Washington University School of Medicine, St. Louis, to the meeting.

With this machine physicians will be able to analyze the complex movements involved in breathing and get a better idea of what is wrong in various diseases of the chest such as pneumonia, tuberculosis, cysts, abscesses and tumors of the lungs and even some abdominal disorders. Kymograph pictures are taken through a lead grid arrangement which gives an effect equivalent to a photograph of a garden through a picket fence.

Kymograph pictures look like badly blurred films because they are long exposures and the movements of breathing cause the blurs. The grid arrangement, however, throws lines on the film which are used to measure the amount of blurring and thus the amount of movement. The movements are made by the lungs, diaphragm, heart and spine during breathing. When disease causes a change in any of these movements, the kymograph records it and thus helps the physician diagnose the condition.

Science News Letter, October 10, 1936

GEOLOGY

Earth Gains Pound an Hour On Diet of Shooting Stars

OLD Mother Earth is putting on weight at the rate of nearly a pound an hour, on a diet consisting of stone and iron. She makes no secret of it either, for at least the larger mouthfuls are signalled by shooting stars.

How fast the earth receives new matter from interstellar space was worked out from the reports presented by Dr. F. G. Watson and Dr. J. L. Greenstein, both of Harvard College Observatory, to the American Astronomical Society.

Dr. Watson made a special study of the rate of fall of what might be called micro-meteors, which are bits of cosmic dust gathered in by the earth as it speeds through space, but which are so small that they do not make the brilliant flashes that mark the capture of their larger brethren, the meteors or shooting stars.

The brilliant shooting stars on which young people "make a wish" are caused by the evaporation in the high upper atmosphere of bits of stone or iron, the biggest about the size of a pinhead. Dr. Watson's micro-meteors are much smaller than that, the smallest detected with his special instruments being about a hundredth of a millimeter in diameter. That is about the size of a yeast cell, or a good, fat, outsize germ.

Dr. Watson's studies showed that every day the earth's atmosphere receives approximately one hundred thousand million meteors and micro-meteors. Their total mass comes to an estimated ten kilograms daily. A kilogram is a little over two pounds, so that the hourly rate is somewhere around one pound.

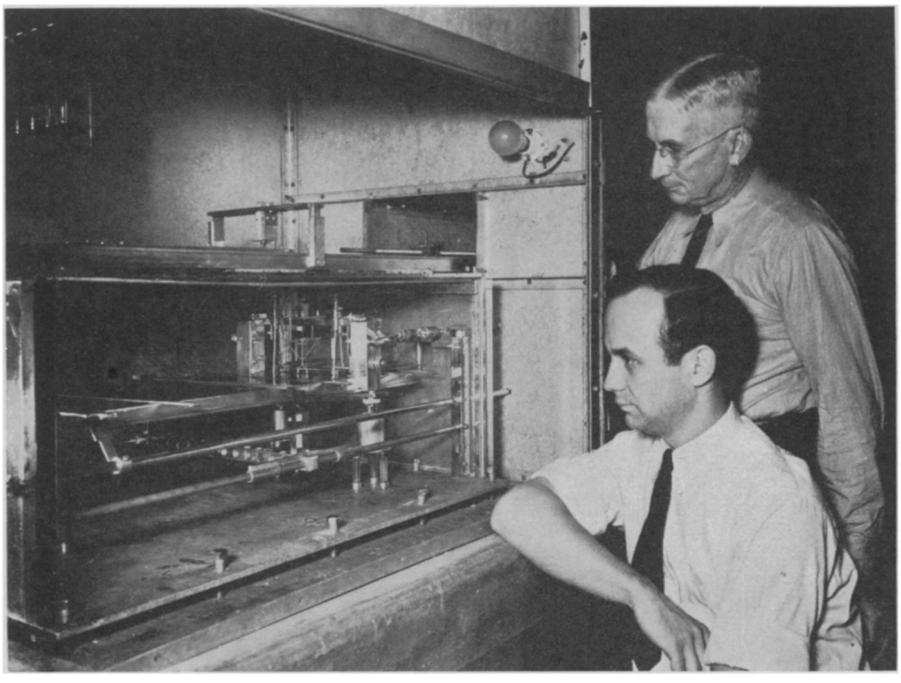
Dr. Greenstein conducted his research on similar drifting solid particles as they exist in the far interstellar spaces, for they seem to be everywhere in the astronomically explorable universe. Particularly thick masses of them cut off light from distant stars, making the dark nebulae, or "coal sacks," that have proved so puzzling to astronomers.

A young woman astronomer at the Harvard Observatory, Miss Henrietta Swope, reported on the behavior of one of the strangest stars ever studied in the sky. Until about 1928, it was a "steady" star, but then it turned into what is called a Cepheid variable, increasing and decreasing its brilliancy at regular intervals. There are many variable stars of this type, but none like this one; for in the first place no star has ever been known to change from a steady, to a variable before, and in the second place no Cepheid variable has ever been known to change its period. And Miss Swope's unique star has done just that. In 1928, when it first began "acting up," its period from bright through dim and back to bright again was fourteen days. Now it is twenty-one. Nobody has any explanation for this strange behavior.

Miss Swope is a daughter of Gerald Swope of the General Electric Company.

Science News Letter, October 10, 1936

Most babies are well when they are born, says the United States Children's Bureau.



STUDY OIL FILMS

Oil films so thin that a mere ounce of oil would cover a 15- to 20-acre pond have been produced with this new polymolecular apparatus devised by Dr. W. D. Harkins (standing) and Dr. Robert J. Myers (sitting) of the University of Chicago. These chemists have discovered that the molecules that make up films can stand on end. Or they can lie over more and take up more room. Or they can lie down completely. "Lying-down" molecules of an ounce of oil will cover the 15 to 20 acres, while the upright molecular films will cover only 3½ acres of water surface. The experiments are expected to throw new light on the films for lubrication and other uses. (See SNL, Sept. 19.)