MEDICINE

Susceptibility to Colds is Tested by Use of Oxygen

American Chemical Society Learns of Physical Tests From Which Number of Colds Can Be Predicted

WITH autumn and winter seasons for colds just around the corner, new tests reported to the American Chemical Society promise to tell you whether you are a favored risk who will have only one cold during coming months or a victim of five or a half dozen colds, one after the other, with pneumonia waiting on the sidelines.

The new arithmetical rating test on cold susceptibility, devised by Dr. Arthur Locke of Western Pennsylvania Hospital, promises to go one step farther in the control of colds.

The common cold is recognized as being one of the most costly, in terms of dollars and cents value to the individual and his employer, of all afflictions of mankind.

The new cold susceptibility test is being used to find treatments which will increase cold resistance. Tests with animals have shown that if rabbits could eliminate injected pneumonia germs from their bodies faster than the organisms can grow they will survive the drastic treatment. When the body's mechanism for removing the germs was not working at its best the speed of elimination could not keep pace with the growth and the animals died.

Similarly, a pump can keep a leaky tub dry only when its elimination rate is faster than the seepage rate.

In man, Dr. Locke indicated, the factor decreasing the danger to colds and infection from pneumococci organisms is physical fitness, as determined by the ability of the body to consume oxygen per unit of body surface.

One hundred people went through hospital tests in which they rode a stationary bicycle for about two minutes, until they were breathless but not exhausted. The contestants were given ratings on a scale of from one to zero. Only three out of a hundred gained the top rating of unity for their ability to use 1,500 cubic centimeters of oxygen per minute for each square meter of their body surface. People who consumed 900 cubic centimeters were rated six-tenths and considered in good condition.

With such arithmetical ratings before them, Dr. Locke and his associates then studied the number of colds each of the 100 individuals had in the next seven months. Sixty-four per cent of the "good condition" people rated six-tenths or better had only one cold or less, while 80 per cent of those with ratings below five-tenths had four or more colds.

The parallel animal experiments where the pneumonia organisms were injected showed comparable survival rates.

Dr. Locke and his associates did not try it on their human test subjects but in animals it was found that decreased fitness followed: maintenance in overheated quarters, morphine poisoning, toxemia and starvation where the loss in weight each day amounted to two and one-half per cent of the total body weight.

By contrast, Dr. Locke found that the following aided the rabbits to attain better physical fitness and an accompanying increased resistance to the pneumonia germs:

1. Removal to cooler quarters.
2. Injections of chemical solutions such as antuitrin, cortin, sodium chlorate and liver extract.

In summary the Pittsburgh cold research gives a method of rating one's cold susceptibility with an accuracy of 80 per cent and a hint, at least, into the possible methods whereby greater resistance can be achieved. In no sense can the work yet be considered a cure for the common cold, but it does offer future hopefulness that from such a line of attack a definite preventive step will be achieved.

Science News Letter, September 19, 1936

PHYSICS

West Coast Has New Atom Smasher Called "Rumbatron"

A NEW high efficiency radio oscillating circuit which should have equal use in television, in radiothermy medical treatment, extremely high voltage X-rays and in experiments wherein the nuclei of atoms are shattered, has been developed at Stanford University by Dr. William Hansen. Patent rights have been assigned to the University.

The apparatus, known by members of the physics department as the "rumbatron," consists of a large copper-lined cylinder having a (*Turn to page* 183)

DR. HANSEN WITH THE RUMBATRON

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"Sign language could be logically developed so as to express the highest and subtlest thoughts of man.

"Auditory speech superseded sign language because it required less effort. It left man's hands free, and did not need light or direct vision for its understanding.

"The development of speech is retarded by pedantry, from which sign language is at present free."

Science News Letter, September 19, 1936

ARCHAEOLOGY

Cyclops Was Not Greek; The Babylonians Knew Him

Discovery of a Bas Relief Showing a Babylonian God Stabbing a Cyclopean Demon Dates Him As Of 2,000 B. C.

REMEMBER old villain Cyclops in Greek mythology, with one terrible eye in the middle of his forehead?

That picturesque monster, American archaeologists have now discovered, was not invented by Greek imagination at all. Babylonians knew about Cyclops—which means round-eyed—back in the days of Abraham. And that was around 2000 B.C., and over a thousand years before the Greek poet Homer made the Cyclopes famous as giant cave dwellers who ate men and defied gods.

Discovery of a bas relief plainly showing a Babylonian god stabbing one of the Cyclopean demons has been reported from Iraq, where an expedition of the Oriental Institute of the University of Chicago has been unearthing Babylonian cities. The remarkable sculpture was unearthed at Tell-Asmar, site of ancient Eshnunna.

The Cyclops is shown completely in the god's power. His hands are tied behind his back, a broad knife is stuck in his ribs, and just to be sure he doesn't get away the god has planted one foot on old Cyclop's toes. In all this discomfort, the sculptor has forced Cyclops to "turn his face to the audience" to reveal the horror of his one big round eye and the sightless traces of ordinary eyes below it. Rays of light or fire around his head like flower petals show that this was indeed no ordinary creature.

Fashion a Clue

Dr. Henri Frankfort, field director of the Iraq expedition, calls attention to the flounced skirt in which the monster was dressed, as a significant historic point. Clothes like this were fashionable in Mesopotamia before 2500 B.C. But by 2000 B.C., when the sculpture was made, flounced skirts were antiques, and the sculptor, trying to dress Cyclops in traditional manner, managed only what Dr. Frankfort calls a "bungled version." From this bit of evidence, Dr. Frankfort is convinced that Cyclops was no new idea to Babylonians even as early as 2000 B.C.

Finding that Greeks borrowed mythological figures from the East, Dr. Frankfort emphasizes, "does not diminish in any way our appreciation for the originality of the Greek mind."

The Greeks were late arrivals in an ancient and highly developed civilized world, the archaeologist points out, and discoveries such as this illustrate how our modern civilization is, through Greece, inseparably linked with the ancient Near East.

Snake Worshipers

First evidence Babylonians were snake worshipers is another result of the expedition. The discovery consists of two cauldron-shaped pots one placed upside down over the other, unearthed in a temple at Tell-Asmar. Decorations on the jars glorify the power of the snake, and an unbroken saucer found in the lower jar with small animal and bird bones suggests to the archaeologists that a live snake was kept in the covered container.

At Ischali, another site explored by the expedition, a temple of sun-dried brick has come to light, revealing that ancient Babylonian architects built temples on a large scale and worked with great care. A statue of the goddess Ishtar-Kititum was found still enthroned in the temple.

Science News Letter, September 19, 1936

A little 3-inch head on a bas-relief in the Boston Museum of Fine Arts is believed to be a portrait of the poet Horace, whose features have heretofore been missing among the hundreds of statues of Romans known today.

RUDE TO CYCLOPS

The Babylonian god who thus stabs the one-eyed demon, pulls his beard, and treads on his corns, incidentally proves to scientists that Cyclops was known at least a thousand years before Homer wrote of him.

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filament and a grid like some giant radio tube. Radio waves bounce from end to end of the cylinder.

The high energy waves produced may be used directly inside the tank or, enlarged many times, for radiothermy. Or they can be carried off on a wire to the antenna of a television broadcaster.

The waves also may be used to speed up electrons passing through the chamber, Dr. D. L. Webster, chairman of the physics department, pointed out. Such electrons would have energies equal to or above 5,000,000 volts. Directing the electrons on a target would create penetrating X-rays; or by shooting them at atoms nuclear disintegrations could be studied.

Distinguished From Cyclotron

The present name rumbatron was chosen to distinguish the device from the cyclotron apparatus of Prof. E. O. Lawrence at the University of California.

An important difference between the new rumbatron and the cyclotron is that the former uses electrons as the bombarding particles while the cyclotron employs atomic nuclei themselves, which are much heavier.

Small models of the rumbatron have been successfully operated showing that the design is satisfactory for the large apparatus now being built.

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