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TUESDAY EVENING SESSION

October 8, 1940

The Annual Meeting of the A.S.S.E.—Engineering Section of the National Safety Council convened with F. W. Braun, Employers Mutuals, Wausau, Wisconsin, Gen-

eral Chairman, presiding. All reports had been mimeographed and copies were available at the meeting.

Mr. Braun gave a brief resume of the section's activities during the past year, following which he called up Mr. C. B. Boulet for the report of the Nominating Committee. Mr. Boulet presented the report on behalf of other members of the committee, including R. E. Donovan, Chairman; D. L. Royer, C. W. Smith, and A. S. Regula. The committee's list of officers, as elected, is presented elsewhere in these pages.

The General Chairman then presented the speaker of the evening, Dr. Phillips Thomas, Research Engineer, Westinghouse Electric & Manufacturing Co., who spoke on "New Horizons of Science," demonstrating and illustrating his address most effectively. The resume given below is a summary of his points, provided for this record by the publicity department of the Westinghouse organization.

New Horizons of Science *Photo. filed 11/21/20 1940*

By DR. PHILLIPS THOMAS

Research Engineer, Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.

Death rays that protect life and laboratory tools that guard against mechanical defects have demonstrated that industrial research is building a safer world on this side of the Atlantic and is helping defend our gains.

Dr. Thomas used a one-man traveling laboratory to buttress his assertion that peacetime research is a major defense line in the American pattern of life. "Many recent developments of the laboratories," he said, "are so closely related to military defense that they cannot be revealed, but it can be said that practically every important peacetime engineering achievement of the past 10 years will have an important, if indirect, bearing on our national defense, enabling this country to build stronger and better designed defense weapons."

Death Ray Guards Health

Dr. Thomas flashed upon a screen a magnified view of ultraviolet radiation in action killing teeming microscopic life in a drop of water. Striking faster than lightning, the radiation literally exploded its victims.

At one moment, onlookers saw swarms of tiny ovate organisms known as paramecia, scurrying across the lighted screen. Then, with a sharp report, a "Sterilamp" hurled ultraviolet radiation at the organisms. In less than a thousandth of the time required to blink an eye, they were dead.

"The Sterilamp," Dr. Thomas explained, "was developed by Westinghouse to produce ultraviolet radiation of a wavelength most

lethal to bacteria." In the demonstration apparatus, electrical energy is stored in a condenser until it jumps across a spark gap with a loud crack. At that instant, the stored up energy is released through a special Sterilamp, concentrating its radiation in one powerful shot.

Sterilamps are now used to reduce infection by killing air-borne bacteria in hospital operating rooms, to preserve the cleanliness of utensils and glasses in restaurants, and to retard mold growth on food. They have made possible a short-cut process in tenderizing beef by controlling mold growth and reducing the aging or ripening time from several weeks to a few days.

Using the rays from a flashlight to play a set of chimes, the lecturer demonstrated a possible means of secret communication over short distances in war maneuvers. In the demonstration, visible light energized photo-electric cells, but he said it would be possible to use invisible infra-red light. Infra-red rays can be made to vary in intensity with the sound waves of a spoken message, transferred invisibly over space, and then reconverted to sound waves at the receiving end, he pointed out.

Atom smashing is another field of research which is already producing peacetime benefits, and may prove to be important in future defense plans. "By constant experimenting," he said, "physicists are learning better to duplicate nature's work and change one element into another. Thus they are able to create new products and processes."