MEDICINE

New Chemical Remedy Used in Undulant Fever

PRONTOSIL and sulfanilamide, new chemical remedies which have achieved spectacular success in treatment of streptococcus and certain other infections, now show promise of becoming sovereign remedies for undulant or Malta fever.

Apparent cures of cases of this ailment, which is acquired from cattle or from their unpasteurized milk, are reported by L. Aylwin Richardson, surgeon to the Children's Hospital, Southampton, and Dr. A. E. Francis, of St. Bartholomew's Hospital, London. (*Lancet,* Feb. 26). French and German physicians have also reported successful results with Prontosil treatment.

The disease is usually a long drawn out malady characterized by frequent relapses. Most forms of treatment have so far proved unsatisfactory, Dr. Richardson points out in reporting his results with Prontosil treatment of undulant fever. Following the use of Prontosil, or the chemically related sulfanilamide which was used in the cases reported by Dr. Francis, recoveries were rapid—dramatically so in one case.

The germ which causes the disease is also susceptible to sulfanilamide in test tube experiments, Dr. Francis found. Germs of other diseases against which the chemical has proved an effective remedy have not been so readily destroyed by it in test tube experiments.

Science News Letter, March 26, 1938

PSYCHOLOGY

Study Characters to Find Why Some Become Topers

OF ten people who develop a liking for alcoholic drinks, seven will be able to take it or leave it—three will become addicted and unable to break the habit.

This is the estimate of the late Dr. William A. White who treated many a sufferer from alcoholism when he was Superintendent of St. Elizabeths Hospital. Some knowledge of why the three become enslaved is derived by a study conducted by Dr. Walter A. Miles of Yale University's School of Medicine and Institute of Human Relations, and reported to *Mental Hygiene.*

Although drinking to be sociable may serve to introduce the habit, the excessive drinker usually wants oblivion rather than convivial pleasure. The alcoholism patient is a solitary drinker, it was found.

The drinking of the alcoholism victim may not be excessive. Although some may consume large quantities, others may become intoxicated from a very small amount.

The alcoholic victim is usually a man and a city dweller. He began to drink excessively at about the age of 18. He is the son of a very emotional mother and has other members of his family also victims to alcohol addiction.

The drink habit is not the only habit associated with their mouths. As children they probably sucked their thumbs. Maybe they like to chew tobacco or gum and use their mouths in talk. They have food idiosyncrasies and are finicky about their food.

Some seem to be effeminate; their fondness for male society is marked. They may be Don Juans due to overcompensation for this natural effeminateness. Those who are married are unhappy with their wives.

More should be learned about the personalities that belong in the group providing the unfortunate three of alcohol's victims, Dr. Miles points out.

An interesting link has been found between high altitude sickness, intoxication, and mental disease. Oxygen deprivation appears to be the factor common to all.

From this discovery new avenues of research on the cause and cure of alcoholism open wide.

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CHEMISTRY

McMillen Ranking Officer Of Chemical Foundation

WHEELER McMILLEN, editorial director of Country Home, is now the ranking officer of the Chemical Foundation as a result of his election to its vice-presidency.

The trustees have decided to leave vacant the office of president which was occupied by the late Francis P. Garvan, under whose direction for 18 years the Chemical Foundation played a major role in American chemical development.

William W. Buffum, treasurer and general manager, announced that the Chemical Foundation would continue its support of research, giving particular emphasis to new chemurgic industries through use of farm products as industrial raw materials. Mr. McMillen is also president of the National Farm Chemurgic Council.

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IN SCIENC

AGRICULTURE

Germany Undertakes Raising Of Own Soybean Supplies

GERMANY, seeking economic self-sufficiency in raw materials and foodstuffs, especially in the all-important oils and fats, has undertaken the encouragement of large-scale cultivation of soybeans, hitherto imported in considerable quantities from Manchuria.

Systematic testing of the hundreds of known varieties of soybean is in progress, as well as breeding to produce new kinds better adapted to the German range of soils and climates. Werner von Haken, an agricultural economist, has blocked out areas on the map where good results may normally be expected, and others where the chances are not so good.

Roughly a fifth of the total area of Germany is in the first-choice soybean regions. These are principally in the southwestern and central parts of the country. An additional two-fifths is second-choice soybean territory, where success will be largely conditioned by local conditions and the skill of the individual farmer. The rest of the land, in the north and east and the mountainous south, is not recommended for soybean culture.

Herr von Haken's discussion contemplates large use of soybeans as human food. The Chinese have for centuries made a large variety of palatable dishes out of soybeans, which constitute the principal source of protein food for most of the population. Herr von Haken believes that crowded, blockade-threatened Germany would do well to follow the Chinese example.

Despite the fact that Manchurian soybeans can be imported into Germany more cheaply than they can be raised there, Herr von Haken feels that large-scale cultivation at home is desirable, even aside from questions of national policy. The imported soybeans, he points out, are a mixture of varieties and therefore do not cook uniformly. He also states that the home-produced soybeans are usually superior in flavor.

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E FIELDS

CHEMISTRY—AERONAUTICS

Helium, Sun Element, Soon To Hold Airship Aloft Again

SOON the compressors at Amarillo will be whirling full speed handling millions of cubic feet of natural gas in order that helium, the sun element, may again hold aloft an airship.

Twenty years ago with great secrecy American engineers and chemists converted helium from a "rare" gas, commanding $2,000 a cubic foot, into a non-inflammable competitor to hydrogen as a lifting gas for balloons and airships. When the armistice was signed thousands of cubic feet of helium in cylinders were on a New Orleans wharf ready to be shipped to Germany to do their bit in the fight against the Germans.

Now the Germans of today, the disaster of the hydrogen-filled Hindenburg fresh in their memories, are about to use some 18,000,000 cubic feet of helium for the initial inflation and replenishment during flights that the new Zeppelin LZ-130 will make this summer between Europe and the United States.

America has a monopoly on commercial supplies of helium and Congress after the burning of the Hindenburg enacted a law allowing its sale for restricted commercial, research and medical uses.

The extraction of the 1.8% helium in the natural gas from the Cliffside field in the Texas Panhandle is the task of the U. S. Bureau of Mines. Underground in the Government-controlled gas field that supplies the Amarillo plant there is an estimated reserve of 1,800,000,000 cubic feet of helium, enough for years to come.

Not content with such a reserve, Uncle Sam has set aside some smaller gas fields in Utah that are much richer in percentage of helium and steps are being taken to purchase helium properties near Dexter, Kansas, and Thatcher, Colo.

Sufferers from asthma, and "sand-hogs" and deep sea divers who work under pressure, will benefit from the availability of helium. The gas is used in preventing the "bends" when under-pressure workers are decompressed. And helium is proving useful in treatment of respiratory diseases.

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BIOLOGY

Plant Parts Live For Year or More Alone

FLOWERS commonly fade quickly, but their parts have been kept alive, with active cells, for as much as a year or more, by Prof. Carl D. LaRue of the University of Michigan. (*Science,* Mar. 11)

In the experiments, parts of flowers were cleared of all forms of germ life and kept in glass vessels on sterile culture media containing appropriate foods. Petals, stamens, and other flower organs survived from 200 to 365 days. Some of them might have lived longer, but the research was discontinued at the end of a year.

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GEOLOGY

Baxter Meteorite Recovered by Museum

THE SKY flamed, something crashed through the roof of Mrs. Jackson's house in Baxter, Mo. Later, the missile was taken out and found to be a small meteoric stone.

Now, 22 years after the fall, the meteor has come to the attention of scientists, and was secured for the Colorado Museum of Natural History by H. H. Ninninger, curator, who describes the visitor from space (*Science,* Mar. 11).

Only one other North American meteorite, the Kilbourn stone, from Wisconsin, is known to have fallen on a building.

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BOTANY

Chemical Treatment Causes Increase in Germination

DORMANT lettuce seed will germinate much more freely if treated chemically before planting, Dr. Ross C. Thompson and William F. Koser of the U. S. Department of Agriculture have discovered. (*Science,* Mar. 4)

Most successful of the chemicals used was thiourea. A one-half per cent solution of this compound caused the germination of 94 per cent. of the seeds tested, as compared with a little less than 23 per cent. in the case of "control" lots of seed treated only with water.

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ENTOMOLOGY

800-Mile-An-Hour Insect Debunked by Science

THAT 800-mile-an-hour insect, the deer botfly, has been completely debunked by science. Twenty-five miles an hour would be more like a reasonable speed for the creature, declares Nobelist Irving Langmuir, associate director of the General Electric research laboratories. (*Science,* Mar. 11)

Dr. Langmuir went at the problem of the fly's alleged high velocity—almost twice the speed of the fastest airplane—in a number of ways. Both by theoretical calculations and laboratory experiments he proved that it just can't happen.

The fly's speed has been given as 818 miles an hour in widely circulated reports. To do that, Dr. Langmuir calculated, it would have to develop five-tenths of a horsepower—rather formidable job for an insect. In doing so, it would have to consume about one and one-half times its own weight in food every second it is in flight—and it carries no lunchbox.

But supposing it could develop such power and attain that speed. Against its practically flat head there would develop a pressure of about eight pounds per square inch, probably enough to crush it. If it struck human flesh at the velocity of 818 miles an hour (400 yards per second) it would exert a force of 310 pounds, or about four tons per square inch. That is, it would be a fairly efficient bullet, and would cause a serious wound; nothing of the kind has ever been reported.

In his laboratory experiments, Dr. Langmuir suspended a lump of solder of approximately the dimensions of the fly on a silk thread and swung it at various velocities in a brightly-lighted, white-ceilinged room.

At 13 miles an hour it could be seen only as a blur; at 26 miles it was barely visible; at 43 miles it appeared only as a faint line and its direction could not be told; at 64 miles an hour it became completely invisible. Laboratory light intensity measurements bore out the experimental results: at 64 or more miles an hour an object the size of the deer botfly becomes invisible.

Dr. Langmuir concludes with the estimate that a speed of 25 miles an hour is a reasonable one for the insect, while 800 miles an hour is "utterly impossible."

Science News Letter, March 26, 1938