

MEDICINE

Rheumatics Being Aided

► THE riddle of rheumatism, the nation's number one crippling disease, is slowly being solved as a result of the combined researches of the leading scientists throughout the world. They reported their findings at the Seventh International Congress on Rheumatic Diseases just held in New York.

Help has already come from a new hormone used on a few patients with one kind of rheumatism, called rheumatoid arthritis. Treatment and results with "Compound E", as it is called, were explained by Drs. Philip S. Hench and Edward C. Kendall of the Mayo Clinic.

They previewed some of the highlights of the Congress as guests of Watson Davis, director of Science Service, on *Adventures in Science*, heard over the Columbia Broadcasting System. The Mayo physicians told of treating 14 victims of severe rheumatoid arthritis with Compound E.

Results were dramatic: A woman who had been unable to take more than two or three steps without assistance went downtown and shopped for three hours. A man whose joints had for years been so painful that he could barely be touched, improved after a few treatments to the point where he arose and actually danced a jig. Another woman who had barely walked prior to injection with Compound E was able to run up and down stairs.

They added a word of warning, however. "Use of Compound E does not constitute a treatment for rheumatoid arthritis, except in a purely investigative sense. We need much more experience, under a great variety of different conditions, before we will begin to know how effective the use of these compounds may be over a prolonged period—and how safe they are over

a prolonged period. Synthesizing Compound E is a long and difficult series of chemical processes. The quantities of Compound E are extremely limited and hard to get. Not only will it not be available for general treatment, but it isn't even available right now in any quantities for further experimental investigation. Not before 1950, at the absolute earliest, will there be any Compound E even for clinical investigation."

These treated patients, Drs. Hench and Kendall said, returned quickly to their former crippled and pain-racked conditions once the drug was discontinued. This lends support to their view that Compound E should not be considered as a general treatment for rheumatoid arthritis.

The new drug is a hormone produced by the outer covering of the adrenal glands and its full chemical name is 17-hydroxy-11-dehydrocortico-sterone. How it operates is still unknown, but the physicians suggest that the real significance of their work lies in showing that rheumatoid arthritis is a "reversible" disease and that they have discovered something which makes it reverse and go into remission.

This disease, they believe, may be caused by a disturbed function of the glands of the endocrine system which may be the cause rather than some infectious origin. This does not rule out infection which might play a part in bringing on an attack of one of the rheumatic diseases—but only if improperly functioning hormone secretions already exist.

Dr. W. S. C. Copeman, of London, disclosed that fibrositis, which affects the white fibrous tissues, may be caused by tiny fat lobules, buried within muscle tissue which becomes swollen and distended with fluid. When these lobules expand they become "trigger points" of pain.

The condition may have its origins in the endocrine glands, he pointed out, which affect the body's fat-water metabolism. The cause may also be excessive secretion of estrogens, or other disfunction of the pituitary or the hypothalamus.

There are three forms of treatment which Dr. Copeman has found effective for relieving the condition. 1. Deep massage which disperses the fatty swelling. 2. Local injections to disrupt the fat lobule by hydrostatic pressure. 3. Surgery when other means fail.

Dr. Richard H. Freyberg, president of the American Rheumatism Association, which sponsored the Congress, said that additional reports were to be given by Dr. Gunnar Edstrom of Sweden, who will describe the effects of an artificially-regulated hot, dry climate on rheumatoid arthritis patients; Dr. Catherine E. Logan of Oak Park, Ill., who will report on the antigenic properties of hyaluronidase in rheumatic

diseases. Dr. Philip A. Cavelti of Los Angeles has an account of sensitization with tissue antigens. Dr. George W. Thorn of Harvard described experiments in hormone stimulation which, he believes, confirm and extend the findings of Drs. Hench and Kendall.

The International League Against Rheumatism, the Pan American League for the Study and Control of Rheumatism, The European League, and the American Rheumatism Association, are joint sponsors.

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NUCLEAR PHYSICS-DENTISTRY

Radioisotopes May Reveal New Facts About Teeth

► RADIOACTIVE isotopes promise to unlock the secrets of many problems involving teeth, the First District Dental Society of the State of New York was told by Dr. William Ward Wainwright, research biologist at the Los Alamos Scientific Laboratory.

If a dentist wonders where the mercury or silver has gone from an amalgam filling, a researcher can trace the radioactive mercury or silver in the fillings of laboratory animals. Radioisotopes can be incorporated in cements and silicates for a rapid test tube test to find out why the saliva of certain patients does not retain silicates well. Dr. Wainwright suggested that it might even be possible to screen patients who would get the greatest benefit from anti-decay applications of fluoride. This could be done by testing their tooth enamel for its ability to take up the fluorine.

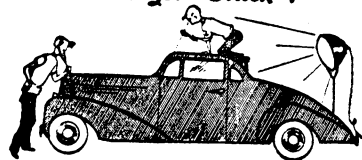
Another possibility pointed out by Dr. Wainwright is to label with radioisotopes such compounds as vitamins, hormones, and amino acids which are essential factors for normal healing so that they could be traced through the body till they reach the healing wound in the gum where a tooth had been extracted.

These are only a few of the unanswered problems which the dentist might get help for by using radioisotopes, he stated.

Science News Letter, June 4, 1949

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