

# High-Speed Photography in Medical Research

PAPER J-8

By E. S. GURDJIAN, H. R. LISSNER, and L. M. THOMAS

(1) First shown in the motion picture was a visualization of a dye (diatrast) injected into the carotid artery, as seen on the surface of the brain in the pial arteries and veins. At 16 frames/sec, changes take place too rapidly for proper integration. At 128 frames/sec, the same experiment gives the observer the opportunity to see the changes at leisure.

(2) The pial vessel of the monkey brain was shown at a magnification of 12 times. Some aggregates of platelets and clots are seen. Breaking off of a platelet clot is observed.

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Presented on October 17, 1960, at the Fifth International Congress on High-Speed Photography in Washington, D. C., by L. M. Thomas, Instructor in Neurological Surgery at Wayne State University College of Medicine, Detroit, Mich. The authors are all neurological surgeons at 801 David Whitney Bldg., Detroit 26, Mich.

(3) A simulated sagittal section of the head, including the region of the foramen magnum, constructed with plastic and filled with milling yellow, was studied at 16, 50, and 500 frames/sec, following the application of pressure by hand or by hammer blow. The milling yellow becomes doubly refracting under the influence of stresses. When viewed with the polariscope, one may see the superimposed color lines occurring in the area of greatest stress. This appears to be in the region of the junction of the foramen magnum with the general cavity of the stimulated head.

(4) The final portion of the film showed a human cadaver dropped onto a plate glass, with records obtained of the fall at 16 frames/sec and again at 1500 frames/sec. The breaking of the glass can be seen well, as can the movements of the head striking the glass.

# Biological Applications of High-Speed Photography (Film)

PAPER J-9

By ERIC LUCEY

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Presented on October 17, 1960, at the Fifth International Congress on High-Speed Photography in Washington, D. C., by Eric Lucey, Department of Animal Genetics, University of Edinburgh, Scotland.

[The film showed the movements of human vocal cords in speech. Most of the film had been taken in Zürich by Dr. K. Pfister working for Professor Dr. J. Eggert at the Photographisches Institute der Eidgenössischen Technischen Hochschule.

The author had worked with Dr. Pfister in Zürich, and is now under-

taking similar work at the University of Edinburgh. For a further description of this kind of work see, for example: K. Pfister, "Motion Pictures of the Human Vocal Cords," *Proc. 2nd International Congress on High-Speed Photography*, Dunod, 92 Rue Bonaparte, Paris 6, 1956, pp. 225-229; and K. Pfister, "Hochfrequenz-kinematographische Aufnahmen von ausgewählten Stimmlippenvorgängen, kombiniert mit magnetischen Schallaufzeichnungen," *Proc. 4th International Congress on High-Speed Photography*, Verlag Dr. Othmar Helwich, Hoffmannstr. 59, Darmstadt, Germany, 1959, pp. 290-292.—*Ed.*]