

MEDICINE

Preventing Strokes

► **PATIENTS WHO** have had a stroke of apoplexy from a blood clot in the brain can be protected from future strokes by anti-blood clotting medicines, it appears from a report by Drs. Irvin S. Wright and Ellen McDevitt of Cornell University Medical College, New York, to the meeting of the American College of Physicians in Chicago.

These drugs are the synthetic, dicumarol, and heparin sodium, usually obtained from the livers or lungs of animals at the slaughter house. They would not help patients whose strokes came from hemorrhage into the brain.

The drugs may even help patients recover from a stroke, medical men believe. There is as yet no conclusive evidence for this, Dr. Wright said, but a study intended to show whether or not this is the case is now being made.

At the meeting, he and Dr. McDevitt reported on 57 patients with severe heart or blood vessel disease who were treated with the anti-clotting drugs after a series of attacks of sudden blocking of a blood vessel by a blood clot or other plug.

In 669 patient-months before starting the drug treatment, the 57 patients experienced 193 such blockings of a blood vessel. Of

these, 82 involved the brain. Following the start of the treatment, during a period of 1,031 patient-months, these patients experienced only 24 blocks by blood clots, of which seven were in the brain, the report showed.

There were 31 patients with rheumatic heart disease in the series, including 29 with erratic heart muscle action. The New York physicians reported that in 428 patient-months after the first stroke and before the institution of anticlotting therapy, the 31 patients experienced 139 blood clots, 47 of which were in the brain.

On drug treatment, they had only 12 embolic episodes, including five in the brain, in 672 patient-months. One group of six patients with rheumatic heart disease and erratic heart muscle action who remained on the drug continuously for 182 patient-months, two and one-half years average, suffered no further attacks. They had had 14 attacks previously.

There were 13 deaths in the total series. Two of the patients died of hemorrhagic complications, and seven of complications during periods when the therapy was interrupted. Four deaths were unrelated to the treatment.

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ASTRONOMY

Vastness of Universe

► **IF YOU** would like to get some idea of the vastness of the universe, the following relations have been worked out by Dr. Clarence H. Clemminshaw of Griffith Observatory, Los Angeles.

A farmer could cut a furrow from the earth to the sun in eight minutes if he plowed with the speed of light. Continuing at that speed, he would plow through the last dust fringes in the orbit of the outermost comet known at the end of a working day of eight hours.

Sticking to his eight-hour day after leaving our solar system to plow through the vast gulf between stars, he would have to furrow at light's speed for about 13 years before he reached the end of his field, or the nearest star, Alpha Centauri, which cannot be seen from most of the Northern Hemisphere.

His field would have been plowed in 4.3 years if he had worked 24 hours a day, as light does.

The distances to stars are commonly expressed in light years, or the distance covered by light traveling at 186,000 miles a second in one year. One light year is equal to nearly six trillion miles.

That part of space at which the 200-inch telescope atop Mt. Palomar in California can peer includes galaxies about two billion light years distant. Galaxies are so far

away that they look like points of light with the naked eye, yet they consist of myriads of stars separated by much greater distances than the field plowed by the farmer furrowing from earth to the nearest star.

Dr. Clemminshaw's suggested relation of the plowed field, with diagrams, is made in the *Griffith Observer* (April).

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PSYCHOLOGY

Trouble Shooting Urged As Subject for Research

► **PRACTICAL PROBLEMS** like trouble-shooting on a radar or a television set, or an automobile, have much in common with another military problem, that of interpreting aerial photographs.

Both types of practical problems provide a promising subject for research, Dr. Robert M. Gagne of the Armament Systems Personnel Research Laboratory, Lowry Air Force Base, Denver, Colo., told a Conference on Human Problem Solving in New York.

A trained technician looking at a malfunctioning radar screen knows that the trouble must be in one of a number of possible places. He then proceeds to eliminate these places one at a time, or in groups, by

a series of checks. Some men have to make more checks than others.

In a problem cited by Dr. Gagne, 33 men out of 77 correctly diagnosed the trouble on their first try. Of these 33, only seven got the solution in the optimal pattern of four checks. A small number used fewer checks—probably these men made shrewd and lucky guesses. Some used 12 checks.

The task of photographic interpretation, although it looks very different, involves much the same procedure, Dr. Gagne said. The person who looks at an aerial photograph, and must say what industry is represented, looks for certain cues he has learned to identify, as the radar technician identifies the symptoms of malfunction on the screen.

He may see a power station, storage tanks, gas mains, a cooling tower, and so on. From these cues, he forms several alternate concepts of the various industries that might be represented. Then he looks for specific cues that would identify one of these industries and eliminate the others, just as the service man makes checks that would pin down one source of trouble and eliminate all the others.

Research could well be devoted to problems such as these and how the most efficient methods of solution could be taught, Dr. Gagne urged.

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