

## MEDICINE

## New Way To Stop Acidity

A radioactive phosphorus coated balloon which is swallowed and then inflated to the size of the stomach suggests new aid for ulcer patients.

► FUTURE treatment for stomach ulcers may make use of a balloon covered with radioactive phosphorus. The balloon would be deflated, swallowed and then inflated to stomach size. Left in place a few hours, its radioactivity would stop production of acid in the stomach and thus favor healing of the ulcers.

Preliminary tests looking toward this type of treatment appear in a report by Dr. Norman Simon of Mount Sinai Hospital to the journal, *SCIENCE* (June 3).

Irradiating the stomach lining by X-rays or radium suppresses stomach acidity, but, Dr. Simon points out, the radiation may penetrate to nearby organs. The liver and small intestine, which are more sensitive to radiation than the stomach, may be damaged if large doses of X-rays or radium are directed to the stomach.

To get around this, Dr. Simon decided to try radioactive phosphorus, with atomic weight of 32. The rays from this material are presumably too short to penetrate beyond the stomach wall, since their range in

body tissue is about three-tenths of an inch.

As an applicator for trial in dogs, Dr. Simon used a thin rubber bag, inflated it, sprayed it with rubber cement and then applied flocs of short cotton fibers to give it a covering like a smooth coat of felt. A series of dippings into a solution containing radioactive phosphorus was next made. The balloon was then deflated, covered with a rubber sac, inserted into special pouches in the dogs' stomachs, and reinflated to fit the pouches. After two to six hours it was deflated and withdrawn.

The amount of acid in the stomach pouches was markedly reduced. There was no change in weight, blood count or general condition of the animals as a result of the radiation treatment.

If similar techniques are considered for humans, Dr. Simon points out, it is important to note that in one dog there was a return of acidity three months after the treatment and an ulcer was found at autopsy.

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scores, but all of them, after treatment, responded faster, were more alert and less confused, were better able to follow instructions and to put ideas into words.

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## PSYCHIATRY

## Racial Differences Study Wins Psychiatric Award

► A STUDY with far-reaching implications with regard to racial differences and consequent international problems won the \$1,500 Lester N. Hofheimer Research award for outstanding accomplishment in the field of psychiatry and mental hygiene.

The award was given to Dr. Benjamin Pasamanik, 34-year-old psychiatrist now in charge of the children's service at Kings County Hospital, Brooklyn, N. Y., at the meeting of the American Psychiatric Association in Montreal.

Dr. Pasamanik's study shows that the lower intelligence quotients scored by American Negroes in comparison with whites is not a matter of racial difference but of difference of environment, especially in the diet of the mothers before the babies are born.

In 1944 and 1945 Dr. Pasamanik studied

## PSYCHIATRY-CHEMISTRY

## Enzyme Aids Aging Brains

► A CHEMICAL rejuvenator for old and aging brains may have been found in an enzyme called cytochrome C.

Elderly men and women whose forgetfulness, confusion, irritability and lack of interest in their surroundings have made it necessary to put them in institutions for mental disease or for the aged have their minds cleared enough so that they can live normal lives outside an institution.

This "distinct improvement" in 11 out of 17 patients treated with the chemical was reported by Drs. Walter O. Klingman and Richard W. Garnett, Jr., of the University of Virginia Hospital at the meeting of the American Psychiatric Association in Montreal.

The chemical that brightens age-fogged brains is extracted from horse and beef hearts. It is given by injection into the patient's veins. The Virginia doctors give it every day for two weeks. Some patients showed "almost dramatic improvement" after three or four doses. Some have retained this improvement for as long as nine months. After the first two weeks of daily treatment, patients are now given a good dose once a week and this promises to keep their minds clear and effective.

Elderly persons who have been neurotic all their lives are not helped by the treatment. The ones who are helped are those who have been normal but whose minds are affected by aging changes, such as hardening of the arteries in the brain.

Trial of the chemical followed earlier reports by other scientists, Drs. Samuel Proger and D. Dekaneas of Tufts Medical College and the Pratt Diagnostic Hospital in Boston. They found that this chemical entirely overcame the effect on mental functioning of oxygen lack in low pressure chambers. Cytochrome C plays a part in the process by which body cells use oxygen for their functioning. Nervous tissue cells, such as brain cells, particularly need oxygen.

The exact way in which cytochrome C helps the elderly patients is not yet entirely understood and the Virginia doctors make no claims for any specific action. They call their research a biochemical experiment. But they "feel encouraged" because the patients "feel so much better and do so much better."

Intelligence tests were given to 10 of the patients before and after treatment. None showed any significant difference in actual



**VIKING LAUNCHED**—Recently this first American-designed high-altitude research rocket was launched at the White Sands Proving Grounds, N. M. It reached an altitude of 51.5 miles at a speed of 2,250 miles per hour. The 45-foot Viking was built to replace the German V-2 for upper atmosphere studies. The power plant was developed by Reaction Motors, Inc., of Dover, N. J., and is the most powerful liquid rocket motor yet developed in this country.

a group of Negro infants and three carefully controlled groups of white infants in New Haven, using the methods developed by Dr. Arnold Gesell at the Yale Clinic of Child Development.

The Negro infants were found to be fully equal to the white infants in all respects, including intelligence. These findings were confirmed by later re-examination.

Significantly, their weight and length at birth and their growth were also precisely similar to white standards. This, Dr. Pasamanik thinks, means that the diet of the Negro mothers before the babies were born may have played a very important role in the development of their babies.

The children in this study were conceived and born during the war years when, probably for the first time, due to improved economic conditions and rationing, Negroes had a diet about equal to that of whites.

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## Science Service Radio

► LISTEN in to a discussion on "Useful Woods of the Tropics" on "Adventures in Science" over the Columbia Broadcasting System at 3:15 p. m. EDST, Saturday, June 18. Dean George A. Garratt, of Yale University School of Forestry, and Prof. Frederick F. Wangaard, associate professor of Forest Products at Yale, will be the guests of Watson Davis, director of Science Service. They will tell of the extensive experimentation and testing of woods from jungles and highlands of equatorial regions which have been undertaken by the Yale school of forestry in cooperation with the Office of Naval Research.

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# Question Box

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## Words in Science— RH

► A BLOOD factor, important because it may cause the illness or death of a baby through incompatibility of the baby's blood with that of its own mother, is called Rh because it was first found in the blood of a Rhesus monkey. You pronounce the letters separately—R-h.

When a person lacks the Rh factor, any mingling of his blood with Rh positive blood sets up a process like immunization against disease. This reaction serves to destroy the Rh positive blood just as the blood of an immunized person checks the invading germs of a disease.

If a woman having Rh negative blood should receive a transfusion of Rh positive blood, it would set up this immunization. Then, if, after that, she should have a baby with Rh positive blood, the baby would be killed or made very ill by its own mother's blood.

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### GENETICS

## Extra Chromosomes in Mouse Ova Developed

► EARLY-STAGE embryos of mice, with cells containing three times the basic number of chromosomes, have been obtained in experiments conducted by Drs. R. A. Beatty and M. Fischberg in the laboratories of the Animal Breeding and Genetics Research Organization in Edinburgh. Results are announced in the British science journal, *NATURE* (May 21).

Plants and lower animals with doubled-up chromosome counts are fairly common in nature, and can also be produced arti-

ficially by treatment with chemicals, X-rays, temperature shock, etc. Mammals exhibiting this phenomenon, however, have never been reported.

Some time ago the American zoologist, Dr. Gregory Pincus, was able to get extra-chromosome eggs from rabbits to divide twice. Drs. Beatty and Fischberg, however, succeeded in getting their mouse eggs to continue dividing as far as the stage called the blastula, which consists of several hundred cells.

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