

## MEDICINE

# Identical Twins Help to Upset Theory of Deafness

**F**IVE DIFFERENT pairs of identical twins who gradually became more and more deaf were described by Dr. George E. Shambaugh, Jr., of Chicago, speaking before the American Federation of Organizations for the Hard of Hearing.

Identical twins offer important aid in the study of progressive deafness, Dr. Shambaugh declared. Such twins develop from the same ovum, which divides and develops independently. Therefore the twins share any hereditary factor exactly equally. If heredity is the all-important factor in the development of otosclerosis, a form which progressive deafness sometimes takes, then loss of hearing should come on at the same age in each and it should run an identical course and lead to exactly the same degree of deafness.

In four sets of twins whose deafness was reported, this career of deafness did run parallel in each twin. But a fifth set of twins had a different history.

Describing these twins, whose case upsets medical theory, Dr. Shambaugh said that they are women, 41 years old, one single and the other married. They are easily mistaken for each other. Their mother, father and three sisters all had progressive deafness. But one twin began to lose her hearing at 14 years and now has a considerable defect, while the other first noticed trouble at 30 and now has only slight hearing loss.

"This is a pair of apparently identical twins with otosclerosis running a different course in each," Dr. Shambaugh stated. "Here, for the first time, we have definite evidence that there is some other factor besides heredity responsible for the development of otosclerosis.

"By comparing the differences in their life experiences we may get a clue to what this factor is."

More cases of identical twins with progressive deafness are sought by Dr. Shambaugh in his study of the causes of this disease.

*Science News Letter, July 1, 1933*

O. Lawrence, in which lithium was bombarded with heavy hydrogen, and the Paris experiments of Dr. Irene Curie and Dr. G. Joliot, in which lithium was bombarded with helium, also satisfied the Einstein theoretical relation of mass and energy.

The new weighing of the neutron allowed Dr. Bainbridge to conclude it is just slightly lighter than the light hydrogen atom. Its weight is 1.0065 while hydrogen's weight is 1.00778.

*Science News Letter, July 1, 1933*

## GENERAL SCIENCE

## Summer School in Jungles Planned by Scientists

**A** SUMMER school offering college credit for study of tropical subjects, located not in the cool mountains of the North but in the heart of Central American jungles, is a project being considered by a group of scientists who left New Orleans for a trip into the wilds of Honduras.

The party is under the direction of Dr. Austin R. Middleton, biologist of the University of Louisville, and Dr. H. E. Enders, dean of Purdue University's School of Science. They plan to spend two months near the Lancetilla experiment station not far from Tela, Honduras.

Collections will be made of biological specimens for the two universities, and a study will be made of reptiles and amphibians, as well as of parasites, fungi and medicinal plants that make their home in the tropical woods.

*Science News Letter, July 1, 1933*

One kind of dinosaur, the triceratops, had a head so big that it made up about one-third of the animal's entire body.

## PHYSICS

# Weighing New-Found Atoms Proves Einstein Was Right

**F**ROM the latest atom smashing comes proof that Einstein was right when, years before he introduced relativity, he formulated the law that mass and energy are interchangeable.

Using the world's largest mass spectroscope, a kind of atom analyzer, Dr. K. T. Bainbridge, of the Franklin Institute's Bartol Research Foundation, Swarthmore, Pa., weighed with extreme accuracy the newly discovered heavy-weight hydrogen and the two varieties of lithium atoms. He explained to the American Association for the Advancement of Science conclusions that might be drawn from this research.

The atoms weigh only about one millionth of one millionth of one millionth of one millionth of an ounce, and Dr. Bainbridge's mass-measuring spectroscope with its two-ton magnet

weighs them to an accuracy of one part in ten to thirty thousand. He used these weights in computations based on atomic disintegration experiments made at Cambridge's Cavendish Laboratory, at the University of California and at Paris during the past year.

Dr. J. D. Cockcroft, present at the meeting, was delighted to learn that the atom rearranging he did with Dr. E. T. S. Walton in Cavendish Laboratory last year upholds the Einstein law. Hydrogen hearts of protons were hurled at atoms of lithium isotope seven, and two alpha particles, or helium nuclei, flew off. Dr. Bainbridge's figures show that the mass lost was transformed into energy as the Einstein law requires.

Similarly Dr. Bainbridge showed that the California experiments of Drs. G. N. Lewis, M. S. Livingston and E.

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an address by

**Prof. Otto Struve**

Director of the Yerkes Observatory of the University of Chicago, Williams Bay, Wis.

To be given Friday, July 7, at 1.45 p. m. Eastern Standard Time over stations of the Columbia Broadcasting system. Each week a prominent scientist speaks over the Columbia System under the auspices of Science Service.