

## • RADIO

Saturday, Dec. 13, 1952, 3:15-3:30 p.m., EST

"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Dr. G. Robert Coatney of the National Institutes of Health, Bethesda, Md., discusses "The Conquest of Malaria."

## AGRICULTURE

### Two Billion Dollars Invested in Irrigation

➤ TWENTY-FIVE MILLION acres of American soil are now under irrigation, served by canals that would stretch five and a half times around the globe, Ivan D. Wood, U. S. Department of Agriculture, reported to the American Society of Agricultural Engineers.

The Federal government alone has invested \$2 billion in irrigation projects, roughly the amount spent to create the A-bomb, Mr. Wood said. Gross returns so far from crops grown on irrigated land are over seven times this amount, he said, amounting to more than half a billion dollars in 1950 alone.

Irrigated land now furnishes nearly all our domestic supply of apricots, almonds, dates, figs, prunes, and olives, he said. Other important irrigation crops are: lettuce, 90%; sweet cherries, 85%; avocados, pears and cantaloupes, 75%; asparagus, 65%; peaches and truck crops, 50%.

Science News Letter, December 6, 1952

## PSYCHOLOGY

### "All-Tied-up" Feeling

➤ WHAT CAUSES that "all-tied-up" feeling when you frown, grit your teeth, clench your fists and feel tense all over?

That is what Dr. Robert Voas, University of California at Los Angeles psychologist, is trying to find out.

His study concerns how tension is reflected in electrical activity in seven muscles. They are the frontalis (brow muscle), masseter (a jaw muscle), trapezius (back of the neck muscle), two forearm and two leg muscles.

Muscle electrical activity is measured by delicate instruments while subjects are exposed to varying situations in a prone position. One situation involved doing mental arithmetic. This was reflected in activity by the two forearm muscles—indicating a response conditioned by years of "figuring arithmetic" with pen or pencil.

Stress-frustration situations were induced by continuous, loud noises while subjects were doing mental arithmetic. These were reflected in some activity in all muscles but particularly in face (frontalis and masseter) muscles and to a lesser extent in the legs. This seemed indicative of how stress may involve frowning, gritting teeth and clenching fists.

## MEDICINE

### Smoke Gives Mice Cancer

Chances of getting cancer increased considerably for mice when they are exposed to cigarette smoke once an hour for a 12-hour day.

➤ HALF A lifetime of smoking a cigarette once every hour for a 12-hour day increases the chances of getting lung cancer by about one-third—for mice, that is, with a hereditary tendency to lung cancer.

This finding is from one of the very few experiments in which animals have been used to try to settle the controversy over whether tobacco smoke causes lung cancer. The experiment was made by Dr. J. M. Essenberg of the Chicago Medical School.

The only similar experiment known to him was made by Dr. Egon Lorenz of the National Cancer Institute in 1943. This showed no difference in lung cancers between mice that smoked and mice that did not, but the experiment did not run longer than 250 days. This, Dr. Essenberg thought, might not be long enough to show a difference.

The mice, of course, did not actually smoke the cigarettes. In Dr. Essenberg's experiment they were housed in a special cage with an especially designed automatic smoking machine. This machine had a rotary cigarette carriage holding 12 cigarettes. An automatic electrical cigarette

lighter connected to a program clock lighted a cigarette every hour for 12 hours. A vacuum pump created just enough suction to burn the cigarette and circulate fresh air.

Of 23 mice in this cage with the hourly cigarette smoke for one year, 21 developed lung cancer. Of 32 mice of the same strain, housed and fed the same but not "smoked," 19 developed cancer. The difference, 31.9%, is statistically significant. The probability of its occurring by chance is less than one in 100.

Besides getting more cancer, the smoked mice grew more slowly and failed "by a large margin" to reach the weight of the unsmoked controls. The smoked mice had no young, while the controls reproduced freely, Dr. Essenberg states in his report to *Science* (Nov. 21).

Science News Letter, December 6, 1952

## NEW FREE BOOK for the HARD of HEARING

Do you now have trouble understanding folks whom you used to hear clearly? Does one ear hear better than the other? Is it hard to hear the difference between fifteen and fifty—then and ten—and life and knife or other sound-alike words?

Do you miss out in general conversation because you must SEE people talking to know what they are saying? Do you feel a growing suspicion that folks are ridiculing you behind your back?

If you must say "yes" to any of the above, you may already have a serious hearing loss. That's how deafness often comes—creeps up so gradually you may be quite deaf before you realize what is causing all your discomfort and inconvenience. Why take chances?

Get the facts. Write today for authoritative, new FREE BOOK about deafness and how to overcome it. It will be sent in a plain wrapper without any cost or obligation whatsoever. A postcard will do.



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### Do You Know?

The seats of most standard straight chairs are about 18 inches from the floor.

More than a million auto accidents occurred in Greater New York from 1942 to 1951 inclusive.

DMC or 88R should be used on spider mites, when phosphate-type insecticides fail to control the rose-attacking pests.

Young men and women under 25 years of age make up about 15% of the nation's motorists; yet they are to blame for more than 25% of 1951's fatal accidents and 21% of the non-fatal ones.