

MEDICINE

Own Blood Transfusion Saves Auto Victim's Life

AN AUTO victim's life has been saved by transfusion with his own blood, Dr. A. Lincoln Brown and Dr. Martin Warren Debenham of the University of California Medical School, San Francisco, have just reported to the American Medical Association.

The blood was removed from the patient's chest, where it had seeped from a cut blood vessel. It was filtered and pumped back into the vein of his right arm, just as in any ordinary transfusion, only in this case no outside donors were needed. The patient's own blood, loss of which was killing him, was reclaimed and used to restore him to life. The patient is described as "G. K., a white man, aged 42."

"We do not consider it true surgery to withdraw good blood and throw it away," Drs. Brown and Debenham commented.

Only one other similar case has been reported, but the San Francisco surgeons did not know of it when they undertook their first case. They considered their operation a "final heroic attempt to save the patient's life."

Encouraged by their success, they have repeated the operation on two other patients. One was a nineteen-year-old youth who had been stabbed in the chest during a street fight. The other was a man who had a gunshot wound in the chest.

In their second case, the surgeons delayed the transfusion until the blood had been examined for disease germs, since there was a chance that the blood had become infected by the stabbing knife. No germs were found and the surgeons subsequently learned that if the blood had been infected, it would have clotted and so been unsuitable for transfusion.

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PHYSIOLOGY-PSYCHOLOGY

Physical Effects Of Emotion Impair Mental Efficiency

THE IDEA that a person can do better mental work under the influence of emotional excitement is not upheld by experiments performed by Dr. Arthur T. Jersild of Columbia University and Dr. William S. Thomas of New York City, but fear and other intense emotion does seem to help the performance

of physical work. The results were reported to the New York branch of the American Psychological Association.

The scientists produced the bodily changes which usually accompany emotional excitement artificially in the subjects by giving them hypodermic injections of adrenal extract. To check the work, they gave them at other times injections of saline solution. Besides marked changes in pulse and blood pressure, the subjects showed many differences in behavior. They became irritable and even irascible, and were subject to tremor, stuttering, and weeping.

Mental efficiency was lowered and motor efficiency increased on the days when the adrenalin injections were given.

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ASTRONOMY

Galileo Declared Not First To Discover Jupiter's Moons

ANOTHER commonly accepted historical idea is wrong, according to the conclusions of J. H. Johnson, in a report to the British Astronomical Association. His researches indicate that it was the Bavarian astronomer, Simon Marius, who first observed the moons of Jupiter, in December, 1609. It was not until the following month that Galileo, in Italy, observed them. Mr. Johnson does not suggest that the Italian plagiarized the work of Marius, but apparently, like many great discoveries, the satellites of Jupiter were found independently by two different observers.

In one of his books, Marius tells how his friend and patron, John Philip Fuchs, attended the autumn fair at Frankfurt in 1608, where a Belgian showed him an instrument that made distant objects appear close. Fuchs and Marius tried to make one, but failed. In the summer of 1609, however, they did obtain a telescope from Holland, and with it Marius made astronomical observations, discovering the moons before the end of the year.

Later, Galileo himself disputed the claims of Marius, but apparently he was not justified in so doing. Mr. Johnson concludes that Marius "was an honest man and that his claims were not exaggerated. If we admit them we must recognize that he was the first both to notice the existence of the satellites and to detect their revolution, but that Galileo was the first to observe their full number."

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IN SCIENCE

ECOLOGY

Soil on Mountain Heights More Acid Than in Valleys

THE HIGHER the sourer, seems to be the rule regarding soil reactions. Confirming by researches in the richest forest region in eastern North America the observations of other investigators in various parts of the world, Dr. Stanley A. Cain of Butler University has collected a considerable series of data from the Great Smoky Mountains region in Tennessee and North Carolina, which is to be developed as the greatest of the U. S. National Parks in the East.

Starting with a moderate degree of acidity in the valleys, Dr. Cain found that the soil became more and more sour as he climbed the mountains, reaching the summits and the highest acid concentrations at the same time. The soil reaction was correlated with different types of vegetation.

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MEDICINE-CHEMISTRY

Chemical Will Relieve Amebic Dysentery

ACHEMICAL specific for amebic dysentery disease was reported by Dr. Frederick R. Greenbaum of the Searle Research Laboratories of Chicago to the American Chemical Society at its recent meeting in Indianapolis. It is chiniofon, chemically known as iodohydroxy-quinoline sulphanate, a drug that has been used in Germany for some fifty years under the name of yatren. It is now manufactured in America.

This chemical given for a week will relieve cases of amebic dysentery if they are caught early. Since Dr. Greenbaum gave estimates that about ten per cent. of the population of the southern states suffer from this disease, it is a medical problem for this country as well as for other countries such as China where four out of ten coolies are said to have the disease.

The disease has been reported among food handlers of the northern United States, and it is sometimes mistaken by physicians for cancer of the liver.

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E FIELDS

AERONAUTICS

Hotter Engines to Make Planes More Efficient

HOTTER airplane engines that will save weight, reduce drag, decrease fuel consumption and simplify control are a coming development in aviation, it is indicated in a report made last week, at the National Aeronautic meeting of the Society of Automotive Engineers by Arthur Nutt, vice-president of engineering for the Wright Aeronautical Corporation.

These advantages are to be gained by the use of high temperature coolants, Mr. Nutt explained. Both evaporative cooling, which has been tested experimentally during the past two years on automobile and aircraft engines, and the use of high boiling point liquids have been considered.

"The liquids that have been found satisfactory from a standpoint of boiling point, freezing point, and viscosity at various temperatures are ethylene glycol and di-ethylene glycol, the latter being selected owing to the fact that it will not freeze at any ground atmospheric temperature providing five per cent. water is mixed with it," the report stated. "This amount will not boil off up to 320 degrees Fahrenheit, so that such a mixture is satisfactory."

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CHEMISTRY-MEDICINE

Better Anesthetics Result From Chemical Research

MORE effective sleep-producing and anesthetic drugs have been produced through research by Dr. H. A. Shonle of the Lilly Research Laboratories, Indianapolis.

The possibility of predicting the duration and the effectiveness of hypnotic sleep-producing drugs that have not yet been synthesized by the chemist is stressed in a report to the American Chemical Society.

Through the use of a new group of anesthetics, known as the amyl ethyl barbituric acids, developed by Dr. Shonle and his associates, it is possible for phy-

sicians to reduce the nausea that often follows operations, give the patients greater comfort and subject them to far less mental distress.

These amyl ethyl barbituric acids will not replace ether and other major anesthetics but they find use as substitutes for morphine in making the patient ready for the unpleasant experience of an operation. Since the new compounds are not habit-forming like morphine and other opium preparations, there is no danger of causing drug addiction through their use.

The new drugs are closely related to veronal or barbital, a synthetic compound that has found use in medicine as a sleep-producing drug. Alcohol, which Dr. Shonle calls the "simplest hypnotic," is one of the constitutional parents of the new anesthetics. Part of the alcohol molecule is replaced with barbituric acid, then a part of the barbituric acid is replaced with what chemists know as an amyl group. This makes the anesthetic action more rapid and the patient recovers faster. If plain alcohol were used, fifty times the dose of barbituric acid would be necessary to produce the same hypnotic effect.

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CERAMICS

Knife-Marked China Is Investigated by Scientists

WHY does cutlery sometimes leave unsightly marks on china which cannot be removed by washing?

Scientists at the U. S. Bureau of Standards are investigating the question, following complaints that the stroke of cutting even a tender piece of meat on a plate or platter is often sufficient to scar the housewife's dishes permanently with pencil-like markings.

Some factor in the baking process of china may account for the fact that some pieces appear immune to cutlery markings, while others are readily discolored, the preliminary findings show. An excess of carbon in the furnace did not appear to make the dishes susceptible to marking but sulfur dioxide gas in the furnace did make the china more liable to scratching with metal.

Dishes just removed from the oven and not washed after their baking marked readily, as did glass surfaces that had been dried by heating at a temperature above 400 degrees Centigrade. When the glass surface retained some moisture to act as a lubricating film, the marking did not occur.

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PSYCHOLOGY

Sometimes Better To Memorize by Part

THE OLD problem which has bothered teachers for years, whether it is easier to learn material all together or split up into small parts, has received a new and compromising answer as a result of research conducted by Dr. Leland W. Crafts of New York University and reported by him to the New York branch of the American Psychological Association.

For the material to be learned, Dr. Crafts used a series of geometric forms. Some of them were irregular arrangements of circles, others were irregular figures, and still others arrangements of unrelated lines. He showed them to those who took part in the experiment for a short time, then allowed them to try to reproduce what they had seen.

It was discovered that in the case of the figures and circles, the learning was easier when the whole pattern was presented at one time. On the other hand, the unrelated lines were memorized best when the part method was used.

"These results suggest," Dr. Crafts concluded, "that in the field of visual perceptual as well as in that of 'motor' or of verbal learning, neither the whole nor any one form of a part method will invariably be superior, and that the whole method can be expected to be especially advantageous with easier and with more closely related materials."

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HOME ECONOMICS

President Hoover Dines On 24-Cent Meal

PRESIDENT and Mrs. Hoover dined Thursday on a meal costing 24 cents a plate at a dinner given in the Girl Scouts' "Little House" in Washington, inaugurating the national celebration of Better Homes Week which begins Sunday, April 26.

Five girl scouts cooked the dinner which was planned by the Bureau of Home Economics of the U. S. Department of Agriculture to demonstrate the low cost health diets which have been developed by government food experts to meet the employment emergency.

Soup, a meat course, dessert and salad were included in the low price meal, which cost \$1.89 for the eight guests or \$.236 per person.

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