

MEDICINE

Bring on Attacks of Angina For Test of Treatment

Sedative Drugs Producing Unconsciousness Interfere With Rhythm of Brain Waves, Scientists are Told

CLIMBING up and down a two-step stoop, while a physician holds a stop-watch, until the exertion induces an attack of angina pectoris: This is the heroic-sounding method by which the effect of various medicines was tested on patients suffering from this dreaded form of heart disease.

Ratings of fifteen different medicines obtained from such tests and also by clinical observation were reported by Drs. Joseph E. F. Riseman and Morton G. Brown of Beth Israel Hospital, Boston, at the Kansas City meeting of the American Society for Clinical Investigation. The patients, it should be noted, did not suffer permanent harm from the test, but were promptly helped to quick recovery from the exertion-induced attacks. The test, besides giving an indication of the effect of medication on the disease, has also proved a help to diagnosis, occasionally enabling Dr. Riseman to rule out angina pectoris as the cause of symptoms from which the patient complained.

About one-third of the patients failed to benefit from any of the 15 different drugs used, Dr. Riseman reported. Nitroglycerine given prophylactically enabled about two-thirds of the patients to undertake about 100 per cent more exercise before an angina attack was induced. In several cases this medicine, taken in a dose of 1/500 grains every hour, rendered the patients free of attacks in daily life.

Study Heart Failure

Heart failure is "a great rarity" in pneumonia, apart from cases in which the patient already had an injured heart before the pneumonia attack. This discovery, which is important in connection with the treatment of pneumonia, was reported by Dr. Arthur M. Fishberg of New York City at the meeting. Researching with Dr. Fishberg were Drs. W. M. Hitzig, F. H. King and J. G. M. Bullowa of New York City.

The discovery was made by what might literally be called a "sweet test" for measuring how fast the blood flows in the human body. This test, devised by

Drs. Fishberg, Hitzig and King, consists in injecting saccharin into an arm vein of the patient to be tested and having him announce when he detects a sweet taste in the tongue.

"This measures the time it takes the blood to flow from the arm vein to the right side of the heart, through the lungs, and then to the tongue," Dr. Fishberg explained. "In health, this interval is between 9 and 16 seconds, while if the heart is weak the interval is as much as 60 seconds, depending on the severity of the heart failure. In the present investigation this procedure was applied to pneumonia, to see how often the heart fails in this common disease."

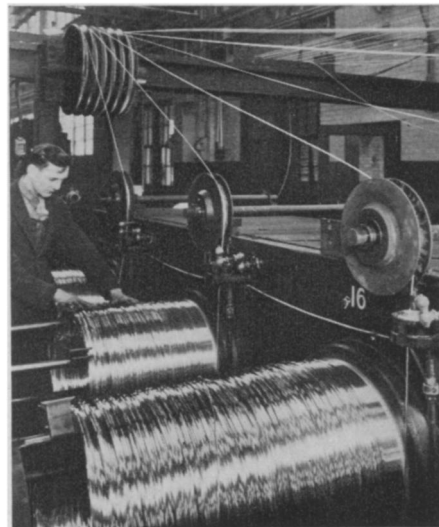
The much-dreaded edema (watery swelling) of the lungs in pneumonia is not due to heart failure, Dr. Fishberg and colleagues also found. Instead it is probably due to certain changes in the capillary blood vessels of the lungs.

Drugs Change Brain Waves

Drugs which interfere with consciousness produce "profound" changes in the electrical activity of the brain, Dr. W. G. Lennox and Dr. and Mrs. F. A. Gibbs of Harvard University Medical School reported.

A comparison with automobile spark plugs was used by Dr. Lennox in an informal explanation of these changes, which were found by means of apparatus which makes a continuous written record of the electrical currents taken simultaneously from four different regions of a person's head. These records, popularly called "brain waves," are known scientifically as electroencephalograms and are akin to the electrocardiogram which has aided greatly in the understanding of disorders of the heart. Electroencephalograms are expected in the same way to help unravel many knotty problems of nervous and mental diseases.

The Harvard investigators studied the effect of some 20 drugs on these brain currents. When sedative drugs of a type interfering with consciousness were given, the electrical rhythms became much slower and (Turn to page 312)



NEW LUSTER

The use of dies for polishing and densifying zinc-coated wire gives it a mirror-like finish under a new electrolytic process for producing a rust-resistant product.

METALLURGY

New Zinc Coatings for Wire Are Perfected

PRODUCTION of a new type of zinc-coated wire by an electrolytic process was started before a convocation of editors, metallurgists, and rural economics professors at the Cambria Plant of Bethlehem Steel Company, Johnstown, Pa. The occasion was the opening of the new unit for the bethanizing process.

The characteristics of this process, as compared with the customary method of dipping wire in molten zinc, include the production of zinc to a purity of 99.9975 per cent to increase its resistance to oxidation as well as its ductility; the use of a new pickling method for cleaning the steel wire core, using a fused salt such as sodium hydroxide; and the employment of a 40,000 ampere homopolar generator set, which is a complete breakaway from tradition.

Another new development is the use of dies for polishing and densifying the zinc coating which gives the wire a mirror-like chromium type finish.

The initial applications of bethanized wire are in farm fence, where it has advantages because of its highly polished appearance and resistance to rust. Developments are going forward, however, in adapting the product for telephone wire, window screening, spokes and other applications where the zinc wire has hitherto not been feasible.

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