

ABSTRACTS

The Editorial Office will welcome contributions of abstracts and book reviews from members and subscribers. Contributors to this section are urged to give correct and complete details regarding the reference. Items which should be included in abstracts are:

- Title of article
- Name of author as it appears on the article
- Name of periodical and volume number
- Date and number of issue
- Page on which the reference is to be found

In book reviews, the following data should be given:

- Title of book
- Name of author as it appears on the title page
- Name of publishing company
- Date of publication
- Edition
- Number of pages and number of illustrations

The customary practice of initialing abstracts and reviews will be followed. Contributors to this issue are as follows: E. E. Richardson, Clifton Tuttle, and the Monthly Abstract Bulletin of the Kodak Research Laboratories.

Densitometer an Automatic Timer. S. E. SNYDER. *Intern. Phot.*, 1, December, 1929, p. 8. In this negative timing device, the film passes under a light measuring device (probably a photo-electric cell) which gives direct readings of the light transmission of an entire frame or a portion of it. These readings are expressed in terms of printer light settings. Thus the instrument eliminates the need of development of test strips necessary with the usual negative timer. The machine is equipped with a footage counter, electromagnetic scene counter, and meters for checking the current supply. It may also be used for timing variable density sound records.—*Kodak Abstr. Bull.*

Review of American Film Technique. W. GEYER. *Kinotechnik*, 11, Dec. 5, 1929, p. 623. The author finds that the American film industry has made a tremendous advance since his visit years ago. The principal cameras used are Bell & Howell and Mitchell, both of which are briefly discussed. Panchromatic negative is most generally used. About 50 per cent of the negative is developed on racks or dums and 50 per cent on machines. The principal types of developing machines are discussed and illustrated. These are: sprocket driven machines with idle rollers for take-ups, sprocketless machines with loops controlled by automatic take-ups, sprocketless machines, each shaft of which is driven by an oil turbine and having the speed of the various parts controlled by a valve in the oil line which is governed by the rising or falling of an idle roller, the Spoor-Thompson machine, also sprocketless, which is driven by the lower set of rollers instead of the upper, and the Fearless machine in which some rollers are fixed and some are

loose upon the same revolving shaft. The degree of development in all these machines is controlled by speed and not by the quantity of film in the developer. The Bell & Howell printer was the only printer used for sound work, and both Bell & Howell and Duplex printers were used for pictures. Variable width and variable density sound film are briefly discussed. The important color film processes are taken up. For Technicolor pictures 50 per cent of the cameras are Bell & Howell or Mitchell. Wide film is briefly mentioned.—*Kodak Abstr. Bull.*

Wide Film Prospects. C. E. A. COMMITTEE ON THE LARGE SCREEN. *Kinemat. Weekly*, 157, March 20, 1930, p. 67. The Fox Grandeur film (70 mm.), the Paramount Magnafilm (56 mm.), and other new widths are described. The Fear system uses standard stock but the picture is taken with its width along the film and occupies the space of approximately two and a half of the standard maskings. An optical device rectifies the image for projection. The Committee considers that standardization will be achieved before any general adoption is called for, and that standard films will be exposed on "sets" simultaneously with the wider films, so as to satisfy the remaining demand for the smaller prints.—*Kodak Abstr. Bull.*

Transmission of Sound by Walls. P. E. SABINE. *J. Acoustical Soc. Amer.*, 1, Part 1, January, 1930, p. 181. A great number of measurements were made with different wall materials leading to the conclusions that: (1) For solid single walls, the per cent reduction in sound is proportional to the logarithm of the weight per unit area. (2) For double walls entirely separated, the thickness of the air separation is most effective in increasing absorption and the use of sawdust or other fillers decreases the effectiveness of insulation. (3) For double walls, partially connected or bridged, filling increases the insulation about as much as would be expected from the increase in weight. (4) By far the best way of increasing the effectiveness of "sound proofing" is to decrease the area of "contact points" between inner and outer walls.—*Kodak Abstr. Bull.*

Optimum Reverberation Time for Auditoriums. W. A. MACNAIR. *J. Acoustical Soc. Amer.*, 1, Part 1, January, 1930, p. 242. The variation in reverberation time with frequency should be such that sounds of equal apparent loudness die out in equal times. This leads to an absorption characteristic similar to that produced by an audience, thus checking observations that well filled auditoriums are acoustically good. A modification of Sabine's formula more applicable to small rooms is developed and seems satisfactory in practice.—*Kodak Abstr. Bull.*

Hearing of Speech in Auditoriums. V. O. KNUDSEN. *J. Acoustical Soc. Amer.*, 1, October, 1929, p. 56. The author considers the four acoustic qualities of a room to be size, shape, reverberation time, and extraneous noises. He then shows that maximum "articulation" or intelligibility of speech occurs at a level of 70 decibels above the noise or threshold level and for good results a speaker should not fall below 50 decibels. Most speakers fall below this in large auditoriums. The reverberation time for speech is noticeably different from that for good reproduction of music, necessitating a compromise in practice. Even if designed specially for speech, auditoriums larger than 400,000 cubic feet should have amplifying systems for all speakers.—*Kodak Abstr. Bull.*

Beats and Related Phenomena Resulting from the Simultaneous Sounding of Two Tones. II. E. G. WEVER. *Physiol. Rev.*, 36, November, 1929, p. 512. This, the second paper on beats, contains a review of the phenomena of beats, conditions

for their excitation, their subjective nature, and their relation to auditory theory.—*Kodak Abstr. Bull.*

Frequency Characteristics of the Light Variation in the Sounding Arc. J. JAU-MANN. *Z. Physik*, 59, No. 5-6, 1930, p. 386. A carbon arc was modulated by oscillations of frequency 100 to 50,000 per second and the resulting variations in the brightness of the positive crater and the arc itself measured with a photo cell. The results indicate that such an arrangement would be suitable for light telephony.—*Kodak Abstr. Bull.*

Should Non-Flam Be Enforced? *Bioscope*, 83, April 23, 1930, p. 35. In the House of Commons, Captain Todd asked the Secretary of State for the Home Department, whether he was aware that there was on the market a British-made film base which was guaranteed fireproof, and whether the Government was prepared to consider the question of making the use of British non-inflammable films compulsory. In reply, the Home Secretary stated that he was not aware that any non-inflammable film had been yet produced which would fulfill the requirements of the cinema industry, and that he could not add anything at present to his reply given on January 23, last.—*Kodak Abstr. Bull.*

Safeguarding the Storage of Photographic, Motion Picture, and X-Ray Films. C. R. BROWN. *Radiology*, 14, May, 1930, p. 454. The discussion includes the effects of various temperatures upon the decomposition and ignition of cellulose nitrate film, the composition and toxicity of the decomposition products, and storage requirements under various conditions.—*Kodak Abstr. Bull.*

Cellulose Nitrate and Acetate Film. A. H. NUCKOLLS. *Projection Eng.*, 2, June, 1930, p. 24. A general discussion of the temperature values at which film ignites (for nitrate 230°F. to 300°F. and for acetate 700°F. to 800°F.); the type of decomposition (nitrate self-supporting or exothermic, acetate, endothermic); and the products of combustion (for nitrate the products are extremely poisonous, for acetate the effect is not so injurious). The author points out the relative ease of extinguishing a fire of burning acetate in comparison to the difficulty involved in putting out a fire due to nitrate film. E. E. R.

Two-Way Television. H. E. IVES. *Bell. Lab. Record*, 8, May, 1930, p. 399. A permanent installation of television equipment and circuits has been set up between the Bell Laboratories and the American Telephone and Telegraph Company's offices, two miles apart. Speakers face a screen and talk into a microphone just back of it so that the entire face is visible to the other party. Listening is through a loud speaker carefully placed to avoid reaction with the microphone in the same booth. An improved 5000 element picture is transmitted, requiring a transmission band 4000 cycles wide. Blue light is used for scanning in transmission so that the observer's eyes are not blinded to the relatively low intensity of the neon receiving lamp.—*Kodak Abstr. Bull.*

Television in Colors by a Beam Scanning Method. H. E. IVES AND A. L. JOHNSRUD. *J. Optical Soc. Amer.*, 20, January, 1930, p. 11. The positions of light source, image forming lens, and sensitive surface, with which we are familiar in photography, are revised. The lens projects a narrow moving beam of light, and the light reflected from the object is picked up by photo-electric cells which occupy the positions which in photography would be taken by the light sources. Three sets of special photo-electric cells are used, one with a green filter, one with a red filter, and one with a blue filter. The transmitted picture is produced by super-

posing the light from three different colored television glow lamps by means of semi-transparent mirrors. The light source and the scanning disk are the same as those used for monochrome television.—*Kodak Abstr. Bull.*