

# Hundreds of Motion-Picture Inventors

*Inventions*

"The motion picture is the product of the labors of hundreds of men for two centuries."

This is the statement of Dr. Henry Leffmann, of Philadelphia, in an article in the *Journal of the Franklin Institute*.

Dr. Leffmann especially protests against claims for Edward James Muggeridge, generally known in the history of invention as Eadweard Muybridge, as being the principal inventor to whom credit for the motion picture is due.

"There can be no question of Muybridge's service in applications of photography to the study of the motion of living beings," he says. "His pictures startled artists, physiologists, athletes and many others, for they showed that the conventional representations of motion such as a horse running, a man walking or an athlete vaulting, were composites on the brain of the observer, due to the persistence of vision, one image on the retina not being discharged before another is produced.

"On careful examination of the history of efforts at projection of pictures on a screen so as to give the illusion of motion—for that is all

that has yet been accomplished in the 'movie'—the work of Coleman Sellers and Henry Heyl in mid-Victorian years, set forth fully in the literature of this subject, is seen to be more closely connected with the line of development than was that of Muybridge. The important point of difference is that Muybridge devised and carried out with great ingenuity and success the analysis of motion, but the present-day screen play is a synthesis. Muybridge used in his pioneer work a battery of twenty-four cameras so arranged that each was released in rapid succession, thus recording the motion of a living animal in twenty-four phases at very short intervals, but each was an independent picture from a separate point of view, while the series to be commercially applicable must be made, as in the modern work, from one camera, that is from one point of view."

The cameras used by Sellers and Heyl operated intermittently and with considerable intervals between exposures, Dr. Leffmann points out. This was due to the poorly sensitive photographic material. They were handicapped also by the necessity of

using stiff glass plates, but even so their results were apparently quite satisfactory. The modern dry emulsion, largely the work of Doctor Maddox of England, and the flexible film, in a considerable degree due to George Eastman, have permitted the modern motion picture camera to speed up and give the results that are now presented on the theater screens.

"In summing up this study of motion-picture history," Dr. Leffmann concludes, "it surely appears that, as said above, no exclusive claim can be made for any one, nor is such claim necessary. As Schley said at Santiago, 'There is glory enough for all.' A long line of workers, only a few of whom sought or secured pecuniary reward, constitutes the group from Schulze down through two centuries that must be honored for their labors. Muybridge is entitled to conspicuous recognition in this series, but in any summary of motion-picture history the work of Coleman Sellers and Henry Heyl must be prominently set forth. There is no justification for declaring Eadweard Muybridge to be the 'inventor' of motion pictures." *Science News-Letter, June 15, 1929*

## Caution in Bathing Urged

*Hygiene*

Bathe, not less often, but more cautiously and wisely, is the substance of a warning sounded by Dr. Guy Hinsdale, of Hot Springs, Va., who classifies sixteen different kinds of accidents that may occur during bathing, in a report to the American Medical Association.

"One can take too much of a good thing," stated Dr. Hinsdale. "There is a type of patient who reckons that if much is good more is better. It is sometimes hard to restrain such persons from overdoing the bath."

This type of patient is apt to overdo the curative bath as part of treatment at health resorts.

People who are prone to dizzy spells or fainting epileptic seizures, or who have heart trouble need to be especially careful, for temporary loss of consciousness while alone in the bath may result in drowning. However, healthy persons have also met with numerous accidents, some of them fatal, in the course of baths,

showers, or seaside swimming.

Scalding while in the tub or under the shower is one of the avoidable bath accidents Dr. Hinsdale discussed. Another that has occurred frequently of late is electrical shock from touching electric appliances, fixtures, sockets or the like when in the bath or while the skin is wet. When the surface of the body is wet it offers much less resistance to the current than when it is dry, water being a good conductor of electricity.

Foolhardiness when swimming, bathing too soon after eating, particularly if the water is very hot or the person is weak or ill, cold plunges and winter bathing in icy northern waters are among the dangerous practices which Dr. Hinsdale warned against. Falls are a prominent type of bathing accident. Death from escaping gas in the bathroom is less frequent than formerly, Dr. Hinsdale reported.

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## Quantum Theory Supported

*Physics*

By observing the way electrons, the particles of which material atoms are made, are scattered by molecules of gas through which they are shot, Dr. Gaylor P. Harnwell, National Research fellow in physics at Princeton University, has furnished new evidence in support of the quantum theory. He reported his work to the American Philosophical Society.

Previous experiments with rapidly moving particles of this kind from radium, as they passed through a gas showed that they were scattered according to a law compatible with the older physical theories. Dr. Harnwell used four gases, hydrogen, helium, neon and nitrogen, and a beam of electrons moving more slowly than those from radium. The way they scattered bore no resemblance to that expected according to the older law, he said, but was quite in accord with the new quantum theory. This theory states that light and similar forms of radiation travel in separate bundles, rather than as trains of waves.

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