

MEDICINE

Hope of Preventing Fatal Blood Clots Renewed

RENEWED hope of preventing fatal blood clots after surgical operations appears in the report of Drs. D. W. G. Murray and C. H. Best of the University of Toronto Faculty of Medicine (*Journal American Medical Association*, Jan. 7). Dr. Best is co-discoverer of insulin for diabetes.

Heparin, an anti-bloodclotting substance from the liver, has been prepared in such pure form that it can be safely given to humans without danger of poisoning, the Toronto investigators report. It prevents the development of blood clots (thrombosis) in the veins of dogs. In their report the Toronto investigators state that this purified heparin has now been given to 220 patients after operation at the university hospital and also to a group of patients in Sweden.

Many times this number of patients must be studied, Drs. Murray and Best point out, before any conclusions as to the effectiveness of heparin in preventing thrombosis can be reached. Heparin and its anti-bloodclotting property were first discovered by Dr. William H. Howell of Johns Hopkins University.

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PUBLIC HEALTH

Millions Unemployed But Overwork Kills Thousands

MILLIONS of Americans are unemployed while "many useful citizens die prematurely from overwork." This tragic state of affairs was recently commented on by Dr. O. F. Hedley of the U. S. Public Health Service. Dr. Hedley is investigating the problem of heart disease, one form of which is responsible for the premature deaths from overwork that Dr. Hedley comments on.

A great many deaths from heart disease, 40 out of every 100, occur in persons past 70 years old. These cannot be classed as premature, and Dr. Hedley points out that as a result of saving lives in earlier decades by controlling diseases such as typhoid fever and diphtheria, more deaths from heart disease at older levels are inevitable.

At present, however, more than half the heart disease deaths occur before the individuals have lived out their normal life spans. Rheumatic heart disease, for example, causes at least 40,000 deaths every year and the average age at which

these victims die is 30 years. In their case the tragedy is that they have never had a chance to work.

A large amount of heart disease, about 60 per cent, Dr. Hedley estimates, is the result of high blood pressure, hardening of the heart arteries and hardening of the arteries all over the body. Many of these victims die at an advanced age. The same condition occurs far too often, however, in middle life. The average age at death from coronary thrombosis is 60 years. This condition is a stoppage of the heart's arteries as a result of thickening and hardening of the walls. It seems more frequent among business and professional men than among wage earners, and the strain of ceaseless work and worry is often held responsible. Victims of this heart malady are, presumably, the ones Dr. Hedley sees dying of overwork in the midst of unemployment.

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METEOROLOGY

All Quiet, Is Report on Anniversary of Great Floods

JUST a year ago, the disastrous floods of the Ohio valley and elsewhere in the Midwest and the East were beginning to pour evil upon the land. In this anniversary week the situation is wholly different, with no flood menace in sight, Merrill Bernard, chief of the river and flood division, U. S. Weather Bureau, informed Science Service.

None of the major rivers of the country is at all high, Mr. Bernard stated, and the Ohio especially is low. The water level behind the great Norris Dam on the Tennessee, always a stream to watch carefully in late winter and early spring, has purposely been lowered to provide a wide margin of safety.

At present there is practically no snow cover on the principal flood-making watersheds, and the soil is not saturated. Indeed, west of the Mississippi, the lack of soil moisture reserves is causing considerable anxiety.

The only thing that could cause a serious flood situation would be a series of torrential rainstorms close upon each other's heels. Nothing in the present general weather map indicates the probability of such an event; though admittedly there is no way of forecasting probabilities of continued non-flood weather for more than a few days in advance.

To sum up: In general, all is quiet along the Potomac, and the Ohio, and streams west and south.

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IN SCIENCE

ARCHAEOLOGY

"Old Temple of Athena" Declared Not Temple at All

AFAMOUS landmark in Athens, called "the old temple of Athena," was actually used by the Greeks as a very different sort of public building, Dr. Leicester B. Holland of the Library of Congress has concluded.

Dr. Holland believes that this building, which stood on the Athenian Acropolis on the spot where early kings had their palace, continued to be a meeting place for civic officials. Instead of shifting from civic to religious use, he says, the site would naturally have kept its traditional function. There, in the place of the King's Hall, the civic council would continue to meet around the sacred hearth, and to entertain ambassadors and city guests.

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PHYSICS

Modern Atom Smashing Has Added 220 Kinds of Atoms

THE GOAL of ancient alchemists—the transmutation of the elements—has been achieved by the atom-smashers of the laboratory so well that there remain only two chemical elements which have not yet yielded to the art of the modern scientist, said Dr. K. K. Darrow of the Bell Telephone Laboratories.

Before the days of modern transmutation the world consisted of some 250 kinds of atoms, said Dr. Darrow. Of these about forty were unstable atoms—like radium—which spontaneously disintegrated into other forms.

"It looks now as though nature had already made almost all the stable forms of nucleus which are possible," declared Dr. Darrow. "While physicists, in a scant four years, have already made almost all the unstable forms which are capable of lasting as much as a few seconds."

Already to the 40 radioactive forms of atoms found in nature modern science has added no fewer than 220 others by the art of transmutation.

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E FIELDS

MEDICINE

Cancer More Nearly Curable Than It Ever Was Before

CANCER is more nearly a curable disease than ever before, Dr. Shields Warren of the Harvard Medical School declared in a public lecture at the school.

Cases of the disease are being recognized earlier and treated more effectively, he said, and there is definite evidence that the cancer death rate can be checked. Many people, he emphasized, die needlessly of cancer because they delay in seeking treatment, either through ignorance or through fear.

Prompt treatment, he emphasized, is of vital importance in checking the disease for once it has spread treatment is difficult if not impossible. There are still but three satisfactory ways of treating cancer, he declared: surgery, radium and X-ray.

"But even if we had no further knowledge than that now available, but could apply it promptly," he emphasized, "the percentage of cures could be doubled." The new super-voltage X-rays of 400,000 to 1,000,000 volts, he added, may well extend medicine's ability to cure and control the disease.

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ETHNOLOGY

Fast Work Needed to Save Old Navajo Lore

SCIENCE must work fast to get information now stored in Navajo Indian minds.

This warning is sounded by Francis H. Elmore of the State Museum at Santa Fe, who has been querying these Indians on use of various plants.

The Navajo had ideas for using at least 500 plants growing in their Southwestern country. The great outdoors was a shopping center where a Navajo could go for basket materials, for food, drinks, medicines, and dyes.

But that's changed. With government aid, and with ways of earning money from blankets, silverware and sheep brought to Navajo attention, these Indians have taken much of their "trade" away from the old plant stores. Conser-

vatives still prefer some of the foods eaten by their forefathers. But Mr. Elmore explains that a Navajo has learned that he can buy food almost as cheaply as he can gather it, and with half the trouble.

Consequently, a young Navajo is little better at describing ancestral customs than a young New Englander might be at telling you how his great-great grandmother made soap. Some older Indians still have valuable information, but Mr. Elmore warns that "in a few years the Navajo will probably have forgotten how many of the plants were used."

Early Navajo lived chiefly on corn, as these Indians still do, he explains. But whenever war or roving interfered with farming, resourceful Indians could live on seed, roots, stems, and leaves, sustaining themselves even on long journeys. The daring of the traditional first-man-who-ate-an-oyster was matched by more than one Navajo who tasted some scrubby fruit to try its food value.

Study of Navajo ways may yield useful information, Mr. Elmore foresees. The pinon nut, Southwestern Indian fare, has become a commercial article for the white man's market, and other Navajo plants may prove useful.

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ENTOMOLOGY

"Protective" Coloration Really Does Protect

"PROTECTIVE" coloration of insects really does protect them against their bird enemies, despite recent claims to the contrary, declares Prof. F. B. Isely of Trinity University, Waxahachie, Texas.

Prof. Isely reports experiments designed to test this point critically. (*Science*, Jan. 14). He laid out a plot of ground in 16 by 16 inch squares. These had the colors of different types of soil, and some of the squares were planted with green grass.

On all the squares Prof. Isely put grasshoppers and related insects, either anesthetized or fastened so that they could not wander off. Some of the insects matched their backgrounds, others contrasted with them. They were exposed to the attacks of mockingbirds, cardinals, sparrows, turkeys, and bantams.

Observations showed that 88 per cent. of the insects that contrasted with their backgrounds were found and eaten by the birds, whereas of the insects placed on backgrounds that harmonized with their own colors only 40 per cent. were eaten.

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PSYCHOLOGY

Sterilization Not Cure For Sex Offenders

STERILIZATION or castration of sex offenders would not prevent them from making sex attacks and might actually add to their sex deviations and homicidal mania, Dr. Lowell S. Selling, director of the psychopathic clinic of the Recorder's Court, Detroit, declares.

Glandular operations on sex offenders have been urged by many lay groups in Detroit and elsewhere. Dr. Selling has found from medical examination and study of 150 sex offense cases going through his clinic between May and December that such an operation would be useless and also dangerous to society. He reported his preliminary findings to the recent sessions of the American Association for the Advancement of Science. Further study of some 5,000 cases is now being made by Dr. Selling.

Sex offenders are not characteristically over-sexed. Underfunctioning of the sex glands was found to be actually more important in contributing to sex offenses than is an oversexed condition. The man who attacks little children is sometimes a person who is undersexed and hence incapable of normal marriage. The trouble is more likely to be psychological than glandular, Dr. Selling indicated. Many of the men studied had some peculiarity of appearance so as to be, or to think they were, repulsive to most girls. Any operation or treatment that would tend to increase this feeling of inferiority would aggravate their menace to society rather than eliminate it.

Mental deficiency and disease was found by Dr. Selling to be very important in contributing to sex crime. Half the group studied are feeble-minded or of inferior intelligence. Six are senile, three psychotic, and nine suffer from compulsive neurosis.

Alcoholism was found to be extremely important. Almost two-thirds of the group are alcoholic. Many have adopted alcohol as a substitute for adequate food which the men were without money to buy. Many of the crimes were committed under the influence of alcohol.

An unexpected finding was that the after effects of mumps may be an important contributor to sex crime. One-third of the cases had had mumps, although only about half that proportion was found in an equal number of non-sexual offenders.

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