PSYCHOLOGY

Salt is Not a Taste, Psychologist Declares

SALT is not a taste. Evidence that this common food ingredient is not tasted but rather felt by some special skin mechanism was presented to the American Psychological Association by Dr. Samuel Renshaw of Ohio State University. Thus the four traditional primary tastes, sweet, salt, sour and bitter, are probably now narrowed to three.

The taste of food and drinks are greatly affected by their temperature, Dr. Renshaw has found. Hot drinks are best at a temperature of 132 degrees Fahrenheit; cold drinks at about 59 degrees. A large soft drink manufacturer has found temperature so important to sales that inspectors are sent around to check on the coldness at which vendors serve the beverage. An increase of but a few degrees in the temperature of the drink means a drop of as much as twenty per cent. in sales.

At a neutral temperature of about body warmth, tastes diminish. Salt, however, does not follow this rule: it is noticed more in lukewarm foods than in hot dishes. Also it can be noticed on the lips and gums of the mouth where there are no taste organs.

Science News Letter, September 15, 1934

ZOOLOGY

Behavior of Whole Animal Recommended For Study

"MIND" and "matter" in living organisms are not separated and opposed things that act upon (and against) each other; the organism is a single continuous unity, and its behavior is a unified, not a dualistic, phenomenon. Zoologists who wish to learn something about the ways of the animals they study must approach their problem from this angle if they are to hope for success, and not depend entirely upon a chopping-to-pieces analysis based on the assumption that behavior is just a complex of chemical reactions and nothing more.

A thesis in support of this "organismal" point of view was advanced and defended before the zoological section of the British Association for the Advancement of Science by its president, Dr. E. S. Russell, director of the Fisheries Station at Lowestoft, England. Zoologists have left the development of this renewed understanding of the "organismal" concept too much to psychologists and physiologists, he said; they should recapture some of it for themselves, especially the study of behavior under natural conditions in the field, for which they are by training especially fitted.

The idea of a matter-mind dualism in animal behavior, Dr. Russell stated, is a relatively new development. Aristotle, the first great scientist of whose work we have anything like a connected record, knew nothing of it. Aristotle was a "first-rate field naturalist and observer." The dualistic concept started with the founder of modern systems of formal philosophy, Descartes, whom the speaker characterized as "primarily a mathematician and a theologian."

Science News Letter, September 15, 1934

PUBLIC HEALTH

Medical Care Urged For Social Insurance Plan

MEDICAL care for the working men and women of America will be included in the scheme of social insurance which President Roosevelt will ask Congress to consider at its next session, if the earnest hopes of health authorities throughout the country are to be fulfilled.

This was indicated in the address of Dr. J. L. Pomeroy, health officer of Los Angeles County, Calif., before the American Public Health Association at Pasadena.

The federal government's recovery program should include subsidies to the states and counties for rehabilitation of their health departments similar to the subsidies given from welfare funds, in Dr. Pomeroy's opinion. The government has wasted millions of dollars trying to cure diseases which could have been prevented by expenditure of a few thousands, he declared.

"Public health is one of the few instruments of social justice which has not broken down, which has not required special government codes for regulation, which has not required special regimentation, and above all, which has kept faith with the American people," he pointed out.

Government assistance and the cooperation of health officers and practising physicians are needed to prevent failure of health service to the men and women of America.

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IN SCIEN

PALEONTOLOGY

Fifteen-Ton Dinosaur Had One-Ounce Brain

FIFTEEN tons of lumbering body: one ounce of bewildered brain. Such is the startling contrast that characterizes the remains of a 140-million-year-old dinosaur partly uncovered by the American Museum-Sinclair Dinosaur Expedition working at Question Mark Quarry near Billings, Mont., under the direction of Dr. Barnum Brown.

The vast but nearly brainless beast had a body-to-brain weight ratio of approximately 580,000 to 1. By contrast, a 200-pound man has a similar ratio of only about 70 to 1.

Science News Letter, September 15, 1934

ARCHAEOLOGY

Early Florida Indians Buried Like Christians

BURIALS of some of the earliest Christianized Indians in the United States are being explored near the shore in the region where the Spanish discoverer Ponce de Leon first saw Florida and gave the land its flowery name.

A stone's throw from the "Fountain of Youth" in St. Augustine the graveyard came to light, and some 90 skeletons of Indians of all ages have so far been uncovered.

An archaeologist formerly with the University of Illinois, John R. Dickson, is removing the earth around the bones, leaving each skeleton in its relative place. That many of these Florida Indians were Christian is shown by the arms crossed as in prayer, of some of the skeletons. Absence of the offerings and belongings poured into the pits of old Indian burials for future use by the dead is another sign that these red men had renounced their native religion. Only beads and some scraps of clay pottery have been found with any of the dead buried here. Some of the beads are of typical Indian make, whereas others are yellow and blue beads such as the Spaniards brought to trade for Indian goods.

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CE FIELDS

CHEMISTRY

Butane Found Rich In Heavy Hydrogen

A NEW source of the much-sought heavy form of hydrogen, known to chemists as deuterium, has been found in the gas butane, occurring in natural gas fields.

In a report to *Science,* Dr. R. D. Snow, petroleum chemist, and Prof. Herrick L. Johnston of the Ohio State University department of chemistry declare that not only is deuterium present in butane but there is thirty per cent. more of it present in this gas than there is in a comparable volume of commercial hydrogen.

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METEOROLOGY—RADIO

Thunderstorms Shatter Radio "Mirrors"

THUNDERSTORMS shatter the radio "mirrors" of electrical particles hundreds of miles above the earth and bring bad luck to radio listeners in the form of poor reception. This, in substance, is the report of J. A. Ratcliffe of Cambridge's Cavendish Laboratory to the British Associate for the Advancement of Science.

The radio "mirrors," which reflect radio waves and makes possible transmission over long distances, are in the ionosphere. Each mirror is a layer of air atoms split apart and in this way electrified. Radio waves bounce off the under side of these layers and are reflected back to earth.

Mr. Ratcliffe used radio signals to study the height of such reflecting layers during thunderstorms. The method is essentially an "echo" one and similar to the system of determining the depths of the ocean by sending sound waves and waiting for the echo. The one difference is that radio instead of sound waves were employed.

The Cavendish Laboratory investigator found that one electrical layer, designated by the symbol E, was 78 miles above the earth before a thunderstorm arrived. During the storm the electrical discharge pushed the layer down to 65 miles.

With the cessation of the storm the height of the layer rose again to 78 miles but within fifteen minutes it mounted to 93 miles. The electrical reflecting surface, therefore, undergoes great oscillatory motion during the storm.

Because of the up and down motion the fidelity of radio reception varies during the thunderstorm just as a beam of light reflected from a still pool is greatly different from that reflected by the water in the pool when waves are stirred up in it.

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PSYCHOLOGY

Sadness of Music Depends on Rhythm

WHETHER a musical composition is sad or happy, serene or exciting, graceful or vigorous, depends upon certain structural elements in the music, Dr. Kate Hevner, of the University of Minnesota, stated before the annual meeting of the American Psychological Association.

To trace the origin of such emotional or mood effects, Dr. Hevner prepared two versions of a musical composition which differed in one respect only, either in rhythm, in harmony, or in the melody. These two versions were presented to two different groups of listeners each of which described the version heard.

Firm rhythms were described as vigorous, dignified, and sad; flowing rhythms as happy, graceful and sentimental; but the firm or flowing character of the rhythm seems to be unrelated to such qualities as excitement and serenity.

Simple consonant harmonies were found to give the impression of being happy, graceful and serene, and complex dissonant harmonies are vigorous and exciting. The use of augmented intervals, especially, increases the exciting, restless qualities, it was found.

Descending melodies are considered more graceful and lyrical, and rising melodies more dignified and possibly more vigorous, although this element is probably not so important in determining the expressiveness of music as is the rhythm, the harmony, and whether it is major or minor.

Science News Letter, September 15, 1934

CHEMISTRY

High Pressure Bearings "Skate" on Lubricants

BEST lubricants allow motion between two pieces of metal when they act in the fashion of a small boy skating on ice. To reduce friction under conditions of high temperature and pressure a good lubricant should be a solid; but such a solid that it turns to a liquid when under a load.

Reporting to the American Chemical Society, Dr. Robert C. Williams of the Ironsides Company declared where high pressure and extreme temperatures occur the best lubricants are not the conveniently paste-like greases but solid wax-like materials.

Such lubricants, he declared, act very much as ice does under the runner of a skate; they turn to a liquid and then back to the solid form. He recalled that one really skates on a film of water formed by the pressure of a skate runner. The water turns back to solid ice as soon as the pressure is removed.

Desirable properties of lubricants, as summarized by Dr. Williams: 1. They should adhere firmly to at least one of the two surfaces between which the rubbing occurs; 2. They should remain in a solid form prior to the motion of the two parts; 3. They should turn quickly to a mobile liquid as soon as sliding under load occurs.

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PSYCHOLOGY

Psychological Method For Trapping Criminals Urged

WHEN police give a criminal the third degree, his replies may not betray him, but his involuntary muscle movements may. A psychological method of trapping suspects which was developed in Russia to take advantage of this fact is urged for trial in America by Dr. Harold E. Burtt, of Ohio State University.

When the suspect is questioned, he is asked to press an electric key at the same time that he gives his answer. If the question relates to his guilt, that fact is often revealed in the record of his muscular reactions as he presses the key, or, in his preoccupation, he may forget to press it at all.

The tale of his guilt is thus revealed in the tell-tale marks on the psychologist's photographic record.

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