



UNLOADING RADIOACTIVE COBALT—Two University of Notre Dame scientists supervise the unloading of a vial of radioactive cobalt encased in a half-ton lead turret. At left, Robert Lazo directs the crane's movements while Dr. Harold Dewhurst measures the intensity of radiation with a meter. The cobalt will provide a source of 1,000,000 electron-volt gamma rays.

MEDICINE

Only Reducing Method

► **BATHS, EXERCISE**, massage and other non-dietary methods recommended for reducing weight cannot accomplish this purpose. The "only logical method" of reducing weight is to reduce properly the intake of food.

This opinion is given in the *Journal of the American Medical Association* (Jan. 24) by Dr. Frank H. Krusen of Rochester, Minn., chairman of the Association's council on physical medicine and rehabilitation.

"A rapid movement of the head from right to left when the mashed potatoes and gravy are passed" is the best exercise for reducing, in Dr. Krusen's opinion.

On hot baths, whether Turkish, Russian or some other variety, Dr. Krusen says it has been calculated that a person would have to take 370 such baths in which on each occasion the body temperature was raised two degrees Fahrenheit for one hour in order to lose one pound of fat.

"Massage," he says, "will not reduce local deposits of fat. Massage will not increase muscular strength."

Whether the massage is given by a person or by mechanical gadgets, "there is no scientific proof whatever" that it can be effective as a reducing measure.

Fat people overeat, Dr. Krusen says, "because they thoroughly enjoy fine food."

Such persons do not even realize that they are eating far more calories than they need. The appetite mechanism in the normal person functions to make him feel full and satisfied when he has eaten just enough food to fill his requirements for energy and to keep his reserves of fat at a constant normal level. Then he stops eating.

But the fat person who overeats enjoys good food so heartily that his level of satiation is almost unbelievably high.

"Even after an enormous meal he can still consume with gusto several after-dinner chocolate mints, coffee with cream and sugar and sweet liqueur, and he will still," Dr. Krusen points out, "be ready to munch some salted nuts while drinking a highball a little later in the evening."

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• RADIO

Saturday, Feb. 14, 1953, 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. Harold Myers Marvin, member, Board of Directors, American Heart Association, and associate clinical professor of medicine, Yale University, discusses "Fighting for Your Heart."

CHEMISTRY

New "Cold Bomb" Test Measures Air Pollution

► A NEW test for measuring the smog-causing materials that pollute the air was described to the American Chemical Society's North Jersey section meeting in Newark.

Air pollution caused by the exhaust gases from autos and other incomplete combustion of hydrocarbons, such as from industrial plants, can be detected using a stainless steel "cold bomb," Ernest R. Quiran of the Esso Laboratories, Linden, N. J., reported.

With his co-workers, S. J. Metro and J. B. Lewis, Mr. Quiran made a synthetic smog to test the device, found that it would measure up to 95% of the noxious materials in mixtures containing only one-tenth of a percent of hydrocarbons.

Many scientists think that the Los Angeles smog is caused partly by the interaction of incompletely burned hydrocarbons with the ozone in the air.

In the new test, the gases are collected by adsorption on silica gel, a granulated material related to ordinary sand, which is kept at a temperature of 100 degrees below zero Fahrenheit. The collected gases are transferred to the cold bomb, a stainless steel container, where an electronic device, the mass spectrometer, then measures the amounts and kinds of gases in the bomb.

Sulfur compounds and carbon monoxide can also be detected by this method, the scientists state, but the amounts of these two chemicals can not be measured.

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BIO-ENGINEERING

Functional Anatomy Part of Engineering

► A CERTAIN amount of functional anatomy may be added to the traditional engineering core of mathematical and physical sciences.

"Today there is an increasing accent upon human biology in engineering research," Dr. Craig Taylor, University of California at Los Angeles professor of engineering, pointed out. "In order to design structures, machines and other technical devices so that man can 'assimilate' them, modern engineers are more and more finding a knowledge of this subject necessary."

An example of such research in the U.C.L.A. department of engineering is in the development of artificial arms. A fairly detailed knowledge of the function of the natural arm is obviously necessary.

Other such studies, said Dr. Taylor, include those of human heat tolerance and of neuromuscular control. The heat tolerance factor is important in the design of jet and rocket planes where heat of friction may seriously affect the pilot. Neuromuscular control is an important factor in the design of controls for high performance aircraft.

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