

the Rockefeller Foundation's International Health Division and now a Harvard lecturer, was awarded the Academy's public welfare medal for his work on yellow fever.

Important oceanographic researches were recognized in the presentation of

the Agassiz medal to Dr. T. Wayland Vaughan of the Scripps Institution of Oceanography in California. Dr. Vaughan has investigated corals, foraminifera and submarine deposits and he has been a leader in studying the Pacific Ocean area.

Science News Letter, May 9, 1936

every subject, Drs. Hunt and Landis reported, nor is the strength of the movement always constant, but every subject tested showed some elements of the pattern, and it developed in a regular course. The facial aspects are the most constant.

Apparently it is involuntary, as instructions to the subjects to inhibit the pattern and not to move, did not result in its disappearance. Some subjects showed rapid habituation with successive shots, with most of the pattern disappearing at the second shot. Others did not habituate and were shown to be still responding at the fifth shot. The response seems to be increased by the simultaneous use of the sudden flash of a photoflash bulb. It can also be increased by the injection into the subject of adrenalin. Instructions to hold the body tense did not seem to have any great effect upon the response.

Body "Tunes In"

Not all ultraviolet light is the same in producing healing of rickets. Drs. John W. M. Bunker and Robert S. Harris of the Massachusetts Institute of Technology presented evidence that the body "tunes in," as it were, differently upon different wavelengths. For in-

GENERAL SCIENCE

Revolver Shot Produces Definite Emotional Response

National Academy Members See Slow Motion Pictures Of "Startle Pattern"; Hear Physiological Researches

AT THE CRACK of a revolver shot, even the most unemotional and stolid person reacts with a definite "startle pattern" that has not been discovered before because the human eye is not fast enough to catch it.

Presenting ultra-rapid motion pictures instead of a formal scientific paper at the scientific sessions of the National Academy of Sciences, Dr. William A. Hunt of Connecticut College for Women and Dr. Carney Landis of the New York Psychiatric Institute announced this discovery that promises to lead them to new facts on the neurophysiology of emotional behavior.

Never before had students of emotion been able to demonstrate the existence of definite patterns of emotional behavior, because they change so quickly. Ultra-rapid motion pictures, at four or more times the normal camera speed, when projected at a slow rate separate out two definite types of behavior.

Two Patterns

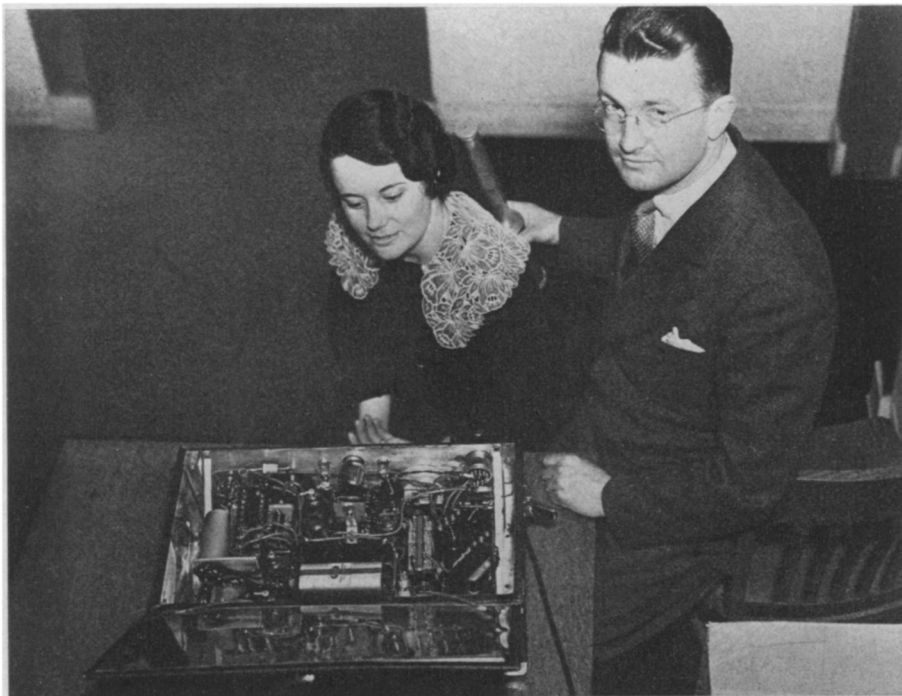
First is a regular behavior pattern of great rapidity, coming and going in less than half a second. This is followed immediately by slower responses which are not regular and which change from time to time in any one individual and between individuals.

The first pattern, however, is universal, and some elements of it were found in all subjects studied. The camera is again proved quicker than the eye, and detects an immediate response which to visual observation has remained concealed by the individualized and socialized behavior following it.

Even the most stolid person, when viewed by the camera, shows some elements of the first, rapid, universal "startle pattern." This pattern consists

of a blinking of the eyes, bending forward of the head, stretching of the mouth as in a "grin," the muscles in the neck stand out, hunching of the shoulders, abduction of the upper arms, bending of the elbows, pronation of the lower arms, clenching of the fists, bending forward of the trunk, contraction of the abdomen, and bending at the knees.

All the elements are not found in



TESTING FOR RADIUM

A new radio-activity detection method 10 to 100 times as sensitive as older methods was demonstrated by Dr. Robley D. Evans, of the Massachusetts Institute of Technology, at the meeting of the National Academy of Sciences. (See SNL, May 2.)