

MEDICINE

Sulfanilamide Successful In Treating Animals

SULFANILAMIDE, the chemical remedy which has helped thousands of human patients recover from infections ranging from blood poisoning to gonorrhea, promises to help laboratory animals when they get sick.

News that the "sniffles," a form of pneumonia responsible for a high mortality in all laboratory rat colonies, can be successfully treated with the new chemical remedy comes from Dr. Norman R. F. Maier of the University of Michigan.

In a report to the current issue of *Science*, Dr. Maier reports (*Science*, May 13) that out of 14 rats with "sniffles" who were given sulfanilamide daily, 12 recovered permanently and two died. In a group of seven untreated animals all died after varying lengths of time.

No harmful effects from the drug were noted although some animals received it daily for nearly two months.

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CHEMISTRY

Vitamin Alphabet Shows Signs of Shrinking

HERE'S good news for those who have given up hope of being able to learn the vitamin alphabet since it has outgrown the ABC stage and taken on not only more and more letters but numerals as well. The vitamin alphabet now shows signs of shrinking.

From a vitamin expert and professor at Yale University School of Medicine, Dr. George R. Cowgill, comes the news that many claims for the existence of new vitamins have been shown to be untenable. What appeared to be new vitamins were just extra quantities of some of the old familiar ones.

Dr. Cowgill cited the case of the vitamin B complex as an example. Originally there was just one vitamin B, found in rice polishings, whole grains and cereals and yeast. Lack of this vitamin caused the severe nerve disorder, beriberi, in man and a similar condition, polyneuritis, in fowl.

After the original discovery, scientists continued to study this vitamin and the more they studied the longer grew the list of B vitamins. Finally there were vitamins B₁, B₂, (also called vitamin G by American scientists), B₃, B₄, B₅, B₆, and two more substances called filtrate factors. All of them were considered

necessary for normal growth and each one was believed to have in addition certain special effects, or rather lack of each one was believed to result in separate nutritional disorders. It was all very confusing and a special committee of scientists had to be set up to straighten out the matter of names alone.

Now, however, things are growing simpler. The chemical structure of vitamin B₁ is known and the vitamin is called either thiamin, its chemical name, or simply vitamin B. It is the beriberi preventive. B₂ turns out to be riboflavin and instead of being a pellagra preventive is a preventive, Dr. Cowgill states, of a degeneration of the spinal cord. The special effects of B₃ and B₄ are now known to be due, according to Dr. Cowgill, to a larger supply of B₁. The effect of B₅, noted in pigeons, has been explained on other grounds.

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PSYCHIATRY

Chemical "Pepper-Upper" Lifts Sick Minds

USE of a chemical "pepper-upper" so potent that it lifted mentally sick patients out of the depths of self-absorption and mental derangement was described by Dr. Eugene Davidoff of Syracuse Psychopathic Hospital at a Conference of New York "Up-State" Hospitals held at Marcy State Hospital near Utica, N. Y.

The "pepper-upper" is benzedrine sulfate, popular as an inhalant to relieve cold-congested noses and as "pep pills" to stimulate tired minds, although this latter use is decried by physicians.

At the Syracuse hospital this chemical has been given either alone or with a sleeping drug, sodium amyral, to 57 patients suffering from schizophrenia, one of the most widespread of mental ills. An improvement in two-fifths of these patients followed the new treatment. In reporting this, however, Dr. Davidoff warned that not enough time has elapsed to be certain that the improvement is real and lasting.

Benzedrine sulfate, he said, makes the patients more adaptable and more accessible to understanding, investigation and psychiatric treatment. It is an easy treatment to give and has less danger and fewer difficulties than either metrazol or insulin shock treatments, now widely used for schizophrenia patients. Dr. Davidoff believes the benzedrine treatment should be given further trial.

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IN SCIENCE

ENGINEERING

Batteryless Telephone Uses Voice and Magnet

A MAGNETIC telephone requiring no battery or other source of outside electric current for its operation has been developed by engineers of the Bell Telephone Laboratories, G. E. Atkins of the organization's staff reports.

Depending on voice vibrations to move an armature placed in the field of a permanent magnet for generating the current which carries speech, the same unit may be used as receiver or transmitter.

The instrument recalls early telephone receivers and transmitters which likewise were magnetic and used no outside source of current. They had, however, too low an output to be practical. It is only in recent years that knowledge of highly magnetic materials and structure has enabled practical use of this type of circuit, Mr. Atkins declares.

Independence of batteries or other outside power source makes the instrument extremely portable and suitable for use in places such as construction camps. A special portable unit weighs less than two pounds. A wall unit contains separate receiver and transmitter.

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CHEMISTRY

Wool for Clothing Is Made From Fish in Germany

GERMANY has added to her rapidly growing list of synthetic products a "fish wool" made from fish albumin and cellulose (*Industrial and Engineering Chemistry*).

Comparing favorably in strength, resistance to washing and wear resistance with good grade fiber made by the viscose process, which is widely used in the United States, the new product is precipitated from a solution containing 50 per cent. fish albumin and 50 per cent. cellulose.

When the solution is spun out, the cellulose coagulates first and the albumin later, producing a thread with a cellulose core and an albumin outer sheath.

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E FIELDS

CHEMISTRY

Secret, Synthetic Oil Developed For Watches

A NEW, secret synthetic oil for aviation watches, clocks and naval and airplane instruments was announced at the meetings of the Horological Institute of America, professional society of watch-makers.

Its superior qualities at high and low temperatures and for long periods, were described by W. C. Trent of the aeronautical instrument section of the National Bureau of Standards. The formula of the oil is still secret and Mr. Trent refused to disclose its composition on advice of the Navy Department.

An extensive report of the tests performed on the new oil was given, however. It is non-gumming at lower temperatures, does not readily oxidize at high temperatures and has showed excellent performance in a 2,000-hour test, which is still in progress.

The new oil seems, at last, to supply the Navy with an oil which can be obtained in large quantities and which will have the superior properties of porpoise jaw oil which is now virtually non-existent in world markets. The decline of the whaling industry—which used to catch porpoises as a side line—is responsible for the scarcity of porpoise jaw oil.

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ARCHAEOLOGY

Dummies Found Wearing Rare Suits of Armor

A GREAT discovery of medieval armor has been made in an old church in Italy.

At this Church of the Madonna delle Grazie, near Mantua, there has been for centuries a gallery of dummy portrait figures, life size. From high niches on the wall, the figures look down. Armored knights, ladies, churchmen, one and all, these represent medieval people who gave thanks to the Virgin at some time for saving them from untimely death or from torture. They were there, on display, in 1555; for an Englishman

sent to Rome by Mary Tudor told of seeing the figures.

And now, a British armor expert, James G. Mann, has discovered that the knightly images in the church are wearing real armor, such as museums and collectors dream of, but scarcely expect to find in quantity.

Mr. Mann's attention was called to the statues by a friend who suspected that the armor might be real, and not papier mache, as every one supposed. Mr. Mann investigated, and reported to the British Society of Antiquaries that no less than 17 of the dummies wore real armor, and a good deal of it looked like fine fifteenth century Milanese craftsmanship, at that.

Not until last September, however, did the chance arise to clean the paint off the metal suits and assemble them properly. Sixteenth century folk who had prepared the figures had not been careful about matching fighting togs, most of which were old-fashioned to them.

With paint boiled off the metal, six complete suits of Gothic fifteenth century armor have been assembled, representing the period in armor history when fighting suits were most varied and the art of adapting protective metal to human machinery was most clever. The rest of the armor is of the sixteenth century, when harness became dressy, and was decorated in ingenious ways.

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GEOLOGY

Remotest Ancestors Of Mickey and Donald

DISCOVERY of the archancestors of Mickey and Donald was announced by Prof. Glenn L. Jepsen, of Princeton University.

All that remains of Number One Mouse, which dates back to the Paleocene age 80,000,000 years ago, are a few teeth. Prof. Jepsen discovered these in south central Montana in 1931, but only recently learned their significance. He now is certain that they came from a member of the rodent family and has named the animal *Paramys atavus*, meaning mouselike grandfather.

Parts of the left wing of a 50,000,000-year-old duck were discovered in northeastern Utah during an expedition under the auspices of Princeton University in 1936. The remains were unearthed from an Upper Eocene deposit by John Clark, now at the University of Colorado. Dr. Alexander Wetmore, of the U. S. National Museum, has built up a probable body structure around them.

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ANTHROPOLOGY

Sitting Bull "Tells All" In Autobiographies

SITTING Bull, big Sioux warrior, certainly enjoyed writing the story of his life—so Smithsonian scientists begin to think.

They have just received a third biography done in pictures by the noted Indian fighter. Two were drawn by Sitting Bull himself; the third is an 1872 copy, but the original of this was never seen by any white man. There may be more of Sitting Bull's literary work scattered around the country, the scientists suspect.

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GENERAL SCIENCE

American Museum Finances In Critical Condition

FACED with rising maintenance costs and sharply decreased operating income, the American Museum of Natural History is in critical financial condition, its president, F. Trubee Davison, reveals in his annual report.

Income from endowment and contributions to the Museum's maintenance and endowment fund have been reduced during the last few years, at the same time the cost of supplies in the daily running of the museum, one of America's most famous institutions, has increased materially, Mr. Davison reports.

Despite economies which included the drastic measure of paycuts for the entire staff, "approximately \$70,000 only is left for scientific and educational work" after fixed overhead and payrolls are met, his statement discloses.

The condition of the museum today is more critical than in 1936, when a \$10,000,000 ten-year development program to assure the institution's future was announced, despite a "most gratifying" response to the long-range drive, Mr. Davison points out.

In spite of sharply curtailed operating revenue, however, the museum was able to find backers for 34 expeditions it sent into the field in 1937. Twenty-three of the expeditions were in North, Central and South America, including the famous American Museum-Sinclair Dinosaur Expedition to Colorado and Wyoming. Headed by Dr. Barnum Brown, it made important 80,000,000-year old finds. The portion of the report dealing with the museum's scientific work was written by Dr. Roy Chapman Andrews.

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