



**FOUR-PARACHUTE BRAKE**—Performance details of this Handley Page Victor jet bomber are still secret but five of them were recently seen in England for the first time by the public. Four parachutes are used to brake the crescent-wing, high-altitude, long-range strategic bomber's landing.

## PHYSIOLOGY

## Find Brain's Pain Center

► A CENTER for pleasure and one for pain or discomfort have been located in the brain.

The locations were reported by Dr. Jose M. R. Delgado and his aide, Ben Bursten, of Yale School of Medicine, New Haven, Conn., at the meeting of the Federation of American Societies for Experimental Biology in Atlantic City, N. J.

The pleasure and pain centers were found in monkey brains. Presumably human brains have the same centers in about the same locations. Knowledge of these areas as well as of areas related to emotions is important, Dr. Delgado pointed out, because it may lead to better understanding and treatment of mental disturbances in humans.

The pleasure areas in the monkey brain are the septum and putamen deep in the middle of the brain. The discomfort or pain area is the orbital cortex of the frontal lobe.

Other areas of the brain were found to be neutral either to pleasure or discomfort.

The Yale scientists used six monkeys in their research. By means of electrodes thinner than a human hair, implanted within the various brain areas of each monkey, the scientists were able to stimulate the different areas electrically, and observe and record the reactions of the animals.

The monkeys were free to move about in a cage equipped with an especially designed floor. When the monkey moved about on one part of the floor, the animal automatically received electrical stimulation in the brain. The other half of the floor was a "relief area" with no stimulation, and the monkey learned to move to that area to avoid any brain stimulation.

The Yale scientists, using electrical computers to record the monkey's movements during the tests, discovered the monkeys preferred to go to the "hot" side of the floor when electrical stimulation was being aimed at the septum and putamen area, which are the pleasure areas.

In contrast, the monkeys quickly jumped for the "relief" part of the floor when stimulation was aimed at the orbital cortex of the frontal lobes, the discomfort area.

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## TECHNOLOGY

## Simple Oxygen Mask For Airliners Developed

► A SIMPLE and almost foolproof oxygen mask for airline passengers has been developed, the Aero Medical Association meeting in Chicago was told.

The safety device is designed to supply 100% oxygen to passengers in the event of pressurization loss at high altitude, its developer, John J. Swearingen of the CAA Medical Research Laboratory, Columbus, Ohio, told the Association.

The adhesive type oxygen mask is made so that:

1. It cannot be put on upside down by mistake.
2. It will fit, with one size, the different facial contours of adults and children.
3. It can deliver 100% oxygen.
4. It can be attached without straps, bands or buckles.
5. It cannot be dislodged by head movement or perspiration.
6. It is comfortable, lightweight, inexpensive and disposable.

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## NUTRITION

## Pump Makes It Easier To Tube Feed Patients

► TUBE FEEDING, a somewhat unpleasant but necessary method of getting nourishment into some patients who cannot or will not eat, is reported easier for the patient as well as more satisfactory medically when a new feeding pump is used.

Patients can sit up in bed and read or watch television while taking nourishment pumped through a tube inserted through a nostril and down into the stomach or intestines.

The pump can deliver precise quantities of food of desired consistency over long periods of time or fairly rapidly. A quart of liquefied food can be fed slowly and steadily over a period of ten hours, or the same amount can be fed in half an hour if the patient's system can assimilate it.

The pump is the result of cooperative work by Dr. James Barron, associate surgeon at Henry Ford Hospital, Detroit, who pioneered in perfecting the new feeding process, and the Engineering Division of the Chrysler Corporation, which designed the food pump.

Plans and manufacturing rights have been turned over to the hospital by Chrysler Corporation. James C. Zeder, corporation vice president, made the presentation in behalf of the auto company.

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## SURGERY

## Can Graft Treated Bones Across Different Species

► BONE BANKS for humans can be enlarged in case of emergency by addition of especially treated bones from cows or other animals.

The method of treating the bones and success in cross-species grafting of the treated bone were reported by Lt. Lloyd A. Hurley and Cdr. Fred L. Losee of the Naval Medical Research Institute, Bethesda, Md., at the meeting of the Federation of American Societies for Experimental Biology in Atlantic City, N. J.

The bones for grafting were boiled with ethylenediamine in a special apparatus and then treated with absolute alcohol. This removed the proteins, sugars, starches and fats from the matrix of the bone. These are the substances believed to cause ill effects in cross-species grafting.

The treated bone is very white, easily shaped and extremely porous. It is not subject to decay and can be easily sterilized by boiling or autoclaving.

The extreme porosity of the treated bone and absence of dead organic debris facilitate the recipient's blood getting in and starting the rebuilding of new bone.

Bone from rats, cows and humans treated in this way was successfully transplanted into the hind legs of dogs with no ill effects and with successful takes of the grafts.

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