

## ABSTRACTS

**Sound Film Processes.** W. STULL. *Photo-Era*, 63, August, 1929, pp. 70-5. Wax disk and sound-on-film, both variable area and variable density methods of sound film processes, are described. Two processes, the Paramount and the Gaumont-Petersen-Poulsen, record the sound on a separate film and later print it on the picture positive. Recording practice as well as reproduction are described.

**Sound Film as Adjunct in Medicine, Law, and Criminal Practice.** H. ROOM. *Kinotechnik*, 11, Aug. 20, 1929, pp. 430-1. The author stresses the value of sound pictures in fields outside of the amusement field, such as in medicine, law, and criminal practice. Actual voice recording of wills, testimony at trials, property sales, and other uses would make records of greater value and accuracy than written records.

**Interchangeability of Sound Equipment.** R. H. CRICKS. *Kinemat. Weekly*, 151, Sept. 12, 1929, p. 176. Original standards in sound equipment were set by the Western Electric Co., the sound track being 0.1 inch in width and situated at the right-hand side of the projector gate; it is separated from its corresponding picture by 19 frames. There is a possibility that a 56 mm. or even a 63 mm. film will make its appearance. The existing standard is not claimed to be the best theoretically, but inventors should bear in mind that it is the most expedient. The most suitable ratio for disk synchronization would appear to be a record speed of 80 rpm. with a film speed of 90 ft. per minute, or 18 pictures to the revolution of the record. The prime essential for disk synchronization is a good start; this could be effected more easily by widening the first groove to  $\frac{1}{16}$  inch so that the needle could be merely dropped into it, without the necessity for a minute examination of the disk.

**Rational Film.** L. GAUMONT. *Bull. soc. franç. phot.*, 16, March, 1929, pp. 59-61. The author suggests leaving room between the picture and the perforations on both sides for two sound records as might be required if right and left side microphones and reproducers were employed for simulating normal binaural hearing. Alternating these, two sound tracks could be reserved for non-synchronized speech in various languages. Also a method of superimposing the sound and picture records is suggested. The sound record would consist of variations in ultra-violet or infra-red transmission which would not interfere with the picture projection and the picture image would not interfere with the sound reproduction owing to a "special" treatment. The area between the perforations and the edge of the film could be used for operating noise effect machines.

**Photographic Problems of the Variable Density Sound Films.** R. SCHMIDT. *Filmtechnik*, 5, Apr. 27, Aug. 3, 1929, pp. 194-7, 334-6; *Sci. Ind. Phot.*, 9, August, 1929, pp. 86-8. A theoretical discussion of the photographic relations of density, transparency, and contrast of negative and positive films and the conditions for obtaining correct sound rendering with variable density systems.

**Explanation of "Dubbing."** *Bull. Acad. Mot. Pict. Arts and Sci.*, No. 26, Oct. 30, 1929, p. 3. A review of a picture given before the Academy on Oct. 23rd by C. W. Spain. The term "dubbing" was invented in the early years of the phonograph and is derived from the word "doubling." Dubbing is resorted to in connection with wax records (1) to even up the volume; (2) to make a new master record; (3) to eliminate defects in a record; and (4) to give uniform quality to an uncut negative. Synchronization is also necessary when sound is added to a previously recorded sound track or when a film record is transferred to a disk record.

**Director Fits German Dialog to Lip Action of American Cast.** *Ex. Herald World*, 97, Nov. 2, 1929, p. 36. By studying each spoken word of the English version of the picture *Lumox*, a German director has so directed a German speaking cast that their voices are adapted to the lip action of the production. When expressions could not be made to fit a particular lip movement, the voices were made to appear to come off the screen, the film portraying only the facial action of the person addressed.

**Sound Film Studios—The Problem of Ventilation.** A. T. HENLEY. *Kinemat. Weekly*, 152, Oct. 3, 1929, p. 61. Essential points in connection with the construction of a talking picture studio foundation system are summarized. For the ventilation of sound studios refrigeration plants are necessary owing to the large amount of heat radiated from the lighting units.

**Modern Studios at Joinville-le-Pont.** G. M. COISSAC. *Cinéopse*, 10, July, 1928, pp. 581-6. The motion picture studio of the Soc. Cinéromans-Films de France, under the direction of Jean Sapène, is described. There are four stages with a total area of 3275 square meters, two tanks for submarine photography, and an available current supply of 40,000 amperes. A detailed account of the lighting and laboratory equipment is included.

**Cameraman's Experiences in the Tropics.** *Filmtechnik*, 5, May 11, 1929, pp. 214-5. Cameraman Berliet relates several interesting details of work in the tropics. During the ocean trip he found the most satisfactory lighting conditions between Spain and the Canary Islands. In the equatorial belt the contrasts were excessive and yellow filters were employed. The best time for exposing was between 7 and 11 A.M. The general results obtained with panchromatic negative were superior to those on orthochromatic negative material. Temperatures of 104°F. were encountered. The rainy season extended from May to October.

**Motion Pictures of the Embryonic Development of the Sea-Urchin.** L. FRANÇOIS-FRANCK AND M. F. VLÈS. *Bull. soc. franç. phot.*, 16, February, 1929, pp. 39-41. Motion pictures were made through a microscope of the processes taking place between fertilization and full development of the larva of the egg of the sea-urchin. Pictures were made every 4 sec. for a period of 8 hrs. Between exposures the specimen was protected from the radiation of the illuminator by a shutter operated electrically from the camera driving mechanism. The camera and microscope were supported independently.

**Motion Picture Study of the Coanoleucocytes and Their Movements.** L. FRANÇOIS-FRANCK AND M. FAURÉ-FRÉMIET. *Bull. soc. franç. phot.*, 16, February, 1929, pp. 41-2. Motion photomicrographs were made of white blood cells *in vitro*. In one case transmitted light was used in making exposures; in a second, reflected light (showing interference patterns); and in a third, ultra-microscopic

technic. The microscope objectives and oculars are mentioned. The taking speeds varied from 14 to 30 pictures a minute.

**Development of Cancer Cells Photographed.** *Photo-Era*, 63, September, 1929, p. 163. Editorial comment. Photomicrographs were made of growing cancer cells. By making the exposures at varying intervals from three to sixty seconds it was discovered that their behavior was very different from that of any other type of cell.

**Motion Pictures of the Interior of the Living Human Bladder.** J. J. STUTZIN. *Kinotechnik*, 11, July 5, 1929, pp. 350-1. Ten years after the conception of the idea, Stutzin (Urological Division of the Kaiserin Auguste Victoria Hospital, Berlin) has succeeded in making motion pictures of the interior of the human bladder. The exposures were made by the use of the cystoscope attached to the camera apparatus, and controlled by a lateral view finder to prevent penetration of the mucous membrane by the lamp end of the cystoscope. An arrangement was also designed which permitted the cystoscope to turn with the camera apparatus to permit panoramic exposures. To obtain sufficient light was a difficulty. An illustrative film of this subject was shown at the 78th meeting of the Deut. kinotech. Gesellsch., June 24, 1929. The author plans to use a similar set-up to photograph the interior of the stomach, etc.

**Lighting Equipment for Photographing Surgical Operations.** H. NAUMANN. *Filmtechnik*, 5, Jan. 19, 1929, pp. 27-9. The outfit comprises a steel and angle-iron framework which is supported high above the operating table, on four legs. Six reflector lamps are mounted at one end of the frame and shine horizontally to 6 respective plane mirrors which are adjustable by cords or levers to throw the light where it is needed. The camera which exposes at the rate of 24 frames a second is located in the battery of mirrors. The 6 lamps comprise three of 500 watt capacity and three of 250 watt capacity. The illumination is equal to approximately 60,000 lux and the lamps are of a type intended for long service (400-500 hrs.). The lighting has been used successfully to make both ordinary and color films. The use of panchromatic and hypersensitized panchromatic film is advocated.

**Modern Scientific Uses of Photography.** H. J. GRAMARSKI. *Filmtechnik*, 5, May 25, 1929, pp. 232-6. A popular article setting forth some of the present day uses of photography in science. The following are among the uses mentioned: (1) photography of electron and atom tracks (work of C. T. R. Wilson); (2) ultra-microscopic photography (Brownian movement); (3) X-ray cinematography (work of Gottheiner and Jacobssohn); (4) developments in stereo-cinematography; (5) studies of the motion of terrestrial bodies (recent film of Jupiter and its moons by Prof. Wright).

**Motion Picture of Electric Arcs.** R. THUN. *Kinotechnik*, 11, July 20, 1929, pp. 283-4. This paper deals with the use of motion pictures in an investigation of conduction in arcs. Photographs of the arc taken through a suitable filter show the conduction process. Relations between current, voltage, and conduction process are given in *Z. deut. Ing.*, 73, June 8, 1929, p. 798.

**Non-Intermittent Projector.** *Cinöopse*, 9, June, 1927, pp. 513-20. The Continsouza-Combes non-intermittent projector is described in some detail. Eight similar objectives, mounted on levers and controlled by cams, move in synchronism with the film so that each objective projects a stationary image of

one frame during its entire passage before the gate. No shutter is used, the images fading one into the other. A rate of projection as low as eight frames per second gives the illusion of continuity. Photographs and diagrams are included.

**New Projectors with Optical Compensation. I.—The System of Gummax Nilsen Vig.** H. IVARSON. *Kinotechnik*, 11, Aug. 20, 1929, pp. 425-6. The Norwegian, Gummax Nilsen Vig., has constructed a projector with optical compensation similar to the Mechau projector. In Nilsen Vig.'s projector one oscillating mirror is placed between the objective and the screen, whereby the curved gate needed for the Mechau and the necessary correction for the curve through a torus lens is obviated. Another oscillating mirror is placed between the film gate and the condenser. Thus the number of mirrors has been reduced from eight to two. The mechanism, which causes the oscillation of the mirrors and also makes the pictures intermittent, is entirely different from that used in the Mechau projector.

**Askania High Speed Camera.** *Kinotechnik*, 11, Mar. 5, 1929, pp. 124-6; *Lichtbildbühne*, 22, Apr. 13, 1929, pp. 18-9. An ultra rapid camera known as the "trommelapparat" employs a high frequency 30,000 volt arc for illumination. The arc current is supplied by a series battery of nine Leyden jars and the light is intermittently flashed on the subject by means of a rotating sector. The film (perforated or unperforated) is wound on the inside of a specially constructed cylinder which accommodates 100 turns of 40 normal frames each. The film is held in absolute contact in the local plane by centrifugal force. With this type of camera 4000 normal frames per second are possible. Exposure frequencies of 8000 and 16,000 per second with frames of one-half and one-quarter normal heights are possible by increasing the intensity and frequency of the light pulses.

**Color Film Using Embossed Prisms.** P. HATSCHEK. *Filmtechnik*, 5, Apr. 13, 1929, pp. 154-6. The description of the working principles of a color film system (U. S. pat. 747,961, Dec. 29, 1903, by Paul Georg and Lena Rosa Frauenfelder). (See *B. J.*, Jan. 6, 1911.) The film support is embossed with prisms and the exposure is made from the embossed side. Each prism produces on the film a tiny spectrum of the light which it receives. After reversal the original colors are reproduced by projecting the tiny monochrome spectral images through the original prisms to the screen. No filters are used in either the camera or projector.

**Illumination by Mercury Vapor Lamps.** L. P. CLERC. *Sci. Ind. Phot.*, 9, Sect. A, July, 1929, pp. 75-7. Reflectors dyed with rhodamine and emitting fluorescent red light proved inadequate and too unstable as a practical means for supplying the red rays deficient in mercury vapor lamps. A mixture of tungsten lamps (at normal voltage) and of mercury vapor lamps in the ratio of 1125 watts of tungsten to 400 watts of mercury, and also in the ratio of 750 watts of tungsten to 400 watts of mercury, both gave satisfactory rendering on Eastman panchromatic film without a filter.

**On the Use of Motion Pictures in Schools.** *Il prog. fot.*, 36, September, 1929, pp. 303-10. Report of a paper by G. Luzzatto at the motion picture congress in Padua, June, 1929. The Pathé Baby film is recommended for use in schools on the ground of its extreme economy. It is stated that with this film a screen of nearly 60 in. diameter can be filled with sufficient light and that this is ample for classrooms.