



**AID BIOCHEMICAL STUDIES**—Monkeys have always been one of the most valuable laboratory animals because their biochemistry most resembles that of humans. Here, Donald Tappan (left) checks the result of a nutritional experiment with Dr. C. A. Elvehjem at the University of Wisconsin.

automobile engines satisfactorily even under Arctic conditions were announced.

Work was advanced on methods for recording television programs on magnetic tape.

A way of preventing air pollution caused by ferromanganese blast furnaces by washing down the dust particles in the furnace gases was developed.

A "Walkie-Lookie," portable television camera for spot news coverage having a built-in power supply, was developed.

The transistor went into use in customer long distance dialing service.

An adjustable diesel locomotive was developed that can run on tracks ranging from the United States standard up to the widest gages in use.

Electronic scales buried under highways were used to weigh moving vehicles.

The British navy developed two new television cameras for underwater work, to be used in salvage and hull-inspecting operations in situations where divers can not be used.

#### MEDICAL SCIENCES

### Polio Vaccine Gets First Successful Trials

A vaccine against all three types of polio virus got its first trials on children with gratifying results in increasing protective antibodies in the blood.

Success in getting one polio virus strain to grow in developing chick embryos gave hope of another polio vaccine that could be given by mouth.

Gamma globulin from human blood can more than cut in half the likelihood of children getting paralytic polio, trials involving 55,000 children showed.

Discovery that the polio virus is in the blood for a few days before attacking brain and

nervous system increased hope for success with anti-polio vaccines and medicines.

A fairly simple and inexpensive test for polio infection and immunity was announced.

Evidence that only three different polio viruses exist was obtained.

Pyrimethamine, tradenamed Daraprim, was reported the most powerful anti-malaria drug yet known, acting as a suppressant cure, with the further advantages of being tasteless, odorless and cheap.

Primaquine proved effective in preventing relapses of malaria in returning Korean troops.

Isoniazid, synthetic chemical known by several trade and chemical names, was announced as effective in tuberculosis, although TB germs soon developed resistance to it, and as promising in preliminary trials in Hansen's disease, or leprosy.

Two chemicals, spermine and a protein of unknown identity, which together have a poisonous effect on tuberculosis germs, were found in blood serum and body tissues.

Discovery of an anti-TB germ substance in lymph nodes of tuberculous cattle was announced.

From behind the Iron Curtain (Poland) came news of three new anti-tuberculosis chemicals, hydroxamic acids named T 40, T 95 and T 139.

Successful birth control by pills made of the chemical, phosphorylated hesperidin, was achieved by 298 out of 300 couples.

The escape route of red blood cells from an Rh-positive baby to the blood stream of Rh-negative mothers during pregnancy was traced through fragile capillary junctions leaving red infarcts on the placenta.

The nerve-gas type insecticides such as Parathion, and probably the nerve gases too, can have their dangerous skin-penetrating power reduced through a new kind of emulsifier obtained when ethylene oxide is added to a phenol of high molecular weight.

An antidote to Parathion and some other nerve-gas types of insecticides, and maybe to the nerve gases themselves, was discovered in the scopolamine derivative, Buscopan.

The first successful antidote to beryllium poisoning was found in aurin tricarboxylic acid.

An artificial heart-lung machine was used successfully on a human patient.

A new filter device was developed by the Army Chemical Corps to detect and identify germs in the air in 15 hours instead of almost four days.

Ugly, painful keloids in wound and burn scars were successfully treated with the enzyme, hyaluronidase.

For the first time scientists succeeded in extracting from living tissue a water-soluble substance which can make fat.

Two hormones from the pituitary gland, oxytocin and vasopressin, were isolated in nearly pure form and, for the first time, separated from each other.

Synthetic production for the first time of a B vitamin, the phosphate form of pyridoxamine which may give scientists a chance to learn more about cancer and nutrition, was accomplished.

A new B vitamin, lyxoflavin, with growth stimulating effects for rats and relaxing effects in human high blood pressure patients was synthesized.

A new vitamin factor, called biocytin, has been made artificially.

Discovery that the conversion of carotene to vitamin A is impaired in experimental diabetes was announced and called the first step toward discovery of an agent to control premature aging of the arteries (arteriosclerosis) in diabetics.

A chemical test of saliva that tells whether a boy or a girl baby will be born was developed.

The first hereditary link with the boy-girl ratio in human births was found in blood observations.

Intravenous use of Fraction I (fibrinogen) from human blood to treat uterine bleeding during pregnancy was successful in seven cases.

Living animals have, for the first time, been studied in a weightless, or gravity-free, condition.

Discovery of the first antibiotic chemical capable of stopping trypanosomes, a protozoan family whose members cause deadly African sleeping sickness among other diseases, was announced.

A new chemical, dimethylamino-isopropylphenothiazine, that promises to allow human whole blood to be preserved for longer periods than now possible was reported.

Experiments gave hope that human blood red cells can be stored at very low temperatures for long periods of time and still be useful for transfusions.

Successful gland transplantation in humans, giving hope of sex rejuvenation, was achieved by use of fetal instead of adult tissues.

A new anti-rheumatism chemical, phenylbutazone, or Butazolidin, was announced.

The B vitamin known as pantothenic acid was reported needed by the body to manufacture cortisone.

Cancer cell spread, called metastasis, was produced experimentally in mice for the first time.

First steps toward a skin test for detecting cancer through changes in electrical resistance were taken.

A definite trend toward more leukemia, and slightly more mutational abnormalities in children of those residents of Hiroshima and Nagasaki who got large doses of irradiation from the atomic bombs has been found.

The one-celled parasites called amebas, which cause amebic dysentery, were grown in pure culture for the first time in medical history.