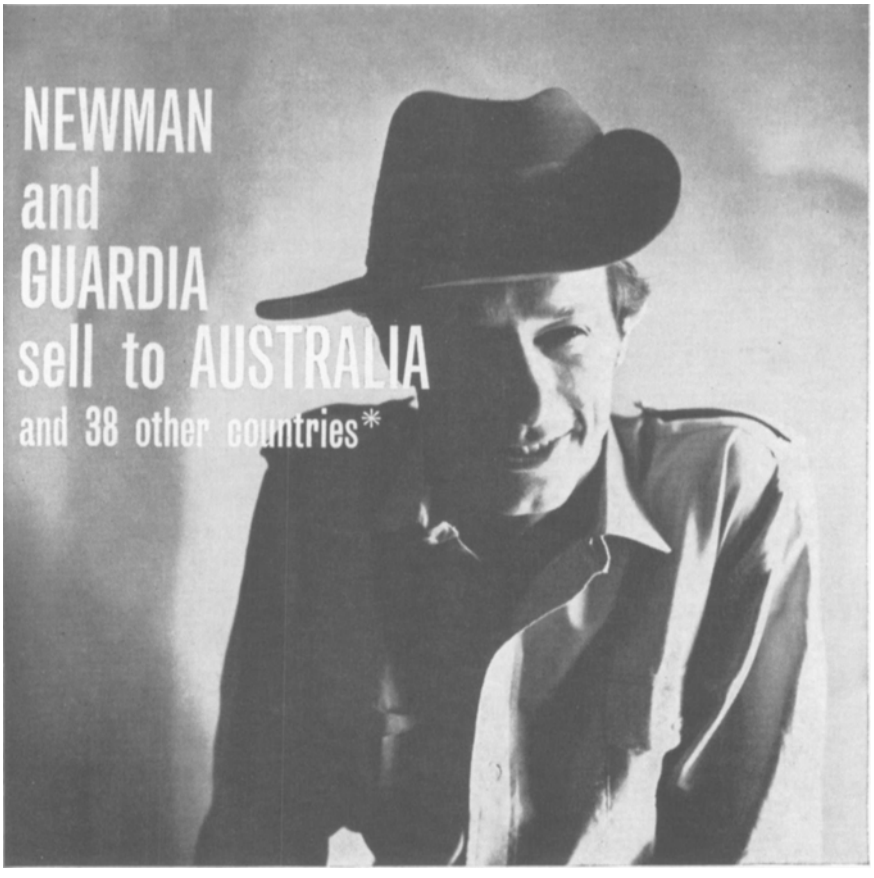
dore, the Grand Ballroom, with 70 booths. There will be the usual session Wednesday morning of Conference week at which exhibitors will describe and demonstrate some of the new equipment being shown.

At a first allotment of exhibit space on July 20 the following companies were confirmed as exhibitors:

Allen Products, Inc., Milford, Conn.
Amega Corp., Sun Valley, Calif.
Arriflex Corp. of America, New York, N.Y.
Boston Insulated Wire & Cable Co. Boston, Mass.
Camera Mart, Inc., New York, N.Y.
Camera Service Center, Inc., New York, N.Y.
Comprehensive Service Corp., New York, N.Y.
Dage Television Co., Michigan City, Ind.
Andre Debrie of New York, New York, N.Y.
DuKane Corp., St. Charles, Ill.
Eumig, Vienna, Austria
F & B/CECO, Inc., New York, N.Y.
Frigidheat Industries, Inc., Nashville, Tenn.
General Camera Corp., New York, N.Y.
Karl Heitz, Inc., New York, N.Y.
Hi-Speed Equipment, Inc., Waltham, Mass.
Hollywood Film Co., Hollywood, Calif.
MGM Telestudios, Inc., New York, N.Y.
Macbeth Corp. & Subs, Newburgh, N.Y.
Machtronics, Inc., Palo Alto, Calif.
Magnasync Corp., North Hollywood, Calif.
Metro/Kalvar, Inc., New York, N.Y.
Motion Picture Enterprises, Inc., Tarrytown, N.Y.
National Cine Equipment, Inc., New York, N.Y.
Neumade Products, Inc., New York, N.Y.
Paillard, Inc., Linden, N.J.
Photo Lectronic Research, Inc., New York, N.Y.
Photo-Sonics, Inc., Burbank, Calif.
Plastic Reel Corp. of America, Weehawken, N.J.
Quick-Set, Inc., Skokie, Ill.
Sylvania Electric Products, Inc., New York, N.Y.
Traid Corp., Encino, Calif.

Applications are now being received for the space that remains. Those who plan to show equipment should lose no time in contacting the Exhibit Chairman, Dom Capano, for up-to-the minute information on the booths that are available. An information brochure and order forms for space can also be obtained from Society headquarters.



Australia is just one of 39 countries to which Newman & Guardia have exported Lawley Laboratory Equipment during the past 10 years.
In fact, wherever there is a need—in film and TV studios, in Government Departments and the armed forces—for the processing and printing of film of any gauge, in any quantity, negative/positive, reversal or colour, there you will find Lawley Laboratory Equipment.
* Lawley Equipment has been supplied to:
Finland · Norway · Sweden · Denmark · Germany · Poland · Russia · Belgium
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Australia · Jamaica · Canada · U.S.A. · Sardinia · New Zealand · Egypt · India
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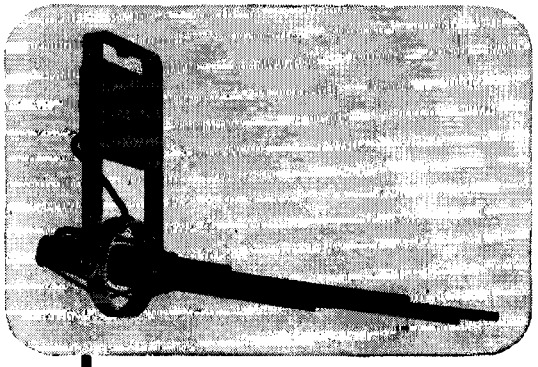
Education, Industry News

The Conference on Photographic and Spectroscopic Optics, arranged by the Science Council of Japan and the Japan Society of Applied Physics under the auspices of the International Commission for Optics, will be held at Tokyo Prince Htoel, Shiba Park, Tokyo, Sept. 1–5, and at Kyota Kaikan Assembly Center, Okazaki, Kyoto, Sept. 7–8. Subjects to be discussed at the Conference are: Design and Evaluation of Photographic and Spectroscopic Optical Systems; Recent Instrumentation in the Far Infrared and the Extreme Ultraviolet; and Optical Materials for Use in Photographic and Spectroscopic Optics.

Inquiries about the conference should be addressed to Professor H. Kubota, Secretary-General, Organizing Committee, ICO Tokyo and Kyoto, Science Council of Japan, Ueno Park, Tokyo.

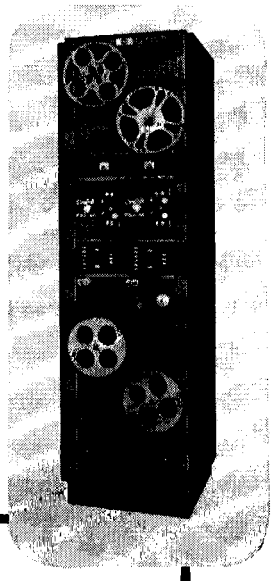
The Society of Photographic Scientists and Engineers will hold its 1964 Symposium October 29–31 at the Marriott Twin-Bridges Motor Hotel, Washington, D.C. The Symposium will deal with Unconventional Photographic Systems within these subject areas: Electrostatic and Electrolytic Photographic Methods; Photopolymerization Processes; Thermographic Image Formation; Photochromic Substances; Photochemical Formation and Destruction of Dyes; Light-Sensitive Diazo Compounds; and Unconventional Preparation and/or Processing of Silver Halide Systems. Final event on the program will be an open panel discussion to compare various unconventional systems with conventional silver halide systems. Further information is available from the SPSE, Box 1609, Main Post Office, Washington D.C. 20013.

RCA FILM RECORDING EQUIPMENT TO MEET YOUR MOST EXACTING REQUIREMENTS



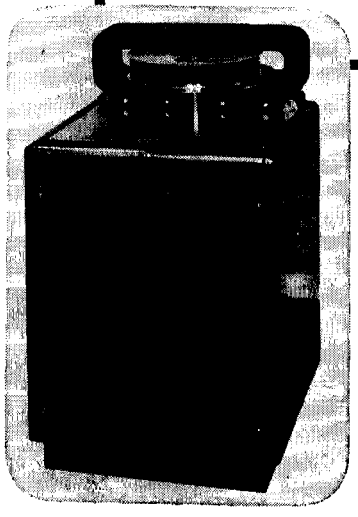
VARI-DIRECTIONAL CONDENSER MICROPHONE

For maximum sound fidelity, start your film recordings with an RCA Varidirectional Condenser Microphone (MI-10006A-1). It features wide range directional pattern, high sensitivity, and self-contained battery power.



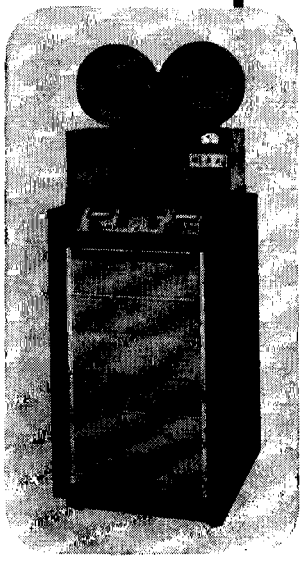
MAGNETIC FILM RECORDER/REPRODUCER

The RCA Dual Magnetic Recorder (PM-75) features two separate mechanisms in one cabinet, selectable as two reproducers or combination recorder and reproducer. Available for 35mm, 17½mm, or 16mm film.



AUTOMATIC MAGNETIC TAPE ERASER

The RCA Tape Eraser (MI-10880) features COMPLETE and UNIFORM erasure for all magnetic recorded signals with an automatic erasure cycle. It handles all magnetic recording stocks from ¼ inch audio tape to 2 inch TV tape.



OPTICAL FILM RECORDING SYSTEM

The RCA PM-80 consists of a transistorized-amplifier system and a 16mm or 35mm optical film recorder. It features negative or direct positive variable area sound track recording. It is pre-assembled and factory tested for easy installation.

From start to finish on your sound film recording production, RCA has the quality product. In addition, RCA has an expert team of Field Sound Engineers for custom design of sound recording facilities. Want to know more about RCA recording equipment and service? Write: Dept. 200, RCA Broadcast & Communications Products Division, 2700 W. Olive Avenue, Burbank, California.

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USC Systems Cataloguing is an automated system of film cataloguing which uses computers. The system was developed by Glenn McMurry, head of the University of Southern California's Film Distribution Division. Mr. McMurry began experimenting with punched cards and similar equipment about five years ago, and later developed a method of programming a computer which he applies to all phases of cataloguing from information preparation to printing film catalogues. Use of the computer technique makes it possible to find out in a few seconds the exact title of any film, print number, where previewed, to whom rented or sold, a summary of the film, transportation charges, and total charges. The same techniques have been applied to the maintenance of detailed mailing lists. From memory tape the computer can, for example, select all the churches, or schools, etc., in a given State.

Mr. McMurry's system is credited with having attracted a large number of education films to USC for distribution. Eight-hundred films produced by Encyclopedia Brittanica Films, McGraw-Hill, Churchill Films and Jenga Productions have already been assigned to USC distribution control.

The eight motion-picture cameras aboard the sixth Saturn I flight vehicle (SA-6) were equipped with Kodak Ektachrome MS film, according to an announcement from Eastman Kodak Co. All eight cameras were ejected and recovered and the footage was "excellent," it was reported by NASA officials. Primary objectives of the launch from Cape Kennedy were the improvement of the launch vehicle and the development of technology needed to build the more powerful Saturns necessary for manned lunar landings and other space exploration.

The cameras and exposed film were ejected from an altitude of about 300,000 ft and the capsules containing them reentered Earth's atmosphere at more than 7,000 mi/hr. Two of the cameras recorded the interiors of the liquid oxygen tanks. Four cameras looked forward along the outside of the space vehicle to monitor retrorocket firing, coasting, the aerodynamic flutter of one blowout panel, and the firing of one of the stages of the rocket. An interior camera viewed the separation of the stages and recorded the actions of engine number four of the S-IV stage, while the last camera monitored the operation of the solid-gaseous oxygen disposal system.

Tiros VII has transmitted 72,000 television pictures of weather occurrences during its first year in space, breaking the record of its predecessor, Tiros VI, which, in 13 months, transmitted 66,674 weather pictures to Earth. Tiros VII also became the seventh unmanned, nonmilitary spacecraft in history to remain fully operational under ground control for a year or more in space. Tiros satellites are constructed by RCA under the technical direction of NASA's Goddard Space Flight Center.

An unusual cartoon film is being produced by Halas and Batchelor Cartoon Films Ltd. in cooperation with an Argentinian film producer, Leopoldo M. Maler. This will be a dramatic film based upon drawings made by Augustin Ibarrola during the sentence of eight years he is serving as a political prisoner in Brugos jail. The soundtrack will consist of a poem written by Marcus Ana, a political prisoner for 25 years, which will be spoken in English by Hugh Griffith. It is believed that this may be the first time the cartoon medium has been used for so dramatic a subject. The proceeds will be devoted to a fund for the alleviation of prison conditions in Spain.

Versions of the Universal Decimal system (UDC), used by librarians, information officers and specialists in many fields for rapid information-retrieval on any subject, are now published in English, French, German, Russian, and several other languages. The British Standards Institution is responsible for the English version and has published an abridged edition (B.S. 100 A:1961) and a full edition which is issued in separate sections as parts of B.S. 1000.

The section for *Electrical Engineering*, B.S. 1000 (621.3), has recently been brought fully up to date. The new edition makes better provision for such topics as amplifiers, oscillators and pulse generators, networks and waveguides, solid state and photoelectric electronic devices, particle accelerators, electronic tubes and signal quality. Important sections dealing with, for instance, electric lamps and electric heating, telegraphy and telephony, television, and radar and radio, have also been revised, and the index has been greatly expanded. The section on electrical engi-

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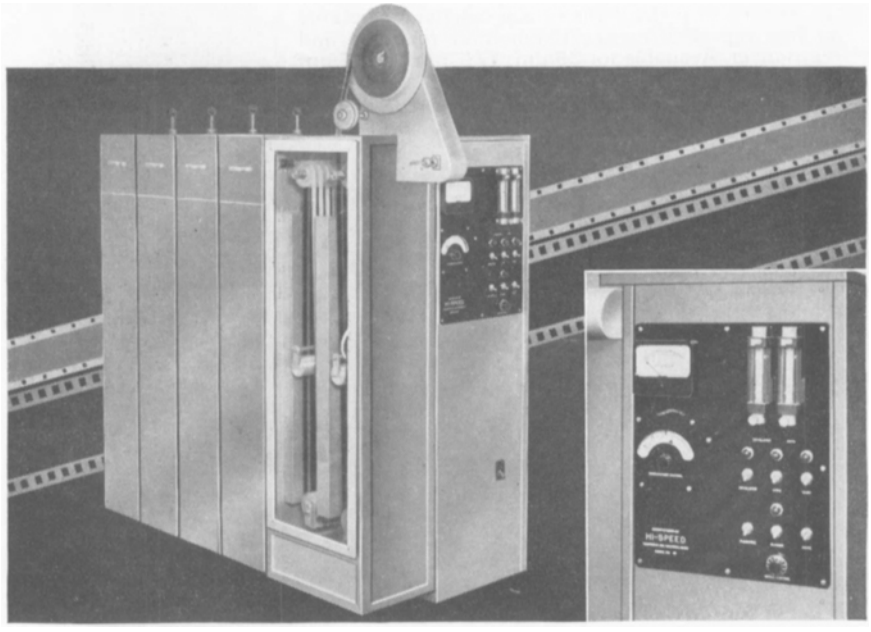

This is the FA-50, Hi-Speed's compact, spray developing machine for 16/35 mm black and white film.

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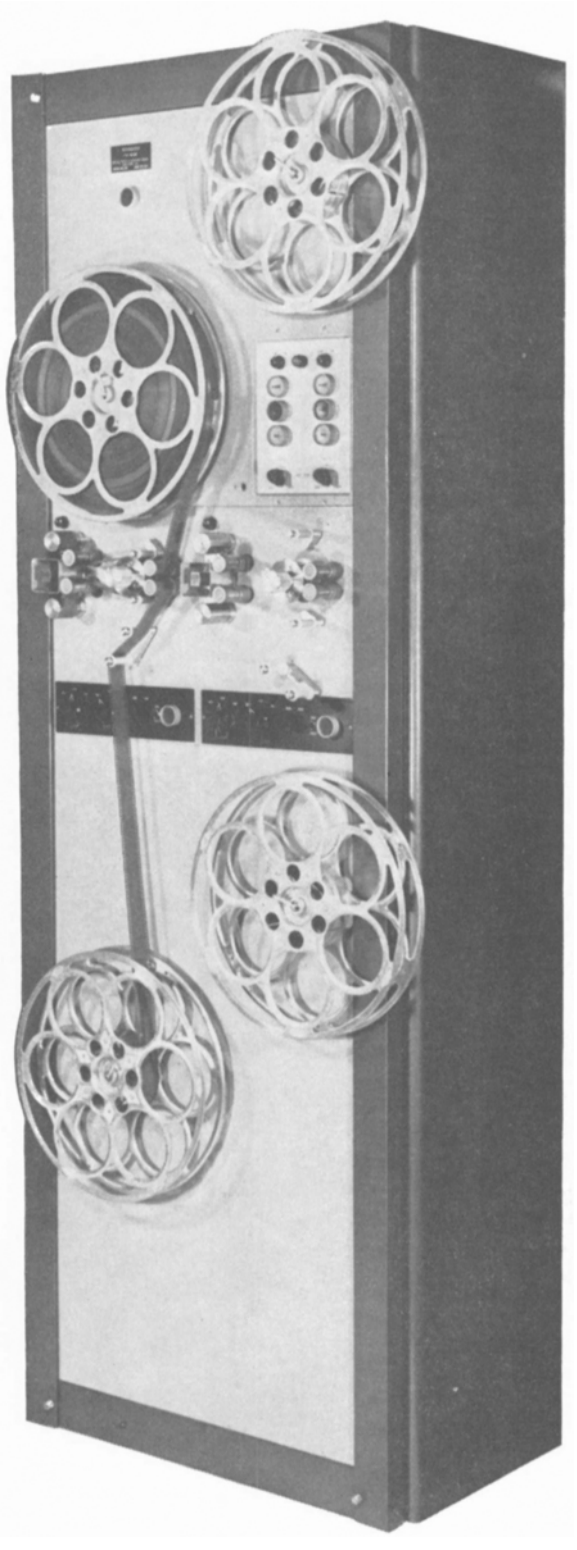

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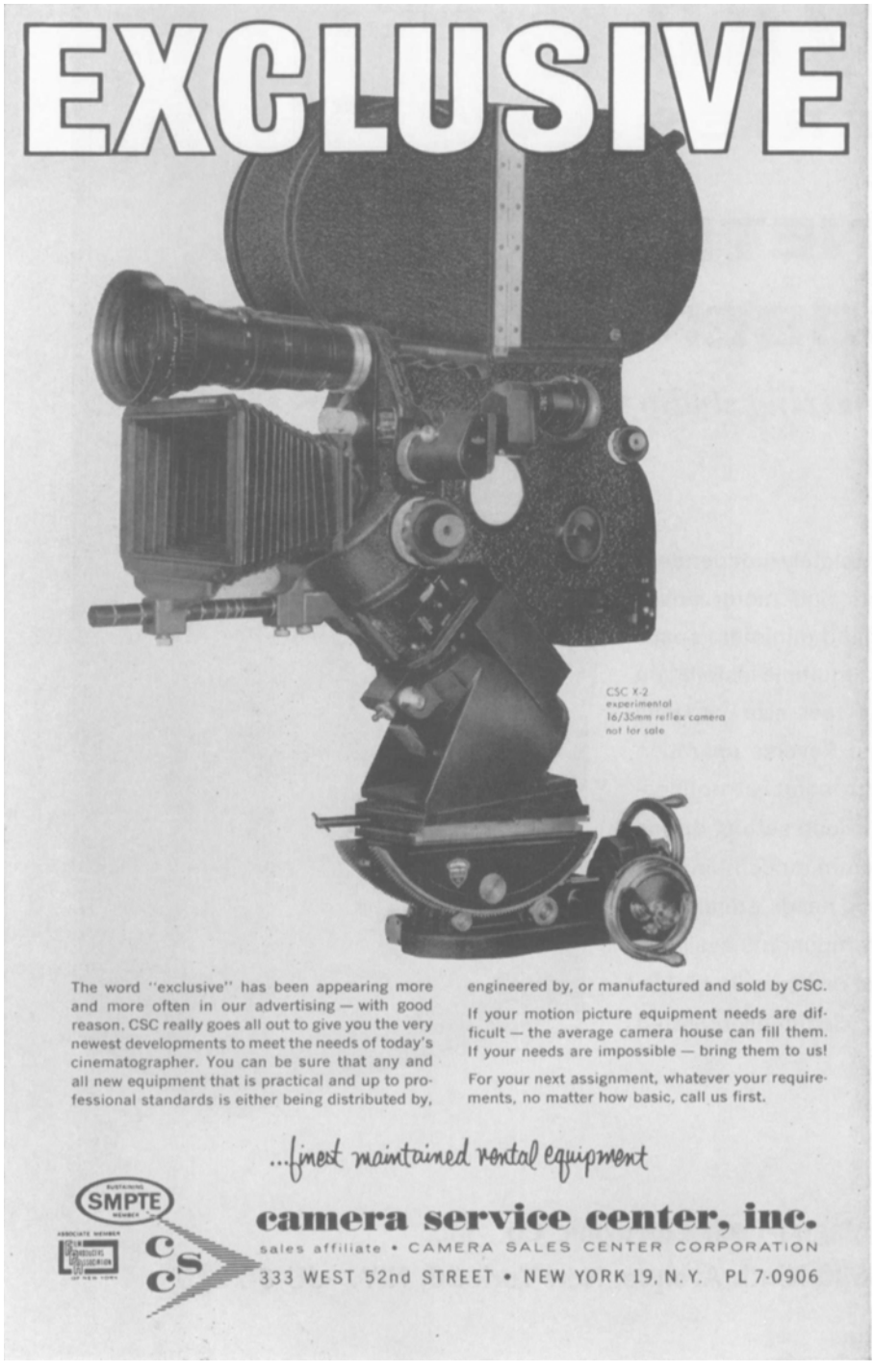
neering now runs to 67 pages, including a 15-page index. The abridged edition, B.S. 1000 A, contains a full introduction to the use of UDC and a synopsis of the whole system, including many topics of interest to those whose primary concern is in the field of electrical engineering.

Copies of B.S. 1000 (621.3) *Electrical Engineering* are available from the BSI Sales Branch, 2 Park St., London W.1, England at a price of £ 2 ($5.60). The Abridged English Edition of the UDC (B.S. 1000 A) is priced at £ 3 ($8.40). B.S. 1000 C Guide to Universal Decimal Classification is priced at 15/- ($2.10).

The 10th Robert Flaherty Film Seminar will be held Aug. 31–Sept. 4 at the Flaherty farm, RFD 1, Brattleboro, Vt. The seminar will consist of all-day sessions of film showings and discussions. Enrollment is limited to 30. Twenty of the participants will be film-makers and ten will be librarians, critics and/or students.

American Science Film Association's Annual Meeting combined with the first Science Film Exposition, held in Washington, D.C., in May (*Journal*, p. 420, May 1964), was attended by more than 200 scientists, science educators and film makers, it was announced by Randall M. Whaley, ASFA President. Dr. Whaley is Vice-President of Wayne State University, Detroit, Mich. ASFA maintains headquarters at 704 17th St., N. W., Washington, D.C. 20006.



A total of 115 new films, including single concept loop films and an animated film made and produced by a computer, were displayed at the 3-day session. Sessions at the Exposition and Annual Meeting were under the general chairmanship of Malcolm S. Ferguson of the National Institutes of Health. Session topics included Science Films for Teaching; Cinematography in Research; and Film as Medium for Scientific Reporting. In the concluding session, Roman Vishniac, a pioneer in the field of time lapse photography, presented a film on *Marine Biology*.

A session on the Photographic Process as a Scientific Instrument will be held September 14-18 at the College of Graphic Arts and Photography of the Rochester Institute of Technology, Rochester, N.Y. 14608. The course is offered by the Institute's Extended Services Division and is planned to assist engineers and scientists in applying photography to the acquisition of data. This is the second time this course has been offered (Journal, p. 974, Dec. 1963). Registration is not restricted; however, a B.S. degree or equivalent experience in physics, chemistry or engineering is presumed.

The course will be conducted by the faculty in Photographic Science of the School of Photography of the Rochester Institute of Technology. General subjects to be covered during the intensive five-day course include Statistics; Chemistry; Physical Properties (silver halide emulsions and supports from the system design engineer's viewpoint); Contamination (effects of contamination on photographic quality, and design problems in contamination control); and Image Evaluation.

Harold E. Edgerton, Chairman of the Board of Edgerton, Germeshausen & Grier, Inc., has been elected to membership in the National Academy of Sciences on the basis of distinguished and continuing achievements in original research. Dr. Edgerton is Professor of Electrical Measurements at the Massachusetts Institute of Technology. He is presently serving as a committee member of the Mine Warfare Advisory Committee of the Academy's Division of Physical Sciences.

Lloyd Varden was invested with the honorary degree of Doctor of Science by Maryville College, Maryville, Tenn., during commencement ceremonies June 3. Dr. Varden is Professor in the School of Engineering, Columbia University, where he teaches courses in photographic technology. He has published extensively in his field and his personal library contains the largest private collection in the world of books and bound volumes of periodicals relating to photographic science. Other honors that have accrued to Dr. Varden include the Brehm Memorial Medal of the Rochester Institute of Technology (1952); Louis Schmidt Medal of the Biological Photographic Association (1957); and the Progress Medal of the Photographic Society of America (1961). Maryville College was

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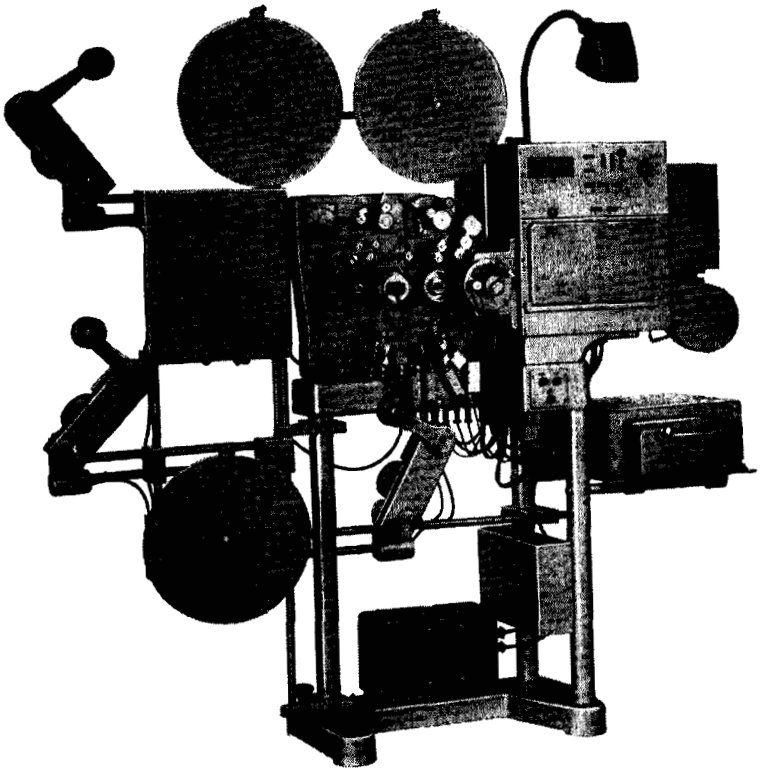

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A three minute color sound film has been prepared demonstrating the additive color system of motion picture printing. Examples of color correction are shown, as well as demonstrations of the unique new light valves combined with tape controlled operation. To preview this film write or phone James L. Wassell, Director of Marketing, Bell & Howell Company, 7100 McCormick Road, Chicago, Illinois 60645; (312). OR 3-3300

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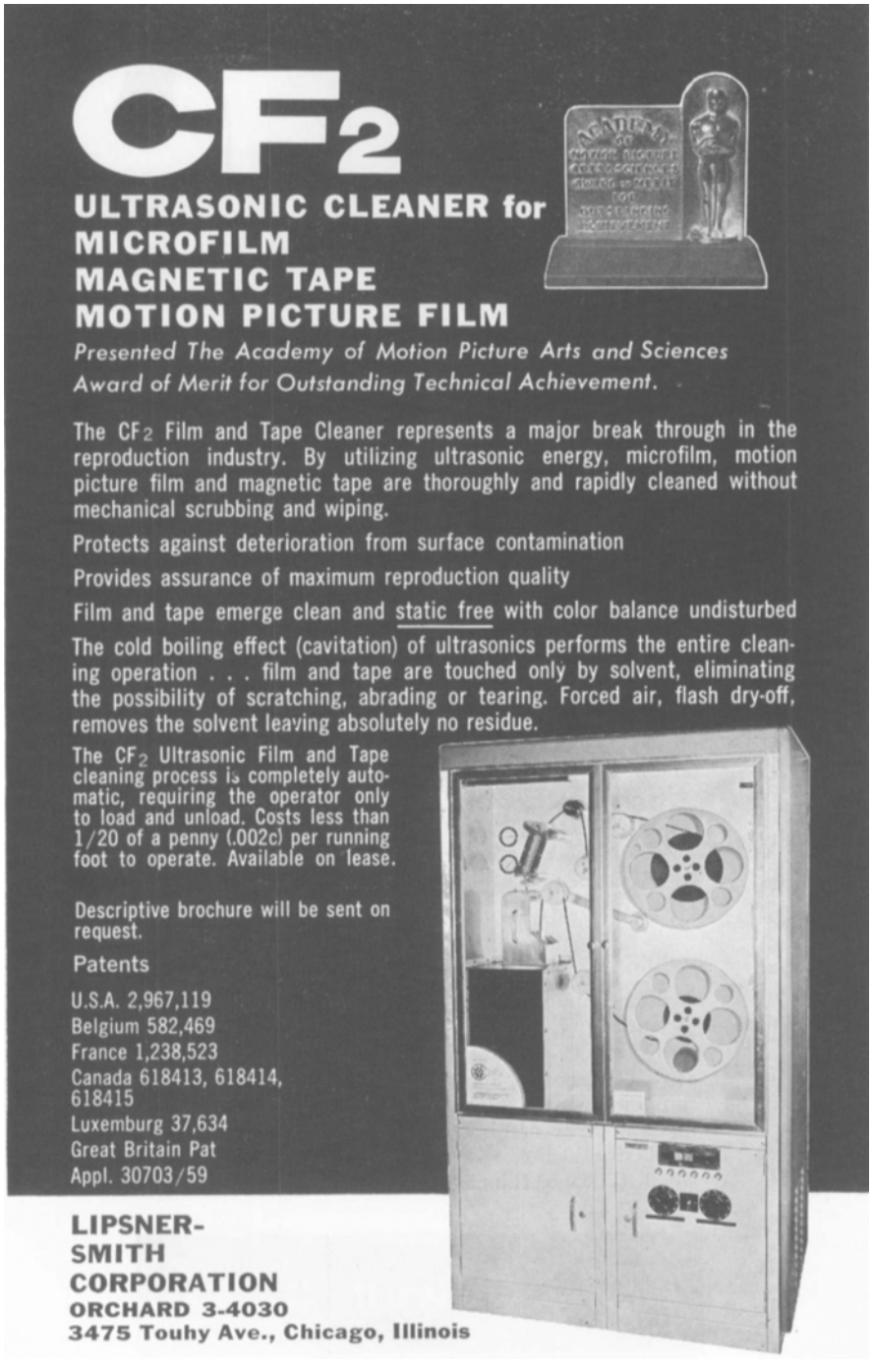
Robert C. Rheineck has been appointed Chief Engineer of Color Service Co., 115 W. 45 St., New York, N.Y. 10036. He was formerly Photographic Engineer of Columbia Broadcasting and American Broadcasting Systems.

Richard T. Petruzzelli has been appointed Operations Manager for the Electronics Division of Du Mont Laboratories, Divisions of Fairchild Camera and Instrument Corp., following consolidation of administrative management under General Manager John S. Auld. In his new post, Mr. Petruzzelli will have operational responsibility for all departments and products of the Du Mont Electronics Division, reporting to the General Manager. He has been a member of Fairchild's Du Mont Laboratories organization since 1951.

Peter J. Buck has been appointed Vice-President and Managing Director of Westrex Co., Ltd., London, England. He joined Westrex's British subsidiary in 1946 and has headed subsidiaries in Thailand, India and Australia. Prior to his present appointment he was Managing Director of Westrex Co., Asia, Manila, and served concurrently as Regional Manager, Far East Operations.



Daniel S. Eisenberg has been elected Vice-President of Finance and Administration of MOVIELAB, Inc., 619 W. 54 St., New York 19, N.Y., according to an announcement from Saul Jeffee, President of MOVIELAB. Mr. Eisenberg was formerly Treasurer of the company and he will continue as a member of the Board of Directors. Morris H. Haber has been elected Treasurer to succeed Mr. Eisenberg.

L. M. Dearing Associates is a newly incorporated consulting and engineering firm, specializing in photo sciences, optics, sonics and materials science, with headquarters at 12345 Ventura Blvd., Studio City, Calif. 91604. President of the new firm is LeRoy M. Dearing, formerly Technical Director of the Consumer Division of Technicolor Corp. Associated with him are John G. Frayne and Leland B. Prentice. Mr. Prentice was formerly Plant Superintendent of Technicolor. Associates in the Materials Science group are Robert E. Hiller and Alvin Snaper.

Subscription Television (STV), 1313 Vine St., Hollywood, began transmission tests on July 1, with scheduled programs planned to begin in Los Angeles on July 17, and in San Francisco on August 14. Equipment was installed and will be maintained by Lear Siegler Service, Inc. The STV studio is equipped to telecast in color over three channels which can be added to existing home TV sets by means of a wired electronic program selector. The first 100,000 subscribers will be enrolled under a charter plan which calls for an installation fee of $5.00. No additional charges will be made for the following year with the exception of basic minimal charges for programs, STV officials said.

The Fastax high-speed photographic line produced by 3M Company's Revere-Wollensak Division plant in Rochester, N.Y., will be handled in Southern California and the Western United States by Gordon Enterprises, 5362 N. Cahuenga Blvd., North Hollywood. Gordon Enterprises will be exclusive field representative of the line for that area.

Fastax-tion is the title of a 16mm color film produced by 3M Company, 2501 Hudson Rd., St. Paul, Minn. 55119, to demonstrate uses of the firm's Fastax high-speed camera in industrial and medical research. The 20-min film was made at speeds up to 8,000 pictures/sec and projected at 16 frames/sec. Fastax cameras are available in 30 models in 8mm, 16mm and 35mm sizes and operate at speeds from 150 to 18,000 pictures/sec. The film shows events ranging from rocket launchings to corn popping and also shows action of the human larynx and a mechanical heart valve.

Craig Corporation of Los Angeles has been appointed exclusive sales representative in the California-Nevada-Arizona area for the Products Division of Edgerton, Germeshausen & Grier, Inc., 170 Brookline Ave., Boston 15. The Craig organization is located at 3410 S. La Cienega Blvd., Los Angeles. E.G.&G. products include high-speed photographic devices and electronic flash apparatus including sensitometers,

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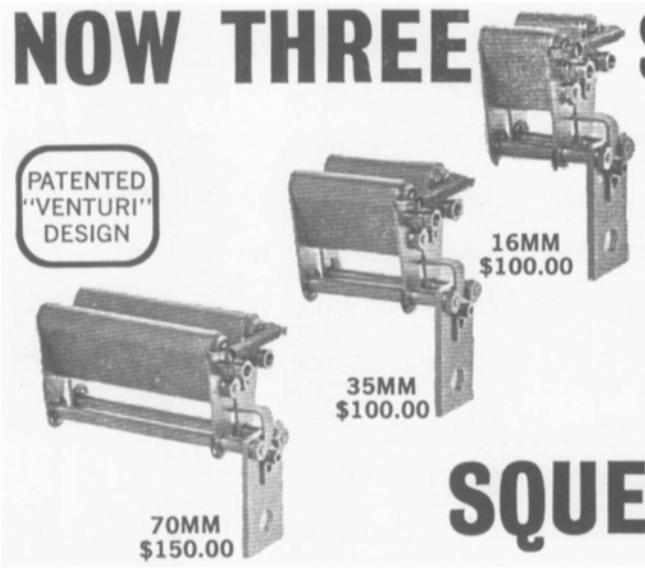

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Zonal Film (Magnetic Coatings) Ltd., which uses a manufacturing process developed by Pyral, S.A., 47 rue de l'Echat, Créteil, France, has been acquired by the Ilford group, according to an announcement from Pyral. The new owners of Zonal Film have entered into an agreement with Pyral in order to continue their activities in their respective countries "in a spirit of complete cooperation in the field of magnetic products," the announcement stated.

A new licensing system for the use of Todd-AO, making it competitive with other 70mm processes, has been announced by Todd-AO Corp., 233 W. 49 St., New York, N.Y. 10019. The new policy permits the use of the system for a flat fee. Heretofore the system has been licensed on a royalty basis. Twentieth Century-Fox has signed a 5-picture contract with Todd-AO under the new arrangement, the announcement stated.

The Gevaert Company of America, Inc., subsidiary of Gevaert Producten N.V. of Belgium, has moved its headquarters to Teterboro, N.J., as the culmination of plans announced more than two years ago (*Journal*, p. 284, Apr. 1962). The 225,000-sq ft building houses executive, sales and administration offices as well as laboratories and a completely equipped motion-picture theater with a capacity of 160. The building will also serve as the distribution center for the firm's seven key branches throughout the United States.

The Ferrania Company of Italy, one of Europe's leading manufacturers of photographic products, has merged with the 3M Company of St. Paul, Minn., which has acquired 100% ownership of Ferrania and its interests in affiliated companies. A total of 769,230 shares of 3M common stock has been transferred to the stockholders of Ferrania, and an additional 76,923 shares to shareholders of other companies outside Italy, formerly related to Ferrania. The primary value of the acquisition will be in photographic products for industrial markets, including the amateur market, according to Bert S. Cross, President of 3M.

Ferrania was founded in 1917; during 1963 its sales were reported as being in excess of $50 million. Instituto Finanziario Industriale (headed by Giovanni Agnelli), with major Italian industrial and financial interests, was principal owner of Ferrania, and was represented by Lazard, Freres & Co. of New York in the negotiations. The Ferrania product line includes some 10,000 items. Its products for the consumer market include a complete line of color and black-and-white films, photographic papers and accessories, x-ray films, microfilm, 35mm and 16mm motion-picture film, aero-photographic films and graphic arts products. Ferrania has a 400-man research staff; there are 3,700 employees at its main plant in the town of Ferrania, near Genoa, and another 1,000 employees at its main office in Milan and at other locations throughout Italy. There are 700 Ferrania employees outside of Italy, nearly half of them in

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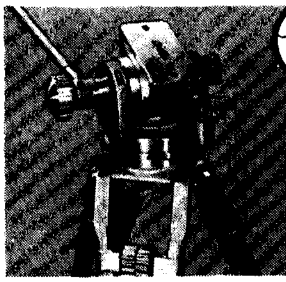

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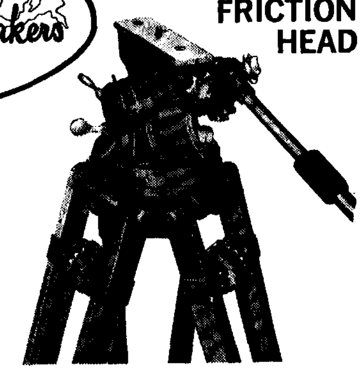
Dimensions: 6⅛" High x 7½" Wide
Tilt: 50° both directions

Designed for maximum smoothness in accommodating these cameras (up to 30 lbs. weight): Cinevoice • Cinevoice 400 Ft. Conversion • Arriflex 16mm & 35mm • Auricon 600 & 1200 • Maurer • Eclair • Kodak Reflex • Eyemo & Filmo With Motors • Cine Special • Bolex

Fluid Head Price $350 **Pro-Jr. Tripod Legs $85**

Unconditional Factory Guarantee

NEW MARK II PRO JR. FRICTION HEAD



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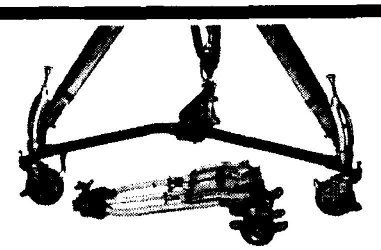
You have never felt any pan and tilt movement like it! The new F & B/CECO Mark II Pro Jr. Head with Teflon combines fluid-head smoothness with the fast, free movement of a friction head. Unconditionally guaranteed. Mounts easily on Pro Jr. Tripod, "Hi-Hat" low base adapter and baby tripod. "T" level attached. Top plate takes camera with or without motor. Features include accessible knob for mounting camera on platform; adjustable angle telescoping pan and tilt handle; 3 positions for attaching pan handle; pan and tilt tension control knobs. ®duPont trademark

Head only......$140
Head with legs......$195
Case only......$22

SPECIFICATIONS

Angle of rotation .... 360 degrees
Degree of forward tilt .... 90 degrees
Degree of backward tilt .... 45 degrees
Height....... 7 inches • Weight....... 6 pounds
Maximum camera weight .... 30 pounds



D-3—F&B/CECO PROFESSIONAL SENIOR 3-WHEEL PORTABLE DOLLY is similar to Professional Junior Dolly in all respects except dimensions. The Senior moves easily in its large 5" wheel:

Price—D3 $150

CEF 122 — Carrying case for above **$20**

SPECIFICATIONS

Weight—18 pounds. Tube diameter—1½". Wheel diameter—5 inches. Constructed of Hi-Tensil Strength Aluminum. Collapsed measures—9½" x 11¼" x 29½". Distance between tripod receptacles in open position—39". Accepts weights up to 200 pounds.

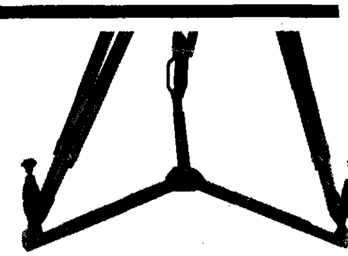
D-1—F&B/CECO PROFESSIONAL JUNIOR 3-WHEEL PORTABLE DOLLY features single positive leg lock to position heavy wheels accurately in proper alignment, two position locks at each caster enables operator to dolly in straight line or to "free wheel" quickly, collapses into easy to carry package.

Price—D-1 $99.50

CEF 122 — **$20**

SPECIFICATIONS

Weight—15½ pounds. Tubing diameter—1 inch, Wheel diameter—4 inches. Constructed of Hi-Tensil Strength Aluminum. Collapsed measures—8½" x 12" x 27½". Distance between tripod receptacles in open position—34½". Accepts weight up to 100 pounds.



TT-2—F&B/CECO MODEL "C" PROFESSIONAL JUNIOR METAL COLLAPSIBLE TRIANGLE WITH LEG CLAMPS

insures tripod rigidity, prevents tripod legs from slipping, adjustable for use with most tripods, wing nut for adjusting and locking permits extensions of triangle to vary leg spread.

Triangle collapses for easy portability. Model "C" comes equipped with leg clamps to attach to tripod shoe for extra rigidity.

Price **$39.50**

SPECIAL! CLOSING-OUT Our Stock of Brand-New Pro-Jr. Army-Type (Military Green) Friction Heads, with Flat (Not Grooved) Legs. **$95.00 each**

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Argentina, where a manufacturing subsidiary is located.

Sales of 3M outside the United States totaled more than $180 million last year, more than 20% of the firm's total 1963 sales of $761 million.

books reviewed

Transistor Circuits for Magnetic Recording

By N. M. Haynes. Published (1964) by Howard W. Sams & Company, Inc., Indianapolis 6, Ind. 384 pp. incl. preface, table of contents, appendixes, index, diagrams, illus., 5¾ by 8¾ in. Price $9.95.

This book ought to have the word "audio" in its title, for it is concerned with audio recording. Video is not considered; however, two chapters supply an introduction to FM and digital recording.

The author's preface promises to avoid complex mathematical treatment, and in this he has succeeded. The book is clearly written, and, for the most part, qualitative, rather than quantitative. For this reason, it will appeal to technicians and service engineers, but will disappoint design engineers.

The subject material is divided into four parts: Part I, *Transistors;* Part II, *Magnetic Recording Elements;* Part III, *Sectional Circuitry,* and Part IV, *System Circuitry.* Three appendixes supply additional information on Decibel Nomenclature, Circuit Perturbabilities (to temperature, voltage, etc.) and Typographical Circuit Diagrams (which is a shorthand notation for signal flow). The author makes considerable use of abbreviations; perhaps too much so, for the reader is never sure which ones are common, and which ones were invented by the author.

Part I, *Transistors,* is particularly well written for it introduces transistors without employing transistor physics. Part II, *Magnetic Recording Elements,* is clearly written, but contains numerous minor errors. Readers looking for information on magnetic recording might well consider reading other books and articles for verification, or, better still, make the measurements themselves. This part covers noise, the recording process, magnetic heads, and basic circuit requirements. Part III, *Sectional Circuitry,* covers "blocks" of circuits such as preamplifiers, equalizers, output amplifiers, bias oscillators and motor control circuits. This is the heart of the book, and it is well written. Of particular interest is the chapter on motor-control circuits, an area about which little has been written previously. Part IV, *System Circuitry,* shows how the blocks of the previous part are put together to form recording channels, playback channels and complete recorders.

This book can be recommended to technicians, service engineers and others who are curious about the subject, but designers will find a minimum of design data.—*Charles B. Meyer,* Radio Corp. of America, Broadcast and Communications Products Div., Camden 2, N.J.

Principles of Cinematography (3d Ed.)

By Leslie J. Wheeler. Published (1963) by Fountain Press, 46 Chancery Lane, London, W.C.2, England. 424 pp. Illus., index, bibliography, 8½ by 5½ in. Price 75s.

This third edition of a book initially published in 1953 brings to the reader a wealth of information on many aspects of motion-picture work. The title is misleading because the content goes far beyond basic principles. The volume is actually an encyclopaedia of motion-picture technical facts.

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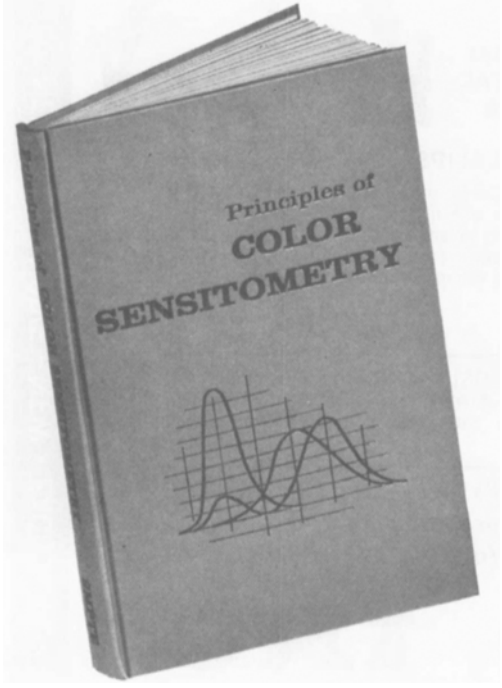

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