

# medical sciences notes

## TUBERCULOSIS

### More than 30,000 patients hospitalized

Tuberculosis has been declining as a killer for many years because of effective drugs and early treatment, but a survey shows that as of June 30, 1967, 30,028 beds in 348 hospitals were occupied by TB patients. The Public Health Service's Communicable Disease Center, Atlanta, Ga., reports that in the past four years there has been a reduction of 47 non-Federal and 14 Federal hospitals providing care for TB patients. Some were closed; some converted to other use.

## DEATH

### Uniform definition suggested

A new definition of death, written by a physician and a lawyer, is proposed in the May 6 issue of the *Journal of the American Medical Association*. Unless the legal and medical rules agree, a doctor, particularly in the transplant field, might be accused of murder.

M. Martin Halley, M.D., who is also a Doctor of Jurisprudence, and William F. Harvey, a Doctor of Jurisprudence, both at the Washburn University School of Law, Topeka, Kans., suggest this general definition:

"Death is irreversible cessation of all of the following: (1) total cerebral function, (2) spontaneous function of the respiratory system, (3) spontaneous function of the circulatory system.

"Special circumstances may, however, justify the pronouncement of death when consultations consistent with established professional standards have been obtained and when valid consent to withhold or stop resuscitative measures have been given by the appropriate relative or legal guardian."

An editorial points out that "whatever legal differences there are between medical and legal definitions of death, it seems clear that physicians rather than barristers must be the ones to establish the rules."

## TRANSPLANTS

### Pigs resemble humans

The structure of the pig's heart, blood vessels and digestive tract is anatomically similar to those of humans, and the animal is being studied with a view to understanding human physiology. Particularly interesting and easy to handle are miniature pigs.

It has been suggested by Dr. Christiaan Barnard, South African heart transplant surgeon, that pig hearts might be implanted in humans.

The University of Missouri at Columbia has received a grant for \$135,000 from the National Institutes of Health division of research facilities and resources to support research on 444 pigs to be studied during five years while biological criteria are established.

The award is one of four animal research grants totaling \$408,839. The other awards will be used by the University of Southern California, Los Angeles, on a study of germ-free animals; Duke University, Durham, N.C., to support a primate colony for study of genetics; and Dartmouth College, Hanover, N.H., for a one-year study on the estrous cycle of cats.

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## ARTHRITIS

### Knee brace to aid walking

As soon as fitting and adjustment of a new knee brace is perfected it will be commercially available to persons with severe arthritis that makes walking a torture.

The theories of stress and loading used to support structural beams have been applied to the human leg by University of Michigan engineers and physicians working together in a relatively new program of bioengineering.

The knee brace is an orthetic device, distinct from a prosthesis, which replaces missing limbs. The device permits normal movement of the knee while absorbing the body's weight at seven points on the leg, similar to seven loading points on a structural beam. The combination of the seven forces restores enough knee stability to enable arthritics to walk with relative comfort.

Robert C. Juvinal, professor of mechanical engineering, worked with Dr. Edwin M. Smith, associate professor of physical medicine and rehabilitation, in developing the knee brace.

To work in orthotics, Juvinal had to supplement his engineering background with a study of anatomy, including many hours spent dissecting cadavers with Dr. Smith "to find out more about the mechanics of the musculo-skeletal system."

## AUTOTRANSPLANTATION

### Ear stored in body

An ear, torn from a man's head in an Australian trotting race accident on Easter Monday, has been implanted in the victim by physicians at the Royal Perth Hospital, in the hope of attaching it later.

The physicians have sewn the ear on the inside of his abdomen, and the body has accepted it. Eventually it will be removed and grafted back after the fear of infection and tissue damage is over.

## CIGARETTES

### Czech Health Ministry fights smoking

With cigarette consumption rising to 22 billion a year in Czechoslovakia, whose population is 13 million, the health ministry has banned smoking in all movie houses, theaters and medical establishments.

At a meeting of the board and executive committee of the International Union Against Cancer in Geneva, Switzerland, Dr. Karlovy Vary reported on the anti-cigarette campaign. The ministry has set up a special organization for youth, the priority target. Publicity materials are going to newspapers and radio, emphasizing that youngsters who smoke don't do as well in sports as those who abstain.

The commission also says, for the benefit of older people, that it is never too late to stop.

Officials are reportedly being careful, however, to avoid creation of anxiety or cancerophobia.

Czechoslovakia is now first in Europe and third in the world, behind the United States and Canada, in cigarette consumption. Dr. Vary says Czech medical and allied professionals still need convincing that smoking is dangerous.