex.

Dr. Haber was one of the speakers at the symposium on space travel held at the Hayden Planetarium in New York.

Dr. Haber said that space-sickness might result when the evidence of a crew member's position that he perceives with the eye does not correspond with the evidence he perceives through the effect of position and of active and passive movement of the body. In a state of gravity, he pointed out, these correspond. Without weight, they are in disharmony.

Recent investigations, he said, have revealed that certain forms of seasickness can be induced by this disharmony.

Weightlessness is already with us, Dr. Haber pointed out. Pilots of modern, high-altitude, fast-moving planes begin to experience reduction or lack of body weight in certain maneuvers, although, so far, this has not lasted more than one minute at the most.

Space-sickness is not the only hazard crewmen who explore the heavens will have to face. Dr. Fred L. Whipple, chairman of the department of astronomy at Harvard, another symposium speaker, pointed out that meteors might pierce thin skins of space ships.

Dr. Whipple advocated "meteor bumpers" to lessen the danger from meteors. The bumpers would consist of an extremely thin outer skin, separated from the surface he said, would explode the meteor, and distribute the force over a wider area of the space ship skin.

The astronomer estimated the chances of hitting meteors in space as being one in 5,000 in a 24-hour trip.

But if the trip to Mars and back took 1,000 days, the chances of being hit by a meteor become one in five. And, further, Dr. Whipple warned, there may be many more meteors than we think.

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ASTRONOMY

Spot Two New Sky Objects— Jupiter's Moon and a Comet

► TWO NEW objects have been spotted in the sky. One is believed to be the twelfth moon of Jupiter. The other is the tenth comet to be discovered this year.

Dr. Seth B. Nicholson of the Mount Wilson and Palomar Observatories in California found the supposed moon of Jupiter on photographs taken with the 100-inch Hooker telescope. Estimated diameter of the object is about 15 miles, approximately the same as the last two of Jupiter's moons, X and XI, also discovered by Dr. Nicholson.

Comet Arend, a faint object in the southeastern sky, was first spotted on Oct. 4 by Dr. S. Arend of the Royal Observatory in Uccle, Belgium. Of magnitude 14, it was then in the constellation of Pisces, the fish. It can be photographed only with larger telescopes. Word of the new visitor from space was cabled by Mlle. J. M. Vinter-Hansen of Copenhagen to Harvard College Observatory in Cambridge, Mass., clearing house for astronomical news in the western hemisphere.

Jupiter's supposed satellite has been photographed five times so far, but astronomers will not be positive that it really belongs to Jupiter until they have tracked it for about a month or until they have plotted its path through the sky. If it is the twelfth moon of Jupiter, Dr. Nicholson will rank with Galileo Galilei as the only astronomer who has discovered four of Jupiter's satellites. He found one in 1914 and two more in 1938.

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INVENTION

Walk-In Bath Tub Is Designed for Old Folks

► FOR THE convenience of old people and others who find difficulty in stepping over the side of a bathtub, is a "walk-in" tub which brought patent 2,570,053 to Arthur E. Fowler and Albert Dressler, Jr., both of Elmira, N. Y.

There is a door on the side of the tub. When closed it is leak-proof. No water can be put in the tub until the door is closed, and the door can not be opened until the used water is drained out. The door is closed and opened by hand, but a float in the drain controls the mechanism.

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SURGERY

Surgeons Button Up Hearts

Hearts with holes in them can now be buttoned up, using nylon and lucite buttons that are halves, one of which fits inside the hole, the other snapping to it.

See Front Cover

► SURGEONS can now button up hearts that have holes in them. The holes in such cases are in the wall dividing the two upper blood chambers of the heart, called auricles. These holes are present at birth and are probably the most common of heart malformations in young adults. They can cause a blue baby condition but are not the only cause of such a condition.

The nylon and lucite buttons for permanently closing these holes were shown by Drs. Charles A. Hufnagel, John F. Gillespie and W. Leonard Weyl, of Georgetown University School of Medicine, at the meeting of the Medical Society of the District of Columbia in Washington.

Each of these buttons is made in halves which fit together something like a snap hook. They are made slightly larger than the hole to be closed. One half is pushed through the heart hole by a special instrument, and then is pulled back so that teeth on the flat side of the button catch in the tissue of the heart's dividing wall, or septum. The other half button is then fastened to the first half, and the instrument withdrawn.

A plastic ball valve for remedying another heart condition was shown by the same Georgetown surgeons.

These plastic devices are pictured on the cover of this week's SCIENCE NEWS LETTER. Also shown is the instrument used to insert in the heart's holes. The surgically-gloved hand is that of a collaborator in Dr. Hufnagel's laboratory.

MEDICINE

Artery Hardening Clue

► EVIDENCE THAT cholesterol and other fatty substances in the blood will deposit in the walls of normal human arteries is reported by Dr. Sigmund L. Wilens of Bellevue Hospital and New York University College of Medicine in the journal, SCIENCE (Oct. 12).

Atherosclerosis, a particularly dangerous form of hardening of the arteries, has for some years been attributed to deposits of fatty substances in the artery walls.

Artery walls, Dr. Wilens finds, act as a filter, letting fluid through but keeping in the bore of the arteries most of the fatty material. Some of this gets into the artery wall but is stopped by the elastic tissue within the wall.

Some 200,000 persons are living today with a valve on the aorta that does not close. The aorta is the biggest artery of the body, leading directly from the heart. It opens for blood to be pumped into the body. When it fails to close, much of the blood rushes back into the heart.

This condition, called aortic regurgitation, is the fourth or fifth commonest type of heart trouble today. In order to pump blood when the aortic valve is faulty, the heart must work harder and harder.

To remedy this, the plastic ball is fastened into the aorta with nylon rings. When the blood is pumped into the big artery, the ball valve moves forward to let the blood through. But if the blood starts to rush back into the heart, the ball valve moves back and closes the opening.

The aorta sometimes balloons out in a dangerous condition called an aneurysm. The walls are thin at this point and there is danger of rupture, like a tire blowing out. Sudden death follows. To remedy this, the Georgetown surgeons may wrap a piece of plastic film around the aneurysm.

The plastic sets up irritation which leads to scarring and thickening of the aorta wall.

Or they may cut out the ballooning part of the aorta and replace it with a piece of preserved artery from another person or with a permanent tube of plastic. Sometimes they put fine stainless steel wire into the aorta to form a mesh which the blood must spray through. This reduces the pressure on the thinned wall and may lead to clots on the wall which would thicken it.

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Most of the cholesterol in the blood fails to get inside the artery walls, Dr. Wilens thinks, because it is linked with large molecules of protein. The part that gets in probably is united to small protein molecules or is entirely disassociated from protein.

Dr. Wilens' experiments were made with pieces of large arteries removed within 24 hours after death from healthy young people who died suddenly in accidents. These pieces of artery were rigged as filters and serum from human blood donors and patients was filtered through.

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