MEDICINE

Sulfanilamide in Blood Keeps It Free from Germs

SULFANILAMIDE, powerful chemical remedy for a host of germ-diseases, is now being used to make blood transfusions safer. A small amount of sulfanilamide added to blood that is to be stored in blood banks for future transfusions prevents the growth of bacteria in the blood for from 10 to 15 days and may even make the blood completely germ-free. Details of the method are reported by Dr. Milan Novak, of the University of Minnesota (*Journal, American Medical Association,* Dec. 16).

Some of the serious reactions occurring after blood transfusions may be due to unsuspected germs in the blood given, Dr. Novak points out. Blood for transfusion is always tested for syphilitic infection before use. Tests for other germs which may lurk in the blood of healthy donors are not always made. Germs can also get into the blood when it is drawn from the donor or in preparing it for storage, in spite of precautions that are always taken against such contamination.

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PUBLIC HEALTH

League of Nations Ready To Act Against Typhus

THE LEAGUE of Nations, regardless of the action taken on the Finnish-Russian situation or other international conflicts, announces that it is ready to act if typhus fever, malaria or dysentery break out, as feared, this winter as a result of unsettled conditions throughout Europe.

Dr. R. Gautier, director of the Health Organization, has completed a tour of the Balkan countries, undertaken because the Rumanian Health Minister had pointed out the danger of epidemics, particularly of typhus fever, entailed by the influx of refugees and the presence of a floating population around the Rumanian borders. Besides the dangers of typhus and dysentery epidemics, it is feared that refugees who are completely non-immune to malaria may contract the disease in its aestivo-autumnal form.

The European Balkan countries, it is now announced, "are, in principle, favorable to concerted action under the auspices of the Health Organization" of the League of Nations, and arrangements have been made for it to be notified immediately of any epidemic foci that may appear. Measures have already been taken to help the Rumanian Health Administration to procure the extra stores and equipment required for prevention of typhus fever.

International meetings scheduled under League auspices on syphilis, malaria, nutrition and other health problems had to be postponed because of war, but "the regular, permanent work of the Health Organization has proceeded unimpeded."

Arrangements have been made among the governments concerned to safeguard the transmission of wireless bulletins to headquarters from the Singapore Bureau, which speeds vital information of epidemic disease conditions in the Far East.

Assurances of continued support have been received from various health administrations, experts and scientific institutions throughout the world.

From the Pasteur Institute of Algeria, Prof. Edmond Sergent advised that the Institute is continuing its experiments on the use of synthetic anti-malarial drugs, its trial tests with controlled vaccination against typhus fever, its work on B.C.G. in tuberculosis, and preparation of a textbook for unification of malaria terminology. The aim, says Prof. Sergent, is for "all men of goodwill to rally to the support of the Health Organization in an effort to assert the preeminence of intellectual work as a means of promoting the welfare of all."

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ICHTHYOLOGY

Salmon Taken For a Ride To Get Around a Dam

MORE than 50,000 salmon were taken for a ride last fall, in the Pacific Northwest. It was a long ride for some of them—as much as 150 miles, from below the Grand Coulee dam now under construction to favorable points for laying their eggs in the upstream waters. Successful completion of the operation has just been reported by the U. S. Bureau of Fisheries.

Plans for operation after the completion of the dam include the capture and stripping for eggs of thousands of salmon, and the planting of the partially incubated eggs in natural hatching waters. However, the ahead-of-schedule state of construction created an emergency this season, which was met by the transfer upstream, in refrigerated tank trucks, of salmon ripe for spawning.

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IN SCIEN

GEOLOGY—ASTRONOMY

Hot Sun Caused Ice Ages; Cold Sun Would Dry Earth

GLACIAL periods on the earth have been due to changes in the sun's radiation, states Sir George Simpson, eminent British meterologist, in the annual report of the Smithsonian Institution.

However, these big chills have come not when the sun, now known to be a variable star, was growing cooler, but when it was throwing out more heat.

It works out this way: the increased heat causes increased evaporation from the oceans; this in turn produces greater precipitation. Near the poles, this precipitation piles up as snow that packs and solidifies into ice—and the Ice Age is on the way.

If the sun puts a damper on its radiation for a long period, evaporation slows down and the lands become dry. We are living in such a cold, dry epoch now, Sir George holds.

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BOTANY

Fatherless Cotton Bolls Produced With Chemical

PRODUCTION of normal bolls of cotton from unpollinated flowers was described by Dr. J. C. Ireland of Oklahoma Agricultural and Mechanical College to the American Association for the Advancement of Science.

Using the same growth-promoting substances that have been employed to induce formation of seedless fruits, all the way from holly berries to watermelons, Dr. Ireland treated the pistils of cotton flowers after the stamens had been removed. Both fiber and seed developed normally, he reported; the only differences observed were in the embryo plants within the seeds.

Dr. F. G. Gustafson of the University of Michigan, pioneer worker in this "fatherless" fruit production, told how he had grown side-by-side crops of ordinary and unpollinated tomatoes. There was no observable difference between the two products.

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CE FIELDS

AGRICULTURE

Sulfanilamide for Plants Promotes Their Growth

NEWEST discoveries on sulfanilamide, potent chemical remedy for many human germ diseases, come from the plant world. This chemical which, fortunately for human lives, checks the growth of bacteria, on the contrary stimulates the growth of tobacco plant roots.

"Plants receiving from 20 to 40 parts per million of sulfanilamide produced new roots from one to three days earlier than similar plants deprived of the chemical," Dr. Ernest L. Spencer, of the Rockefeller Institute at Princeton, N. J., reported.

Uncut seedlings, however, were not stimulated, and concentrations of sulfanilamide which stimulated root formation in cut plants poisoned plants with normal root systems. This poisoning was very much like the conditions seen in frenching, tobacco plant disease for which scientists have never been able to discover the cause. It now appears that this disease may be due to poisoning with a substance similar in structure to sulfanilamide.

If sulfanilamide is to be used for fighting plant diseases, Dr. Spencer warned, it must be used in very much smaller doses than can be safely used in treating human patients.

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PSYCHIATRY

"Moral Treatment" in 1822 Start of Modern Mental Care

MODERN scientific treatment of the mentally diseased has its beginnings in the pioneering zeal of a young New England physician a century ago, it is recalled by a new book, *Mind Explorers* (Reynal and Hitchcock).

Young Eli Todd, in 1822, introduced in America the "moral treatment" of the mentally diseased. Unfamiliar with the modern term "occupational therapy," Dr. Todd nevertheless employed it to the great benefit of his patients, it is revealed by the authors of the book, John K. Winkler and Dr. Walter Bromberg.

The method as explained by Dr. Todd was to "treat them in all cases, as far as possible, as rational beings. To allow them all the liberty and indulgence compatible with their own safety. . . . To cherish in them the sentiments of self-respect . . . To draw out the latent sparks of . . . social affection. To occupy their attention, exercise their judgment and ingenuity, and to engage them in useful employments, alternated with amusements."

All this was new in New England in a day when mentally ill members of a household were hidden away in attics or even chained in outhouses.

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ARCHAEOLOGY

Ancient Eskimos Had Ways Unknown To Later People

AT POINT HOPE in Arctic Canada, Danish and American archaeologists have dug their way into an Eskimo village unlike any they had ever seen.

On the expedition were Dr. Froelich Rainey and Louis Giddings of the University of Alaska and Helge Larsen of the Danish National Museum.

At this place, now called Ipiutak, lived prehistoric Eskimos who conspicuously do not fit into the neat pattern of some five successive types of Eskimo culture that scientists have worked out.

These people had odd ideas of houses, by Eskimo standards. The expedition unearthed nine houses, finding them square or rectangular and made apparently of sod with logs and poles for framework. No stone or whalebone such as Eskimo builders ordinarily used. No long, narrow entrance passage for protection from cold. And no lamps! Eskimo women have always seemed inseparable from their lamps, which served as cook stoves, furnaces, for lighting, melting snow, drying clothes, and other uses. But these Eskimos had instead a central hearth where they burned wood and oil.

About 50 kinds of implements lay in buried wreckage of the homes, and only half are characteristically Eskimo. The rest are new to Arctic science. These Eskimos used no slate for blades, contrary to Eskimo custom. Flint was their leading material for drills, knives, and harpoon points. They had no pottery.

From style of decoration on their goods, these odd Eskimos belonged to the North in an early time. But their precise place in prehistory awaits a later decision.

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CHEMISTRY

Fur Replaced by Plastics In Making New Felt Hats

MAKING felt hats without fur, wool, or hair, is like making butter without cream, but it is the new achievement made possible by American chemists.

You have been hearing much about Vinyon and Nylon, the two new plastic materials made synthetically from coal, air and water, in connection with their use as fibers in chemical silk stockings that look and feel like natural silk but which will outwear the latter.

Newer and less-known is the important application of Vinyon as a resin powder in the fabrication of felt hats which look and feel like ordinary felt but contain not the slightest particle of fur or wool. Gone too is the lengthy process of felting, for the new felts are made by a dry process in which the batts are merely subjected to heat and pressure. The plastic materials fuse and cohere and bond the whole hat material into a commercial felt-like material.

Prize development of the use of plastics in the hatters' field so far is the creation of an all-cotton felt hat.

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ARCHAEOLOGY

Excavate a Settlement Of the New Stone Age

EXCAVATIONS of a New Stone Age settlement at Akropotamus in eastern Macedonia, a region that "saw plenty of action in the first world war," was reported to the Archaeological Institute of America by Dr. George E. Mylonas of the University of Illinois.

The settlement, dating back almost 3,000 years before Christ, is one of the few thus far yielding information of value about prehistoric Macedonia. Neglect of Macedonia's buried remains is regrettable, Dr. Mylonas declared, because the region was a corridor along which early tribes wandered, and therefore the earth holds the solution of many problems regarding the dawn of Greek civilization.

Finds at the New Stone Age site included an amulet in the shape of a foot made of clay, which Dr. Mylonas pronounced unique among New Stone Age relics, also pins and needles of bone, much pottery, figurines of clay, and stone celts. Dr. Mylonas excavated the site for the Washington University of St. Louis under auspices of the Greek Archaeological Society.

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