BIOPHYSICS

Relieve Arthritis Pain

Ultrasonic beams cut down pain and relax muscle spasm in arthritis patients. The technique may "prove to be one of the greatest advancements" in treatment.

➤ SOUND WAVES of such high frequency they cannot be heard have been cutting down the pain and relaxing muscle spasm in arthritis patients and helping arthritic cripples to walk.

These good results were reported by Capt. Edward P. Reese of the Army and Navy Hospital, Hot Springs, Ark., at the meeting of the American Institute of Ultrasonics in Medicine in Washington.

Capt. Reese said that he was "quite disinterested and pessimistic" when asked to start a study of ultrasonic treatment of arthritis because so many drugs, hormones and other treatments for arthritis had proved disappointing after first being hailed enthusiastically.

However, he thinks now, after a short experience with ultrasonics, that it "may prove to be one of the greatest advancements in the treatment of arthritis," and that it should be studied further.

Although all the patients so far treated had marked relief of pain, they still had some pain or occasional bouts of it. The character of the pain was changed from severe and sharp to a moderate or minimal dull ache or soreness.

Rheumatoid arthritis, he points out, is a chronic disease and it may be that the patients he has treated have not had ultrasonic treatment long enough to eradicate the pain completely.

Besides decreasing pain and muscle spasm, the treatment has let the patient relax and get restful sleep. It has made it possible to cut down the dose of aspirin, thus decreasing nausea and improving appetite.

Splints and traction to reduce spasm and absolute bed rest were not necessary when ultrasonic treatment was used. Temporary limitation of weight bearing, however, was necessary in several cases.

The treatment made it possible to start patients on exercises that strengthened muscles, and improved posture and breathing. Hands so crippled they could barely grasp very large objects were so helped that the fingers could close enough to grasp small articles.

One patient who had not improved with a year's treatment with cortisone was able, after ultrasonic treatment, to climb stairs and walk long distances for the first time in many years.

X-rays showed no apparent changes in bony deformity following ultrasonic treatment.

Capt. Reese and his associates, Capt. Dorothy M. Kinnison, WMSC, and Pvt. Herbert J. Jacobus, both physiotherapists, plan to continue the study and to include a study of the effects of ultrasonics on chemical composition, cell count and viscosity of the joint fluid.

Science News Letter, September 18, 1954

BIOLOGY

Atomic Radiation Causes Tobacco Cancer Growth

➤ ATOMIC RADIATION can cause a healthy, normal tobacco plant to become cancerous, it was reported for the first time at the meeting of the American Institute of Biological Sciences, Gainesville, Fla.

Drs. Arnold H. Sparrow and Lloyd A. Schairer of the Brokhaven National Laboratory, Upton, N. Y., described the first positive proof that atomic radiation can cause tumors in plants.

Scientists have known for several years that atomic rays or particles, as well as X-rays, can cause tumors in humans, and it has been suspected that this was also true for plant life. However, previously, there had been no definite evidence.

Drs. Sparrow and Schairer exposed tobacco plants to gamma rays given off by cobalt 60, made radioactive in an atomic pile. This particular type of tobacco plant normally produces non-fatal tumors as it grows.

However, when bombarded by atomic rays, the plants became covered with a green-gray tumor mass. The life process was smothered, and the entire plant withered and died within a few weeks.

The cause of the increased tumor growth is not known. Biologists think that the cause is due to an attack on the living cells themselves rather than an interference with the structure of the chromosomes that carry heredity.

The continued study of the effects of atomic radiation on plant cells may help solve the puzzle of all cancerous growths, since plant cells are very like animal cells.

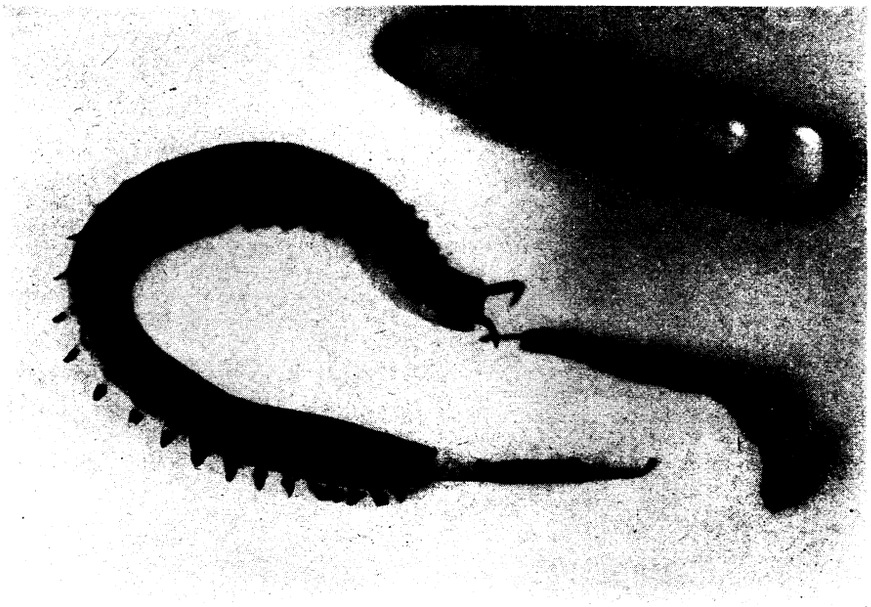
Science News Letter, September 18, 1954

CHEMISTRY

Now Know What Puts Nip in Catnip

➤ THE STUFF in catnip that makes it the favorite nip of cats is nepetalic acid, Prof. Samuel M. McElvain of the University of Wisconsin announced at a celebration of Prof. Roger Adams' 28 years of chemistry teaching at the University of Illinois. Now scientists can attempt to find out why cats like this essence of catnip so much.

Science News Letter, September 18, 1954



RARE BIRTH—Thought to be the only photographed birth of a Peripatus, this strange creature, rarely seen alive, was brought from Panama to the American Institute of Biological Sciences' meeting at the University of Florida by Byron E. Harrell, a graduate student at the University of Minnesota. The Peripatus had already given birth to one young, pictured above, when this photograph of the second birth was made. This creature is of unusual interest to biologists because it has characteristics of both worms and insects.