

MEDICINE

Migraine Headache Relief Possible with Histamine

► RELIEF for migraine headache sufferers is possible with the body chemical believed involved in allergy, histamine, according to two Mayo Clinic physicians, Dorothy Macy, Jr., and Bayard T. Horton.

Their description of the treatment of 144 patients with migraine headache at this clinic from 1937 to 1946 appears in the *Journal of the American Medical Association* (July 24).

While 98 of these patients showed a 25% to 100% improvement, they emphasize that histamine is not a cure for the condition.

Drs. Macy and Horton stated that freedom from migraine attacks in these patients paralleled the period of treatment with histamine. They declared that patients who were free of symptoms after one year or more were still taking histamine once daily or every other day.

Science News Letter, August 7, 1948

DENTISTRY

Healthy Teeth Found Among Hydrofluoric Acid Workers

► MAKING HYDROFLUORIC ACID for the Manhattan atomic bomb project seems to have resulted in unusually healthy teeth for workers.

Men on the project who worked in an atmosphere laden with acid fumes had less than half as many dental fillings as did the office workers in the same plant who were not exposed to the fumes, Drs. Peter P. Dale and H. B. McCauley of the University of Rochester report in the *Journal of the American Dental Association*.

"This finding was made in spite of the fact that most of the men neglected their mouths," the doctors wrote.

It is known that fluorine in small amounts is very important to healthy teeth and recently dentists have begun to paint children's teeth with a solution of a fluorine compound to prevent cavities.

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CHEMISTRY

Compressed Gas Bubbles May Start an Explosion

► TINY GAS BUBBLES make an explosive more sensitive. These little pockets of gas when compressed become hot enough to start an explosion.

Friction on a small piece of grit may also be the factor which turns the relatively slow initial burning of an explosive into a real explosion. These findings were reported to the British journal, *Nature* (March 6) by the Research Group on the Physics and Chemistry of Rubbing Solids at Cambridge University.

Tracing the history of an explosion, the scientists found that liquid explosives which

were set off by impact showed an initial slow burning which proceeded at the rate of about 890 miles per hour. Then, some sudden heating at a point in the explosive material caused the explosion to race ahead at a speed of about 4,000 miles per hour.

Solid materials showed a similar effect. The critical hot place in the material is believed to be due to either air or gas bubbles or grit.

Not all explosives show the two stages in the start of an explosion. One which was tested, lead azide, a solid, showed no initial slow burning but began exploding immediately.

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GENERAL SCIENCE

Visits to Chemical Work In Progress in Washington

► UNUSUAL OPPORTUNITIES to see the chemical work of the United States Government are being arranged for members of the American Chemical Society attending the 114th meeting of the society in Washington Aug. 30 to Sept. 2. Programs in nearly every field of chemistry are being carried on, ranging from creation of new compounds to testing and standardization of samples of those on the market.

Four major trips are offered chemists attending the meeting, scheduled in such a way that all four of the institutions may be visited by those who wish to, and still leave time for attending sessions in Washington. Beltsville, the research center and experimental farm of the Department of Agriculture, will appeal to many on account of the wide variety of researches there in fields touching the primary one of food supply. Visitors will see investigations of the effect of minor elements, fertilizer investigation, food and nutrition studies and insecticide work. The Naval Research Laboratory offers inspection of a number of chemical laboratories investigating protective coatings, fuels, lubricating agents and plastics, with special emphasis on its microchemical work and its under-water sound studies.

At the National Bureau of Standards, exhibits showing standards of fundamental measurements and pure materials, as well as investigations of rubber, textiles, paper, leather and plastics, and demonstrations of high voltage will be shown. In Bethesda, Md., visits will be made to the Naval Medical Center and to the U. S. Public Health Service's National Institutes of Health, where studies of immunology, blood fractions and cancer research will be seen.

These institutions, at a distance from the center of Washington, will be reached by special busses which are being arranged for at nominal fees to take members directly to the laboratories. So far as possible, these trips are scheduled in duplicate, on different days, to give a better chance for all visitors to go to all of them.

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IN SCIEN

ASTRONOMY

Sundial Shows Midnight And Midday at Thule

► MIDNIGHT as well as midday is indicated these summer months by a sundial in Thule, situated on the northwestern coast of Greenland.

Thule, only 800 nautical miles from the north geographic pole, is so far north that the sun is above the horizon continuously for three months. It remains above the horizon for a while each day for another five months.

The angle on the shadow-forming upright or gnomon of this, probably the world's northernmost sundial, is exceedingly steep. The geographical coordinates of Thule are 76 degrees 33½ minutes north, 68 degrees 48 minutes west. Thus the upright has an angle of about 76½ degrees, Lt. Howard P. Smith, Jr., amateur astronomer stationed at Randolph Field, Tex., reports in *Sky and Telescope* (June).

The standard time in Thule, one of the world's most northerly permanent settlements, is four hours less than Greenwich time. The sundial is set within ten minutes of local meridian time.

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GENERAL SCIENCE

American-Soviet Science Group Ceases Activities

► LACK OF FUNDS, due to failure of the U. S. Treasury Department to grant tax-exempt status, has caused the American-Soviet Science Society to cease activities.

In 1946 the society was offered a grant of \$25,000 from the Rockefeller Foundation for the continuance of its work of acquainting American scientists with the work of Soviet scientists and furthering better relations between the scientists of the U. S. A. and the U. S. S. R.

According to a statement issued by the society's executive committee, the Treasury Department failed to act on the application for tax exemption because the House Un-American Activities Committee is investigating Dr. Edward U. Condon, director of the National Bureau of Standards, who is one of the members of the executive committee.

Since tax-exempt status was necessary to accept the Rockefeller grant, the society has suspended its bulletins since September, 1946.

A collection of Russian scientific and technical books and journals has been deposited by the society with the American Russian Institute in New York.

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CE FIELDS

ASTRONOMY

New Object in Heavens Discovered by Wirtanen

► ANOTHER new object has been discovered in the heavens by C. A. Wirtanen of Lick Observatory of the University of California.

Found in the constellation of Pegasus, the winged horse, Dr. Charles D. Shane, Lick's director, states that it is of the 13th magnitude and thus far too faint to be seen without a good telescope.

Instead of being another comet, the object is probably an asteroid moving unusually rapidly across the heavens. Located on plates taken on July 21, it was headed northwest, according to reports received at Harvard College Observatory, clearing house for such astronomical information in the Western hemisphere.

This is the second faint object Mr. Wirtanen discovered in July. On July 15 he reported finding a 15th magnitude comet, located in the near-by constellation of Equuleus, the colt, and headed toward the constellation of Aquila, the eagle.

Early in the morning of July 21, the object's right ascension was 21 hours, 7.8 minutes; its declination plus 12 degrees, 27 minutes. Its daily motion in right ascension is minus 22 seconds, in declination one degree, 28 minutes.

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ZOOLOGY

Rattlesnakes Tattooed To Trace Their Movements

► TATTOOING RATTLESNAKES, a pastime of Prof. Angus M. Woodbury, is a feat in which he is not likely to be widely imitated. He does it for scientific reasons, marking the snakes with numbers so that they can be identified if picked up subsequently, and their movements thus traced. In the past ten years he has tattooed 777 rattlesnakes and 529 non-poisonous snakes.

The job is done with a home-made outfit consisting of six fine needle points mounted on a piece of piano wire, vibrating within the outer casing of a mechanical pencil. A switch on the outside of the casing controls the vibrator, which was adapted from the "works" of a doorbell. Eight dry cell batteries furnish the power.

It is necessary for the needle points to punch clear through the tough skin, and even the scales, so as to leave some of the India ink in the tissues underneath. Otherwise the markings would be lost the next time the snake shed its skin.

Rattlesnakes are tattooed on the underside of the body just back of the head,

Prof. Woodbury states; non-poisonous snakes receive their identification marks farther aft. The snake is held by an assistant during the tattooing operation; or if he is alone, Prof. Woodbury holds the reptile down with his foot. What the snake says, he does not report.

Prof. Woodbury gives details of his technique in the zoological journal, *Copeia* (June 30). He thinks it can be adapted for use on other lower animal forms such as lizards, amphibians and fish.

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PHYSIOLOGY

Crowing Hens Point Way to Useful Gland Discoveries

► CROWING HENS, which in older times were regarded with horror as a kind of evil miracle, have indirectly accomplished much good in pointing the way to many useful discoveries in the glandular physiology of chickens and other animals, it was pointed out in a talk given jointly by Dr. Mary Juhn of the University of Maryland and Dr. Richard Fraps of the U. S. Department of Agriculture.

Dr. Juhn and Dr. Fraps spoke as guests of Watson Davis, director of Science Service, on Adventures in Science, sent out over the network of the Columbia Broadcasting System.

Hens crow and in other ways behave like roosters because of disease or other abnormalities in their female glandular system, Dr. Juhn pointed out. Discovery of this fact, years ago, led to much research on the activities of the ductless glands and the effects of their secretions, the hormones.

In one of her own experiments on the influence of hormones on feather growth, Dr. Juhn injected female sex hormone daily into young roosters, while their feathers were growing. Hen-like feathers sprouted. However, she gave the roosters (and herself) a rest on Sundays—and each of these interruptions in the hormone treatment produced a male-pattern cross-bar on the otherwise hen-like feathers.

Dr. Fraps told of his recent discovery in chickens of a hormone known as progesterone, hitherto considered a monopoly of mammals. (See SNL, July 31.) In the latter animal group, progesterone brings about the attachment of the early-stage embryo to the maternal tissues that nourish it and bring it to birth. Its role in birds is anything but clear as yet, but Dr. Fraps thinks it may have indirect effects on egg development and possibly on the presence of a germ-repelling substance in the egg white that protects the growing chick in the shell.

Of course, the presence of this "mammalian" hormone in birds is of great interest to students of evolution, as adding a new bit of evidence of descent of these two widely different groups from a common ancestor.

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RADIO-ENGINEERING

Radio Signals Sent from Rocket at 72-Mile Height

► A WAR-DEVELOPED DEVICE, for sending automatic radio signals giving scientific information from a roaring rocket high above the earth, operated successfully at the White Sands Proving Grounds, Las Cruces, N. Mex., in a test just revealed, from an altitude of nearly 72 miles while traveling at over 2,800 miles an hour.

The device that provides scientific data from aloft to ground-based recording instruments is known as a telemeter. In this test what is known as the Aerobee telemetering system was used. It has had many successful trials, but this is the first time that this miniature telemetering system has reached an altitude of 71.78 miles above the earth and attained a maximum velocity of 2,830 miles an hour.

The information collected and sent to the ground-based recording instruments include flight characteristics, motor performance and missile aspect, data on cosmic ray intensity, the quality of sunlight above the atmospheric blanket, and changes in the earth's magnetic field. The system has been used to transmit 24 different kinds of information. The records sent are continuous.

The system used in this test was evolved during the war by scientists of Princeton University and of the Applied Physics Laboratory of Johns Hopkins University at Silver Spring, Md. The application to supersonic missiles, those that travel faster than sound, was made at the Applied Physics Laboratory.

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WILDLIFE

Western Tourists See New Wildlife Park

► VACATION travellers now have an opportunity to see a sample of primitive western American wildlife in its natural environment, with the opening of the new 1,500-acre Jackson Hole Wildlife Park in Wyoming, south of Yellowstone National Park. A fence, so arranged as to be practically invisible, surrounds 400 acres of the area, keeping elk, bison, moose, deer and pronghorn within easy sight of the automobile road. Horseback trails make more of the wilderness accessible to those who wish to stay longer.

This newest wildlife park has been set up on land made available by John D. Rockefeller, Jr., and his son Laurance S. Rockefeller. The Wyoming Game and Fish Commission, the Jackson Hole Preserve, Inc., and the New York Zoological Society are cooperating in its development.

Although the new park is open to tourists only during the normal season for easy travel, it will be used by research zoologists on a year-round basis for the study of the ways of wild animals.

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