MEDICINE

Course of Disease Traced In Prints of Human Tongue

HOW TONGUE PRINTS made on smoked paper show the course of certain diseases was explained by Dr. William S. Middleton, associate professor of medicine at the University of Wisconsin Medical School, at the meeting of the American College of Physicians.

In pernicious anemia, for example, and in a number of other diseases such as pellagra, sprue, and anemias due to pregnancy, to tapeworm infestation or certain other conditions, the tongue becomes inflamed and eventually wastes and shrinks. The smoked paper prints show the progress of this condition of the tongue. In the case of pernicious anemia under the liver treatment, the tongue becomes normal again and this is shown on the paper prints. These may be shellacked and thus make a permanent record for future study, Dr. Middleton said.

Apparently the different types of anemia, pellagra, sprue and certain other conditions, are related through some common but still unknown factor. Some one vital substance, for example, may be lacking in the body and the various features of these diseases may result from its absence. Since this condition of the tongue is one thing which all these diseases have in common, its study through the smoked paper prints may reveal important facts about the cause of the diseases, Dr. Middleton explained.

Science News Letter, April 9, 1932

METEOROLOGY

Sun, Moon and Heat Cause Tides in Air Above Earth

DISCOVERY of three kinds of tides in the ocean of air above our heads was announced by Prof. J. Bartels, German meteorologist and research associate of the Carnegie Institution of Washington's department of terrestrial magnetism, when he summarized a series of researches into barometer readings.

Atmospheric tides have greater regularity than the tides of the oceans but they are masked more effectively from simple detection by the great variations and irregularities of the atmosphere which cause our weather, Prof. Bartels reported.

The same gravitational forces of the sun and moon which cause the tides of the oceans produce part of the rhythmical oscillations in the atmosphere, but the daily heating and cooling of the air also exerts its influence.

Prof. Bartels summarized three mathematical harmonic analyses, using thousands of readings of the barometer at all parts of the earth. Buried within the great irregularities of the barometer which show the march of fair and storm areas over the face of the earth, Prof. Bartels found three distinct types of oscillations of striking symmetry. There is a twelve-hourly tide due to the sun, a lunar wave which is exactly the sort of tide that theory says the moon's gravitation should produce, and an eight-hourly wave that is caused by the variation in heat of the atmosphere and is built up by resonance.

Scientists at the Carnegie Institution studying the electrical and magnetic conditions of the earth are interested in the tidal variations in the atmosphere because they help in the interpretations of the systematic variations of the earth's magnetism during each day. The variations of the earth's magnetism in turn are the main sources of information about the physical state of the outermost layers of the earth's atmosphere and the effect that cosmical influences have on the earth.

Science News Letter, April 9, 1932

BIOLOGY

Expedition to Study Life Off Mexican Coast

AN EXPEDITION of scientists who will collect specimens and make observations on the plant and animal life of islands off the Mexican coast and southward to the shores of Ecuador has left San Francisco on the yacht *Zaca*. An announcement of the details of the expedition's plans and personnel are made in *Science* by Dr. Barton W. Evermann of the California Academy of Sciences, which sponsors the expedition. The cruise is backed by Templeton Crocker of San Francisco, owner of the *Zaca*.

Among the apparatus carried for the study of deep sea life is an electrically illuminated trap which can be sunk to great depths. It is hoped that this will make possible the capture of creatures of the dark abysses, attracted by the light. It is expected that the expedition will bring back large collections representing all classes of land and marine life for the museum of the academy.

Science News Letter, April 9, 1932

IN SCIENCE

MICROBOLOGY

Microbes Live in Foods Below Freezing Point

SOME food-destroying microbes are unharmed and continue to multiply below freezing temperature, Dr. C. A. Magoon of the U. S. Department of Agriculture told the American Chemical Society.

The old belief that freezing destroys microorganisms that cause decay in food must be revised, said Dr. Magoon. While the majority of these microbes are usually killed by freezing temperatures, there is ordinarily a small proportion of survivors whose vitality is unaffected by temperatures below freezing.

Some microbes, said Dr. Magoon, have been found to resist temperatures as low as minus 422 degrees Fahrenheit for as long as ten hours with no apparent harmful effect.

These cause alterations in the color, flavor, and healthfulness of foods, which depend on the particular organism concerned. Dr. Magoon is studying intensively the physical and chemical nature of these changes.

Three main groups of microorganisms, explained Dr. Magoon, are responsible for this spoilage of frozen foods: molds which thrive practically anywhere, yeasts which attack sugar-containing products such as fruits, and bacteria which act on meats and other substances rich in proteins.

Science News Letter, April 9, 1932

ENTOMOLOGY

Spider's Eggs Form Pattern Like Mosaic of Pebbles

See Front Cover

LIKE a rough mosaic of pebbles is the array of spider's eggs photographed by Cornelia Clarke and reproduced on the cover of this week's SCIENCE NEWS LETTER. Although smaller than small pin-heads, the enlarging lens brought the eggs up to such apparent size that they were guessed to be puffballs, mouldy grapes, and a number of other objects of similar size by persons to whom the photograph was first shown.

Science News Letter, April 9, 1932

FIELDS

ANATOMY

Right or Lefthandedness Decided Before Birth

THE QUESTION of whether a person will be naturally righthanded or lefthanded is decided before birth, Miss Stella M. Leche of the department of anatomy, Tulane University, told members of the American Association of Anatomists.

Miss Leche has studied the ridges and surface markings of the palms of 244 lefthanded persons and compared them with those of 300 persons chosen at random. These markings on the skin of the palm are known to be different for the right and left hands. Likewise, they show which is the dominant hand, that is whether the person tends to use the right or the left hand for writing, cutting and other similar tasks.

Since the nature of the markings on the palms is determined long before birth, Miss Leche concluded that the matter of which hand will be dominant is also decided at this early period in the individual's life.

Science News Letter, April 9, 1932

ENTOMOLOGY

Spider Bite Poisoning Reported on Increase

POISONING from spider bites is increasing, Dr. Emil Bogen of Olive View, Calif., told members of the American College of Physicians at their meeting in San Francisco. He estimated that there are hundreds and possibly thousands of cases of this condition in the United States every year. Nearly 400 cases of poisoning from the bite of the Black Widow spider have actually been reported and twenty cases of it were seen at a single Los Angeles hospital in the past year alone, he stated.

"Several death certificates were made out from this cause in California during the past year and several others reported in the newspapers and in personal communications," he said, "so that even though the mortality rate is very low, the possibility of fatal termination cannot be disregarded."

Dr. Bogen urged that the condition be given more consideration in the medical school. If physicians knew more about the condition and were familiar with its symptoms fewer patients would be subjected to the unnecessary operations which occasionally are performed on victims of spider bite poisoning, he pointed out.

Arachnidism, which is the medical term for spider bite poisoning, seems almost always to be due to the bite of the Black Widow or Shoebutton spider, Dr. Bogen said. This spider may be easily recognized by the bright red patch, shaped roughly like an hourglass, on its black, globular abdomen. Also it may be known by its web, which consists of straggly, uneven, coarse, sticky threads running in all directions in all three dimensions. It has none of the geometrical exactitude which gives to webs of certain other spiders their aesthetic charm, Dr. Bogen said. The Black Widow spider is found over more than half the United States. People should be taught to recognize it and to destroy the spider, web and eggs, to protect themselves from its bite, he urged.

Science News Letter, April 9, 1932

PHYSICS

Light Velocity is Key to Other Numerical Constants

PHYSICISTS have acknowledged that light's velocity is one of the most fundamental constants of nature, and now Prof. J. E. Mills, University of South Carolina chemist, has discovered that this speed is a numerical master-key for computing other constants used in science.

By using a formula that involves the velocity of light as the circumference of a circle and certain other relations involving the velocity of light, Prof. Mills has been able to derive with great numerical accuracy the values for the geometrical constant, the mass of the electron, the mass of the proton, Planck's constant, the electronic charge, the gravitation constant, and Boltzmann's constant, all of which are familiar to physicists. It is necessary to ignore the placing of the decimal point, however.

Prof. Mills believes that it is not possible that any merely accidental agreement could produce the numerical agreement he has achieved and he therefore suggests that the relationships he has found are real and not merely mathematical.

Science News Letter, April 9, 1932

ARCHAEOLOGY

Scientist Denies Link Between Egypt and Mexico

A DECIDED blow to the theory that American Indians borrowed the best things of their civilization from wise old Egypt is dealt by Dr. James H. Breasted, eminent Egyptologist of the Oriental Institute, at Chicago.

Dr. Breasted has just returned from Mexico, where he examined the ruins of Mayan Indian temples in Yucatan.

"There is nothing in Mayan art which remotely suggests any connection whatever with Egyptian or Oriental art," declared Dr. Breasted in response to a request from Science Service.

Alleged similarities to Egyptian and Chinese art detected in sculptures and paintings on ruined Mayan temples have been brought to public notice by various observers. If any of the beautiful and intricate designs wrought by Mayan Indians could be identified as definitely Egyptian in origin, it would be impressive evidence to bolster up the theory that the Indians borrowed or imported their civilization. Most American archaeologists, however, hold the view that the American Indians built up their own civilization unassisted.

To Dr. Breasted's verdict that he found no significant trace of Egyptian art in Yucatan, he added the statement:

"In the vast majority of cases the developments of the leading Mayan art motifs can be followed out of their indigenous sources in the Western Hemisphere."

Science News Letter, April 9, 1932

PUBLIC HEALTH

English Camp to Benefit Health of Unemployed

A CAMP for unemployed men is being organized in England with the object of keeping up the physical and mental health of the men so that they will be fit to re-enter employment if opportunities present themselves through a revival of trade.

"Chronic unemployment almost inevitably leads to deterioration of physical and mental health," sponsors of the movement point out in a note to *The Lancet,* in which they ask for names and addresses of young men suitable for the first groups at the camp.

Regeneration of men already demoralized by prolonged unemployment will be undertaken as soon as possible.

Science News Letter, April 9, 1932