The new California Museum of Photography opened April 7 after a series of construction delays in the renovation work on the former Kress variety store in downtown Riverside, CA. Now housed in the new facility is the huge Keystone-Mast collection of over 250,000 stereo negatives and 100,000 prints, donated to the CMP by the Mast family in 1977 and long stored in the museum's cramped quarters at the University of California, Riverside (site of the 1986 NSA convention).

The new museum is a 23,000 square-foot, four-level showcase of photographic history, art and technology. With its several collections of cameras, equipment and images it has the scope, if not the size, of any of the leading photography museums in the world. Seven galleries allow a variety of permanent and special exhibits to be featured at the same time. A walk-in camera obscura is built into the front facade of the museum's upper level, where visitors will see an inverted image of the Riverside mall in front of the museum. The lower level includes a study center, library, photo lab, and the collection room—repository of the thousands of historic images created and/or purchased by the Keystone View Company.

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Front Cover:
"A Crowded Street Market, Hong-Kong," No. 32 from the first series (1927) of the Peeps Into Many Lands stereoscopic cigarette cards issued by Cavanders Ltd with Army Club cigarettes. This image is from one of the medium size card pairs, which were to be inserted in the Camerascpe viewer as separate left & right pieces. Several British companies produced stereocards in a variety of sizes to promote their cigarettes. The feature "British Stereoscopic Cigarette Cards" by John Bradley includes examples of most known formats and subject areas. Mr. Bradley lives, of course, in Chesterfield, England.
Dear Source:

It seems to be helpful, every few years, to remind NSA members both old and new that it's exactly your input and sharing of ideas, research and general knowledge that makes Stereo World possible. That sharing (combined with some horse-trading in stereographica) is the reason for the existence of the NSA in the first place. The magazine's generally high quality and growing reputation regarding both appearance and content are the results of time and effort contributed by members with skills and interests covering every aspect of stereo imaging.

So again the reminder; DON'T take it for granted that all this material spews forth from a cosmic stereo worm-hole or faxes unbidden from the processors of some multi-funded research institute. Our sources for everything from features to news items are our readers — with their own special interests, connections, inspirations, resources and passions. Some of course have the time and experience to contribute more than others. But often the new areas of coverage are opened up by people contacting us for the first time with their efforts. Remember: there is no "staff" here grinding out articles or intercepting secret satellite transmissions of 3-D related news items. If you don't at least send us a card about your news or idea or project, it may never be published in any form anywhere!

Send Clippings

The same thing applies to articles or items appearing in other publications. Every month, at least one stereo related item appears in some technical or historical or photographic magazine. If you see it, send us a clipping or a xerox before the magazine is misplaced, borrowed, eaten by the dog or recycled. If the publication is very specialized or obscure, include its full address. Unless it's a cover story in Newsweek or Popular Photography, don't assume that somebody else will have noticed it.

Holmes Library Curators Ray and Marge Holstein have asked that NSA members also send clippings or xeroxes of stereo related articles to the library in order to help it become as complete as possible. One of the strengths of the Holmes Library is its holdings of material relating to any and all aspects of stereo imaging past or present. Yet even some articles written by members for specialized publications only find their way to the library (or SW) by accident or after a long delay. Material sent to the library should include complete information concerning author, publisher and date.

The First NSA View-Master Three Reel Packet

A Limited Edition Collector's Item!

Reels A & B contain scenes from some of the programs presented at NSA PORTLAND 89, the 15th annual convention of the National Stereoscopic Association, Aug. 4-7, 1989, Portland, Oregon.

Reel C is a collection of scenes from several View-Master "DR" and Plant Tour reels and is the only commemorative reel to be published as a token of the 50th anniversary celebration.

Packets are $6.00 including postage from NSA, Box 398, Sycamore, OH 44882.

View-Master History Reprint Available

The feature "Seven Billion Windows on the World — View-Master Then and Now" appeared in the now out-of-print Mar./Apr. '84 issue of Stereo World. This 18 page illustrated history of the View-Master company has now been reprinted in a separate, updated version and is available for $3.00 including postage from the NSA Back Issue Service, Box 398, Sycamore, OH 44882.
Wanted: 49 Top Views

I am currently working on a book project in which I hope the NSA membership will act as participants. The book will feature 49 select stereo views made prior to 1945. The criteria for inclusion will be stereoscopic effect, subject, print quality and historic significance. Each view will be reproduced actual size and the book will include 7 View-Master reels. Limited to 1,000 numbered and signed hardbound copies, the book will be of the highest quality.

Members are asked to submit one or more stereo views from their collections for possible use. Also, members may suggest a view or views not in their collections which they would like to see selected. Participants are asked to submit Xerox copies at first for editing purposes. Once the view is selected, I will inform you when and how to ship for copying. All participants with selected views will receive a complimentary copy of the book.

Send your copies or suggested views to John Waldsmith, P.O. Box 191, Sycamore, OH. 44882.

Lustre No Sin

It delighted me to read about "Lustrous" Stereo by Neal DuBrey in the Nov/Dec 1989 issue of Stereo World.

I am a stereoscopic painter and graphic artist and first made use of this important effect in a series of large acrylic canvases I produced in 1972.


Lustre continues to interest me as a painter. It is more than just a curious or "annoying" effect and deserves serious attention by artists. Lustre derives quite directly from the work of French Impressionist painters, particularly Seurat and Monet, who employed the concept of optical mixture of adjacent pointillist dots of color to achieve in the mind a sense of spatial color atmosphere in their canvases. What I have found in taking this a step further into a stereoptic space field is that one can actually impress the real fusion of whole color fields mixed in the mind. These fields viewed stereoscopically appear to excite actual virtual space with an almost electrical colorescent reality.

I'm currently exploring this phenomenon and the whole of stereo space aesthetics by "painting with light," as I call it, via high resolution computer graphic technology.

Roger Ferragallo
El Sorbrante, CA

Mr. Ferragallo wrote a detailed, illustrated article on the history and techniques of stereoscopic painting for the Spring, 1974 issue of LEONARDO, Vol. 7, No. 2. One of the aspects of this generally neglected art form which he covers is the use of the "lustre" effect in various color combinations.

— Ed.

Secret of Lippmann Color

The Nov-Dec issue raises some questions about the Lippmann color process. Gabriel Lippmann was a French/Belgian chemist who won a Nobel Prize for Physics in 1908. More than 20 years before that, he became interested in recording scientific imagery in colors from such instruments as spectographs. It took many years to achieve full-color "snapshots." A garden scene was on display at the Eastman Museum in Rochester, New York before its renovation, and may be back on view with its recent re-opening. A twopage article apparently based on the information presented with the Eastman display appeared in Popular Photography some twenty years ago.

Only occasional, brief mentions may be easily found on this process. A search of the literature several years ago yielded only one paper as recent as 1926, which concluded the process was "impractical." Strangely enough, a letter I have from Kodak dated 1987 basically says the same thing, and that the process's advantages simply aren't worth further research, nor possible manufacture.

Last year, at the Eastman Museum's research library, I found the most complete "how to" description so far, in an 1895 paper expanded by a Lippmann associate from an earlier paper. This was easy to access since I read French, but a contemporary paper in German was not, though a quick scan didn't seem to reveal additional information.

The process reminds me of a full-color hologram method I ran into, again, some twenty years ago, in which full-color was achieved at the expense of depth — no 3D image.

The Lippmann process is entirely physical, no dyes being employed, and to someone acquainted with modern holography, again, seems a variant of a "white light, non-coherent" hologram technique. As Neal DuBrey explained in Stereo World, light passes through an emulsion of silver halides, is reflected from a mirror in contact with the emulsion, and forms standing waves of exposed silver grains within the emulsion.

The mirror contact is crucial, and must be "perfect." Lippmann used a shallow "well" of mercury with the photo plate forming one side of the cell — sort of a fish tank of mercury, with the plate acting as a "window." After exposure, the plate was removed sans mercury for developing. The plate was replaced in contact with the mercury for viewing — light has to be reflected at a critical angle. The effect is like viewing a positive image formed by an underexposed black and white negative under reflected light.

No one today, of course, would want to work with mercury, although early photographers routinely did so at great hazard to their health. The process also depends on two other critical factors: full panchromatic sensitization of the emulsion, with extremely thin (low silver density), extremely fine-grain characteristics. Required are "scien-

(Continued on page 40)
Cigarette cards made their first appearance in America over 100 years ago. As a simple attractive marketing idea they gained popularity in America, Great Britain, and elsewhere. At the beginning of the century they were part of the ammunition in the so called “Tobacco War” of 1901-02 when American and British tobacco conglomerates fought for control of the world market. Cards reached their peak, in terms of standards of production and popularity in the years between the two world wars. After World War II, cards were issued less widely and were generally of a lower standard. Trade cards — given free with other products such as breakfast cereal or tea continue to be issued, but again these are mostly of an inferior quality.

Throughout the years a number of “novelty” cards have been produced — cards woven on silk; miniature records on cards; pop up cards and many more. Of interest to stereo collectors though are those series utilizing stereoscopic photography, and here a number of interesting sets can be found.

The most widely available British stereoscopic cigarette cards are those issued by Cavanders Ltd with their “Army Club” brand of cigarettes from 1927-1931. Readers may recall a description of two of these series in the Mar./Apr. 1985 Stereo World article “Dinosaurs Through the Stereoscope.” The cards were produced for Cavanders by Camera-scope Ltd of London, whose other stereoscopic work can also still occa-

Peeps Into Many Lands No. 11, “On the Road to Kashmir, N. India.” From the first series of small card pairs issued with Army Club Cigarettes in 1927 by Cavanders Ltd. for viewing in the Camera-scope. (All cards are reproduced actual size unless noted otherwise.)

Peeps Into Many Lands, First Series, No. 19, "A Snake Charmer, Bombay, India." 1927.

Peeps Into Many Lands, Second Series, No. 4, "Group of Natives, Sumatra." 1928.

Peeps Into Many Lands, Third Series, No. 19, "Gala Day, Dubrovnik (Ragusa), Yugo-slavia." A slice of the complex political history of south-central Europe is revealed on the back of the right-image card, issued in 1929.

sionally be found. Camerascop e also produced the folding metal viewer in which the cards were inserted for viewing. As the advertising on the back of the cards announced, "A 5s Camerascop e will be supplied post free for 1/-" What a bargain! Some of the cards also bear the inscription "C.J. Dearden Holmes," which I take to be a reference to the copyright holder of the photographs. In all, Cavanders produced nine different black and white series and two coloured series. There is sometimes confusion over these series since the titles are a little ambiguous and sets were produced in three different sizes. It should be noted that although the 'Peeps in to Many Lands' series all appear to draw on the same stock of world travel views, each series is completely different. The size of the card was dictated by the size of the packet or tin with which it was issued — bigger tins had the bigger cards. The small cards were always issued as separate "left" and "right" images, as were most of the medium sized black and white cards, while the coloured series are more often found as joined pairs of views. In the case of the large series they contained both images on one single card.

The complete Cavanders list is as follows:

**Black & White Series**
Peeps in to Many Lands, A Series, 1927, 36 pairs, small
Peeps in to Many Lands, A Series, 1927, 36 pairs, medium
Peeps Into Many Lands, First Series, No. 32. “A Crowded Street Market, Hong-Kong.” A pair of the medium size cards issued in 1927.


Peeps in to Many Lands, A Series, 1927, 36 cards, large
Peeps in to Many Lands, 2nd Series, 1928, 36 pairs, small
Peeps in to Many Lands, 3rd Series, 1929, 24 pairs, small
Peeps in to Many Lands, 3rd Series, 1929, 24 pairs, medium
Peeps in to Prehistoric Times, 4th Series, 1930, 24 pairs, small
Peeps in to Prehistoric Times, 4th Series, 1930, 24 pairs, medium

Colour Series
Glorious Britain, 1930, 25 pairs, medium
Coloured Stereoscopic, 1931, 25 pairs, medium

Although the most widely known, Cavanders were not the first British tobacco company to issue stereo cards. In 1904 John Player Ltd. of Nottingham produced a series of 150, with two stereo views printed on one small card. However this series was never actually issued to the public, and the few rare examples from it to be found probably escaped from the printers. Those I have seen were hand cut rather than accurately machine cut.

British American Tobacco, formed by the rival companies as part of the solution to the “Tobacco War” issued 270 cards in the “Views of the World” series in 1908. The images in this series are some of the smallest stereos I’ve encountered, and the question of how they, and the other small single cards, were viewed is something of a mystery. I have seen examples of the cards which have been cut and re-mounted at an appropriate inter-ocular distance for viewing in a Holmes type viewer. One card in my collection advertises a “Rotoscope” viewer “specially designed for viewing these cards.” Possibly this device employed prisms or mirrors.

In later years BAT issued other stereo series — “Nature Studies,” “Pictures of the East” (1930) and “Round the World in Pictures” (1931). Another major British company, W.D. & H.O. Wills overseas division had issued their own “Na-
Pictures of the East series No. 32, "Arab Bridal Carriage," published by British American Tobacco in 1930. While the images are a bit larger than the B.A.T. series of 1908, the separation is actually less.

Here There and Everywhere No. 40, "Cotton" issued by United Tobacco Company of South Africa in 1930.

coloured Stereoscopic, No. 7, "SS. Mauretania." These medium format pairs of cards issued in 1931 are high quality tinted lithos.

The only example of anaglyph 3-D being used for British cards was the 1939 series "Zoo Studies - Come to Life Series" produced by Phillips in 1939. These larger than average cards — 30 photographs taken in London Zoo — were issued with their own set of cardboard red/green spectacles.

It was over twenty years before the next British stereo series was seen—sets of stereo trade cards given away with Weetabix breakfast cereal. These full colour sets were produced over a period of four years — "Thrill Cards" (1960), "Our Pets" and "Working Dogs" (1961), "Ani-
Quite possibly one of the smallest stereo prints ever commercially published, "Rome—Paolina Fountain" is No. 228 in the British American Tobacco 1908 series "Views of the World." Front and back are shown here actual size.

A FREE GIFT
OF A HANDSOME POCKET ROTO SCOPE

Especially designed to take these Photos is being presented to Smokers of these Cigarettes. Watch the Newspapers for particulars of the scheme. A series of 270 Photos is being issued.

Thrill Cards No. 18, "Steeple Jacks" is from the Weetabix Cereal promotion of 1960.

(18) STEEPLE JACKS

Steeple jacks are men who work on very high buildings either constructing, repairing, or cleaning them. One regular job of this kind is repairing the brick chimneys of the factories in the Midlands and the North of England which are inclined to crack because of the heat. Monuments like Nelson's Column need regular cleaning and this job falls to the steeple jacks. This work is very dangerous and needs men who have no fear of the height at which they work.

You must get a WEETABIX 3-D VIEWER

See your "THRILL CARDS" leap into glorious, full-colour 3-D realism. Send off now for your Weetabix 3-D viewer. Send the special offer token from your Weetabix packet.

British Cars No. 4, "Austin Healey Sprite MK II" was issued by Weetabix in 1963.

The folding plastic Vistascreen viewer.

Weetabix viewer with its gold logo from the rear.

mal Cards" and "British Birds" (1962), and "British Cars" (1963). The cards and their viewer were based on the Vistascreen 3-D system — a small folding plastic viewer which was sold at tourist locations with sets of 10 small stereo cards. The Vistascreen viewer normally sold for 2/6d (pre-decimal British money!), but Weetabix customers were able to buy the special red edition (embossed in gold letters with the Weetabix name) for only 1/6d. The quality of the colour printing was only average, but nevertheless they make interesting viewing. The Australian sister brand "Weet-Bix" issued similar sets in 1964, including "The Mysterious East," "Veteran and Vintage Cars," and "Wildlife of the World."

More recently, trade cards employing lenticular printing and holography have been issued with some success. Kelloggs "Animals 3-D" (1968) was one of the earliest lenticular sets, followed by Shell Petrol’s "3-D Animals" (1970), Spar Groceries "Disney Characters" (1974) and Sun newspapers "Gallery of 3-D Football Stars" (1975).

The "Hologrems" series of small holograms of "space monsters" was issued by sweet manufacturers.
Barretts in 1986, the same year that Nabisco cereal’s “Dungeons and Dragons” cards produced by Applied Holographics was given away with Shreddies breakfast cereal.

Because cigarette and trade cards have an active following of collectors and dealers, examples from most series can still be found. Prices vary enormously according to how “scarce” the collecting fraternity believes the series to be. Some complete sets of Weetabix cards can still be found for a few pounds, while I was recently offered a single card from the unissued Players series for £50.

I would be pleased to correspond with any other NSA members interested in this field, and can be contacted at: The Mede, Moor Rd., Ashover, Chesterfield, Derbys., S45 OAQ England.

A Canadian Stereo Library

Canada’s first reference library exclusively for 3-D image technology has been established at Sheridan College in Oakville, Ontario. Titled The Canadian Stereoscopic Collection, the library is a collaborative effort of the college and the Photographic Historical Society of Canada.

Students, collectors, and enthusiasts of 3-D imagery will gain access to an extensive collection of educational materials concerned with the full range of 3-D technology and related topics, including stereoscopy, 3-D video, film, and computer imaging. The collection will also cover 3-D as used in conjunction with other contemporary technologies.

College President Mary E. Hofstetter and Photographic Historical Society of Canada President Mark Singer signed the agreement to establish the library, which will open in October, 1990. The College will be responsible for housing and maintaining the library, and the Photographic Historical Society of Canada will be responsible for funding and acquisitions.

“This is an historic agreement for the society and will work well to preserve Canada’s photographic heritage,” said Photographic Historical Society of Canada President Mark Singer. “It will be a valuable, centralized collection, which will allow instant access to people who want information on any of the 3-D technologies.”

Opening ceremonies for the Canadian Stereoscopic Collection will be held on October 17. The College is at 1430 Trafalger Road, Oakville, Ontario, L6H 2L1 Canada.
I was recently surprised when a friend of mine (who wasn’t even a stereo enthusiast) showed me a random-dot stereograph that consisted of a single image, rather than the usual stereo pair. To view the image, one fused two marks within the image, and would see the words SEEING THE LIGHT written using two levels of depth. I found it a unique experience to view in 3-D as my eyes roamed freely over a single image.

I duplicated the technique with my computer, modifying the method slightly so I could produce images with numerous depths rather than just two. I’ve included some samples here. They should be viewed divergently, not cross-eyed. I’ve kept the interocular distance small, so they should be accessible even for those who aren’t used to free-viewing.

It is not hard to understand the method I used to make these. I begin by generating a column of random black and white pixels, running the full height at the left side of the image. The width of this column determines the interocular distance for the image — I used from 50 to 200 pixels. Let’s call this width N. Moving from left to right across the image, I decide for each pixel what height it should represent. If I want the height to be 0, I color that pixel the same color as is located N pixels to the left. Or, if for example I want the height to be 3, then I use whatever color is located (N-3) pixels to the left. Thus, as I march across the image from left to right, I’m constantly looking back at what I drew previously, at a variable distance behind me, to find the new values for the image. Deciding what height to make at each pixel is, of course, not essential to the algorithm. I wrote a simple ancillary program that let me draw geometric shapes into an array, which I then used as a guide to tell me the heights.

The only trouble I ever had is an occasional “aliasing” artifact, which tends to corrupt the randomness of the dots towards the right edge of the image — this happens if the value for N is close to the frequency of something in your image (the “weaving” pattern image shows this effect slightly.)

Interested readers might consider creating poster-sized images using this technique, or experimenting with supplementary gray-level or color values for each pixel. And, if any reader knows who invented this technique for single image random dot stereograms, or who created the SEEING THE LIGHT image, please drop a note to this magazine.
ARIZONA LANDMARKS:

Stereography of Natural Wonders
in Arizona Territory, 1871-1930s

by Bruce Hooper

Mission San Xavier del Bac is nine miles west of Tucson. It is located in the Santa Cruz Valley at an elevation of about 2,000 feet. Its location in the desert has earned it the name of "the White Dove of the Desert." Mission San Xavier del Bac was founded during the 1690's by the Jesuit Missionary Father Kino and was named in honor of the "Apostle to the Indies." It was one of a chain of Spanish missions extending across Pimeria Alta to the Colorado River. San Xavier served two purposes: (1) to Christianize the Indians and (2) to serve as a ranch. The mission was abandoned in 1751 when the Pima Indians revolted. The revolt subsided in 1754 when the mission was reopened. In 1767 the Jesuits were forced to leave again and never returned. Immediately, the Apache Indians destroyed the original mission and in 1768 the Franciscans began to rebuild what is now the present church. In 1797 the reconstruction of the mission was completed and furnishings and ornaments originally brought to San Xavier by Father Kino were installed. During the late 1820's San Xavier was abandoned again when the Mexican government secularized the mission lands.

San Xavier was reoccupied after 1854 when the mission was sold by Mexico to the United States as part of the Gadsden Purchase. In 1859 Arizona Territory was aggregated by a decision of Rome to the diocese of Santa Fe, New Mexico. The Right Reverend J. B. Lamy, Bishop of New Mexico, sent his Vicar-General J. B. Machebeuf to ascertain the condition of the missions and the state of affairs. Although the Reverend was only able to stay at San Xavier for a couple months, he found the mission had not gone to complete ruin. During 1866 the Government attempted and failed to establish a school for the Papagoes at San Xavier. In September 1873 a school finally was established and administered by R. A. Wilbur, Indian Agent, and directed by three sisters of St. Joseph from Carondelet, Missouri. The school was closed on April 1, 1876 due to the consolidation of the Papago and Pima Agencies. Towards the end of 1895 San Xavier was once again reoccupied by the Franciscan Order when Reverend Michael Richardt accepted St. Mary's congregation at Phoenix, Arizona. Bishop Granjon began the restoration of the church in 1906 when a period of rainy weather seriously damaged the buildings threatening their safety. In 1937 restoration was begun again when the west tower was struck by lightning. The mission was restored completely during this second restoration.

Mission San Xavier del Bac exemplifies the late Spanish Renaissance or Churrigueresque style. It is divided into three parts with walls of burned adobe brick and lime plas-
San Xavier del Bac Mission Church by Rothrock, 1877, published c 1880 (Courtesy of Arizona Historical Society Library, Tucson).

Distant view of San Xavier by Watkins, 1880 (Courtesy of Arizona Historical Society Library, Tucson).
ter. Its dimensions are approximately 115 by 70 feet. The church faces to the south and is surmounted by one dome and two minarets. The atrium, approximately 66 by 33 feet separates the church from the plaza. The front center is covered with low relief scroll work of the coat-of-arms of the order of St. Francis of Assisi. The church's form is of that of a cross with the transept forming on each side of the nave a chapel of twenty-one square feet. San Xavier has only one nave which is divided into six portions. Above the transept is a cupola about fifty feet high and the remainder of the vaults being about thirty feet high.

Inside San Xavier the main altar is bounded by frescoes and stands at the front of the church facing the nave, which is dedicated to St. Francis Xavier. There are two chapels each with two altars. At the front door, from the inside, there are two small openings that lead into the towers. During the nine-

Mitchell, San Xavier from the same angle. Is this Buehman's negative? (Courtesy of Arizona Historical Society Library, Tuscon.)
and used as a schoolhouse until 1876. During 1906 the atrium was changed and the dormitories and their patio also were changed. The whole interior of the church is decorated with frescoes and sculptures.

Photographic documentation begins with Charles Gentile who probably photographed San Xavier Mission on his tour of Arizona Ter-

teenth century one of the towers stood incompletely. On the west side of the church, separated from it by a narrow passage is an enclosure with an opening on the north and a small chapel standing at its western side.

On the east side of the church is the long narrow mission building. There were several farm houses containing dormitories located on the mission land of which they made up six rooms. Four extended south and faced the church plaza, while two were attached to the church. All these rooms were repaired by the Government in 1873, with the Bishop's consent and supervision.

Mitchell, Main Altar, San Xavier, same angle. Is this Buehman's negative again from the same series? (Courtesy of Arizona Historical Society Library, Tucson.)
ritory between 1871 and 1872. During the summer of 1874 Dudley P. Flanders of Los Angeles stereographed the church and the Papago Indian School. These views are on orange/lavender and gold mounts. Henry H. Buehman of Tucson probably took some stereographs of the Mission between 1874 and 1879 and during the 1880's in order to satisfy demand by local residents and the tourist trade. Views of San Xavier were apparently quite popular, because stereographic documentation continues until the twentieth century. San Xavier like the Casa Grande ruins were close to settlements and as a result they were easily accessible to tourists and photographers. During 1877 George H. Rothrock took some excellent stereographs of San Xavier. These are on orange/lavender mounts with manuscript captions and in gothic lettering titled "G.H. Rothrock's Arizona Scenery." During the tour, Rothrock set up his darkroom behind the altar in San Xavier Mission. Rothrock's views of San Xavier were reprinted during the 1880's. Sometime between 1878 and 1879 Charles O. Farciot, an operator for Edouart & Cobb of San Francisco, also took stereographs of the Mission. Views are on orange/lavender mounts with manuscript captions. The finest stereographs ever taken of San Xavier were taken by Carleton E. Watkins during the summer of 1880. These were taken on April 14, 1880 and number between 4899 and 4901. Stereographs are on orange/lavender mounts.

During the 1880's Daniel Francis Mitchell issued some stereographs of the interior and exterior of San Xavier that are alleged to have been taken by Dudley P. Flanders of Los Angeles. I have examined the reproductions of the original Flanders stereographs and the Mitchell stereographs in my own collections of San Xavier and have concluded that the negatives that Mitchell used could have been taken by him or else he acquired the negatives from Henry H. Buehman of Tucson. Flanders did not take any of the negatives. During the 1870's and 1880's there was some negative swapping between the Mitchell, Rothrock, and Buehman galleries. A good example of negative swapping is Rothrock's No. 60 captioned "Arizona Shrubbery." This stereograph was originally taken and published by Buehman, but sometime during 1877 Rothrock bought the negative from Buehman and published it as his own. In Rothrock's sequence of views for 1877 this stereograph looks totally out of place. Rothrock reprinted this same view during the 1880's because if was a popular number.

During the twentieth century a staff photographer for the Keystone View Company did take a number of stereograph negatives of San Xavier Mission after there had been some restoration work on the edifice. These views were taken in 1933 and they show the interior and the exterior, nuns, and the Mission from a distance. They are an interesting contrast to stereographs taken during the 1870's and 1880's that show a deteriorating dilapidated structure. I do not know if these Keystone negatives were ever published.

Others who photographed San Xavier were Willis P. Haynes of Tucson (c.1880), C.C. Pierce of Los Angeles (c. 1890), G. E. Moore of Los Angeles (c. 1890), Joseph Amasa Munk of Los Angeles (c. 1890), L. C. McClure of Denver (early 1900's), and Edward Sheriff Curtis (early 1900's).

Sources


New CMP Opens Shutter

(Continued from inside front cover)

Moving that massive collection of prints and glass negatives (an estimated 25 tons) from the UCR campus to the new downtown museum was a very specialized job. Currently valued at $10 million, the fragile collection was moved at no charge to the museum by O'Neil/Citizens Moving and Storage, a division of O'Neil Moving systems of Santa Ana. The glass negatives were moved in some 1,200 wooden boxes weighing 50 pounds each on four consecutive Mondays beginning May 7.

The California Museum of Photography is located at 3824 Main Street, on Riverside's pedestrian mall. Hours are 10 am to 5 pm Tuesday through Saturday and noon to 5 pm Sunday. The museum's 24-hour events hotline is 714-784-FOTO.
Several people have asked us to provide information on the various styles of viewers that have been produced over the years. The following is a list of viewers produced from 1938 to present and the “known” variations. Since many items are continually being “discovered” for the first time, any updates by our readers would be greatly appreciated. We are only listing production viewers. Although View-Master has, over the years, produced prototype viewers, we feel these items are too rare to be included in this listing and plan to review prototype viewers at another time.

**Model A (1938-1944)**

This round viewer is made of black plastic and easily identified by the words “to change view pull to stop then release” above the scene title window. It warps easily in heat and was sold alone or in gift sets. The versions we know to exist are:

- Black with small eyepieces
- Black with large eyepieces
- Black with large eyepieces and inner metal clip
- Black-blue/white speckled with small eyepieces
- Black-green/tan speckled with small eyepieces

**Model B (1944-1948)**

This model is also round but somewhat more durable since it is made of Bakelite. Several color variations were made. They are:

- Black
- Brown with black eyepieces
- Blue with black eyepieces

The Model B was also manufactured in England for a short time. Made of black Bakelite, the English version has oblong eyecups.

**Model C (1946-1956)**

The most common of the older viewers, the “Deluxe Stereoscope” was the first square model. There are many variations of this viewer and the differences we have found are as follows:

- Color Variations
  - Black
  - Brown
  - Black/brown flecked

- Printing Variations
  - Sawyers name and patent information outlined in box at bottom of back (seam down middle of viewer)
  - Sawyers name and patent information not outlined

- Lever Variations
  - Advance lever in brass
  - Advance lever in aluminum

- Eyepiece Variations
  - More “steps” leading to top of viewer
  - Fewer “steps”; greater distance from top of viewer to first “step”

- Rivet Variations
  - Front rivets are concave
  - Front rivets are inset
  - Front rivets are pointed

**Model C Lite Attachment (1950-1956)**

Made of black Bakelite, this attachment was made to clamp onto the Model C and lights up by using batteries or an optional transformer cord. There are two variations:

- Attachment with outline of viewer on back
- Attachment with words “Luma View” printed on back

As far as we know, a brown lite attachment was not made to accompany the brown viewer.
A light attachment was also made by the View-Lite Co. in Kansas. Made of black plastic, this attachment is much smaller and lighter than the Sawyers design. Also made to hold the viewer and light attachment in an upright position was a round pedestal base.

**Model D (1955-1974)**

This model is also known as the "focusing viewer." Secondary to the focusing feature is the fact that this viewer has an image size more than a third larger than the regular model. It also has a built in light source and optional transformer. It came in three styles:

- Black
- Brown
- Brown with special filters and bulb life (This viewer, originally included within the Chinese Art Set, is currently available from Reel 3-D Enterprises)

A special viewing stand was made for this viewer as well. This stand was only made in brown and accompanied the Chinese Art Set. (This stand, too, is still available from Reel 3-D.)

**Model E (1956-1960)**

Streamlined and a little lighter than the Model C, this model, which dips down in the middle to form a "V" has several variations:

- Brown with flat ivory knob
- Brown with rippled ivory knob
- Black with rippled ivory knob
- Black with rippled red knob

**Model E Light Attachment (1956-1960)**

Made to fit onto the Model E, this light attachment was smoother and easier to use than the one made for the Model C. It could be used with the transformer cord or with batteries. The only variation we know is made of brown Bakelite with an ivory button and we do not know if Sawyers made a light attachment to match either of the black viewers.

**Model F (1959-?)**

This viewer has a built in light source activated by pressing the bar on top. It also has about one power larger magnification than the regular Model C. Made of dark brown Bakelite, we know of no variations.

**Model G (1959-1977)**

Called the “standard viewer” but also given the designation “Model G” by many collectors, this viewer has enjoyed the longest production run of the regular viewers. Originally this viewer was made of off-white plastic with a dark brown lever; but this was later changed to an all beige version. Even later, this viewer was produced in a red/white version and, still later, as an all red viewer. Differences include:

- Off-white body/dark brown lever
- Beige body/brown lever, Sawyers on back
- Beige body/beige lever, Sawyers on back
- Beige body/beige lever, GAF on back without Belgium patent information on front
- Beige body/beige lever, GAF not on back with Belgium patent information on front
- Beige body/beige lever, GAF on back in large gold letters without Belgium patent information on front
- Beige body/beige lever, GAF on back in small gold letters with Belgium patent information on front
- Red & white/blue lever with metal plate, GAF on front and back in white letters with large diffuser openings
- Red & white/blue lever with metal plate, GAF on front and back in white letters with small diffuser openings
- Red & white/blue lever with metal plate, GAF on front and back
- Red & white/round flat blue lever with plastic plate
- Solid red/blue lever with metal plate, GAF on back white letters
- Solid red/round flat blue lever with plastic plate
Model H Lighted Viewer  
(196?-1981)
Same features as Model F but rounder in design. First introduced in beige and later changed to a royal blue color. Known variations:
- Beige with metal disc on front—Sawyers logo on disc with long advance lever
- Beige with metal disc on front—Sawyers logo on disc with short advance lever
- Beige with metal disc on front—GAF logo on disc
- Blue with metal disc on front—GAF logo on disc
- Blue with GAF logo molded into front of viewer with red printing on light bar
- Blue with GAF logo molded into front of viewer with black printing on light bar
- Blue with GAF logo molded into front of viewer with outlined black printing on light bar

Current Viewer (Mid-1977 to Present)
Newer, more modern in style, this viewer—first introduced in the 70’s—is still being sold today. Most models produced are an orange-red color with a bright orange knob. Lighter weight than most previous models, the plastic scene changing lever was used in most versions. This is an excellent feature to collectors because it prevents the black rings around the edge of the reels caused by the metal advance levers. Two shapes and many variations exist:

Square Shape
- Blue with white lettering-VMI logo
- Red with white lettering-VMI logo
- Red without white lettering-VMI logo

Rounded Shape
- Red with flat orange lever-VMI logo
- Red with flat orange lever-TOMY logo
- Red with flat orange lever-VMI logo in white letters
- Red with flat orange lever (incised circle within lever)-VMI logo in white letters
- Blue with flat orange lever-VMI logo
- Blue with flat orange lever (incised circle within lever)-VMI logo in white letters
- Red with large orange knob and metal plate-GAF logo
- Red with large orange knob and metal plate-GAF logo in white
- Black with flat orange lever-GAF logo
- Black with flat red lever-TOMY logo

Push Button Viewer  
(1986-Present)
When this viewer was first introduced it was poorly designed with the inside plastic bar covering part of the image. It has since been redesigned with the bar in the correct position for proper viewing. The diffusion on both models is very poor. The original design as well as the corrected model were made in two colors:
- Red with yellow push button
- Blue with yellow push button

Mickey Mouse Viewer (1989-)
Possibly the cutest design ever made—the Mickey viewer was introduced for Christmas 1989 sales. The viewer consists of the currently produced standard viewer with a plastic Mickey Mouse face fastened to the front of the viewer. The faces are made in China and assembled at the View-Master plant in Portland. This viewer is extremely popular and sold individually as well as in gift sets.

Although we have tried to provide as much information on regular viewers as possible in this article, we’re sure there are other versions that exist and are not in our collection and, therefore, unknown to us. Once, again, we ask for any information you may have regarding additional variations.

We have not addressed talking viewers, folding viewers or Belgium-made viewers at this time but plan on doing so in a future article.

We would like to thank Reel 3-D Enterprises for letting us use some of the information published 12 years ago in Reel 3-D News.
The first published book ever to be illustrated with stereo prints owes its existence to two of the most well known figures in the history of science: Sir John Herschel and Sir Isaac Newton. *Teneriffe, An Astronomer's Experiment* by Charles Piazzi Smyth is an account in text and stereographs of an 1856 expedition to establish a temporary observatory on the volcanic peak of Teneriffe in the Canary Islands.

What today would be presented as an episode of *Nova* or a *National Geographic Special* appeared in 1858 as a 450 page book with 20 bound-in albumen stereographs designed for viewing with a special "book Stereoscope" by Negretti & Zambra. The wide popularity of the book helped prove the potential of stereography as an effective medium of scientific illustration and general enlightenment. It also proved the practicality of combining truly informative text with stereo views in the same volume—leading to *The Stereoscopic Magazine* of 1858 - 1865. (See *Stereo World*, Sept./Oct. '84.)

Then as now, what is eventually accomplished can often depend on who you know—and in that respect C. Piazzi Smyth had ideal "connections" for both astronomy and photography. One of the several astronomers among his parent's close friends was Sir John Herschel, who in the late 1830s secured a position for the young Smyth as an astronomer's assistant at the Cape of Good Hope. When photographic information and materials started to become available shortly after that in England, Herschel sent both to the astronomers at the cape. Already trained in art as well as science, Smyth quickly took up photography with the help of further correspondence from Herschel and by 1841 was producing Calotypes of a quality equal to any work being done in England or France.

In 1845 Smyth was appointed Astronomer Royal for Scotland and soon became a respected member of the Edinburgh scientific community. The generally smoky and cloudy sky of Edinburgh prompted his interest in Sir Isaac Newton's theory...
the Clouds
by John Dennis

"Volcanic 'Blowing Cone' in Orotava, on the Northern Coast of Teneriffe."

"Tent Scene on Mount Guajara, 8903 Feet High." The person in the hat could quite possibly be Jessie Smyth.
that the resolution of telescopes was more limited by interference from the atmosphere than by their own design or optics. When Smyth proposed placing a large telescope “above the clouds” on Teneriffe to test the theory, Herschel not only supported the idea but added that, “as Mr. Smyth is an expert photographer, he should be provided with an apparatus for obtaining photographic impressions of everything worthy of record.”

Even 134 years before the Hubble, the chance of a clearer view for telescopes was seen as a worthy investment and the British Lords Commission of the Admiralty authorized and financed the expedition. Smyth had to quickly catch up with the advances in photographic technology he had missed during his busy ten years of astronomy in Edinburgh. (Daguerreotypes and calo-

"Second Mate of Yacht Observing Radiation Thermometers on Mount Guajara."

PREFAE.

IN the month of May, 1856, H. M. Lords Commissioners of the Admiralty, advised by the Astronomer Royal, were pleased to entrust me with a scientific mission to the Peak of Teneriffe. Their Lordships most liberally placed 500£ at my disposal for defraying the necessary expenses; and left me, within bounds of such expenditure, as untrammelled by detailed instructions, as any explorer could desire.

No sooner was the authorization known, than numerous and valuable instruments were kindly proffered by many friends of astronomy; and one of these gentlemen, Robert Stephenson, M.P.,—who had indeed fully appreciated the scientific question in 1855, and even asked me to accompany him to the Canaries in that year,—immediately offered the use of his yacht “Titania;” and by this, greatly ensured the prosperity of the undertaking.

The object mainly proposed, was, to ascertain how far astronomical observation can be improved, by eliminating the lower third part of the atmosphere. For the accomplishment of this purpose, an equatorial telescope and other apparatus were conveyed in the yacht to Teneriffe, in June and July 1856. There—with the approval of the Spanish authorities, (always ready in that island to favour the pursuits of scientific men of any and every country), the instruments were carried up the volcanic flanks of the mountain, to vertical heights of 8900, and 10,700 feet, and were observed with during two months.

On my return from this service in October, I had the honour of presenting to Government a short report on what had been done; following it, in the spring with copies of the original observations, as
types having been replaced by the wet collodion process.) His return to photography was both sudden and in depth - as he choose wet plate stereo cameras to record the expedition.

The quality of accurate detail in the resulting views convinced Smyth, on his return to Edinburgh, that such technology should replace the drawings (sometimes done only from memory) which had always illustrated scientific reports and journals. His prime example was a comparison of three generations of drawings supposedly illustrating Teneriffe's Grand Dragon Tree. Only the first artist had actually seen the tree, and his less than accurate rendition had been altered and exaggerated by each artist who prepared copies for later publications. Both the bark and foliage ended up completely wrong, the overall form was

"Euphorbia Canariensis on the Sea Cost of Orotava."

well as the results deduced. These were afterwards communicated by authority to, and read before, the Royal Society on the 2nd of June, 1857; when they were proposed for printing in the Philosophical Transactions.

Being then asked by various friends to prepare some account of the personal experiences under which the said observations were made, as likely to subserve many purposes not reached by the numerical statements of the Memoir,—I have endeavoured, in the following pages, to throw together those parts of my journal which seemed best calculated to bring out the specialities of scientific life, on a high southern mountain. Readers who would study the history, statistics, or physics, of Tenerife, will find them treated of at length in the several admirable publications by George Glas, Viera, Von Buch, MacGregor, and Barker-Webb cum Berthelot; here, I have only attempted an humble record of particular labours, with due regard to the objects for which they were undertaken.

These objects, I am happy to say, have been so warmly appreciated by my intelligent and scientific publisher, Mr. Lovell Reeve—that although the book threatened to be very costly, by reason of the nature of the illustrative plates, he was prompt in relieving me of every attendant risk and expense.

THE ILLUSTRATIONS.

Anxious as myself to put all the actual facts of Nature in the elevated regions that were visited, as completely as possible before the public, Mr. Lovell Reeve has been earnestly at work for some time past, and with the gratuitous and continued assistance of Mr. Glaisher of the Greenwich Observatory, has succeeded in maturing plans for illustrating the
distorted, and the height increased by about 100 feet.

Smyth concluded on page 426 of Teneriffe, "With these three views before us, it is instructive, as connected with the language of drawing, to trace the gradual growth of error and conventionality, as man copies from man. Errors are always copied, and magnified as they go; seldom are excellences reproduced. After a few removes, the alleged portrait of nature, is only a caricature of the idiosyncrasies of the first artist. Never was the debt that mankind owes to the inventors and organizers of photography, Talbot, Daguerre, Herschel, and Archer, more apparent than in the case of the dragon-tree."

Unable to convince the Royal Society of the practicality of using original photos in the expedition's official report, Smyth had to settle

"Young Dragon Trees (Dracaena Draco) Near Orotava."

letter-press with a series of photo-stereographs, the original negatives of which were taken by myself.

This method of book illustration never having been attempted before, may excuse a word on this part of the subject. By its necessary faithfulness, a photograph of any sort must keep a salutary check on the pencil or long-bow of the traveller; but it is not perfect; it may be tampered with, and may suffer from accidental faults of the material. These, which might sometimes produce a great alteration of meaning in important parts of a view, may, however, be eliminated, when, as here, we have two distinct portraits of each object.

Correctness is thus secured; and then if we wish to enjoy the effects either of solidity or of distance, effects which are the cynosures of all the great painters, we have only to combine the two photographs stereoscopically, and those bewitching qualities are produced.

Stereographs have not hitherto been bound up, as plates, in a volume; yet that will be found a most convenient way of keeping them, not incompatible with the use of the ordinary stereoscope, open below and well adapted for Mr. Reeve's new form of the instrument,—The Book Stereoscope,—constructed by Messrs. Negretti and Zambra, to fold up in a case like a map, without detriment to its stereoscopic action.

I have only further to observe, that while Mr. Reeve has been organizing his application of the manufacturing principle to the printing of photographs—Mr. Glaisher has personally superintended the chemical part of the process, in the hands of Mr. Melhuish, of Blackheath, in order to ensure permanence in the pictures so multiplied.

Edinburgh, January 1st, 1858.
for what he regarded as inferior engravings. Shortly before the Teneriffe project, he had married Jessie Duncan, who would prove to be a lifelong scientific, photographic and personal companion. The feasibility of using photographic prints in a publication was soon demonstrated to all concerned when Jessie printed 350 copies of a stereograph for inclusion in the British Admiralty’s Report of the Teneriffe expedition.

As with today’s Hubble Telescope, great interest was generated by the literal breakthrough in astronomy—combined with the exotic location involved. At the urging of various friends, Smyth followed the official reports with his detailed personal account of every aspect of the project for publication by Lovell Reeve of London. The 20 albumen stereo print pairs bound into Teneriffe, An Astronomer’s Experiment: or, Specialities of a Residence Above the Clouds made it the first book of its type and forever changed the career of Charles Piazzi Smyth. The same year saw the first issue of Lovell Reeve’s Stereoscopic Magazine, with its nearly identical format. The success of the Teneriffe book, combined with Reeve’s interest in stereography, led to that elegant publication’s seven year run, 116 years before the advent of Stereo World.

"The Great Dragon Tree at the Villa de Orotava."

"Dragon Tree Walk at Palazzo Near Orotava."
Photography became an essential element in Smyth's scientific and publishing efforts from that point on, often involving improvements and innovations of his own. But while the Teneriffe book today could have appeared on a program like Nova, Smyth's other most well known project would probably show up on the sort of program that devotes miles of film to tracking Big Foot. The astronomer had become an adherent of the belief that detailed measurements of the Great Pyramid would reveal coded messages from God to all of humanity. In 1864, Piazzi and Jessie financed their own expedition (the Royal Society turned this one down) to improve on the accuracy of all possible measurements of the Great Pyramid. Every aspect of the project was of course to be photographed, and here Smyth was again to be a pioneer of 19th century photo technology.

The cameras he took to Egypt used plates made from 1x3 inch microscope slides - the actual image area being only one square inch. To prevent drying of the plates in the Egyptian heat, each plate holder had a clear glass window of its own, and held the entire plate sealed in water from coating in the morning until developing later in the evening. With apertures of f/5 to f/20, the all-metal cameras used revolving cylinder shutters to minimize springs and other parts that could be jammed by sand or heat. For stereo, two of the cameras were joined by a synchronizing bar, although Smyth's notes indicate that he used the sequential shift of a single camera for some stereographs.

To record his work inside the chambers of the Great Pyramid, Smyth used the very recently introduced magnesium strips as a bright-burning but smoky light source. Exposure techniques had yet to be established for the material even in England, but the Smyths were able to obtain several good interior photographs through trial-and-error, made less tedious by their small format plates.

On their return to Edinburgh, the couple enlarged the images, (perhaps as many as 166) making prints and lantern slides for lectures before scientific and religious audiences. Smyth's "increasingly strident" religious tone distracted many from his otherwise precise research, which fed both scientific and popular controversy about the Great Pyramid. His photos, of course, were a part of the whole debate and remained commercially available until 1890.

While Charles Piazzi Smyth hoped to prove something about the Great Pyramid, what he and Jessie proved as effectively (if not better) was the potential of high quality images enlarged from even very small negatives. It took many more years for the prejudice against enlarging to be truly overcome - roll film and the advent of 35mm still cameras finally turned the tide. And one of the first of those 35mm cameras was the stereo Homeos, with a format fairly close in size to the small stereo negative pairs Smyth had made at the pyramid in 1865.

Sources

"Entrance to the Ice Cavern in the Malpays on the Peak of Teneriffe, At the Height of 11,040 Feet."

28 STEREO WORLD May/June 1990
Adventures of a Folio

The whole business of the Stereoscopic Society is the circulation of the members' stereographs in the many folio boxes which we have traveling. While this leads to a great deal of enjoyment in seeing all of the wonderful stereo views being taken around the country and for that matter around the world, the folios themselves do on occasion find adventure. Sometimes it is literally earthshaking adventure.

A good case in point is illustrated by overseas folio OX-11 which in addition to traveling our Alpha Transparency Circuit (Realist Format) pays extended visits to Great Britain, Australia, and New Zealand. But it was not in the lush valleys of New Zealand with its hot rivers, volcanoes, and occasional earthquakes that it got a shock. No, it was at the home of Society member John Dukes in October of 1989 at Los Altos, California, when the 'World Series Earthquake' struck. John reports that it was buried under the "Optics through Stereo" portion of his bookshelf when he found it in the debris. John hopes for patience and understanding should any mounting problems or minor aesthetic irregularities appear which clearly were not present when the slides were entered. Since an OX folio takes about three years to tour the several countries on its itinerary, it may be a while before everyone can check on their entries...which now can claim a piece of history.

(2x2)x2 Circuit 1989 Voting Results

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Favorite Views

"Yosemite Valley from Eagle Peak" (Jim Murray, 37 points)
"Morning Flight" (Jim Murray, 25 points)
"Guaranteed Overnight" (Bob Mannle, 24 points)
"Still Life-Bottles & Float" (Bruce Hansen, 24 points)
"Pair of Mittens" (Jim Murray, 23 points)

clearly were not present when the slides were entered. Since an OX folio takes about three years to tour the several countries on its itinerary, it may be a while before everyone can check on their entries...which now can claim a piece of history.

(2x2)x2 Report

In November of 1988 the new folio circuit was inaugurated which circulates stereo views in the form of matching pairs of 2x2 35mm transparencies. More often than not these feature full frame 35mm transparencies but there are many variations. The views may be taken with a single camera and one of the several time lapse techniques. Or they may be simultaneously taken using paired 35mm cameras. Again there are many possibilities and variations. The one common denominator is that they are viewed in two separate 2x2 mounts. In many respects this is one of the most difficult stereo techniques to master, and especially so when using a single camera. But it is also true that it is the way many of us made our first stereograph, using only the equipment a 2-D photographer may have on hand. So it has a popular base to start from.

When started, the first folios went out with eight members and several guest members who signed on for a round or two. It has grown steadily ever since and is now in excess of twenty members as of this writing. There is a great deal to learn but we have seen some excellent stereographs and much improvement in the average entry thus far. It seems that 2x2 is here to stay.

Voting totals through the first full year of operation (1989) are listed herein for members scoring 30 or more points.

Persons interested in joining the Society should write to the Corresponding Secretary, Jack E. Cavender, 1677 Dorsey Avenue, Suite C, East Point, GA 30344.
We arrived at the New Durley Dean Hotel in Bournemouth, England on Friday, June 20, 1990 to attend the annual convention of the Stereoscopic Society (founded 1893). The hotel was just beautiful, with a warmth and charm that made the weekend even more pleasant than we expected. We were pleased to begin running into old friends—British, American, French and German, from the moment we arrived.

These events always begin with registration, lots of hugs and greetings and an enormous supper of many choices. We sat, we drank, we talked, we ate and then ... we settled down for an exciting evening of 3-D projection.

The first program was my own, "Susan's 3-D Potpourri," a collection of interesting slides by more than 50 different Stereographers collected over the past decade, and arranged into mini sequences with a variety of music. It was projected on the new German RBT stereo projector, and utilized automatic slide advance from the cued tape.

Stan Hoey presented "Memories of the Past" which shared slides copied from old black and white stereo cards made by members of the original United Stereoscopic Group, from around the turn of the century. This is a group that I was previously not aware of, which pre-dated the present stereoscopic Society. He also showed a fascinating set of images of the Crystal Palace, both sets which he embellished with interesting and relevant comments to round out the whole experience.

The last show of the first evening was by David Burder, who shared with us many behind the scenes bits of information about being a View-Master photographer. Images that have appeared on reels were shown, and many that had only been under consideration, but never utilized, were also included. Another highlight was his shots of last years visit to the View-Master factory (while attending the Portland, OR 1989 NSA convention).

Saturday offered the attendees a variety of selections. For Stereoscopic Society members (and anyone interested) you could attend their Annual General Meeting. After attending many NSA, SCSC, PSA and other board meetings over the years, I have to admit I find theirs quite fascinating. It's very formal, with an agenda that they stick to, and it seems extremely efficient. One thing I strive to come back to the Stereo Club of So. California board meetings with (as membership director for the past 10 years) is how publically appreciative they are for those who contribute time, effort, and money (all those things that make a club work). Our organizations seem to require years of dedication to warrant a small bit of notice (if at all). As a board member of all the above mentioned, perhaps I need to work harder to help implement this difference.

Fred and Val Lowe provided a sales table full of fun and practical 3-D goodies for sale.

Some couldn't stand to miss out on the scenery of Bournemouth and took the opportunity to leave the hotel and explore the beautiful city with colorful flowers in bloom everywhere. Bournemouth is a seaside resort on the southern coast of England, less than a 2 hour drive from the center of London.

The Third Dimension Society held their Annual General Meeting in the afternoon. The TDS is a similar society which covers the northern half of England.

Saturday evening's program was orchestrated by one of France's leading stereo photographers, Guy Ventoulliac. The variety was impressive with a segment on close-ups (including equipment used), a charming show on Paris, historical and current, his famous Musical Box "Stereo" by Martin Willsher, "Twin Rig Cameras" by David Burder and "VHS Stereo Demonstration" by John Christianson. The eighth workshop was off in the gym of the hotel, where stereographers swarmed around the hired model as she "worked out" on the equipment. They were a marvelous subject themselves!

Twin fisheye lenses on a spliced SLR rig provide this dramatic view of some stairs in the resort town of Poole. Bernie Makinson (convention organizer) and Susan Pinsky wait at the bottom of the spiral. (Stereo by Guy Ventoulliac)
sequence, a marvelous cave exploring (spelunking) set, and even some not-for-everyone medical slides. There certainly was something for everyone in the evening's images, and it helped keep the conversations going well into the night. Guy's entire program was presented using four Simda (Ektagraphic style) Carousel projectors, with dissolve and synchronized soundtracks.

On Sunday almost all the attendees piled into two buses (coaches) for a full day of sightseeing and fun photo opportunities. We started out at Compton Acres, a lovely garden setting full of bronze and marble statuary, glorious flowers and trees and perfect background for stereo photography of both the natural surroundings and the stereo photographers trying to capture every bit of it. The "official" Group Photograph was taken here.

We continued on to Corfe Castle, where the history of England speaks through the remarkable stone ruins on the top of the hill. The village at the base of the castle was also quite picturesque, and seemed quite typical of what one might expect of a small English town. Then on to the nearby seaside resort of Poole, also famous for its pottery works.

Sunday evening we continued the slide programs with the Stereoscopic Society Annual Slide Competition Show. Work by members of the Society proved to have just a slightly different perspective than the styles and techniques we see mostly in the States. The program was well presented with appropriate music.

The next show was "Hypers" from Paul Wing, the man who is famous for his hyperstereo work. His lively off-the-cuff narrative made his slide show both personal and educational. No one left without knowing how to start doing some of those "cha chas" (hyerstereos) with any old camera after that show.
Derek Hawkins presented a unique program of light patterns with sound. Each image was abstract and worked with the others to create an unusual sequence.

One surprise treat of the evening was a birthday cake for David Burder, who was presented with what looked like a giant double SLR stereo camera, but was actually a cleverly designed birthday cake with gray and black icing. We all had to stop watching 3-D to eat some 3-D. Very well done!

The second surprise treat was an unscheduled program from Franz and Hermann Miller of West Germany, who had brought slides they had taken with their camera creations, the twin Yashica Stereo. Shots of Las Vegas, many U.S. national parks and other assorted subjects combined with Elvis songs and other selections of music created a memorable and impressive show. For a finale they showed a sequence of costumed revelers at the Mardi Gras in Venice, Italy, comparable to the famous New Orleans Mardi Gras that we know in the States.

The convention was totally planned and orchestrated by Sue and Bernie Makinson, and it is to them that we take our hats off. The pre-planning was extensive and well thought out. Many tiny details they attended to were noticed and appreciated.

The Makinsons are also in charge of the 1991 convention which is already planned for May 3, 4, and 5th in the Seaside resort of Southport. Southport is on the west coast, south of Blackpool (England’s “Atlantic City”) and west of Manchester. It’s also not too far from Bradford, the location of the National Museum of Photography, Film and Television (a “must-see” visit for photo enthusiasts).

The Makinsons say they have found a “super hotel” for the convention, and we know that you can trust their recommendation if you are considering going. For more information for next year’s convention send a note to: Sue and Bernard Makinson, 36 Silverthorn Drive, Hemel Hempstead, Herts HP3 8BX, ENGLAND. They haven’t asked, but we think that including $1 to cover postage would be a nice gesture. Hope to see you there!
It is a paradoxical and somewhat vexing illusion that watching stars on a clear night does not convey any sense of three-dimensionality. Stars simply seem to hang there all at the same distance, on what our ancestors called the "celestial sphere." Even knowing their individual distances, it is difficult to visualize mentally their spatial organization, and this can be done at most for a few stars at a time. A remarkable book by computer graphics expert Richard Monkhouse and astronomical map maker John Cox now helps change that. It consists of a collection of anaglyphic maps (8 × 7 inches) showing over 10,000 stars and galaxies as seen from Earth. The maps are organized in three sections, each covering the entire sky according to different criteria. Star maps are not the only contents of the book. A thorough introduction explains the nature and classification of stars and galaxies, distance measurements, projections, coordinate systems, as well as practical considerations for observing them. It is in fact a clear and pleasant initiation to astronomy.

The first section consists of 12 maps of 8000 bright stars which can be seen with the naked eye on a dark night (down to visual magnitude 6.5). Most are 10 to 1000 times as bright as the Sun and lie between 10 and 3000 light-years away. Their symbol size conveniently varies with their visual magnitude, so that it is easy to match them with an actual night sky and familiar constellations. The second section contains 6 maps of the near stars in our galaxy. Contrary to what their name may suggest, most are not visible to the naked eye, because on average they are only 1/15th as bright as the Sun and between 4 to 80 light-years away (the Sun is 500 light-seconds away). Symbol size varies with distance and reinforces the stereoscopic effect. The distance to the near stars has been computed by the parallax method familiar to most stereoscopic photographers, using the diameter of Earth's orbit around the Sun as a gigantic stereo base and taking two pictures of the same corner of the sky six months apart. Many stars are probably missing from the near star maps because they are too cold to register on earthbound detection devices (they are part of an ongoing controversy on how much "dark matter" is present in the universe).

The third and last section covers extragalactic space up to millions of light-years away, in 8 maps. (Continued on page 37)

SMART TECO-NIMSLOS GET 36 SLIDE-PAIRS
New Camera $145 or yours Educated for $63. 6', 12', 30' Macros $29 ea., Case $12, Cutter $18.

Technical Enterprises (714) 644-9500
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WORLD'S LARGEST MAIL ORDER SELECTION OF 3-D PHOTOGRAPHY!
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ZURICH ST. 3-D FOTO-WORLD FACH
CH-4059 BASEL
Those who shoot full frame 35mm stereo slides, or "(2x2)x2", now have another option among the limited selection of viewers available for that format. This addition to the high quality end of a range of choices which seems to have little if any middle is the True Image stereoscope, designed and manufactured by Mark Dow of Eugene, Oregon.

The True Image incorporates what some will see as a radical solution to the problem of accommodating a variety of people with different eye separation measurements. While the lenses have an interocular adjustment much like other viewers, the slides themselves are in mount-to-mount contact with no spacing between them and are angled to each other at a slight "V" pointing toward the lenses, which match the angles of their respective images. This results in an average viewing convergence angle of 3°, varying slightly with image and interocular separation. The purpose of all this is to allow comfortable, distortion free flat field viewing for people of all eye separations—and to avoid the need of any divergence of eyes with less than "normal" separation.

According to Mr. Dow, even the best large lenses lose some of their flat field qualities when adjusted to accommodate people with small pupil separations, because viewing is through a point too far from the centers of the lenses in viewers of the usual design. The convergence required by the True Image viewer allows eyes of all separations to make use of the central areas of its large (30mm) diameter achromatic lenses with their 55-68mm interocular adjustment. The sample examined by Stereo World provided sharp, easy fusion for all who tried it. No distortion was evident and the viewer provided good eye relief at nearly any setting of the interocular adjustment.

Since slides are viewed with no gap between mounts, a simple piece of tape can be used to hold pairs as a unit—with a tab of folded over tape left at the top as a handle. Slides may be inserted separately but the central thumb depression leaves a relatively small corner of each mount exposed for removal. Spring clips hold the slides against a dark mask to eliminate stray light from the front surface and hold them in position. The glass diffuser is 18mm beyond the slides (well out of focus) and is removable for dusting the interior.

The optional case holds the stereoscope as well as 20 slide pairs. An optional slide case holds 50 pairs. The stereoscope is $170. The stereoscope with case is $195. The 50 slide case is $20. A booklet on Stereo photography with a single lens camera is $5.00, all from: True Image, Mark Dow, 4021 Royal Ave., Eugene, OR 97402 (503-688-6286).

Specifications

- Designed for full format 35mm slides in standard mounts.
- Fixed focus.
- Adjustable interocular, 55-68mm.
- For use with ambient light (ground glass diffusing screen).
- Achromatic lenses, 50mm focal length, 30mm diameter, anti-reflection coating.
- 50-54mm image separation.
- Dimensions—2 1/8 inches x 4 3/4 inches x 3 3/8 inches deep.

The stereoscope and case are of kerfed oak plywood with solid oak nose piece and adjustment handle.
Autostereoscopic TV
Through L.C.D. Grid

Most recent attempts at presenting 3-D television without glasses have involved the use of a sheet of plastic lenticular lenses in front of the screen. (See page 13, July/Aug. '89 and the Panasonic system on page 30 of the July/Aug. '85 issue.) Now, Dimension Technologies of Rochester, NY has introduced a flat panel autostereoscopic display using liquid crystal image generating technology in place of a picture tube.

Instead of any sort of lenticular lenses in front of the L.C.D. images, the system relies on an illumination plate behind the liquid crystal display which shows the left and right images on alternating vertical columns of pixels. The illumination plate generates sets of very thin, very bright lines spaced evenly with dark gaps between them. Due to the parallax difference between the observer's eyes, left image columns on the display are illuminated by the lines on the plate as seen from the angle of the left eye. But from that same angle, the right image columns are in front of dark areas on the plate. The reverse of this is provided for the right eye, much as was achieved in a mechanical way by Savoye's Cyclostereoscope in the 1940s. The narrow viewing zone which so limits other parallax stereogram based systems has been extended, at least for a single viewer, in a novel way by Dimension Technologies. A sensing system locates the position of the observer's head and automatically adjusts the spacing of the illuminated lines to maintain proper parallax and stereo fusion over a wide range of head movement within the larger viewing zone.

Acticon Folding Viewer

A 1/2 ounce folding viewer for full frame stereo slide pairs is now available as a direct mail promotional device from New Orient Media Inc. of Chicago. The company has long been involved with 3-D corporate A/V productions and with 3-D computer graphics for logos and advertising. Mounted slides are attached to the inside of the viewer by two pieces of double-stick tape, which also hold a piece of diffusing material between each slide and its framed opening.

The "Toyota" viewers bound into magazines by the millions in October, 1987 were similar in design, but used wider format images printed on single strips of unmounted film. The Acticon is intended for more specialized promotions using standard format slides. The viewer can be printed with logos, messages or artwork to boost its impact as a marketing aid. IBM recently used the viewers as a motivational device in an internal mailing to staff personnel before a round of meetings to introduce a new product line. New Orient Media is at 126 W. Main St., Dundee, IL 60118.

This column depends on readers for information. (We don't know everything!) Send information or questions to David Starkman, P.O. Box 2368, Culver City, CA 90231.
Taylor-Merchant Corporation has announced that its "Stereopticon 707" folding stand-on-the-page viewer is included in two recent medical publications which feature stereo pair illustrations. *Finding the Critical Shapes* is a lavishly illustrated report on X-ray crystallography and stereo computer graphics in current medical research published by the Howard Hughes Medical Institute in Bethesda, MD. The magazine format book includes eight full color pairs of DNA structures as well as virus, enzyme, and antibody images produced as part of various research projects using 3-D computer graphics. The book has been distributed to educators, scientists, crystallographers, biochemists and companies involved in biochemistry research.

The TM viewer is also part of a 1000 page college textbook titled *Biochemistry* published in four different languages by Neil Patterson and authored by J. D. Rawn.

Stereo computer graphic of a repressor protein, left; binding to viral DNA. From the laboratory of Carl Pabo at Johns Hopkins School of Medicine as presented in "Critical Shapes."

This is one of the first in the field of scientific text publications to use full color 3-D graphic biochemistry illustrations.

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**SEVENTH ANNUAL FALL D.C. Antique Photo Show**

"The #2 Antique Photo Image Show in the USA"

Over 55 tables of stereoviews, CDVs, Daguerreotypes, photographs, etc.

No Cameras!

**Sunday**

**14 OCTOBER 1990**

10 AM - 5 PM; Public Admission $5

Rosslyn Westpark Hotel, 1900 N. Ft. Myer Dr.

Arlington, VA: Rosslyn Ballroom

"At the Key Bridge opposite Georgetown"

Preview admission 8:30 AM $20

1991 shows: 24 March & 6 October

Managed by Russell Norton, PO Bx 1070, New Haven, CT 06504 / (203) 562-7800

**FIRST ANNUAL FALL Boston Antique Photo Show**

"The #1 Antique Photo Image Show in the NE"

50 tables of stereoviews, CDVs, Daguerreotypes, photographs, etc.

No Cameras!

**Sunday**

**7 October 1990**

10 AM - 5 PM; Public Admission $4

57 Park Plaza Hotel Howard Johnson

Boston MA: 200 Stuart St. Park Sq.

Convention Halls "A & B"

Preview admission 8:30 AM $20

DC show: 14 October 1990

Managed by Russell Norton, PO Bx 1070, New Haven, CT 06504 / (203) 562-7800
sands of galaxies are represented by circles with a diameter proportional to their magnitude. It is possible to visualize their organization in "bubbles," a quite recent finding by astronomers.

The anaglyphic maps are printed on a greenish-grey background which completely eliminates "ghosting." Each map is accompanied by a stereoscopic depth key. On the facing pages are matching maps printed in white on black, with names, symbol keys and coordinates. Going from one type to the other while wearing red & green glasses does not require any adaptation. Special mention must be made of the print-in-stereographic depth key. On the facsimile pages are matching maps printed in white on black, with names, symbols, and coordinates. Going from one type to the other while wearing red & green glasses does not require any adaptation.

In Hong Kong, Backtones are very homogeneous and there is not the slightest stereoscopic misalignment. Pages are easy to maintain flat against the hard covers to allow perfect viewing. The only precaution is to touch the pages by their margins to avoid smearing.


ARCHIVAL SLEEVES: clear 2.5 mil Polypropylene

CDV (3/4"x4/"")
per 100: $7 case of 1000: $60
CDV POLYESTER 2-mil
per 100: $9 case of 1000: $80
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per 100: $7 case of 1000: $60
4" x 5"
per 100: $7 case of 1000: $50
STEREO (3/4"x7")
per 100: $8 case of 1000: $70
STEREO POLYESTER
per 100: 2-mil $10 or 3-mil $14
CABINET (4"x7")
per 100: $9 case of 1000: $80
5" x 7"
per 50: $6 case of 1000: $90
BOUDOIR (5½"x8½")
per 25: $5 case of 500: $70
8" x 10"
per 25: $6 case of 200: $34
11" x 14"
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16" x 20" (unsealed flap)
per 10: $10 case of 100: $90

Russell Norton, P.O. Box 1070, New Haven, CT 06504-1070 SHIPPING: $4 per order. Institutional billing.
For Sale


VIEW-MASTER REELS, 100 Different, pre-1968, $85 plus postage. Steve Kruskall, Box 418, Dover, MA 02030.


MAIL/PHONE BID AUCTION of a private collection. Many good views from a variety of topics. Send $2. for catalogue. John Waldsmith, PO. Box 191, Sycamore, OH 44882.


STEREO VIEWER LENSES - Two Wedge-shaped lenses, each molded and embodied in 1 1/2" square frame. Precision optical quality; build, experiment. $7.50 postpaid (USA); Taylor-Merchant Corp., 212 West 35th Street, New York, NY. 10001.

UNITED STATES Book boxed Keystone 100 set (19 views missing, total now 81), views fine, box like new. $95.00. Telebinocular Viewer in orig. box; box good, glass sound but leather spine badly rubbed and smeared. $50.00. Stereo Views signed by author Wm. Culp Darran, 1964. Two Points of View by Harold F. Jenkins, 1957. Both books fine condition with dust wrappers, both signed by author. $50.00 each, or all items in this advt $225.00. R. Walker, Madison, WI 53794.


Nikon Split Beam Stereo Outfit: Nikon FG (Mint) 50 MM 1.8 lens, 1B, case, Stere-Tech adapter, 3000 slides, tripod, 3 VIEWER, $225.00 G. Sergio, 760 Clawson St., S.I., N.J. 0306. (719) 797-3107.

COMPLETE PACKAGE DEAL!! Not sold separately. Nimslo 3-D camera flash & case, Pan Vet viewer w 2 rolls of slides. Stereo sound mixer, Recronton Fred II TV Decoder, JVC Character Generator cgv600, Commodore Modem 300 model 1660. All items in Good to Exc. Condition-all for $170.00 or $200.00 & Ins. No items sold separately. Call 1-407-478-6816 - 6 pm to 9 pm or write to: T. Rando, 1111 Loxahatchee Dr. #7, WPB, FL 33409.

TDC Project-or-View, Kodak 3-D camera & Life-Line Viewer wt case and slide set "House of Wax" - All for $199.00, plus $20.00 Sh and Ins. No items sold separately. Call 1-407-478-6816 - 6 pm to 9 pm.


TDC 716 - Excellent Condition, lenses both clean, both bulbs work. Includes IB, one manual carrier. No case. First $325, shipping, take it. Trades considered. Charles Trentelman, 3556 Fowler, Ogden, UT. 84403, (801) 394-0239 Evenings.

STEREO CAMERAS, Viewers & misc. equipment for sale. Money back guarantee on everything I sell. Send LSASE to: Bruce Hansen, Box 89437, Honolulu, HI. 96830 - 9437. Will consider trade offers.

NEW LIST of stereo equipment and View-Master reels. Send SASE for your copy. Mark Wilke, 200 SW 89th Ave., Portland, OR 97225.
AUSTRALIAN VIEWS and 3-D 1050's
Sandy UT. 84094. Specialties: Western, comics wanted. For cash or U.S.A. views.
Smythe, 258 Cumberland Rd., Auburn, NSW (207) 854-4470.
864 Bridgton Road, Westbrook, ME. 04092, ville.

WILL ATLANTA and related views, interested in cataloging and related views, interested in cataloging same. Bob Berry, #7 Deerfield, Huntsville, TX. 77340.

SUTNIK 6 x 13 cm Stereo Camera for 120 film in Excellent condition. Will trade for camera(s) or viewer(s). Send offer to: Bruce Hansen, Box 89437, Honolulu, HI. 96830-9437. All letters will be answered.

INTERESTED in sharing information and for trading/selling views of Yellowstone Park and related views, interested in cataloguing same. Bob Berry, #7 Deerfield, Huntsville, TX. 77340.

WANTED.

MUYBRIDGE VIEWS. Top prices paid. Also Michigan and mining - the 3 Ms. Many views available for trade. Leonard Waller, 4925 W. Seven Mile, Northville, MI. 48167, (313) 348-9145.
LANSING, MI memorabilia of all types including stereo views, post cards, photos, advertising, catalogs, etc. Permanent want by collector. David R. Caterino, 9679 Bismarck Hwy., Vermillion, MI. 49096.
I BUY ARIZONA PHOTOGRAPHS: Stereo views, cabinet cards, mounted photographs, RP post cards, albums and photographs taken before 1920. Also interested in xerography of Arizona stereographs and photos for research, will pay postage and copy costs. Jeremy Rowe, 2331 E. Del Rio Dr., Tempe, AZ. 85262.
COLORADO PHOTOGRAPHS: Stereo views, cabinets, CDVs, large photos, glass negatives, photo albums, books with real photographs, collections and single photographs. My specialties: Colorado, locomotives, trains, towns, street scenes, mining, farming, occupational, stage coaches, and freight wagons. Also will trade mint set of the first editions of Volumes I, II and III of The Mineral Belt series, matched numbered and autographed. The books are large deluxe 8 1/2" x 11" page size and 416 pages each. And contain hundreds of pictures from stereo views helping to authentically illustrate the books in subjects as Black & white, also more modern color views a hundred years of time between exposures. A spectacular pictorial history of the Central Colorado area covering the mining industry, towns and the narrow gauge railroads that served them. David S. Digerness, 4953 Perry St., Denver, CO. 80212-2630.
BELPLASCA, Versasco, Realist needed by 3-D glamour photog. for upcoming mens line. Will pay fair price for good condition. Let me know what you have. Call Len Rapoport, (212) 564-1550.
STEREO REALIST slide storage cases, chests, and files in Exc. or better condition. (Must contain Realist logo.) Mark Wilkie, 200 SW 89th Ave., Portland, OR. 97225. (503) 237-7653.
ALASKA AND KLONDIKE views: also Daguerreotype, Ambrotype & Tintype stereos. Send copies, descriptions, prices. Thanks! Robert King, 3800 Coventry Drive, Anchorage, AK. 99507.
LONG ISLAND, NY collector seeking any and all stereo views marked Long Island. Also will buy quality LI real photo post cards. Material Seldom Refused. Joe Trapani, 611 Haig Street, Longview, WA. 98632.
SHAKER PHOTOS. All formats. Please send Xerox copy with price to: Richard Brooker, 36 Fair Street B12, Cold Springs, NY. 10516.
JOHN ROGERS stereo cards wanted of the Photographer and School Days. A. Marlo, 3025 Spring St., Racine, WI. 53405, (414) 634-0734.
SOCCER/BILLIARDS/POOL. Any stereo views, photos or paraphernalia. Any condition. Les Jones, 56 Leuty Ave., Toronto, Ontario, Canada M4E 3L1, (416) 691-1555.

MILWAUKEE, WISCONSIN stereo views and early photos, books and plat maps. I also collect all-wood stereo cameras and pre-1880 photography books. Dave Gorski, 1326 Garfield Ave., Waukesha, WI. 53186.
ILLINOIS AND MISSOURI stereo views. Especially views of Quincy, Illinois. Please describe and price or send on approval. Will also trade for Illinois and Missouri views. Philip Germain, Box 195, Quincy, IL. 62306.
REDUFOCUS Wide-Angle lens for Realist or Kodak stereo. Gary Patterson, 1705 Hol- ly St., Longview, TX. 75602.
CIVIL WAR VIEWS. Also Chattanooga, Lookout Mtn., Milwaukee, or Wisconsin views. Send descriptions and pricing to: Steve Tuchalski, Milwaukee, WI. 53208.
PRINCE EDWARD ISLAND (P.E.I.) Canada - any subject and Halifax, Nova Scotia, especially explosion of 1917. Kyler Bowness, Kensington R.R. #6, P.E.I., Canada C0B 1M0.
VISTA-STEREO REALIST Table Top Viewer. D. Smekal, 1765 Rosebery Ave., West Vancouver, British Columbia, Canada V7V 225.
NEW MEMBER wants views taken by R.E. Wood, Santa Cruz, CA. Views are of Bodie, Ca. but may not be identified as such. Larry Poag, 320 Keene Ct., Turlock, CA. 95380, (209) 632-7165 eves.
STEREO VIEWS or photographs of any format showing street cars in Scranton, PA, or Scranton area. Charles Wrobleski, Box 663, Scranton, PA. 18501.
ILLINGTON VIEWS to Custer's 1874 Black Hills Expedition. Other Custer related views, CDVs, 7th Cav. Indians. Don Schwarcz, 1159 Vissar, South Lyon, MI. 48178.
CHESS stereos, ambrotypes, daguerreotypes, tintypes, post cards, letters, etc. of chess players. J.G. Kramer, PO. Box 611, Lehigh Valley, PA. 18001.
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GET HIGH DEFINITION QUALITY FROM YOUR HOME TV!

MODEL 2001
HOME 3-D THEATRE™

TO CAPTURE THE MAGIC OF 3-D ON YOUR HOME TV, you will need a 3-D TV StereoVisor™, and a Model 2001 StereoDriver™. Plug the StereoVisor, power supply and the video out from your VCR into the StereoDriver. Put your 3-D videotape in the VCR, turn down the lights and enjoy fantastic 3-D! Each StereoDriver can be used with four or more pairs of StereoVisors by using stereo mini plug splitters.

MOVIES

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- Cat Women of the Moon (1953) (G)
- The Zoo (1966) (PG)
- Hidous Mutant (1976) (PG)

WESTERN
- Outlaw Territory (1953) (G)

ADVENTURE
- Rising Sun (1973) (PG)

ADULTS
- First Kisses (1972) (R)
- Hawaiian Fantasy (1976) (R)
- Political Pleasures (1975) (R)
- The Stewardesses (1969) (R)
- Sexcalibur (1982) (R)
- The Stewardesses (1969) (R)
- Criminals (1973) (R)
- Sexcalibur (1982) (R)
- Chambermaids (1972) (R)

MISCELLANEOUS
- The World of 3D (1989) (G) $49.95
- 3D Teaser Vol. 1 (PG) $29.95 (Clips from 3D movies)
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- Sam Space (1954) (G) Animated, 10 minutes, $19.95

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NEW TITLES AVAILABLE SOON!

CHECK LIST
- Home 3-D Theatre @ $189.95
- (1 StereoDriver, 1 StereoVisor, 1 Movie)
- Home 3-D Theatre for 2 @ $269.95
- (1 StereoDriver, 2 StereoVisors, 2 Movies)
- StereoVisor @ $49.95
- StereoDriver @ $149.95

STEREODOVIER™

STEREO WORLD
May/June 1990

3-D TV CORPORATION
Box 13059 San Rafael, CA 94913-3059
415/479/3516 FAX: 415/479/3316

Letters

(Continued from page 3)

tific” emulsions of very low turbidity.
A direct camera exposure would be reversed, of course, and would be “one of a kind” in the same sense as any positive image. Today, slides are routinely copied via “dupe” processes. Against the disadvantages of such low speed that normal snapshot photography would be very difficult, are three advantages accruing from avoidance of dyes. First, only a single silver layer is needed as against chromogenic film’s multilayers. Second, as a black and white film, archival permanence is assured. Third, within the limitations of current panchromatic sensitization, the colors viewed under suitable illumination ought to be very close to a perfect rendition.

Jay K. Klein
Bridgeport, NY

40
A Listing of Coming Events

Calendar

August 27 - Sept. 1 (TN) National Convention, Photographic Society of America, Nashville, TN. Contact Richard Frieders, 1305 Foxglove Dr., Batavia, IL 60510.


September 9 (CA) Pasadena Antique, Collectible and Usable Camera Show & Sale, Pasadena Elks Lodge, 400 Dolorado Blvd., Pasadena, CA. Contact Anton at Bargain Camera Trade Shows, Box 5352, Santa Monica, CA 90405. Call 213-396-9463.

September 15 (CA) Culver City Camera Show & Sale, Vettrans Memorial Auditorium, Culver City, CA. Contact Anton at Bargain Camera Trade Shows, Box 5352, Santa Monica, CA 90405. Call 213-396-9463.

September 15, 16 (MI) 21st Detroit Photorama USA, Dearborn Civic Center, Dearborn, MI. Contact Photorama USA, 20219 Mack Ave., Grosse Pointe Woods, MI 48236. Call 313-884-2243.

September 16 (CA) Buena Park Camera Swap Meet, Sequoia Club, 7530 Orangethorpe Ave., Buena Park, CA. Call 714-786-8183 or 786-6644.

September 22 (CA) 1990 Monterey/Carmel Camera Show & Sale, Carmel Mission Inn, 3665 Rio Road, Carmel, CA. Contact G. Lash, 231 Market Place #379, San Ramon, CA 94583. Call 415-828-1797.

September 22, 23 (TX) 28th Semi-Annual Houston Camera Show & Sale, Holiday Inn, Hobby Airport, Houston, TX. Contact Leonard Hart, c/o The Heights Gallery, 1438 Herkimer, Houston, TX 77008. Call 713-868-9606.

September 23 (OH) Cleveland Super Used Camera Show & Model Shoot, Holiday Inn, Strongsville, OH. Contact Photorama USA, 20219 Mack Ave., Grosse Pointe Woods, MI 48236. Call 313-884-2243.

September 23 (CA) Hayward, CA Camera Swap, Centennial Hall, 22292 Foothill Blvd., Hayward, CA. Contact G. Lash, 231 Market Place Ste. 379, San Ramon, CA 94583. Call 415-828-1797.

September 23 (IL) Chicagoland’s Camera and Photo Show, Holiday Inn, Rolling Meadows, IL. Contact Chicagoland, Box 72695, Roselle, IL 60172. Call 708-894-2406.


September 29, 30 (OH) Ohio Camera Swap, 68 Shadybrook, Armory, Cincinnati, OH. Contact Bill Bond, 8910 Cherry Blue Ash, OH 45242. Call 513-891-5266.

September 30 (CA) Riverside Classic Camera Show and Sale, Riverside Convention Center, Riverside, CA. Contact Anton at Bargain Camera Trade Shows, Box 5352, Santa Monica, CA 90405. Call 213-396-9463.

October 6 (MI) Giant Grand Rapids Camera & Computer Show, Stadium Arena, Grand Rapids, MI. Contact Photorama USA, 20219 Mack Ave., Grosse Pointe Woods, MI 48236. Call 313-884-2243.

October 7 (CA) Pasadena Antique, Collectible and Usable Camera Shoe & Sale. (See Sept. 9.)

October 7 (FL) North Florida Camera Show, Rama- da Inn South, Jacksonville, FL. Contact John Reaves, 904-733-1941.


October 7 (MI) 17th Lansing Gigantic Camera & Computer Show, 505 W. Allegan, Lansing, MI. Contact Photorama USA, 20219 Mack Ave., Grosse Pointe Woods, MI 48236. Call 313-884-2243.

October 13 (CA) San Diego Camera Show & Sale, Albahr Shrine Temple, 5440 Kearny Mesa Rd., San Diego, CA. Contact Anton at Bargain Camera Trade Shows, Box 5352, Santa Monica, CA 90405. Call 213-396-9463.

October 13 (OR) Oregon’s Focal Point Camera Show. Contact Mike Lowery c/o Focal Point Photography, 211 E. Ellendale, Dallas, OR 97338. Call 503-623-6300.


October 14 (CA) 6th Santa Monica Camera Show & Sale, Santa Monica Civic Auditorium, Santa Monica, CA. Contact Anton at Bargain Camera Trade Shows, Box 5352, Santa Monica, CA 90406. Call 213-396-9463.

October 14 (NJ) Second Sunday Camera Show. (See Sept. 9.)