

MEDICINE

Less Sweets and Starches Believed to Reduce Colds

YOU may have fewer colds this winter if you cut down on sugars and starches in your daily diet, it appears from a report by Frederick Hoelzel of the University of Chicago (*Science*, Oct. 29).

Observations by himself and various other investigators show that colds are fewer on such a diet and Mr. Hoelzel believes it is because the diet reduces the amount of fluid in the body tissues and this in turn reduces susceptibility to nose and throat infections.

If you think of applying this theory, it would be advisable to have the diet prescribed in detail by a physician so as not to run the danger of getting ill from a badly balanced or deficient diet.

Science News Letter, November 20, 1937

MEDICINE

First Tuberculosis Clinic Has Fiftieth Birthday

THE first clinic for the diagnosis, treatment, and control of tuberculosis was established just 50 years ago in Edinburgh by Sir Robert W. Philip. The importance of this anniversary can be measured all over the western world in lives and money saved and human misery avoided. The principles on which Sir Philip, then an unknown young physician, organized his clinic have served with very little change, the editor of the *American Journal of Public Health* points out, as the basis of all the efforts since then which have been effective in the fight against tuberculosis.

At the time this clinic, the Victoria Dispensary for Consumption, was established, it was known that tuberculosis was infectious, because Robert Koch had just recently isolated the bacillus that causes the disease. But little or nothing was known about how to apply this knowledge to the control of the dread disease. Tuberculosis, at that time the chief cause of death, was still taking 250 lives a year out of every 100,000 of the population.

The problem, as Sir Robert saw it, was that of getting patients to the physician in time for treatment to be effective. Also important was the need to find and bring under medical care the children and other members of the household in which a tuberculosis patient lived.

He established his clinic to serve as a center linking the various efforts being

made to fight the disease. It was to have four functions. One of these was to receive patients for medical diagnosis. Another was to serve as a clearing house where all persons in close contact with patients could be observed and carefully examined. A third function was to investigate environmental conditions and to supervise the general care of households in which there was tuberculosis. The fourth function was that of furnishing information and propaganda.

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PALEONTOLOGY

"Horned Toad" Dinosaur Among Expedition Trophies

A "HORNED toad" dinosaur, a huge but squat creature twenty feet long and five feet wide, with a height of only four feet, was among the fantastic discoveries made during the fossil-digging season just closed, by the American Museum - Sinclair Dinosaur Expedition under the leadership of Dr. Barnum Brown. Dr. Brown, who has just returned to New York, reported to his colleagues at the American Museum of Natural History.

Among the finds of hitherto unknown monsters of the ancient world are the skeleton of a gigantic duckbill dinosaur, apparently bigger even than the towering spike-toothed tyrannosaur that was the "tiger" of the dinosaurian jungles. There are also some new fossil footprints and a single armbone of the "Mystery Dinosaur"—a monster that stood 35 feet high and made footprints nearly a yard in diameter and 15 feet apart. A sandstone slab containing some of these terrific footprints is now on view at the Museum. (See SNL, July 31, for a photograph of this huge relic and description of a discovery it led to.)

Dr. Brown's finds were all made in a rock formation that has hitherto yielded nothing in the way of dinosaur remains, the Mesaverde Cretaceous, dating back some 80,000,000 years. The formation also yielded plant fossils showing a strange jungle of fossil plants, a mixture of palms, figs, poplars, willows and many other species.

Most of the digging was done on property of the Union Pacific Railroad. The company helped greatly by lending some of its heavy power excavating machinery, enabling the expedition to move masses of overlying debris in a few months that would have taken years to clear by ordinary shovel-and-wheelbarrow methods.

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IN SCIENCE

ZOOLOGY

Yard-Long Electric Eel Can Deliver 500-Volt Shock

THERE IS nothing imaginary about the shock delivered by the electric eel, known to scientists as *Electrophorus electricus*. Even a baby eel, only eight inches long, can produce an electrical voltage equal to that used to run electric lights in the home—115 volts. And a yard-long eel has been found to develop 500 volts in its electric organ.

These results were reported at the symposium on biophysics held at the University of Pennsylvania by Prof. Robert T. Cox of New York University and Robert S. Mathews of the New York Aquarium. The scientists recently returned from Para, Brazil, where they had been on an expedition to study the electric eel in its native habitat.

They also found that the electrical discharge passed down the large electric organs of the eel with a speed of about 700 meters a second, or at the rate of about 1,800 miles an hour.

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PHYSICS

Searchlight Beam Spotted At Height of 20 Kilometers

DR. E. O. HULBURT, naval research laboratory expert, reported to the Optical Society of America that he was able to spot a searchlight beam 20 kilometers (about 12 1/2 miles) high in the air.

His camera went him one better, he declared, for the camera was able to spot the beam at a point 28 kilometers (nearly 19 miles) in the air.

Dr. Hulburt's method was simplicity itself. He knew how far away the searchlight was and the angle at which it was pointed. Simple geometry then told him how high the beam he was looking at directly overhead must be.

The air beacons seen by an air-minded citizenry are much lower, Dr. Hulburt pointed out. Air beacons are deliberately aimed low so that once each time around they will shine directly at the approaching airplane pilot.

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E FIELDS

PHYSIOLOGY

Trout Spawning Hastened By Changing Length of Day

TROUT in hatcheries can be "ripened" to sexual maturity in far less time than the process takes in nature by artificial manipulation of their length of day. This makes possible a shortening of the ordinary spawning cycle, with consequent saving of time and therefore of cost and labor in getting the young fish ready for release into the streams.

Experiments in which this artificial control over the sex cycle of fish was established are reported in *Science* (Nov. 5) by Earl E. Hoover of the New Hampshire Fish and Game Department.

Mr. Hoover first lengthened the day of breeding trout by shining electric lights over the aquaria in which they were kept after the natural light of the short winter days had faded. This brought about an artificial midsummer light condition. Then the days were shortened by turning off the lights and shading the aquaria, each day a little earlier than the day before. This produced an artificial autumn.

The trout responded as they normally do in the fall, the females producing their quota of ripe eggs, while the males were ready with copious quantities of fertilizing milt.

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PSYCHOLOGY

Chimpanzees Are Trained To Take Their Medicine

ANY mother who has had a stormy session with Junior and the castor oil spoon will give generous sympathy to those who have struggled with the problem of giving medicine to apes.

The problem of giving drugs by mouth is considerably more difficult with the mature chimpanzee than it would be in the case of a strong man, determined to resist treatment, reports Dr. J. H. Elder, of the Yale Laboratories of Primate Biology, to the *Journal of Pharmacology and Experimental Therapeutics* (July, 1937).

It is no use to try to dress up the medicine with orange juice, either; the chimp

is wary. Resort to force is generally useless—impossible for chimpanzees over six or seven years old.

Yet every once in a while it is necessary to give medicine or an anesthetic to one of these animals, and the ingenuity of the scientists at the Yale Laboratories has made it possible to secure the cooperation of the chimpanzees to such an extent that they have served as willing substitutes for humans in experiments on the effects of new drugs.

Most pitiful of the cases requiring anesthesia is that of the mother ape who has lost her baby, but who clings tenaciously to her dead child, fighting dangerously any attempt to remove the body. For this situation and for the animal requiring dental examination, Dr. Elder has devised a portable air-tight chamber which can be placed over the animal and ether administered in much the same way that oxygen is given inside an oxygen tent. If other treatment is necessary, it can then be given during the resulting anesthesia.

It seems odd, but the chimpanzee who so vigorously resists medicine by mouth, can be trained in less than half an hour to accept the drug calmly by injection. This method has been so satisfactory that it has made possible the Yale Laboratories research studies on the psychological and physiological effects of new narcotic drugs.

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ENGINEERING

Carbon Dioxide Filled Daylight Lamps Perfected

CARBON dioxide filled incandescent lamps, providing an artificial daylight claimed to be a wide improvement over any previous type of artificial daylight lamp, have been commercially perfected, the Optical Society of America was told.

The lamp is suitable for matching colors, the test which has proved the undoing of most previous artificial lights, Dr. Thomas J. Killian of the Barkon Tube Lighting Corporation declared.

Previous attempts to use carbon dioxide in lamps, a long-sought goal because of its white spectrum, have failed because of the tendency of the gas to break down under the electric charge sent through it, with consequent changes in its pressure and behavior. A simple electronic control for the pressure is the new feature of the light, Dr. Killian asserted.

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ENGINEERING

Can Now Send Pictures By Dots-and-Dashes

A GERMAN inventor has been granted a U. S. patent on a system of transmitting photos over wires by dots-and-dashes.

Unlike the standard method of transmitting photos, the new system breaks a picture up into dots of various shades of gray and black, and converts the various shades into electrical impulses which are turned into dots-and-dashes for ordinary telegraphic transmission.

Siemens and Halske, internationally famous German engineering corporation, has been assigned the patent by Johannes Herrmann of Berlin-Siemensstadt, its inventor.

Telegraphic photo systems in use today send the electrical impulses into which a picture is broken up directly over the wires instead of converting them into dots and dashes first, as does the new method.

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SURGERY

Radical New Treatment For Thighbone Fractures

RADICAL change in the method of treating fractures of the head of the thighbone is promised by a direction-finder perfected by Dr. Gilson Colby Engel of Philadelphia, and described to the American College of Surgeons meeting in Chicago.

By this method the whole operation can be performed through a 1½ inch incision and completed in 20 minutes. The patient can move his leg at once, is up in a chair in 48 hours, and there is no shock from the operation, no cutting of muscles.

The device is formed of two plates in sector shape with a slotted center through which the nail is introduced over a Kirschner wire. When the nail is partly in, the fragments of bone are impacted with an impactor. A fluoroscope is used with the fracture reduced by means of the Leadbetter manipulation.

The incision is made to the bone and through its sheath (the periosteum). The apex of one plate is introduced into the incision with the plane parallel to the shaft of the thighbone and its point upwards. The pin is inserted and driven into the bone, fixing the plate in position.

Steps in the procedure are checked by X-ray.

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