

MEDICINE

Helps High Blood Pressure

Some patients are helped by a rigid salt-free diet. Must cook everything, including bread, at home and milk must be treated to remove sodium.

► NEW ANGLES on high blood pressure appear in two reports in the *Journal of the American Medical Association*, (Nov. 3).

A salt-free diet treatment will help some patients, Dr. Arthur Grollman and collaborators of the Southwestern Medical College report on the basis of animal studies and trials in patients.

This type of diet treatment was tried many years ago and abandoned when it failed to give good results. One reason for the failure, Dr. Grollman believes, was that the diet was not really free of salt, or rather, of sodium. It is the sodium part of salt, not the chloride, that Dr. Grollman finds important in high blood pressure control. To eliminate enough of this from the diet means patients must cook everything, including bread, at home and if they drink milk, that must be treated to remove the sodium. Not all patients, however, are helped by this diet, which also accounts in part for the failure of dietary control to attain general recognition.

Associated with Dr. Grollman in the studies were: Dr. T. R. Harrison, Dr.

M. F. Mason, Dr. James Baxter, Dr. Joseph Crampton and Dr. Francis Reichsman.

The importance of the cortex, or outer part, of the adrenal gland for the development or maintenance of essential hypertension, one kind of high blood pressure, is suggested by Dr. George A. Perera, of Columbia University College of Physicians and Surgeons.

This suggestion is based on experience with a patient who had high blood pressure and subsequently developed Addison's disease, an ailment resulting from lack of the hormone produced by the cortex of the adrenal glands. His blood pressure continued high while the Addison's disease was being treated with synthetic adrenocortico-hormone. When, however, he was treated with salt alone instead of the synthetic gland chemical, his blood pressure dropped to normal limits.

The mechanism by which the adrenal gland cortical hormone affects blood pressure is a matter for speculation, Dr. Perera comments.

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NEW PLASTIC—Forticel, produced by Celanese Corporation of America, is lighter, more lustrous, tougher and odorless. (See SNL, Oct. 27)

has that of the British or many of the nationalities of Europe. The Russians are very realistic, inclined to face problems frankly and are very direct.

The writings of Lenin, Hegel and Marx, Prof. Razran said, and not of Tolstoy or Dostoyevsky, are the key to understanding of the workings of the current Russian mind.

The Russians hate hypocrisy and appreciate being dealt with frankly and even with bluntness. The most frequent term of opprobrium used by Lenin against his enemies was "hypocrite." He apparently believed that calling names may be useful as a means for getting grouches off the chest. The Russians are very wary of covering up or whitewashing bad situations or assuming pollyanna or "keep-your-sunny-side-up" attitudes. They have no patience with empty substitutes. Russian soldiers have no pin-up girls.

Russians think a great deal about their ideals and principles. And they are always trying to figure out and appraise the ideals of other people. If our own diplomats do not define our principles to the Russians, they will attempt to define them for us, Prof. Razran pointed out. The reason that the late President Roosevelt was greatly admired among Russian leaders was due to FDR's reputation in Russia as an idealist.

Russians are extremely proud of and sensitive to criticism of their country, but are very modest, even self-effacing about their individual achievements. The Amer-

PSYCHOLOGY

How Russians Think

They make heated claims but later cool off; American diplomats should wait until their mood moderates and then talk business.

► WHEN the Russians make unacceptable, heated claims in an international conference, just wait patiently. Give them time and they will naturally cool off and become less emphatic. Then step in quickly and close the bargain.

This is the advice to diplomats that might be based on an analysis of Russian ways of thinking made by a Russian-born psychologist, Prof. Gregory Razran, of Queens College, New York.

Russian habits of thinking are very different from those of Americans, Prof. Razran, who has lived in this country for more than 20 years, said. Americans are likely to weigh the pros and cons of

a situation as they study it. Russians plunge forward with an idea, pursuing it with full force and enthusiasm to the neglect of any other point of view and then later, sometimes quite suddenly, begin to consider the other side of the question.

Americans in a debate will say, "Yes—but . . ." Russians say, "No. No! NO!—well, yes." When they are in the "No" mood nothing is to be gained by protest or argument; better wait until they lose their steam.

In some ways, Prof. Razran explained, Russian thinking has much more in common with American thinking than

ican who praises the individual but disparages the Soviet system gives serious offense to his Russian friend.

Russians have a high regard for technology, science and intellectual achieve-

ment in general. For this reason, probably the best emissaries for promoting goodwill between the two nations are the scientists and engineers.

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PHYSICS

Sensory Aid for Blind

Will permit its user to locate all obstacles within a radius of 20 feet by using a photoelectric cell and a beam of light.

► **SUPLANTING** the blind man's white cane and seeing-eye dog, a sensory aid device, under development by the Army Signal Corps for six months, will permit its user to locate all obstacles within a radius of 20 feet by means of a photoelectric cell and a beam of light, it was announced by Maj. Gen. Harry C. Ingles, chief signal officer of the Army.

At present not sufficiently perfected for practical use, a nine-pound experimental model, turned slowly from side to side in the path of the user, detects objects within a 20-foot range and conveys the distance in a coded tone signal by means of an earphone to the user.

Designed by Lawrence Cranberg, physicist, the experimental model's three-watt lamp beams a narrow finger of light through a focusing lens in the front of the case, in a ray about two inches in diameter. Upon striking an object, the ray is reflected back through a second lens in the front of the case, which re-focuses the beam in a tiny point of light to the receiving unit, consisting of a revolving disk mounted in front of the photoelectric cell. The disk is divided into five concentric rings, containing one or more holes to permit the ray of light to strike the photoelectric cell. The angle of the reflected beam, changing with the distance of the object from the device, strikes the inner concentric ring of the disk at the maximum range of 20 feet, and moves downward on the disk as the object nears. The inner ring contains only one small hole, and as the disk moves at the rate of one revolution per second, the light would strike the photoelectric cell for an extremely brief period of time in each revolution. The energy, created by the photoelectric cell as the light reaches it, is relayed to the earphone by a standard commercial hearing aid, giving the code tone. An object five feet distant would reflect the ray of light to the fourth concentric

ring, which has one small and one large hole, giving a signal of one long and one short tone, as in the dot-and-dash of the Morse code.

The five rings indicate approximate distances of three, five, eight, 11 and 20 feet from the user to the object. With practice a blind person could determine exact distances by the overlapping of the signals as the light strikes areas between the rings.

The problem of filtering out disturbing signals from sunlight and ordinary electric lights was solved by an amplifying system sensitive only to modulated or "pulsed" light, and then modulating the light ray to that frequency.

Further development programs in supersonic and radar waves are also being conducted by the Signal Corps.

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ORNITHOLOGY

British Radar Clocks Invisible Flying Geese

► **WILD GEESE** flying at night have been tracked by radar operators on the eastern coast of England, so accurately that their ground speed could be measured, it is reported by David Lack and G. C. Varley of the Army Operational Research Group, Ministry of Supply, (*Nature*, Oct. 13). Radar pick-ups of bird flocks were made as early as 1941, and similar occurrences have been reported from other countries, including the United States; but it is only now that wartime restrictions on publication of the information have been lifted.

Longest radar track on a flock of geese thus far recorded was one made by a station of the R.A.F. on the coast of East Anglia. The birds were kept in the radar field for 99 minutes, during which time they flew 57 miles—an average of 35 miles an hour. Another station picked up the same flock and tracked them for an additional 22 miles,

at a ground speed of 33 miles an hour. The geese were never seen, but when they crossed the coast near a Royal Observer Corps post they were identified by their call as gray geese.

Gulls as well as geese have been picked up by radar, and even small birds traveling in flocks. Experimental proof that birds actually do produce radar echoes was produced by suspending a dead gull beneath a balloon and "radaring" this known target. The echo from the bird's body could be clearly distinguished from that produced by the balloon.

When approaching flocks of birds were first detected by radar it created some confusion, but this did not last long because of the great difference in speed between even the fastest of birds and the slowest of airplanes. Birds continued to create some disturbance, however, because their speed is close to that of fast surface craft. During the war, birds gave rise to several E-boat scares and to at least one invasion alarm.

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PHYSICS

Nazis Used Infra-Red Rays To Detect Fighting Tanks

► **INFRA-RED** rays were used by the Germans during the latter days of the war to detect Allied fighting tanks at night, it is now revealed. Since infra-red rays are not visible to the human eye, the Allied tankmen did not know they were being illuminated.

This is one of the startling advances made by German scientists that might have prolonged the war if the Nazis had been able to hold out a few months longer, according to Dr. Charles F. Green, of the General Electric Company, who recently returned from Germany where he served on an Army mission.

The infra-red rays were the results of infra-red filters positioned on German searchlights. If these filtered searchlight beams hit the Allied tanks, they bounced back to devices known as "bildwandler," or "image changers," mounted on German tanks. These devices transformed the infra-red rays into an image of the opposing tank, Dr. Green states, and the gunners opened fire.

Research in German laboratories, and the use of that knowledge in making armaments, according to Dr. Green, were coming ahead so fast at the end of the war that the Allies' margin of superiority was rapidly decreasing.

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