

MEDICINE

Relief for Angina Pectoris, "Most Painful" Disease

Chloroform-Like Drug Inhaled As Routine Treatment Makes Attacks Less Frequent and Reduces Pain

QUICK relief for the world's most painful and most rapidly increasing disease, angina pectoris, has been achieved by the simple inhalation of the chloroform-like drug called trichlorethylene, Dr. John C. Krantz, Jr., of the University of Maryland School of Medicine, Baltimore, reported to the meeting of the American Association for the Advancement of Science.

Patients with the fear of death upon them, dreading the next seemingly inevitable attack of the excruciating heart pain that is said to be worse than childbirth or gallstones, get relief in a second from inhalation when the attacks occur.

As a routine treatment night and morning, crushing an ampule in a handkerchief makes attacks less frequent by a half or third. Clinical tests made by Dr. William Love, Jr., Baltimore physician, were successful in 15 out of 20 cases.

An extract of the pancreas from which insulin has been removed is also effective in the medical fight on angina, Dr. James C. Munch, Philadelphia pharmacologist, made known at the A.A.A.S. meeting. Tested on some 500 patients at New York, Santa Barbara, Mayo Clinic and Philadelphia, it brought seemingly permanent relief from angina attacks in 85 per cent. of the cases.

Some patients needed no more treatment after daily injections for two weeks, others needed weekly treatments for several months thereafter before relief came.

From Diabetes Treatment

Discovery of the usefulness of the pancreas hormone in angina came as a byproduct of the insulin treatment of diabetes. Some patients with both angina and diabetes had both diseases mitigated by the relatively crude insulin of the early days.

As insulin was refined to greater and greater perfection, it became less effective in angina. The scientists therefore looked in the impurities for the substance benefiting angina conditions, and

the pancreas extract now being used resulted.

Dr. Munch estimates that angina pectoris, predominantly a "busy man's disease," magnified by increasing life expectancy, has about sextupled in frequency in the past 20 years.

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ASTRONOMY

Rare Meteor Spectrum Obtained by Astronomer

THE FIRST photograph of the spectrum of a meteor of the Leonid shower to show all the light visible to the naked eye, as well as some of the short ultraviolet waves, was obtained at the David Dunlap Observatory of the University of Toronto. The photograph was made by Dr. P. M. Millman, of the observatory staff, at the time of the shower in November. These are meteors, or "shooting stars," that seem to radiate from the constellation of Leo, in which direction their parallel paths seem to converge, like the tracks of a railroad.

Blue in Color

According to Dr. Millman, "the Meteor appeared at 1:48 a. m., on November 18, and was almost as bright as the planet Venus. It was blue in color, and burst at the end of its path, leaving a train visible for 14 seconds." The photograph was obtained with a small camera, over the lens of which had been placed a prism. Thus, instead of a direct photograph of the meteor, the image was spread out into a spectrum. From such spectra it is possible to tell much about the meteor's constitution.

"The spectrum is of type X," explained Dr. Millman. "That is, it shows very little other than the lines of iron, and is the first Leonid spectrum of this kind to be photographed." The importance of this observation is indicated by the fact that only on 38 previous occasions have meteor spectra been photographed.

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RARE SPECTRUM

Unusual photograph of the spectrum of a Leonid meteor, showing all the light visible to the naked eye, as well as some of the short ultraviolet waves. The photograph was taken by Dr. Peter M. Millman, at the University of Toronto's Dunlap Observatory.

CHEMISTRY

Synthetic Production of Musk and Civet Achieved

PRACTICAL synthesis of the organic chemical compounds in musk and civet that give choice perfumes their odor was reported by Dr. Wallace H. Carothers, du Pont chemist, to the National Symposium of Organic Chemistry.

Chemists are about to manufacture in the laboratory pure essences such as that of "muscone," which if made from the rare musk deer would cost \$40,000 a pound.

A new field of chemistry is opened by the researches of Dr. Carothers and his collaborators, Julian W. Hill and E. W. Spanagel, who have developed a theory and method of control of synthesis of what chemists call "large ring" compounds of high molecular weight.

These large rings of chemical molecules may also prove of use in medicine, as the Chinese use musk in medicine and investigations may demonstrate scientific medical uses.

Based upon the 1926 discovery of the Swiss chemist Ruzicka that the essential principles of musk and civet are

chemicals of large-ring type, the du Pont research has aimed to make this discovery practically available. "Muscone" and "civetone" are the only known examples of such chemicals found in the animal world, the chemists declared.

Lower grade perfumes have long been made synthetically and there are also synthetic imitations of musk. In

fine perfumes the function of musk, although unpleasant in large quantities, is to blend the various odors into a single fragrance as well as to confer permanence on odors otherwise fugitive.

The new chemical research has the possibility of bringing to the boudoir new synthetic odors that nature has not imagined.

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ASTRONOMY

Great Hydrogen Outburst on Sun Preceded Radio Fading

A SUDDEN outburst of hydrogen from the sun preceded the diminution in radio intensity on the earth observed on Oct. 24, R. S. Richardson, of the Carnegie Institution's Mt. Wilson Observatory, reported to the American Astronomical Society.

Mr. Richardson's work followed announcement of such fadeouts by Dr. J. H. Dellinger, chief of the radio section of the National Bureau of Standards. Another such eruption of hydrogen occurred on Aug. 30 when a sudden and mysterious fading of short wave radio transmission was noticed for about fifteen minutes by scientists at the National Bureau of Standards. Fadeouts also occurred on March 20, May 12 and July 6, the interval between them being just about twice the period that the sun takes to rotate.

Dr. Dellinger suggested that they might be associated with some sort of solar eruption, and the Oct. 24 photographs were taken as a result of his request that careful observations be made of the sun at the time of the next expected occurrence. Earlier observations were studied as well.

It was found that an eruption, probably rather small, was recorded in July, but no unusual activity was noticed at the time of the first two dates. However, no observations had been made at the exact time of the fading.

Such a hydrogen eruption is called a flocculus, and Mr. Richardson reported that "when the sun is observed for half an hour each day at this phase of the solar cycle we may expect to photograph about ten such flocculi in one year."

Beginning Oct. 21, photographs of the sun were made by the spectroheliograph, which records the light from a single element, hydrogen in this case, at

intervals not greater than ten minutes wherever possible. Between that date and Oct. 25 a total of 323 exposures were made, an average of one every eight minutes during observing hours. A small flocculus was photographed on the first two days without any sign of great activity, until the time of one exposure made on the 24th.

"On the next image, taken twenty-one minutes later," said Mr. Richardson, "the flocculus had increased in intensity until it was the most conspicuous object on the disk seen in a hydrogen spectroheliogram. It was stronger than the one photographed on July 6, but never reached the intensity of the one on Aug. 30."

Until this date there had been a general improvement in radio transmission in the short wave bands and it had reached the highest value ever recorded at the Bureau of Standards on Oct. 24. There was no sudden fadeout such as those noticed before, but the upper limit of frequency dropped to half of the value on the preceding day, and on the following days returned to the previous high value.

Earlier observations were examined, as well as records of magnetic storms. One very brilliant cloud of hydrogen appeared on June 5, 1925, while the number of sunspots was low, and a magnetic storm followed four days later. An equally brilliant eruption appeared on Dec. 28 and 29, 1928, when the spots were numerous.

"The magnetic character of the day was calm during the eruption and was very calm and at most only slightly disturbed for a week afterwards," it was stated. "Other examples like these might be cited to show the difficulties encountered in attempting to correlate solar and terrestrial phenomena.

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MEDICINE

Breathing Exercises Help Sufferers From Asthma

ASTHMA sufferers at King's College Hospital are being helped by a relatively simple but promising remedy, Dr. Marjorie Gillespie of Glasgow has reported. (*Lancet*, Sept. 28, 1935)

The remedy consists of individually prescribed breathing exercises. Of 75 patients treated by this method, only eleven failed to be helped, Dr. Gillespie reports. These eleven seemed incapable of mastering control of the diaphragm for proper breathing. Older patients were as likely to benefit as younger ones but the length of time the patient had had asthma had much more to do with the results of the treatment. Those who had suffered longer were less likely to be helped.

The theory of these exercises upon which the treatment is based is that asthmatic patients are found to have during attacks congested and narrowed bronchioles through which air could be drawn but could not escape. The aim is to empty the lungs as far as possible, to reeducate the automatic diaphragmatic movements and to diminish chest breathing. When done properly, the exercises tend to relax contracting muscles and make ribs and chest walls more mobile.

Various types of exercises are used to suit individual patients, since some were found who could do one kind but could not be taught to do a different kind. The patients had with few exceptions been taking various drugs, but as their confidence in the treatment warranted it the drugs were gradually withdrawn, which was usually between four and eight weeks. Besides attending the special classes in breathing twice a week, they were urged to use the exercises whenever an attack seemed imminent.

The doctors at the clinic think the good results may be partly psychological. The nervous tension is reduced whenever a patient feels that he can relieve an impending attack by his own efforts.

Women recovered more quickly than men. About one-half of the patients claimed that they could check almost all but the most severe attacks if they began their exercises at the first suggestion of troublesome breathing.

In Germany Dr. D. K. Schütz has also been treating patients by a similar method. He has added to the breathing exercises a few physical exercises. He reports that two-thirds of his patients have been relieved of their symptoms.

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