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"SLEEPING SICKNESS" CASES ARE NOW WORLD-WIDE

(By Science Service)

Washington, April .- Encephalitis lethargica, the disease commonly known as "sleeping sickness", is prevalent all over the world, according to reports that have been received here by the Public Health Service.

This malady that causes inflammation of the brain, probably is a product of the war. Announced in Austria by von Economo at the beginning of 1917, it reached France and England in the spring of 1918, and Italy the following winter. It appeared in Portugal in February, 1919, in India in November, and in Spain in the early part of 1920. It appeared in the United States toward the end of 1918, on the Atlantic Coast, and on the Pacific Coast in October, 1919. It has also reached Uruguay, South America, and was present in Australia in March, 1919.

In January of this year there were 220 reported cases in the United States, while in February 463 cases were reported. As this disease is not reportable in most states, it is probable that the numbers are actually much larger. In New York City alone last year there were 565 cases with 211 deaths.

England during January had 454 cases. Beginning in January of last year, encephalitis took an epidemic form in France and it is estimated that there were 10,000 cases in France, with 1,500 in Paris. Since 1918 about 4000 cases were actually reported upon in Italy and the death rate was 25.6 per cent

MONKEY HAS HUMAN SMILE AND LIKES TO HELP HIMSELF

(By Science Service)

Release Tuesday morning, May 3.

Washington, May 2.- "The Orang-utan when he is captured young soon becomes friendly with man and attached to those who feed and care for him" W. H. Sheak of Philadelphia said at the meeting of the American Society of Mammalogists here today.

This monkey also has a very human-like smile and when the young animals play they smile often. But when the Orang-utan grows older he is inclined to become mean and cross, said Mr. Sheak.

"The Orange-utan is almost if not altogether as intelligent as the chimpanzee," declared Mr. Sheak. "But as he is less active he does not show up to as good advantage. Mr. Orang-utan spends much of his time sitting silent in one corner of his cage. He does not weep as easily as the chimpanzee nor laugh aloud as often."

"One orang-utan wanted a walnut that lay just beyond his reach outside his cage. He tried to roll some straw into a wand, but this was too much broken. After deliberating for some time, he took off a red sweater he was wearing, pushed it between the bars of the cage, dropped it over the nut and pulled the nut within reach. This same animal pushed his keeper toward a lantern that was turned too high, because he had previously been burned by one that took fire and exploded."

ELEPHANT'S SKIN TEMPERATURE MAY TELL HOW TO KEEP COOL

(By Science Service)

Washington, April .- Taking an elephant's skin temperature is the first step of science in finding out what would be the skin temperature of a man who remains nude for some length of time in an environmental temperature of about that of a cool summer morning.

Armed with delicate electrical thermometers and using much patience, Drs. Francis G. Benedict, Edward L. Fox and Marion L. Baker of the Nutrition Laboratory of the Carnegie Institution of Washington, located at Boston, and of the New York Zoological Park, have succeeded in measuring and charting the temperatures of nearly every portion of an elephant's skin from the flap of his ear to the tips of his toes.

A keeper at the New York Zoo, petted a hippopotamus until he turned over on his back and went to sleep and so allowed the scientists to determine the temperature of his body. *animals*

These interesting and practical thermometric experiments were reported upon at the meeting of America's foremost scientific association, the National Academy of Sciences.

Mr. Rhinoceros, however, objected strenuously to the scientific attempts to tickle him with the wire of the electro-thermometer. He would stand still only a few times for the six seconds necessary to make a temperature determination, and therefore the heat of his hide is not well known.

These trips to the zoo to test the epidermis of the pachyderms are only preliminary to experiments to be conducted on people, both nude and fully clothed, to find out whether Newton's law of cooling is followed by the human body.

Man, when fully clothed, has a skin temperature of 91 degrees Fahrenheit, only about 8 degrees less than that of his body. Because the scientists know that the loss of heat from the animal organism by radiation, conduction and vaporization of water is governed, among other factors, by the temperature of the skin, they want to know what the skin temperature of man would be if he, like some of his brother mammals, went around without protective clothing. Elephants, rhinoceroses and hippopotami are not covered with fur or hair and in that respect are similar to man.

The experiments showed that these animals have nearly the same skin temperature of from 10 to 12 degrees higher than that of their surroundings, and there were differences of as high as five degrees between spots on different parts of the animal's skin.

INSECT FIGHTING INSECT MAY CONTROL IMPORTED PESTS.

(By Science Service)

Washington, April .- The biological method for the control of imported insect pests, and recent experiments that may prove of great value to certain foreign countries were described by Dr. L. O. Howard, chief of the Bureau of Entomology of the Department of Agriculture at the meeting of the National Academy of Sciences.

This method consists in bringing from their country of origin the natural enemies which affect the insect pests there, and establishing them in the countries into which the injurious species have been accidentally introduced. The most famous case of this kind was the importation of the Australian ladybird into California many years ago to kill off the white scale which threatened the destruction of the orange and lemon industries of that state.

There is a woolly plant-louse which occurs upon the roots of apple trees, and also to a certain extent upon the trunks and limbs, which is American in its origin but which is seldom especially injurious in this country since the American apples have become inoculated, as it were, against the injurious effects of the plant-louse. But this injurious insect has been spread by commerce to many parts of the world, and in other countries the apple trees suffer severely from its attacks. There is in America a very minute parasite which lays its eggs in the woolly aphid, and these eggs hatch into minute grubs which destroy the plant-lice. Doctor Howard described his personal carriage of living samples of parasitized plant-lice from the United States during the summer of 1920 and the establishment of the parasites in many parts of France. He announced further that the parasites successfully withstood the rigors of the past winter and are issuing in numbers in several localities in our sister republic.

During the autumn of 1920, parasitized woolly plant-lice were sent from Washington in cold storage to the Cawthron Institute at Nelson, New Zealand, and to the Zoological Institute at Montevideo, Uruguay, and word has just come this spring that the parasites have begun to issue and are attacking the woolly aphid in both of those countries.

Incidentally, shipments of the same parasite were sent from Cornell University, by a South African student, to Prof. C. P. Lounsbury, Entomologist of the Union of South Africa, last autumn, and late reports indicate success in that country also.

These announcements are of very considerable biological interest as well as of much economic importance. The successful carriage of living parasites into the southern countries is of especial interest, on account of the diametrically opposed seasons (when it is summer here it is winter there) and consequently the life history of the insect in such carriage across the Equator is subject to a radical change, so that it is rather surprising to find that it accommodates itself to this extraordinary change with apparently little difficulty.

THE UBIQUITOUS DANDELION CONQUERED

(By Science Service)

Geneva, N. Y., May . Although the dandelion is generally hailed as one of the first harbingers of spring, all of those who delight in a clean expanse of lawn will be interested to know that a rather simple means of eradicating the weed has been developed by the New York Agricultural Experiment Station thru the use of a spray containing iron sulfate.

Four or five sprayings are usually required, the first being made in May just before the dandelion blooms; one or two additional applications at intervals of three or four weeks; and finally, one or two sprayings in late summer or fall. The lawn may become blackened after each application, but this need cause no alarm if the grass is growing vigorously. During hot dry weather in midsummer it is thought advisable to discontinue spraying. It is suggested that the spraying be supplemented by the application of fertilizers and by the seeding of grass in the spring and fall. If the proper precautions are taken it is said to be necessary to spray only about every third year in order to keep the lawn practically free from dandelions.

The spray is prepared by dissolving from 1.5 to 2 pounds of iron sulfate (also known as copperas and green vitriol, and available at any drug-store) in 1 gallon of water, using a wooden or earthenware vessel.

A gallon of the solution will cover about 375 square feet of lawn. The best results will be secured when the solution is driven down among the foliage in a fine, mist-like spray, preferably with some type of compressed-air sprayer. However, fairly satisfactory results may be secured with the use of a sprinkling can.

Those who contemplate using the spray are cautioned to prevent it from coming in contact with walks, building foundations, and clothing as it leaves a more or less permanent, brown, rusty stain.

TINY QUARTZ CRYSTAL CONTROLS HUGE ELECTRIC CURRENT

(By Science Service)

Middletown, Conn. April .- A tiny quartz crystal not bigger than a short length of the graphite in an ordinary lead pencil can control and maintain the frequency of electric current in large installations such as the Arlington wireless station as the result of a new method developed by Prof. W. G. Cady of Wesleyan University here. Dr. Cady has just returned from reporting his invention to the meeting of the American Physical Society held in Washington.

In a little pill box, he carries sufficient tiny quartz crystals to produce a large range of oscillations. The smallest of them, about as large as the head of a pin, makes the current vibrate at a rate of 3,000,000 times a second, while a longer crystal is needed to obtain the 40,000 oscillations per second needed to control a long wave wireless installation.

Just by dropping the small crystal into a condenser placed in the vacuum tube regenerative system, the oscillations that control the whole of a gigantic high-frequency current system can be set up and maintained for hour after hour with less than one-tenth of one per cent. variation.

"In fact, the crystals control the vibrations of current much more accurately than they can be cut or ground," Prof. Cady explains. Grinding the minute quartz fragments to the proper size usually can not be done with an accuracy of more than 10 to 20 vibrations per second.

That the use of the new method will provide a simple and inexpensive method of frequency control that will soon be used in practical high-frequency circuits, especially where frequency changes are required often, is the expectation of physicists and electrical engineers. A change of the number of oscillations per second can be made by the simple act of taking one crystal out and dropping in another, they point out. In radio work, by allowing a station to change quickly from wave length to wave length of the wireless impulses, it is expected that the tiny crystals utilized in Dr. Cady's new method will prove especially useful.

FAMOUS SALTON SEA IS DRYING UP

(By Science Service)

Washington, April .- The level of water in the famous Salton sea is being lowered by evaporation at the rate of nearly six feet a year, according to B. C. Kadel of the Weather Bureau who spoke at the meeting of the American Meteorological Society here.

"In 1915, for some reason not explained, the water level fell considerably faster than in any other year during the period from 1910 to 1919," he said.

Mysterious lights seen over Brown Mountain, near Blowing Rock, North Carolina, were described by Herbert Lyman. They are probably silent discharges of electricity, such as have been observed in mountainous regions elsewhere, especially over the Andes, in Chile, where they occur on a vast and spectacular scale, and have acquired the name of "Andes lightning."

E. B. Calvert, chief of the Forecast Division of the Weather Bureau, described new methods of broadcasting forecasts and other weather information by wireless. High-power naval radio stations are now distributing bulletins every night containing not only weather forecasts and storm warnings, but also data with which mariners on the Atlantic and Pacific can draw their own weather maps. After June 1 even more elaborate bulletins will probably be issued from the radio stations every morning, including data of the winds at high levels and other information intended especially for aeronauts. Meanwhile rapid progress is being made in adapting wireless to the ordinary inland distribution of weather forecasts, and the time is near at hand when the forecasts will reach more people by this method than by any other except the daily newspaper.

That weather is a many-sided subject and that the study of it is of interest to people in diverse walks of life is illustrated by the membership of the American Meteorological Society. Among more than a thousand persons who have joined the society since it was founded, a little over a year ago, there are professional and amateur meteorologists, agriculturists, horticulturists, botanists, zoologists, entomologists, geographers, geologists, astronomers, physicists, medical men, engineers, mariners, aeronauts, officers of the Army and the Navy, manufacturers, business men, railroad men and numerous others. The society maintains committees for promoting the application of meteorology to various arts and industries and publishes a monthly journal appealing to a wide range of popular tastes and interests.

DETERMINE U.S. - CANADA GRAVITY DIFFERENCES

(By Science Service)

Washington, April .-- The difference in gravity between Washington and Ottawa is being determined. To find out the amount of the earth's attraction at the capitals of the United States and Canada, experts from both governments are swinging very precise pendulums hour after hour in both cities.

With an accuracy of ten millionths of a second, in the time of oscillation of the pendulum, three of these special instruments, a quarter of a meter in length and with a swing of eight millimeters, are being run for two days stretch here under the observation of scientists of the U. S. Coast and Geodetic Survey and A. H. Miller of the Dominion Astronomical Observatory who is the representative of the Canadian Government.

This whole series of observations will be repeated at Ottawa and then by means of a simple formula the difference in gravity between the two cities will be obtained and the Canadian base for gravity determinations will be established.

These observations will tell with an accuracy of one part in a million just how far above the center of the earth each city is, and the work is being done so that an exactly determined point from which to take elevations will be had in Canada.

This summer engineers of the Canadian government will travel up into the Mackenzie River region and the new oil fields of that area and by swinging the same precise pendulums will establish gravity bases that will be used in the mapping of that country.

The skulls of primitive man dug up by modern archeologists frequently show artificial holes made by prehistoric surgeons, probably with the idea of letting out the demons supposed to cause headaches. In most cases evidence of healing at the edges of the opening in the bone shows that the patient recovered from the operation. Whether the headache was cured is not so evident. Perhaps the pain of the operation itself persuaded the patient to forget the original trouble.

That the bacteria which cause disease have been present in the world for many millions of years is proved by the finding of fossil bones which show evidences that the long extinct animals to whom the bones belonged suffered from bone and joint inflammations of exactly the same character as those from which men suffer today.

Nematodes, tiny worm-like creatures like the well-known vinegar eel, are so numerous in ordinary soil that a handful may contain thousands and even millions of them. It is estimated that if all nematodes were removed suddenly from the soil the soil surface would sink half an inch.

Models found recently in an ancient Egyptian tomb show slaves engaged in home brewing and in pouring off the clarified beer into round stone jugs, no doubt an exact reproduction of the way in which this household art was practiced over four thousand years ago.

Theodoric Borgognoni who died in the year 1296 advocated and practiced the modern aseptic treatment of wounds nearly six hundred years before it was re-discovered by Lord Lister and applied by modern surgeons.

The optophone is a new scientific instrument by which light can be made to produce a sound. It is hoped that it can be applied to a method of translating ordinary printing into a series of recognizable sounds so that blind people can learn to read "by ear".

The prehistoric monument of great upright stones at Stonehenge, England, is being excavated and evidence has been found of a still earlier series of monumental stones, which were removed by the prehistoric builders who erected the present stones. The purpose of these two successive monuments and the kind of people who erected them remain unknown. In the case of the more recent series evidence has been found that the stones which lie horizontally along the tops of the upright ones were fitted into mortises and lowered into place, implying that the primitive people who erected them possessed some equivalent for ropes and at least a sufficient knowledge of engineering methods to permit the raising and lowering of stones weighing several tons.

The value of cold in preserving meat has been shown by a recent experiment in Australia. Fragments of meat were placed in a liquid containing numerous microbes of the kind which cause meat to decay and the whole was then placed at a temperature slightly above zero Fahrenheit for five months after that time the meat was still perfectly fresh and good.

Epidemic hiccoughs have been prevalent in France during the past winter. Many physicians believe that this peculiar disease is caused by the same germ which causes "sleeping sickness", more properly known as "encephalitis lethargica".

French scientists have perfected an apparatus for lighting and extinguishing public gas lamps by means of a slow change of pressure in the gas pipe, this being controllable from the central station.

Examination of the teeth of ancient Egyptian mummies shows that the decay of the teeth, pyorrhea and other forms of dental diseases occurred five thousand years ago much as they do today. The preservation of teeth by filling appears never to have been discovered by the Egyptian surgeons. Toothache must have been common but was probably regarded as inevitable.

Electrolysis, or damage to underground pipes and conduits caused by straying electric current from nearby street railways or power lines, results in a large economic loss each year and in rare cases has caused loss of life.

Complex oils, whether mineral, fatty or essential are very liable to adulteration, and optical methods, including the polarimetric test used in sugar analysis, are being used to detect impurities.

For protection against the ultra-violet and infra-red rays, it has been found that the following combinations of commercial colored glass are satisfactory: red and green, red and cobalt, brown and cobalt blue.

Tests have shown that the Germans used no new fibers in the fabrics that they used as substitutes during the war, but that cotton and coniferous fibers such as used in paper making, were utilized.

The transmission of sensations along our nerves is sometimes likened to the flow of electricity in a wire, but it is immensely slower, its speed being only about 100 feet a second.

The name "Mahogany" is applied to the wood of about 70 distinct species of tree. Some of these are distinguished as "Indian mahogany," "Madeira mahogany," "African mahogany," etc. True mahogany is, however, produced by only two species, both belonging to the genus Swietenia.

Snakes are rare on the Isthmus of Panama. During the first fifteen years of American occupation of the Canal Zone the hospital records show only one case of snake-bite.

One of the queerest plants in the world is the Welwitschia, which grows in Southwest Africa. The body of the plant resembles an enormous radish, and is sometimes 12 to 15 feet in circumference. From this grow two long leaves, which trail on the ground and are usually split into numerous ribbons. These are the only leaves produced, and they last through the lifetime of the plant, which is said to reach more than 100 years. The colonial authorities maintain a small park for the preservation of this rare and remarkable plant.