

flights of limited extent. Furthermore, the V-2's are extremely complicated and expensive. Consequently a small, relatively inexpensive rocket called the Aerobee was developed for use in carrying equipment into the upper air.

Leading research agencies primarily responsible for the rocket experiments are: the Naval Research Laboratory; the General Electric Company, under the sponsorship of the Army Ordnance Department; the Air Material Command of the Air Force; the Army Signal Corps Labora-

tories; Princeton University; and the Applied Physics Laboratory of Johns Hopkins University, under the sponsorship of the Navy Bureau of Ordnance.

Dr. Van Allen pointed out that all high altitude experiments to date have been made over the White Sands, N. Mex., Proving Ground. Before we begin to really learn about the upper air, he said, repeated flights with identical instruments must be made at different geographical locations, at different seasons, at different times of year.

Science News Letter, September 4, 1948

Dr. Elberg revealed that there was a rather high incidence of the disease among certain laboratory personnel during the experimentation, carried on during the war at the Army's Camp Detrick, Md., bacteriological warfare laboratories.

Airborne transmission was indicated in many of these cases. Frequently there were no accidents which could explain transmission of the disease on the basis of handling or drinking of infected material. Air and dust tests in the laboratory showed the organisms existed in these media, and strengthened the possibility of airborne transmission.

Brucellosis is a generalized infection marked by intermittent undulatory fever, malaise, cervical pain, headache, sweating, weakness and anemia. There are three types of the infection: porcine (swine); bovine (cow) and caprine (goat). The last was the first type reported, being discovered on the island of Malta.

The occurrence of swine type brucellosis is high among stockyard workers, and the three varieties are frequently found in the general population. While 27,299 cases were reported in the U. S. for 1940-46, scientists estimate the actual number of cases is much larger.

Science News Letter, September 4, 1948

MEDICINE

New Artificial Kidneys

Two methods for removing wastes from the blood when the kidney has stopped functioning, are presented. These devices simulate natural processes.

➤ **ARTIFICIAL** man-made kidneys can now be hooked onto the human body's blood vessels in an emergency to cleanse the vital fluid of wastes that would cause death.

Two artificial kidneys are being announced to the scientific world. One of these is a completely new type that is simply a sheet of cellophane sandwiched between two rubber pads.

This imitates the action of the natural kidney by allowing blood to pass through its "vessels" which in this case are grooves. On the other side of the cellophane another set of grooves in the rubber carry chemical solutions in the opposite direction. These snatch the impurities from the blood and return it, cleansed, to the body.

This new apparatus is reported to the journal, *SCIENCE* (Aug. 27) by Jack R. Leonards of Western Reserve University in Cleveland and Leonard T. Skeggs, Jr., formerly of Cleveland, now with the Crile Veterans Administration Hospital in Parma, Ohio.

Chemical solutions do the work which the kidney neglects because of disease or absence. They separate the sugar, salt and water in the blood, concentrate the waste products which are urine, and remove them.

They explained that this apparatus shows promise both as a laboratory tool and as an artificial kidney. It has the advantage, they declared, of being efficient, easily sterilized since the entire apparatus can be immersed in a laboratory pressure cooker, and of having a large surface through which solutions can be passed.

Another artificial kidney which filters the waste products in the blood through a cellulose membrane has been developed by three Canadian researchers. Dr. Gordon Murray, Dr. Edmund DeLorme, and Newell Thomas, of Toronto, report their developments in the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION* (Aug. 28).

A pump is used by this machine to remove by means of a tube the blood from the large trunk vein of the body, pass it through the membrane and into the opposite vein of the flank.

The membrane is subjected to a chemical bath while the blood passes through it so that the poisonous body substances can be removed. In addition, heparin, an anti-blood-clotting substance, is added.

The Canadian scientists report that the apparatus has been successfully used on patients and several days of treatment causes no ill effects.

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VETERINARY MEDICINE

Brucellosis Found To Be Transmitted Through Air

➤ **BRUCELLOSIS**, also called undulant fever and Malta fever, can be transmitted through the air, it is revealed in the *JOURNAL OF INFECTIOUS DISEASES* (Aug. 30).

A British scientist, Dr. David W. Henderson, and Dr. Sanford S. Elberg, of the University of California, reported that monkeys, mice and guinea pigs were infected by exposing them to an artificial cloud containing brucellosis organisms.

Infection by the drinking of infected milk or through the skin from the handling of diseased livestock are the only routes that previously had been scientifically demonstrated, though the air route was suspected.

The scientists said that man can probably be infected by the air route as well as animals, though this remains to be proved by definite evidence. Drs. Henderson and Elberg reported they were able to determine the concentration of *Brucella* organisms in the air needed to cause infection; and that it is probable that such a concentration would be present in stockyards during the slaughtering season.

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