

## ● RADIO

Saturday, July 14, 1956, 1:45-2:00 p.m. EDT  
 "Adventures in Science" with Watson Davis,  
 Director of Science Service, over the CBS Radio  
 Network. Check your local CBS station.

Mr. Robert Fairthorne, senior principal scientific officer, Royal Aircraft Establishment in Great Britain, will discuss "Machines and Mathematics."

In the case of Tesla, his name is likely to be used longer than many others. This is due to the fact that the building of a Tesla Coil for the purpose of producing spectacular electrical discharges will continue to be a favorite science fair project for many of the thousands of boys and girls who find scientific experiments so much fun as they learn to become new generations of scientists.

Science News Letter, July 7, 1956

## MEDICINE

### Drug Fails to Bring Expected Improvement

► HOPE THAT ISONIAZID, widely used and effective drug in treating tuberculosis, would help patients with another disease, multiple sclerosis, is destroyed by a report to the American Neurological Association meeting in Atlantic City.

The report, based on a study of 186 patients in 11 Veterans Administration Hospitals, was given by Dr. Benedict Nagler, chief of VA's neurology service and chairman of the VA cooperative study.

Science News Letter, July 7, 1956

## BOTANY

### Chemical Probes Plant Senses

► PLANTS can be fooled into not knowing which way is up.

A recently discovered chemical keeps plants from responding to gravity by checking their perception mechanisms.

Called N-1-naphthylphthalamic acid, the anti-gravity chemical gives science a new tool to study whatever sensory devices seedlings may have.

Michigan State University scientists working with U. S. Department of Agriculture researchers have discovered that the compound prevents perception of gravity in plants. It does this, the investigators say, by checking growth changes normally caused by gravity.

French scientists first showed that plant seedlings treated with the acid failed to respond to gravity.

Researchers suspected the compound inhibited growth, thereby making the seedlings indifferent to gravity. The United States scientists, Drs. Te May Ching and Robert S. Bandurski of Michigan State University, and Dr. Robert H. Hamilton Jr. of the Department of Agriculture, showed this was not the case.

Science News Letter, July 7, 1956

## METALLURGY

# New Super Alloy

## See Front Cover

► A "MADE-TO-ORDER" super-alloy that represents a major step forward in metallurgy was shown in New York by its developers, scientists of the Westinghouse Research Laboratories, Pittsburgh, Pa.

The alloy, called Nivco, was hailed by the scientists as the forerunner of a new class of metals that can be "tailor-made" to do a specific job.

Important as is the alloy itself, the research technique used to develop the alloy is perhaps more important, the Westinghouse researchers hinted. The process permits the "predesign" of a needed set of properties into an alloy before it is ever prepared, thereby eliminating the time- and money-consuming "cut-and-try" metallurgical methods now being used, Dr. Clarence Zener, acting director of Westinghouse research, said.

The new material, which is five times stronger than 12% chrome steel, resists breakdown when subjected to temperatures

as high as 1,200 degrees Fahrenheit and mechanical vibration.

Although the exact ingredients of the new alloy were not disclosed, Dr. A. W. Cochard, advisory metallurgist at the research center, said it contained principally cobalt and nickel and smaller amounts of five additional elements.

An immediate application for the alloy will be for high-temperature steam turbine blades.

The alloy resulted from mixing it first on paper by putting into the theoretical recipe all the characteristics the Westinghouse scientists wanted. To kill the effects of mechanical vibration, for example, the scientists controlled the magnetic arrangement of the atoms, before the alloy was actually prepared.

The tuning forks shown on the front cover of this week's SCIENCE NEWS LETTER show that the predesigned magnetic structure minimizes vibration. The fork at the right is made of the new super-alloy, Nivco. (Continued on page 12.)

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"Now, after several years of research," Dr. Cochart said, "we have discovered how to design needed mechanical behavior into certain alloys by control of their magnetic structure. This enables us to predict the behavior we will get by combining certain metals in different proportions, and we can do this without preparing and testing hundreds of thousands of potential combinations of two or more alloying metals.

Science News Letter, July 7, 1956

MEDICINE

## Low Protein Diets for Kidney Ills Questioned

► IS THE current medical practice of keeping many kidney disease patients on a low protein diet advisable?

Perhaps not, it is suggested in research at the Long Beach Veterans Administration Center by Dr. Nathaniel B. Kurnick of the University of California Medical School, Los Angeles. The work is being supported by the American Cancer Society.

The findings apply particularly to patients whose kidneys are under-functioning and to those who have had one kidney removed. Dr. Kurnick has shown that when one kidney is removed, the other grows and increases its function to compensate for the loss of the organ.

Kidney growth took place not by cell multiplication but by cell enlargement. This was determined by measuring the amount of a nucleic acid, DNA, the substance genes are made of, in the tissue. The DNA remained constant during kidney growth, indicating that the cells did not multiply. But other measurements indicated that the cells were expanding to do more work.

Dr. Kurnick has found that while a low protein diet does spare kidney function it does not provide enough protein to promote expansion of kidney cells. He has shown in rats and in humans that a kidney functions best when the diet includes ample protein to provide for kidney growth but not so much protein that the kidney cannot excrete it all.

Science News Letter, July 7, 1956

INVENTION

## Typewriter Invention Replaces Morse Code Key

► A WIRELESS operator can now type-write Morse code to other stations. A device that makes this possible has been invented by Leif Evensen of Larvik, Norway.

The invention is designed to replace the familiar Morse code telegraph-key with a standard typewriter keyboard. When a key on the typewriter is hit, an impulse is instantaneously converted to Morse code and transmitted by radio.

The Morse code typewriter can be used by anyone and is capable of transmitting up to 240 letters and figures per minute.

Science News Letter, July 7, 1956