Science News-Letter

The Weekly Summary of Current Science

A Science Service Publication

Edited by Watson Davis
Vol. XI No. 299

10¢ a copy $5 a year
January 1, 1927

A. A. A. S. Meets to Reveal Progress of Science

Some of the most important papers delivered at the Philadelphia meeting of the American Association for the Advancement of Science, December 27 to January 1, are reported in this issue of the Science News-Letter. Further reports will appear in the next issue.

PHYSICS—ASTRONOMY

Sun Speaks to Earth

The sun and the earth will speak to man and man will understand; the meaning of the messages from the sun that man, in his displeased ignorance, calls static and fading, will be deciphered. These predictions were made by Dr. Michael I. Pupin in his address as retiring president of the American Association for the Advancement of Science at Philadelphia, December 27.

After recounting the half-century of progress in electrical communication that began with Bell's invention of the telephone, Dr. Pupin said:

"The next twenty-five years will not merely see men speaking to men all over the world. The earth itself, and the sun, that great center of all our terrestrial energy, which means all our life, will be speaking to men by means of electrical communications, and men will understand the message. They are speaking now, but as yet we do not understand. We call their voices 'static' 'fading,' 'earth currents' and other disagreeable terms. The means of electrical communication which the coming generation will develop will be also powerful instruments in their hands for the study of the electrical activity of our solar system; that study will decipher the messages which we now do not understand."

"I myself have already watched on my instruments the arrivals of these cosmic messages," Dr. Pupin continued. "The earth currents in transatlantic cables and the fading of radio messages, for instance, rise and fall, rise and fall, very very slowly, taking hours and hours to complete a cycle. It is like watching the deliberate and irrestible breathing of a cosmic giant. I can only guess that it means a constant, slow, rhythmic change in the electrical relations between the sun and earth. But where I can only speculate today, the next generation will know."

Shame at not being able to pronounce English as well as a simple steel disc in front of a magnet was a factor in Dr. Pupin's rise from sheep herding in Serbia to the heights of American science. For tonight, Dr. Pupin revealed that at the centennial exposition in 1876, he heard Bell's telephone demonstrated and decided to learn how it executed its magic performance that so far exceeded in perfection the articulation of his speaking organs accustomed to Serbian speech. Today the telephone repeater and telephone cable with inductance coils, thanks largely to Dr. Pupin, make New York, St. Louis and Chicago one large telephonic community.

Science News-Letter, January 1, 1927

MEDICINE

Diabetes Communicable

That diabetes, heretofore considered a disease of disarranged metabolism, is caused by an ultramicroscopic germ or filterable virus is suggested by experiments on rabbits by Dr. D. H. Bergey, professor of hygiene and bacteriology of the University of Pennsylvania.

By infecting rabbits with carefully filtered secretions from diabetic patients, Dr. Bergey was able to produce the first stages of diabetes in the animals. He also found that the infective agent increases in strength when it is cultured in broth, just as well-known visible germs do.

Dr. Bergey calls attention to the astounding doubling of the diabetes death rate in the first twenty-three years of this century and declares that since neither bacterial nor protozoal cause for diabetes mellitus had been discovered, this increase "indicated some definite toxic action and suggested the possibility that a filterable virus might be the responsible agent."

Dr. Bergey found that inoculated rabbits developed the diabetic symptoms of sugar in their secretions in one to three weeks and continued to show sugar at irregular intervals, indicating that diabetes had set in.

"The fact that the virus causing diabetes mellitus can be cultivated," he says, "opens up the way for the development of specific prophylactic and therapeutic measures against this disease. Time has not been available to develop this line of investigation but it is hoped that by bringing the results of this preliminary study to the attention of other investigators work in these several fields will be stimulated.

"There is no doubt that systematic study of the blood of normal and inoculated rabbits will aid in the solution of the problem of the etiology (cause) of diabetes and at the same time elucidate the irregularity of the appearance of glucose in the urine of inoculated rabbits.

"More detailed study of the pathology of this infection in rabbits is also needed to determine whether the changes in the pancreas and other internal organs are similar to those in man. For this study, it will be necessary to keep inoculated rabbits under observation for a year or more so as to permit the development of alterations in the pancreas and other internal organs.

"The relation of the form of diabetes in children which is often rapidly fatal to the slowly progressing disease in adults may also be elucidated through experiments on animals."

In diabetes the function of a portion of the pancreas, called the islands of Langerhans, is deficient and does not promote the utilization of the carbohydrate foods eaten. Insulin, a great boon to diabetics, is made from the animal pancreas and substitutes for the normal function of the human gland. Although insulin, the discovery of Banting and Best, has saved the lives of many patients, the cause of diabetes has been unknown.

Science News-Letter, January 1, 1927