MEDICINE

Test Drug on Human Polio

New sulfa drug, phenosulfazole, for the first time has been given to human victims of the disease to study its effect. Five research teams are cooperating.

➤ AN EXTENSIVE TEST of the new anti-virus sulfa drug, phenosulfazole, upon human patients suffering from infantile paralysis is underway through cooperation of five research teams in New York, Texas and North Carolina. This was announced officially by Columbia University.

Although no results upon human cases were reported, the new drug was stated to have "successfully halted a polio virus in the mouse" in a series of investigations at Columbia University and the Lederle Laboratories.

How for the first time a virus disease in mice was successfully attacked by a man-made chemical is being told in a scientific report by Dr. Murray Sanders, associate professor of bacteriology at Columbia, and his associates, appearing in the fall issue of TEXAS REPORTS ON BIOLOGY AND MEDICINE.

Because of the successful use in mice, the study of the drug's effect on actual cases of human poliomyelitis was begun. The groups now working are at the College of Physicians and Surgeons of Columbia University, the Medical Branch of the University of Texas, the Knickerbocker Hospital in New York City, the Jeff Davis Hospital at Houston, Tex., and the Bowman Gray School of Medicine at Wake Forest College, N. C. (*See SNL,* July 21).

Why victims of poliomyelitis did not receive the new medication during the "vicious poliomyelitis season" from which we are emerging is explained in a statement by Dr. Sanders.

"There are hundreds of families throughout the United States," said Dr. Sanders, "which have suffered terrible losses through death or paralysis of one or more of their members. The sole purpose of this statement is to assure these people that they have not been victims of professional neglect."

Dr. Sanders explained further that polio is a disease with tremendous clinical variability. To investigate properly the therapeutic value of a substance in poliomyelitis, he said, requires a test involving hundreds of cases of the disease studied in the most critical fashion.

"We do not know what effect Darvisul (trade name for phenosulfazole) has on human poliomyelitis," Dr. Sanders continued. "Premature claims for a 'polio cure' are not only unjustified but under present circumstances cruel."

"Drug No. 2," as it has been known since the mouse tests began in September, 1947, had three dramatic results in the mouse: 1. The drug cured in the early stages of the disease. 2. Mice that survived were immune to reinfection. 3. When the drug was given in a single dose orally, it prevented infection.

The drug does not act directly on the mouse virus, but appears to react on the tissue cell itself. This encouraged the researchers to intensify their efforts because it indicated that the compound would be able to change the physiology of the cell without destroying it, at the same time making it an unsatisfactory site for virus growth.

No ill effects were caused by the drug, although heavy doses (five grams per kilogram of body weight over five days) were given. This lack of toxicity is one of the most important qualities of the drug.

Associated with Dr. Sanders were the late Dr. Yellapragrada SubbaRow, Lederle director of research who died Aug. 10, and Mrs. R. C. Alexander, research assistant at Columbia.

Darvisul was the result of a program initiated by Dr. SubbaRow. As a first step, workers at the Calco Division, American Cyanamid Company, in Bound Brook, N. J., synthesized numerous compounds. The team responsible for the synthesizing of Darvisul was composed of Dr. M. E. Hultquist and Dr. Robert Parker.

Once the compounds were synthesized, they were sent to the Lederle Laboratories at Pearl River, N. Y. There, under the direction of Fritz Popken and Miss Kathleen Richards, scores of tests were used to determine whether Darvisul and the other compounds possessed anti-viral activity.

The synthetics which showed promise were then given to the College of Physicians and Surgeons, 168th Street, where Dr. Sanders and Mrs. Alexander tested them exhaustively against viruses which affected the nervous system.

The strain of virus selected for use in the study was a mouse virus originally isolated in 1940 at Columbia by Dr. Sanders and Dr. Claus W. Jungeblut.

Scientific therapeutic agents against true animal or human viruses have not heretofore been available.

Darvisul is a white powder which goes into solution only with difficulty. When it was realized in the early stages of the study that the powder was not sufficiently absorbed by the body of the animal, a sodium salt of the drug was made. This salt proved to be soluble, non-toxic and generally satisfactory as an injectable material.

The effect of the drug on 100 macacus rhesus monkeys infected intracerebrally with a human strain of poliomyelitis has also been studied, Dr. Sanders said. Results of this study will be published later.

Science News Letter, September 11, 1948

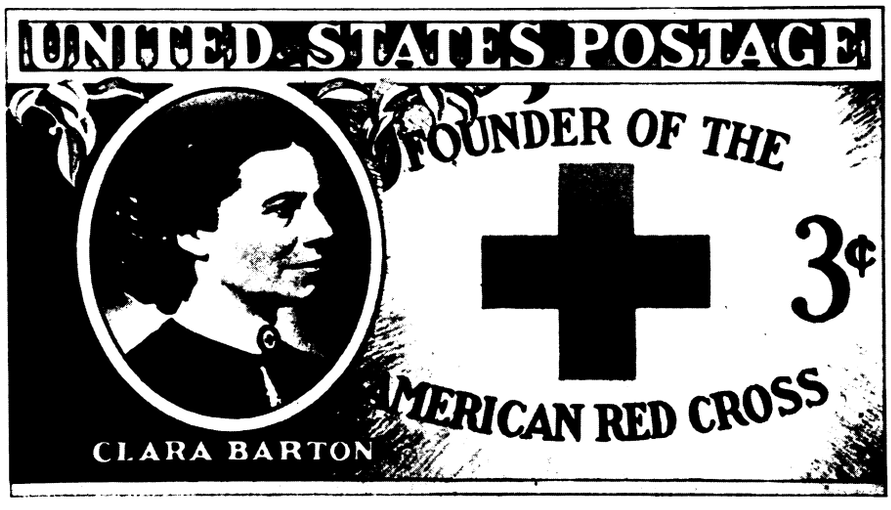
ZOOLOGY

British Make U. S. Gift Of Strange Animals

See Front Cover

➤ THE DORMOUSE, known to thousands of Americans only through children's books by British authors, has arrived in the U. S.

Dr. William Mann, director of the National Zoological Park of the Smithsonian



STAMP FOR RED CROSS FOUNDER—A commemorative postage stamp honoring Clara Barton was issued Sept. 7. Ceremonies were held at her birthplace at Oxford, Mass., the day the stamps went on sale.

Institution in Washington, visited 15 European zoos in six countries during a six-week trip to Europe. But the pair of dormice, which are included in the group of animals he brought back, were not spotted in a zoo.

While visiting in an English home, Dr. Mann heard a noise in the rafters of the house. He was told that it was a dormouse.

Dr. Mann remarked to his English host, a fellow zoo director, that the zoo here had no dormice, so an exchange of animals was arranged.

A dormouse, it seems, is a small animal with a bushy tail. It looks more like a squirrel than a common mouse.

Another gift from the British zoo is the perodicticus potto shown on the cover of this week's SCIENCE NEWS LETTER. It is a beady-eyed lemur celebrated in West African folklore.

Science News Letter, September 11, 1948

MEDICINE

New Clubfoot Technique

A cohesive bandage binding the leg and foot of a newborn infant with this deformity has proved highly successful in correcting the condition.

➤ CLUBFOOTED INFANTS are being treated with a high degree of success by a new technique with cohesive bandage which is akin to the Chinese custom of binding the feet of their baby girls.

The advantage of this treatment is that it can be begun the day after birth while the newborn infant is still in the hospital under the care of the physician, Dr. Emil D. W. Hauser of Chicago pointed out.

Moreover, the cohesive bandage does not adhere to or irritate the skin. It is wound firmly around the foot beginning just below the knee with emphasis placed on overcorrecting the deformity. The entire foot and leg are covered with only the very tips of the toes left visible. Over this is placed a stirrup type of bandaging to force the foot into a knock-kneed position. Then an encircling bandage, wound all the way down to the ankle, holds this in place.

The foot needs further support against the constantly contracting muscles so adhesive tape is superimposed in like fashion to prevent the foot from returning to its abnormal position.

Dr. Hauser emphasized that this treatment must be begun immediately after birth. The earlier treatment of clubfoot is begun, the better the correction, for the younger the child the more rapid is the growth and the softer and more easily changed are structures of the foot, he said. With former methods, such as the use of plaster casts and splints, treatment could not be begun until a baby was from one to three months old.

If treatment begins while the baby is still in the hospital, the bandage is reinforced daily, with more correction in each treatment. At the end of a week a new encasement must be applied because the other usually becomes ill-fitting. The procedure is then repeated at each visit to the doctor.

This corrective bandage must be kept on until the child begins to walk, otherwise the deformity may reoccur, he declared.

Results in 70 patients treated over a period of six years with this technique were highly successful, Dr. Hauser reported to the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (Sept. 4). Although in some cases a tight tendon in the foot did not allow a full correction with the bandage alone, it was possible to lengthen it with surgery. In only a few of these cases did a child fail to develop a normal foot.

Science News Letter, September 11, 1948

CHEMISTRY

Weed-Killers Aid Crops

➤ CHEMICALS now being investigated at the Army's wartime biological warfare laboratories hold the possibility of increasing the food production of the world so that a population suicide of civilization can be averted.

The same kind of growth-regulating chemicals that make lawns and fields weedless (2,4-D is the common one) can be developed to:

Produce crops of higher yields per acre.

Bring speedier maturity to a crop, either to foil a late season or grow the plants farther north.

Eliminate the necessity of crop rotation to combat weeds.

Yield seedless, larger and more delicious fruits.

A report presented to the American Chemical Society meeting in Washington, by two chemists from the famous Camp Detrick, Md., R. L. Weintraub and A. G. Norman, gave a glowing forecast of the increased usefulness of plant growth regulators.

Some of these chemicals would have been used to wipe out enemy crops if the war had continued longer.

While the chemical plant regulators have been applied mostly to flowers and fruits, the government chemists predicted that they can be made to have profound effects upon the major food and fiber crops of the world. Field crops as well as specialized crops might be so influenced chemically that they can be grown in climates and upon soils where they cannot now be harvested profitably.

Plants might be modified by chemical treatment to give more resistance to insects and plant diseases.

Earlier flowering and maturity of plants, possible by chemical treatment, would make many crops possible for northern latitudes where the growing season is short.

"A diversity of chemical compounds possess growth regulatory activity," the chemists reported. "There appears to exist a close correlation between activity and molecular structure. Information as to the mechanism of action is as yet scanty."

Science News Letter, September 11, 1948

CHEMISTRY

New Pain-Killing Drug Coming Out of Laboratory

➤ A NEW pain-killing drug more potent than cocaine and chemicals that give temporary relief from high blood pressure may emerge from the chemical laboratory shortly. These developments reported to the American Chemical Society meeting in Washington need successful use upon human patients before they can be made generally available.

Best of all chemicals tested in a five-year search for local anesthetics, the new pain-killer is known as SKF 538-a and is a complex quinoline synthesized by a new method. Its pain-killing effect in animal experiments lasted much longer than cocaine, procaine, or dibucaine.

Four chemists collaborated in research on the new compound at the Smith, Kline & French Laboratories in Philadelphia: Drs. James W. Wilson, Glenn E. Ullyot, Norman D. Dawson and Walter Brooks.

The new drugs that cause prolonged drop in blood pressure were discovered by another chemical group. They were impurities in synthetic chemicals that were spotted as blood-pressure depressants during routine tests.

If the new drugs prove satisfactory for use on human patients, they may be valuable for periodic treatment of hypertension or for reduction of dangerously elevated blood pressure in preparation for surgical operations. Very small doses in dogs cause a fall in blood pressure that lasts for as much as two hours. These new depressors are comparable in potency to the most powerful known drugs.

The work was done by Drs. Richard Baltzly and Edwin J. de Beer of Wellcome