Earthquake Stereos • 3-D Trilogy
A Mind Altering Viewer?

by Russell Carter

J. W. Cadwell invented, in 1874, a rotary viewer that held 100 stereos that could be viewed consecutively. See Stereo World Volume 4, No. 3 & No. 5, 1977.

The first record of J.W. Cadwell in North Reading, Mass., was May 16, 1871. As recorded in The Registry of Deeds, a house (85 Park St.) was sold to Margaret & J.W. Cadwell, Springfield, for $1,000 and on 10 1/4 acres. The same property was sold on July 24, 1882 for $1,000. It appears that Cadwell lived in North Reading for only 11 years.

The Register of Voters for 1887 showed Nelson A. Cadwell, inventor. It must be assumed that this was Cadwell’s son as there was no other Cadwell in North Reading. Another assumption is that Cadwell was not a registered voter.

The Reading Chronicle was a weekly newspaper published in Reading, Mass., a separate municipality from North Reading. In that newspaper dated April 8, 1876 under the heading Business Notices was the following item:

J.W. Cadwell is the inventor of Cadwell’s patent revolving stereoscope, one of the most valuable inventions of the age. There is hardly a family without stereoscopic views, and they are considered by all thinking minds as the very best means known for imparting valuable information. At a comparatively trifling expense every member of the family can, by the aid of a stereoscope, visit every prominent place on the globe. It is a pastime for the children, a pleasure for adults, a study for the philosopher. Through the stereoscope we get correct ideas of the customs and conditions of the people of foreign lands, behold the wonders of mountain scenery, the rigours of polar winters, become acquainted with the plants and flowers of tropical climes, of the ocean in its fury, of stupendous cataracts, dreary wastes, smiling valleys, of cities and their grandest architectural beauties, with their crowded streets of hurrying, busy humanity. There is indeed no other way by which a general knowledge of the world can be gained so easily and pleasantly as this. The more a child learns of the wonders that exist the more eager that child becomes to know more, and the other studies, that were dreary and irksome before, are comprehended to be only as stepping stones that aid the mind in acquiring something worth living for. The greatest objection to a more universal use of stereoscopic views in the past has been the liability of their becoming soiled and ruined by constant handling. To obviate this difficulty a number of stereoscopes have been invented and patented, holding ninety to two hundred views each, but their cost has been too much for the common people. After months, even years of experimenting, Professor Cadwell has completed a stereoscope that holds one hundred views, each one of which can be seen without handling one of them, and they will keep clear and clean for a lifetime, and appear far nicer than when seen in any other stereoscope known. They are sold at only one-fifth of the price of any other stereoscope ever invented holding as many views, and they can be changed in a moment, so that they can be used for an unlimited number of views. Orders by mail to J.W. Cadwell, North Reading, Mass. or Chas. Polluck, 342 Washington Street, Boston, Mass. will meet with prompt attention. Usual discount to the trade.

Note—he called himself "Professor Cadwell." Our inventor had another side to his life completely unrelated to the photographic industry. He was considered a “Mesmerizer & Psychologist.”

Reported in the Woburn Advertiser (a nearby city newspaper) dated May 12, 1871:

The entertainments given at Lyceum Hall, during the past few evenings by Prof. Cadwell have been of a highly interesting character, and were well patronized by our citizens, who were nightly amused by the wonderful manifestations of Psychological control. It is truly wonderful that one man can have such control over the mind of another, simply by mental force, as to cause him to lose his own memory, forget his own name, and to lose all recollection of the place where he is, and to perform things most supremely ridiculous, which in his sober senses he would no sooner think of doing than drowning himself. This was all done in Lyceum Hall during the Professor’s stay. At one time during the Saturday evening’s entertainment some four or five of our young men, imagining themselves in a velocipede rink, were riding around the platform on the backs of some chairs. At another time one of their number was drumming on an old table thinking himself at a piano, while an...

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Front Cover:
San Francisco city hall following the 1906 earthquake, Universal View Co. — one of the “then” views in the feature “Earthquake Stereos Then & Now.” While video tape now captures most of the news, some of today’s stereographers produce images that rival in quality and imagination the best of current video OR past stereo views.
The letter in this issue from Esther Walker ("Give us a Break") deserves a more complete answer than possible in some brief-but-pithy paragraph under it on the letters page. As an active NSA member and a Nishika distributor, she expresses concern that we had shown, in effect, an elitist attitude about Nishika cameras and dealers in the July/Aug. '89 issue.

Among Nishika distributors, Esther Walker is no doubt one of the most knowledgeable and enthusiastic about the past, present and future of stereo photography and about the NSA in general. At the opposite end of the scale would be distributors like those referred to in the "Nishika Strip-Down Report" on page 20 of the July/Aug. issue. Between these two extremes would be found the vast majority of the 60,000 Nishika distributors in the U.S. and Canada. It was in fact to avoid accusing Nishika dealers in general of deception that the word "some" was used in front of each example related from around the country.

Stereography is certainly no stranger to slick sales practices — from the days of hotshot Keystone salesmen to the various promotional schemes of the 1950s and beyond. If it's elitist to react with strong words of concern to reports of isolated questionable practices, then in this case we may well be guilty.

Our observations about the Nishika camera itself are another matter. The letter emphasizes that the Nishika is an "improved" and "simplified" camera, better for inexperienced picture-takers, amateurs and kids than the Nimslo. But which is really the simpler "point & shoot" camera?

To take an outdoor picture with a Nimslo, you simply point and shoot. The meter automatically adjusts shutter speed and aperture to the prevailing light conditions. (The only adjustment on the entire camera is the 100/400 film speed switch — set only when loading the camera.)

The Nishika, on the other hand, requires the photographer to choose one of three manual aperture settings for each picture — or to at least be aware of where the selector is set. (While overexposure due to ignoring the adjustment makes little difference with color negative film, under-exposure can still be a problem.)

There is a similar difference between the two cameras when used indoors with flash. The Nimslo flash is automatic, adjusting its output to the distance and reflectivity of the subject regardless of how the upper bounce head is aimed. The Nishika flash requires the user to estimate the distance to the subject and set the angle of the bounce head accordingly. Controlling exposure via bounce flash can be tricky even for experienced photographers, given varying colors and heights of ceilings. A good percentage of Nishika users probably just let the flash overexpose shots rather than trouble themselves with the suggested adjustments.

The point here is that the Nimslo is a true automatic "point & shoot" camera, without the Nishika's adjustments to make (or to worry about the consequences of ignoring). The Nishika's improved "simplicity" is in the very cost-effective design inside, allowing its much more successful mass marketing through personal sales. Stereo World's criticism of the techniques used to give the Nishika its appeal, both to buyers and distributors, was echoed (if not amplified) on page 71 of the Nov. '89 issue of Popular Photography.

Those "inexperienced picture-takers" defended in the letter are also very much the concern of Stereo World. We think they deserve something better than the Nishika — but, as stated in our coverage in the May/June '89 issue, the camera does work well for its intended purpose. While overpriced, it is not in itself a fraudulent rip-off or a one-use toy. Compared to a Realist or a synchronized pair of SLRs, the Nishika is a simple, user-friendly camera with the potential to spread interest in stereography among many diverse segments of the public — especially if they are dealing with a distributor like Esther Walker.

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**Editor's View**

**Nishika Response**
**Letters**

**Give us a Break!**

This is in rebuttal to the article by J.D. and the Charles F. Trentelman letter to the editor in the July/August Stereo World regarding the Nishika camera.

I am one of the 60,000 Distributors of the Nishika camera, yes, 60,000 Independent Distributors across the United States and now into Canada. I also have been a collector of 3-D artifacts for over 30 years, and a member of NSA since its inception.

I am sorry that J.D. has run into a distributor who did not read his company material sufficiently, so that he/she gave erroneous information on the Nimslo camera. The first information I was given on the Nishika Camera stated that, upon the demise of the Nimslo Company, Nishika (American 3-D Corporation) bought up all the existing patents, SIMPLIFIED IT, IMPROVED ON IT, and brought it to market last April 1989. What was the ONLY complaint Nishika and American 3-D had relative to the NIMSLO? That it was not properly marketed.

I read my Stereo World faithfully, every word, and never, during the days of the Nimslo, did I ever understand that I could have been taking pictures with a camera which would give me prints to view in 3-D without viewers or special glasses. How could a lay person, strictly a collector of artifacts, have understood what these pictures might be without actually seeing a print?

When I was first shown a print from the Nishika, I immediately understood what the Nimslo had been about. I also knew that I wanted to take 3-D pictures, and that this was a product I could promote and sell. I also was told that Nishika would print pictures taken by Nimslo cameras, without any subterfuge or covering up of how it was taken. I also was told that the price for developing pictures was much less than had been charged by Nimslo, and the turnaround time was much less than with the Nimslo.

There was nothing wrong with the Nimslo. Its only problem was marketing, and development and printing.

The changes in the Nimslo . . . what about them? The simplification of the camera takes it out of the hands of the experienced cameraman and puts it into the hands of every amateur, little old lady (that's me), child (I've had 8 year olds use my camera), and I sell it as a "point and shoot" camera. Believe me, J.D., there are more inexperienced picture-takers across this land than there are the seasoned veterans.

Call me if you want to talk to a distributor who is truly interested in 3-D, who cares very much about stereo photography. I am not detracting from your true 3-D photography. I am only increasing the public's awareness of a new, fun type of photography, and incidentally adding thereby to the people who are interested in the 1800s type of stereoscopy, and the more recent recreated interest in professional "real" 3-D photography. Come on, fellas, give us a break!

Esther G. Walker
Indio, CA

(See "Editor's View")

**Stereo Publishing Pitfalls**

In case I haven't properly done so, I would like to commend you on the superior way in which you handle the reproduction of stereo views. The consistent proper spacing and correct "window" obtained through your judicious cropping from a variety of originals is outstanding. I think that many readers may not realize what an accomplishment this is!

As an example of the pitfalls, an article on 3-D electron microscope pictures in the December issue of the PSA Journal contained 6 stereo pairs, all seriously flawed. The frame width for all views was 3½", which is too wide. The first two pairs had vertical misalignment and severe errors in image separation. Three of the remaining views were rotated 90 degrees, and when scissors were used, two of the three are found to be pseudo as well. The remaining view, taken at high magnification, is off about 45 degrees!

Paul Wing
Hingham, MA

**Hot Tip**

Just in case you missed it, Stereo World was mentioned on page nine of the September 4, 1989 issue of Dick Davis Digest, an investment advisory newsletter. It is nice to know that Stereo World is now influencing the financial markets!

Larry S. Moor
Atlanta, GA

Along with Women's Wear Daily and Baseball Card Monthly, Stereo World is mentioned in the piece as an example of sources "beyond Wall Street's research" in order "to benefit from emerging social and economic trends."

— Ed. ☐

**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. ☐
The October 17, 1989 earthquake in the San Francisco Bay area is still having its effect on tourism there, but is by now old news to the rest of the world. Anyone interested in stereography, however, is likely to have seen at least a few of the many dramatic published views of the much stronger 1906 quake, and to have at least a bit more appreciation of a quake's destructive power thanks to those memorable 3-D images. Through the efforts of NSA members Howard Frazee and Robert Bloomberg, we are able to present what is in effect a disaster view "Then & Now" look at the Bay area, and at stereo's continuing potential in historical documentation and feature journalism. All "Then" views are from the John Weiler collection.
I was sitting in my easy chair waiting for the World Series game to start when the house started to shake and rattle. Having lived in the bay area all my life and experienced many quakes, I knew that this was a big one. I sat there waiting for it to stop, knowing that I would be thrown to the floor if I tried to walk through the house to get outside. As soon as the initial shock was over, I went into the 3-D room to see what had happened to the cameras, viewers, projectors and other equipment that I have on shelves. I was surprised and thankful to find that the only thing to fall to the floor was a Pentax beam splitter attachment. I walked through the house and found that a few things had fallen, but nothing of any value. I then went outside expecting to find cracks in the stucco and in the brick chimney, but there were none. I find it unbelievable that the house could have taken so much shaking with no damage. My wife Helen was

The damaged section of the Bay bridge under repair on October 31, 1989. Telephoto hyperstereo from a moving ferry shows that the collapsed upper section had been removed. A number of news photographers buzzing past the bridge soon after the quake in helicopters probably got some fine stereo pairs with their motor drive cameras, but are unlikely to think about fusing them. (Stereo by Howard Frazee.)

Keystone #13350. "An Actual View of The Burning of San Francisco as Seen by An Eye Witness." One of the very few views showing a disaster in progress.
in the pool at a spa. Much of the water splashed out, and she held on to a ladder until the first shock was over.

Some of our friends had interesting experiences. An electronics firm where I work part-time had much of their stock shaken off the shelves, so the owners stayed late cleaning up the shop. On returning home they found the house flooded with hot water. Things had fallen from shelves above the kitchen sink, hit the faucet, and turned on the water. Something also fell and blocked the drain, so the hot water flooded through the house for several hours!

I was not in the mood to take any pictures of the damage for about two weeks. I could not face the unfortunate people who had lost so much. On October 28, Helen and I drove to Watsonville and took some shots of the damaged houses. We saw hundreds of houses that were shaken off their foundations. Most of them had moved several feet, all in the same direction. The downtown area was fenced off, but the damage was not extensive. We then drove up the coast to Santa Cruz, where we found fewer houses damaged, but more damage to the downtown area.

On October 31, a friend and I drove to Oakland and took the ferry to San Francisco to view the damaged Bay Bridge. We were a considerable distance from the bridge, so I took a few hypers with a 135mm lens and a 2x teletender. We walked around the Ferry Building area and took a few slides of a building that was being demolished. On returning to Oakland we drove to the 880 freeway. The last body had been removed that morning. It was an unbelievable sight to look up and see something that massive in ruins. The lower columns and the lower roadway were essentially intact but the columns supporting the upper roadway had broken at the top and/or the bottom, allowing the upper roadway to drop. It appeared to me that these upper columns were not tied sufficiently to the lower columns and to the upper roadway. We then drove home in a somber mood, not really believing what we had seen. On November 11, I repeated this trip and found that demolition crews were at work with about 15 large cranes swinging wrecking balls.

Steel reinforcement rods were no help when the motion of the Cypress structure section of the Nimitz Freeway split support columns like firewood. (Stereo by Robert Bloomberg.)
Damage like this was typical to many of the houses in Watsonville shaken from their foundations and moved to one side by the quake's wave motions. Most of the structure would drop to the ground in one piece except for porches which had their own larger foundations and refused to follow the house. (Stereo by Howard Frazee.)

f. 7.1 @ 15 secs.
by Robert Bloomberg

They're calling it "The Big Enough One." Not quite the Big One of 1906 or The Big One that will eventually come, big Big Enough to bring down a section of the Bay Bridge, a mile of freeway, and hundreds of homes in the Bay Area. A real 15 second E-ticket ride.

When it hit at 5:04 p.m. on Tuesday, October 17, everyone in our two-story wood frame office in Marin felt certain the epicenter must be in the county, if not next door. It felt as if a pair of giant hands had taken hold of the building and given it a good shake to see what was inside. What was inside was a dozen people trying frantically to remember everything they were ever taught about what to do in an earthquake. Under a table or under the doorframe? Run outside or stay indoors?

When the 15 second ride was over, neighbors gathered on the street to compare stories and exchange what information was coming in over the radio. When we learned that the epicenter was somewhere in the Santa Cruz mountains, approximately 100 miles south, we knew it was big.

Universal View Co., "A Terrible Tribute to Earthquake and Fire, City Hall from 8th and Mission, San Francisco, 1906." While there is plenty of debris in the foreground, it is evident that the streets had been cleared for traffic by the time this view was made.
As every photographer knows, whatever your first thoughts and concerns might be in a disastrous situation, your second thought is always “I should be documenting this.” Aside from a pile or two of papers on the office floor and many pale, worried faces, there wasn’t a lot to document in the immediate vicinity. The local camera store lost a Hasselblad and a few other cameras which had fallen off a shelf, the grocery clerks at the supermarket were still busy hours later, as I ran in to buy batteries, mopping up the liquor section and sorting through piles of canned goods, but Marin county got off easy. Watsonville, Santa Cruz and other areas around the bay were not so lucky. Still, considering the more than 3000 people who lost their lives in the 1906 quake, it could have been a lot worse.

Forty-two of the 65 people who died in this 7.1 quake were traveling on the Nimitz Freeway, on the section known locally as the Cypress structure. Considering the time of day — evening rush hour — it was astonishing how sparse traffic was when approximately a mile of the top deck collapsed. Because of the World Series, many people had left work early to watch the game at home on television. They, along with sports fans across the nation, witnessed quite a different event.

Three days after the quake I drove somewhat nervously over the Richmond Bridge to Oakland. A few blocks from the Cypress structure I picked up a hitchhiker, Tony Lopez, a 55-year old Red Cross worker who had been one of the original iron workers on the Nimitz Freeway when it was built in the 1950s. He said at the time that he and others working on the freeway didn’t think the steel reinforcement rods in the support beams would withstand a major quake. Tony had spent nearly every day since the quake helping locate and rescue survivors, remove bodies, and transport equipment. I drove Tony to the Cal Trans command center where I signed up as a volunteer.

Tony walked me around the area, pointing out how the Oakland Fire...
Quake damaged mail slots reveal damage typical to many Marina buildings in San Francisco. Close-up attention to the small but intimate and poignant details of a disaster is seen far more often in today's images than in vintage stereographs. (Stereo by Robert Bloomberg.)

A police fence becomes a clothing rack for items found in the debris of Marina apartment houses. The sign gives date and time the pile will be hauled to the dump, and announces: "Property owner(s) and tenants may interrupt the removal of debris to retrieve small items of personal value from the perimeter of the pile." (Stereo by Robert Bloomberg.)

A section of the Cypress structure awaits demolition in November, '89. Few views of the 1906 quake show this clearly how specific structures failed — largely due to effects of the fire that followed. (Stereo by Howard Frazee.)
Department, responsible for rescue operations, had mapped out the entire structure, numbering the columns, plotting the location of each trapped car. They measured distances with lengths of rope, hand-carried by volunteers like Tony between the narrow gap of the sandwiched freeway. Corresponding spots were then marked on the top deck with spray paint so that rescue machinery could cut through to the cars trapped below. I took my cameras (Belplasca and twin Konica rig) up with me in the cherry-picker.

One of several wrecking balls attacks the dangerously weakened structure while water is aimed at any clouds of concrete dust. (Stereo by Robert Bloomberg.)

Ingersoll View Company, #53C, "Out Door Kitchens on Waller Street. Ruptured chimneys Forced All San Francisco to Cook Their Meals on the Street for Several Weeks." Imagine the numbers of video cameras a scene like this would have attracted in 1989.
for some close-ups and aerial views of the structure. The bright, sunny day was a strange contrast to the grim scenes of crushed cars and collapsed concrete. A few personal effects — a woman’s shoe, a briefcase — were still scattered across the buckled roadway.

Occasionally there were miracles. The mailman who walked away from his crushed truck which later had to be opened with blowtorches to extract the mail bags for delivery. Or the Chevron truck driver traveling on the lower deck who described seeing the freeway

One former resident ignores all the warning signs on this twisted and distorted house in Santa Cruz. Many of the classic Victorian houses near the epicenter, in places like Watsonville and Santa Cruz, showed little external damage but were completely shattered inside. (Stereo by Howard Frazee.)

Marina resident Pat Prochaska gazes at a pile of earthquake damaged cars — hers is at the bottom. (Stereo by Robert Bloomberg.)

Universal Photo Art Co., #5344, “San Francisco Earthquake, April 18, 1906. Making the best of it.”
collapsing towards him like a house of cards, then glancing in his rear-view mirror and seeing the same scene. He screeched to a halt in the only small section of freeway that remained standing.

Later, working in the Marina District of San Francisco, I heard more stories. The elderly widow who was taking a bath when her house collapsed around her, but still managed to get dressed and walk to a disaster center where she signed up as a volunteer. Or the unknown man who drove through the Marina distributing stacks of quarters to lines of people waiting to use the few working pay phones.

Humor and heartbreak mixed freely. I discovered Marina resident Pat Prochaska holding her GAP clothing store bag of salvaged belongings, while staring in disbelief at a pile of crushed cars stacked in the wreckage of a collapsed building. “That’s my car under there,” she said, pointing to the car at the bottom. “Could you spare a photo for my insurance company?”

I watched another woman walking trancelike through a mountain of burnt rubble that was once her apartment building. When I asked if I could help her find what she was looking for she said she was searching for her pet cockatiel. “I just clipped his feathers yesterday,” she cried. I was happy to discover later that her pet turned up safe the next day, having been found wandering down the middle of the street by a neighbor.

Those hungry for more stories could stop by a card table set up a week later by an enterprising 12-year old Marina girl whose hand-lettered sign read “Earthquake stories — 25¢.”

All of us here will be telling and retelling our stories for some time. They say it relieves anxiety.

It’s been months since the quake. Out of town visitors are shocked to see the city still standing and not half-submerged in the bay. In fact, unless you know where to look, you’d never know there’d been a quake at all. The routine of daily lives takes over and we forget all about it. Until a passing truck vibrates the building and we exchange nervous, questioning glances.

Universal Photo Art Co., #5342. “San Francisco Earthquake. April 18, 1906. Houses on Howard St. after the earth quaked.” Few 1906 stereographers got much closer to damaged houses than this, and most concentrated on the more spectacular scenes of gutted buildings downtown.

MIND ALTERING VIEWER?

(Continued from Inside Front Cover)

other was sawing away with a stick upon a cotton umbrella which he supposed a bass viol; at the same time the rest of the party were singing the chorus “Tramp, Tramp, The Boys, etc.” These manifestations are fully as wonderful to us as anything we have seen in the way of spiritualism.

The Middlesex County Journal, May 13, 1971:

Prof. Cadwell - This wonderful psychologist has given five of his unique entertainments in Woburn, closing with Wednesday evening. He has had a large number of subjects on which to exercise his peculiar control, and has given entertainments which have been very amusing and entirely satisfactory. The power he exercises over some of them is wonderful. What ever the effect is on the subjects we cannot say, but to the spectator the effect is one of intense amusement, and the person who could see that “show” and not laugh, we would despair of ever pleasing. We learn the Prof. Cadwell will soon visit North Woburn, and also before long go to Winchester.

The Reading Chronicle, Feb. 9, 1878:

Professor Cadwell’s grand combination of Mesmerism & Psychology, in Flint Memorial Hall, last week, was largely attended. It was given under the auspices of the Reform Club & their share of the receipts amounted to about $12. The club has over 100 members. (Flint Hall is in North Reading.)
State of the Hologram

A Review by John Dennis

I n case you've been wondering, far more has been happening in the field of holography since the 1970s than the perfection of embossed foil stickers, rainbow magazine covers and cartoon cereal box promotions. "Holography as an Art Medium" is the title of a recent special double issue of Leonardo, the journal of the International Society for the Arts, Sciences and Technology. Within its 180 pages are several color plates, sequential photos, actual holograms and thirty-one essays covering matters from aesthetics to current laser technology to practical tips and diagrams for holography projects.

This is no condensed overview of holography as it stands at the end of the decade, but rather a monumental assemblage of illustrated essays by those who have been producing holographic art while pushing the technology involved to its limits, if not beyond. Holographers from ten countries contributed reports on their work and their thoughts concerning the function and potential of holography as a medium now out of its experimental infancy and entering the galleries of the "serious" art world.

While other holography publications or texts include brief (if any) mention of the history of 3-D imaging techniques, this special issue of Leonardo opens with an eight page essay titled "Before Holography: A Call for Visual Literacy" by NSA member Lance Speer. The piece covers stereography from the Crystal Palace to the Nimslo, and lists the NSA as the source for "further information regarding the visual and cultural legacy of the three-dimensional image."

The wide range of work being done in holography can be surprising to anyone who hasn't kept up with the literature and/or visited some of the galleries specializing in it. More different approaches to the possibilities of holographic imaging have been gathered here than are usually seen in one place. (It was a two year project.) The emphasis is less on the technical hardware than on the uses to be found for it in creating works of a new (and more flexible than first thought) kind of art. Many possible answers (some quite lengthy and esoteric) are offered in various essays to the question of whether holography is art. Perhaps the best answer offered is the statement that, "A hologram is a space in which art can happen."

Most of the contributors are interested in large format holograms ranging from 8 x 10" up to room size. While abstract patterns and complex objects remain popular, a sizeable percentage of the images in the issue are portraits made with high-power pulsed lasers and combined to produce multiple images changing with the angle of view. Some of these involve sequential images of the same subject and others introduce completely different objects. One of the many illustrated holographic portraits is by Long Island City holographer Ana Maria Nicholson. Its subject is multidimensional artist Alphonse Schilling, who created the sixteen-foot wide Wheatstone viewer seen in "World's Largest Stereoscope?" on page 17 of the Jan./Feb. '84 Stereo World.

The intense realism offered by holography is exploited by these artists only as far as it suits them — and then the manipulation of light and images comes into play through everything from water tanks to fiber-optics to all the more standard mechanisms of holographic recording and reproduction available. Digital generation of images plays a part in some work, including the contribution of a Brazilian team who have achieved a dizzy new height of artistic synthesis with their floating, twisting changing forms and word segments called "Fractal Holopoetry."

The one failing of the issue is that the possibility of reproducing holograms through stereo pairs wasn't explored in any of the black & white or color illustrations. While only a limited impression of an entire hologram is given by a stereograph, it can certainly show more than any flat photo. Multiple or changing-image holograms can be shown by stacking sequential pairs one above the other so that fusion can be maintained while looking from one 3-D image to another — much like changing the viewing angle of the original hologram.

While the special Leonardo issue may not put you in the market for a $700 laser, it can easily generate a desire to see much more of what is being done on this wave-front-line of 3-D imaging. Our thanks to NSA member Harold Layer (who contributed an essay on the measurement of the binocular depth content of stereograms or holograms) for the copy of Leonardo, which he is donating to the Holmes Library. The double issue is Volume 22, Numbers 3 & 4, 1989 and is available in limited quantity at $40.00 a copy from The International Society for the Arts, Sciences and Technology, 1442A Walnut St., Box 75, Berkeley, CA 94709.
Arizona Landmarks: Stereography of Natural Wonders in Arizona Territory, 1871-1930s

by Bruce Hooper

Arizona Landmarks have always been popular subjects for local Arizona photographers and the major stereo publishers in the eastern United States. The most popular local subjects were Oak Creek Canyon's Red Rock Country, the Casa Grande ruins, Montezuma's Castle and Well, and Mission San Xavier del Bac. The most popular Arizona subjects that were published nationally by twentieth-century stereopublishers were the Grand Canyon and the Hopi Mesas. A major factor in the local and national popularity was accessibility. Most of these areas became more accessible with the growth of settlements and the construction of the railroad. All of these areas functioned as tourist attractions to local residents and those travelling west to California. Stereographers helped to satisfy demand for views of these areas.

Views of these areas usually took up most of the local photographer's negative file because there was always a demand for them. Some areas such as Canyon de Chelley were less frequently stereographed due to its remoteness in the far northern part of the Territory. After O'Sullivan's stereographs during the Wheeler Survey about the only person who would have taken any stereographs of Canyon de Chelley was George Benjamin Wittick. The popularity of the previously mentioned subjects assured their publication as stereographs because they represent the West's natural wonders.

The Hopi Mesas are located on the Hopi Indian Reservation surrounded by the Navajo Indian Reservation. Hopis are agriculturalists and the only Pueblo Indians living in Arizona. All but one of the Hopi's twelve villages are located on the top of three mesas. Major villages are clustered on the southern heights of three finger-like projections of Black Mesa. The mesas start in the east with First Mesa and end in the west at Third Mesa. Black Mesa is a high plateau ranging in altitude from 6,000 to over 8,000 feet.

Starting at Polacca, a settlement developed around the First Mesa, at an altitude of 6,000 feet, the three villages on the First Mesa can be seen. Polacca was named for Tom Polacca, a Hano Tewa who built the first store below the mesa. The village grew up around the First Mesa day school during the 1890's. Hano, 1.1 miles up the mesa at an altitude of 6,200 feet, is not a Hopi village, but was established late in the seventeenth century by Tewa-speaking people from the Rio Grande section near Abiquin, New Mexico to assist the Walpi. Shichumovi or Sichimovi or Shichumovi means "Place of the Mound Where Wild Currants Grow" and lies between Walpi to the south and Hano to the north. Shichumovi is 1.2 miles up the mesa at an altitude of 6,218 feet and was established about the middle of the eighteenth century by a group of individuals from Walpi. Walpi, two miles up the mesa at an altitude of 6,225 feet, is perched precariously on the narrow tip of a steep cliff. Walpi was established about 1700 and means "Place of the Gap." Its houses, two to three stories high are crowded together, suggesting a castle in the sky. The Snake Dance is held at Walpi in August during odd years. Walpi is named for the large gap in the mesa just north of the village of Hano.

The end of the Second Mesa splits into two fingers. On one are the villages of Shipolovi and Mishongnovi and on the other is Shongopovi. Below Shipolovi and Mishongnovi is Toreva Spring. Shongopovi, located at the top of the mesa at an altitude of 6,562 feet, is the oldest of the Hopi villages. Shongopovi was established by members of the Bear Clan and the chief has always been from that Clan. The original settlement was located two hundred yards north of Gray Spring before 1250 A.D. and was occupied until the early 1500's. The village was moved next to the spring and was near the Franciscan mission of San Bartholome from 1629 to 1680. Following the Pueblo Rebellion the present village was constructed. The Snake Dance is held here in August on even years. Shongopovi means "Place by the Spring Where the Tall Reeds Grow."
Shipolovi and Mishongnovi both are located at an altitude of 6,230 feet and are almost two miles apart. There are two theories on Shipolovi's origins. One theory is that the people at Shipolovi once lived at Homolovi, near Winslow, Arizona, and were forced out by hordes of mosquitoes. The other theory states that the village of Shipolovi was established by people from old Shongopovi after a schism developed during the late seventeenth century. The Snake Dance is held here in August on even years. There are also two theories on the establishment of Mishongnovi. One theory states that it was founded by female survivors of Awatobi, a pueblo destroyed in 1700 during a religious war with nearby Hopi. The other theory states that Mishong, a member of the Crow Clan, led his people from the San Francisco Peaks...
region to Shongopovi but was refused admission. They were later permitted to establish a village below the shrine at Corn Rock by the Shongopovi chiefs on the condition that they protect the Corn Rock shrine from desecration. Early Mishongnovi was occupied from the 1300's to the early 1700's. The village was moved to the present site during the eighteenth century. The Snake Dance is held at Mishongnovi on odd years.

On the Third Mesa are Old Oraibi at its tip, Hotevilla, eight miles to the northwest, and Bacobi, eight miles north, and at the foot of the mesa, New Oraibi. Old Oraibi at an elevation of 6,497 feet was established in 1150 A.D. and was once the largest of the Hopi villages. Father Garces visited Old Oraibi in 1776. In 1906 New Oraibi was founded by Hopis who had converted to Christianity and left Old Oraibi. New or Lower Oraibi is at an altitude of 6,070 feet. The Hopi Tribal Council is located here. Hotevilla was established by conservatives from Old Oraibi in 1907. Bacobi was founded either in 1907 or 1908 by a splinter group from Hotevilla. Hotevilla is located at an altitude of 5,905 feet. Forty miles north of the Third Mesa at an elevation of 4,550 feet is the Hopi village of Moenkopi founded during the 1870's by Tuba, an Oraibi chief. The people live here according to the traditional way of Hopi life and they live on the sites once occupied by migrating Hopi clans. The people here return to important ceremonies at Old Oraibi.

The Hopi villages were established by migrating clans of Pueblo Indians during the twelfth and thirteenth centuries. In July 1540, a detachment led by Pedro de Tovar from the Spanish Expedition led by Francesco Vasquez de Coronado was the first to see the villages. Early in 1583 another Spanish explorer named Antonio de Espejo arrived in the villages. In August 1629 Spanish Franciscan missionaries established missions, in order to convert the Indians on the Hopi Mesas. Francisco Porras, Andreas Gutierrez, and Cristobal de la Concepcion were all assigned to set up a mission in Hopi country in 1629. The Hopi were forced to build these Franciscan missions that led to the Pueblo Rebellion in 1680. The Rebellion lasted until 1682. The Spanish were never able to regain control of the Hopi villages.

During the nineteenth century the Hopi villages were visited by explorers, anthropologists, tourists, missionaries, and United States government officials. Some of the more prominent persons to visit the Hopi or Moqui Buttes during the nineteenth century were Kit Carson, Major John Wesley Powell, George Wharton James, Charles Fletcher Lummis, Dr. Jesse Walter Fewkes, and Heinrich R. Voth. On December 16, 1882 an Executive Order consisting of one long sentence set up a Hopi Reservation. In May of 1887 Superintendent James Gallaher arrived at Keams Canyon establishing the Hopi Agency or as it was known then the Keams Canyon Office and Gallaher's position being School Superintendent, acting as Indian Agent. Relations between this office and the Hopis never was very good. On December 14, 1936 the Hopi Tribal Council was established.

Photographic documentation began in 1872 when E.O. Beaman left the Powell expedition and stereographed the Hopi towns, while on his way to Denver. He reached Denver in the late summer and his negatives were subsequently published by E. & H.T. Anthony of New York City. Original views are on cabinet size orange/lavender mounts and imprinted on the front.

Anthony, publisher. Beaman, photographer - Oraibi Pueblo - 1872. (Courtesy of Museum of New Mexico.)
of the mount, E & H. T. ANTHONY & CO./591 BROADWAY, NEW YORK. Stereographs are of Mishongnovi, Walpi, Shipaulovi, and Oraibi. C.W. Woodward of Rochester, New York either acquired from Anthony some of the Beaman negatives or he pirated them, because some of Beaman's views of the Hopi Mesa area were published by Woodward in his series imprinted Colorado and Arizona Scenery, C. W. Woodward, Rochester, N.Y.

It would seem that from the start views of the Hopi Mesa area were a popular subject among the large commercial publishers of the eastern United States. Stereographs of the Hopi mesa area also were published by photographers in Arizona Territory and in New Mexico in order to satisfy demand by tourists and local residents.

Two other survey photographers also photographed the Hopi Mesa area during the 1870's. In June or July of 1875 William Henry Jackson, while on the Hayden Survey, photographed but might not have stereographed the Hopi villages. Between 1872 and 1879 John K. Hillers while on the Powell Expedition did take some stereographs of the Hopi Mesa area, but I do not know how many were taken.

The earliest stereography of the Hopi villages by a local commercial stereographer was by Henry T. Hiester of Santa Fe from 1877 to 1878. The negatives were purchased from Hiester and published by Melander of Chicago around 1880. Views by Hiester and published by Melander are on buff standard size mounts with captions on the front and usually lack identification. I do not know what Hiester's original stereographs look like, so I am unable to provide such information. After Hiester, ever increasing numbers of commercial photographers visited the Hopi villages from the 1880's until about 1915 when photographing of Hopi ceremonies was banned due to disruption of Hopi life.

Most photographs of the Hopi Mesa area were taken by photographers in Arizona Territory and in New Mexico, with one exception being Charles W. Carter of Salt Lake City. Carter took a small number of stereographs of the Hopi villages during the 1880's and these are on standard size light green mounts imprinted Carter's Western Indian Stereoscopic Views with captions on the front of the mount. This probably is one of Carter's scarcer series. Some New Mexico photographers who visited the Mesas during the 1880's were W. Calvin Brown and his assistant Mr. Saunders of Albuquerque, William Henry Brown or George C. Bennett of Santa Fe, and George Benjamin Wittick of Fort Wingate and Albuquerque. W. Calvin Brown visited the Mesas in August of 1885 and attended the Snake Dance. This is from an eyewitness account published by J.C. Burge in the Arizona Champion in Flagstaff in September 1885. J.C. Burge and George Benjamin Wittick saw W. Calvin Brown and Mr. Saunders when they attended the Snake Dance in August of that year.

"...There was quite a number of visitors present, — Dr. Yarrow, of Washington, Mr. Graham, of Zuni, Mr. Roberts, of Santa Barbara, Cal., Mr. Hubbell and Mr. Lynch and the Misses Lynch, and three other young ladies whose names we have forgotten, from Navajo Springs; also Mr. Cal Brown and Mr. Saunders, photographers, of Albuquerque, who all expressed themselves as amply repaid for their trouble." I do not know if W. Calvin Brown stereographed the Hopi villages, while he was there. Sometime during the early 1880's either William Henry Brown or George C. Bennett visited the Hopi Mesas and took an unknown number of stereographs. Stereographs
are on cabinet size yellow mounts imprinted PHOTOGRAPHED & PUBLISHED AT SANTA FE, N.M., with manuscript captions on the front of the mount. The most prolific stereographer of the Hopi Mesas was George Benjamin Wittick. He attended the Snake Dances and visited the villages from the 1880's until his death by snake bite in 1903. Other photographers such as J.C. Burge occasionally accompanied him. Stereographs probably are on cabinet size orange/lavender mounts with the Wittick & Russell Albuquerque imprint on the back. I have never seen any of Wittick's stereographs of Arizona Territory so I can only guess as to what they must look like. Stereographs probably were only taken during the 1880's.

The only Arizona Territory stereographer known to have visited the Hopi villages was J.C. Burge. His earliest stereographs, c. 1883-1884 are on cabinet size yellow/light green mounts with captions in manuscript on the front. The back of the mount has Globe City imprint. Views taken in 1884 and 1885 would be on cabinet size orange/lavender mounts also with manuscript captions. I do not know if there ever were any stereographs published in 1885 with a Burge & Wittick imprint.

"Moki Indian House" – Chromolithograph, c. 1906. (Courtesy of Museum of New Mexico.)

Underwood, Mishongnovi, c. 1901. (Courtesy of Museum of New Mexico.)
Twentieth century stereographs were taken by Underwood & Underwood. The earliest issues are copyrighted 1901 and are on buff mounts. Later issues taken about 1903 are on gray mounts. Most views are of the ceremonies and houses at Walpi and Oraibi. Some of these views were posed. Keystone later acquired the Underwood negatives and subsequently reprinted some of them. There was one stereo chromolithograph series copyrighted 1905 and issued by Hawin and Company as part of their World Series. I do not know who the original negatives came from. Subject matter of stereographs from the 1870's to the early 1900's encompass Hopi dances, costume, houses, ruins, and portraits of Indians. Walpi was the most frequently stereographed of the villages.

Other photographers who visited the Hopi Mesas but did not take stereographs were Charles Fletcher Lummis, George Wharton James, Frederic Hamner Maude, Adam Clark Vroman, Calvin Osbon (Flagstaff), Joseph Jacinto Mora, Heinrich R. Voth, Joseph Amasa Munk, Frederick L. Monsen and Edward Sheriff Curtis.

**Sources**


*Arizona Champion* 5 September 1885


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**Darrah, William Culp.** "Beaman, Fennimore, Hillers, Dellenbaugh, Johnson, and Hat- tan." *Utah Historical Quarterly* 17(4), (October 1949):491-503.


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Arthur Batut, French inventor of aerial photography by kite, also practiced stereo photography by kite as early as 1907 by lifting two cameras, fixed to the kite two meters apart. The ratio between the width of the base and the distance from which the photos were taken makes the stereo effect hardly perceptible.

An optometrist in Brussels, Belgium, I have done aerial photography by kite since 1979. In June 1986 I also applied the stereoscopic technique to photography by kite. Securing and simultaneously tripping two cameras separated by several meters immediately appeared to me as being quite complex. I then had the idea to take two pictures successively with one camera by moving the tether line anchor point on the ground in an axis perpendicular to that of the camera lens.

As in non-stereo photography, the camera must hang from a pendulum approximately 1 meter long, attached to the tether line at more or less 75 meters from the kite. The shutter release must be by radio control or by an automatic timer. A minimum of moving objects should be included (none, if possible). A series of photos (an average of three to six) must be taken, from which the choice of the ideal pair will be made.

Labruguiere - Tarn - France in a view made from a kite by Arthur Batut, April, 1907 (base, 2 meters). (Collection of Arthur Batut Museum - KAPWA.)
Photography by Kite

Berck-Plage, France from a kite. April 1989. (Stereo by Michel Dusariez.)

Rocroi, France from a kite. (Stereo by Michel Dusariez.)

The shifting of the camera is more easily done perpendicular to the wind's direction, since the lateral shifting of the anchor point will not influence the altitude of the kite and therefore the camera. It goes without saying that both pictures will probably not have the same framing. Print pairs will need cutting to reframe the stereo pair and slides may need correction by enlargement and duplication.

Michel Dusariez is president of the Kite Aerial Photography Worldwide Association, which publishes a magazine covering the history of photography from kites and news of recent innovations in the field. More information is available from him at Avenue Capitaine Piret 14, 1150 Brussels, Belgium or from David Town, 112-47th St., Sea Isle City, NJ 08243.
The Newest 3-D Camera — The Trilogy

Following the apparent multilevel marketing success of the Nishika 3-D camera is the announcement of the “Trilogy” — said to be the brainchild of the original Nimslo 3-D camera designer Allen Lo.

The production model of the camera is not available for testing yet, but at a recent camera show we saw sample 3-D lenticular prints, an artist’s rendering of the camera, and a short video that showed an actual camera, which turned out to be the pre-production prototype that I had a chance to handle later. The video even showed the camera sitting next to its predecessors, the Nimslo and Nishika 3-D cameras. The Trilogy appears to be just a little bit larger than the original Nimslo.

The most interesting feature of the Trilogy is that it has 3 lenses instead of the four found on the other cameras. With typical marketing finesse they have tried to turn this to an advantage: less film used, more pictures per roll, and “better picture clarity” than on the Nimslo/Nishika prints. The better clarity referred to would come from the fact that there is less of a double image on the background subjects when there is a close foreground subject in the same shot, due to there being less parallax in the picture. The tradeoff, however, is a reduced 3-D effect. This reduction in effect may be made up for by the fact that the color saturation and printing were superb — at least in the samples shown. The average snapshooter would probably be just as happy with the Trilogy style of print. In an interesting scheme Trilogy is proposing a “film club” whose members will get a free roll of film and a set of “flat” prints along with the 3-D prints in every roll processed.

If the Trilogy is short one lens, it makes up for it in modern features not found in the only current competitor. According to the specifications sheet it has two aperture settings of f5.6 for indoors, and f11 for outdoors, with the camera meter setting the speed between 1/80 to 1/120. DX coded film is read for 100 or 400 speed film. The camera has built-in motor drive (for wind and rewind) and flash, with the expected low-light warning in the viewfinder. Dimensions are approximately 143 x 72 x 50 mm and weight is approximately 260 grams (9.2 oz.) — actually less than the Nimslo due to significantly plastic construction.

Proposed price is $249.00, and the expected introduction date for the film and processing (to be done in Ontario, California) is April 1990. Sales will not be through camera stores, but only through independent distributors, in a similar multilevel marketing plan to the one being used by Nishika.

My opinion is that this looks like it will offer some competition to Nishika that might result in better quality versions of both cameras at some future time. Alternatively, a renewed interest in the 3-D marketplace may stir some manufacturers to consider a “new” market with two-lensed stereo cameras.

Baseball Enters the 3-D Zone

3-D comic publisher Ray Zone has announced April 1990 as the publication date for Baseball Thrills 3-D, a 32-page book dealing with the history of baseball in a 3-D format. Baseball Thrills 3-D will include illustrated life stories of Ty Cobb and Ted Williams, a history of the World Series, classic baseball cards in 3-D for the first time and many historic baseball cartoons converted to 3-D by Ray Zone. The only existing 3-D photo of Babe Ruth will be included on the back cover. Retail price is $2.95 from The 3-D Zone, 1872 Hillhurst Ave., Los Angeles, CA 90027. (This is the new Zone address.)
First "Holographic" US Stamp

In case you've been living in a cave lacking a mailbox and haven't yet seen the new space station hologram stamped envelope, here are both front and back views of it. (To get the full effect of the 3-D scene, remove the back of the envelope and view the whole 1 1/8" square image by a good point-source light.) The image, of course, is not a true hologram created with laser beams and actual objects. Like the stickers in a novelty store, flat drawings are embossed on foil at different planes — a sort of manipulated diffraction grating.

The notable difference in this one is the Lunar surface, which extends in a continuous sweep from behind the fanciful space station out through the window. This adds a lot to the effect, but note that the upper edge of the moon appears behind the background star field! As with the foil stickers, the main object (the space station) is embossed at the window plane and thus remains clearly visible regardless of viewing angle or light.

The envelope was issued Dec. 3, '89 at World Stamp Expo '89 in Washington, D.C. in conjunction with the 20th Congress of the Universal Postal Union. Artwork is by Ken Hodges and foil embossing is by American Bank Note Holographics. Inc. The envelopes are 30 cents each, but a bit less if ordered in bulk (item #2156). You can also have the Post Office print your name and address in the upper left corner of bulk orders — see your local main post office for details. No other images are scheduled for any sort of series at this time, but it could help if the Postal Service got a few thousand requests for a holographic stamp of a real object on the next try.

The New Teco 3-Viewer

While the concept of a transposing viewer is not a new one, few have been designed and fewer built. (There may be as many designs for transposing cameras.) Most that exist were intended for use with uncut glass stereo negatives or prints made from such uncut negatives. The newly introduced TECO 3-VIEWER is the latest incarnation of these transposing devices, designed for viewing uncut rolls of 35mm slide film from any Nimslo/Nishika, Teco-Nimslo or Realist format stereo camera. It also functions as a normal viewer for mounted slides in the above formats when the original STAR-D top cover is used.

The specially designed transposing top cover is removed from the base for loading each roll of film and for removing the film after viewing. The first couple of times, this procedure seems complex at best, if not frustrating. But the threading path and take-up assembly become easily familiar by the third roll, and

The Teco 3-Viewer assembled for viewing a roll of Nimslo slides. Center knob adjusts the size of the loop between images for Realist or Nimslo formats. Focusing track is longer than other viewer's (and a bit rough) to allow conversion back to mounted slide viewing.
the sharp, well registered images make the whole process seem well worthwhile. This is especially true for those of us with several uncut rolls of stereo slides waiting since 1987 in some desk drawer for that ever-promised weekend's worth of "spare time" for editing and mounting. It can be a true delight, advancing frame-by-frame through nearly forgotten images as if they had suddenly appeared on your own personal Tru-Vue filmstrip.

Color or black & white negative rolls can also be previewed with the Teco 3-Viewer, but as with any such specialized device there are some limitations involved. There is no reverse provision, so one must be sure that everyone present has viewed the picture before advancing to the next one. Full rolls (or rolls as long as possible) must be used, and plenty of leader must be left on the start of the roll for threading the viewer. (This is not a viewer for those 10" long strips left over after mounting 3 or 4 pairs out of a roll.)

The big question, of course, is what will this lightweight plastic arrangement of pegs, guides, spool and mirrors do to a roll of film? After running a roll of Ektachrome through it several times, no scratches were evident in the image areas. Only the edges of the film seem to come into hard contact with any of the plastic parts, although skeptics will be quick to point out that even some very expensive cameras have been known to scratch film.

Greater concern may be generated by the rather tight roll the film must be wound into for insertion between the pegs in the top cover. Many serious photographers will worry about cinch marks, possible when-ever film is wound tightly in contact with itself — or simply about the amount of handling the film can get during loading. Those who are very particular about hanging film straight and storing it in protective sleeves won't even want to think about a device like this. (But people like that are generally more efficient about mounting their slides in a timely manner anyway.)

While you may not want to use this viewer on rolls of images destined for an international competition or a special projection program, it can mean the difference between viewing for potential mounting vs perpetual oblivion for many uncut rolls of film. The occasional gems never detected by an initial unmagnified freeviewing, but now seen in all their glory, could make a Teco 3-Viewer well worth the price. The viewer is in royal blue, with acrylic lenses by American Optical. Price (including 2 Duracell "C" batteries) is $87, plus $3 shipping from Technical Enterprises, 1401 Bonnie Doone, Corona Del Mar, CA 92625.

3D International Newsletter Born

After some initial delay, the first issue of the 3-D International Newsletter was published in January, 1990. The official organ of the International Conference on Three Dimensional Media Technology, this new magazine will be published three times a year from Montreal, where the next 3Dmt Conference will be held in 1991. The first issue is a 12-page, 8½ x 11" desk-top publishing style newsletter packed with articles and information on current work in 3-D film, video, computer and holography technology. Included are items on the speakers who appeared at the 3Dmt '89, the history of 3-D TV systems, holographic cinema in the USSR, 3-D molecular modeling, a high-tech Japanese 3-D forum, and much more. Edited by Christine Davet, the newsletter describes itself as "a comprehensive 3-D publication for researchers, industry professionals and enthusiasts in all the domains of 3-D research and applications." (See the 3Dmt '89 articles in the July/Aug. and Sept./Oct. issues of Stereo World.)

Subscriptions to the 3D International Newsletter are $60.00 Cdn. per year from: 3Dmt International Newsletter, Bryan Building, 7141 Sherbrooke St. W., Montreal, Quebec H4B 1R6, Canada.
Trout Fishing in 3-D

One of the most specialized sets of stereographs ever issued, Trout Flies: A Stereoscopic Retrospective, will feature 25 views of trout fishing flies tied by the sorts of experts who write books on the subject. The Catskill Mountain Company, "a group of artists and craftsmen dedicated to projects that preserve and celebrate the beauty of the outdoors," is offering a limited edition of 110 sets (including a custom designed stereoscope) to an invited group of fly tying enthusiasts and collectors. One set will be presented to former President Carter.

The "Catskill Mountain Viewer," custom designed and crafted for the set by Stat- en Island woodworker Gary Heller.

The large format color images will be on a material which can be viewed by either reflected or transmitted light — making these, in effect, the first new boxed sets of "tissues" to be published in about a hundred years! The sets are not intended as instructional kits on the art of fly tying. These are strictly collector's items by a dozen of the top fly tiers in the country — never intended for exposure to water or fish, and photographed in an elaborate studio set-up at the Catskill Fly Fishing Center in Roscoe, NY. Sets were expected to be available by late March, '90.

A second set, not including viewer, may be issued later. According to a company spokesman, the images may also be made available on View-Master reels for wider distribution at some future date. For more details, contact The Catskill Mountain Company, Box 324, Parksville, NY 12768, (212-505-1936).

"Source" Includes Stereo

The recently published catalog of nearly everything photographic, The Photographer's Source — An Annotated and Illustrated Guide to Equipment Information Materials Services Accessories, features a three-page section on stereo images and equipment. That's about three pages more than most photo publications devote, but this is no ordinary equipment guide. The Photographer's Source is 248 pages of current information on just what is available to do nearly anything photographic, from tripod heads to archival print washers. As important as the listings of equipment and materials are the listings of organizations and publications likely to be able to help with any questions not answered in the text.

Books on historic, alternative and non-silver processes are described, as well as books, magazines and organizations devoted to pinhole photography, hand coloring, archival processing and materials, photojournalism, photo collecting, etc. Detailed lists of photography schools and workshops are included, as well as discussions of leading museums of photography and their publications. Photo magazines from around the world are illustrated and examined, along with more specialized organizations and their newsletters. The Photographer's Source may not have all the answers, but if an answer exists to your obscure photographic question, it can probably point you (Continued on Inside Back Cover).

The "classic flies" from the Catskill Mountain set, stereographed by New York large format, table top specialist Don Holway.
For half a century, television has brought the world into America's living rooms. The "box" so faithfully provides pictures of the news that reaching for the remote control is nearly automatic when people want to see what's happening around the globe.

In the late 19th century, simpler technology provided pictures of current events. Holding a stereoscope to their eyes, millions of people could see — in dramatic, three-dimensional relief — the people and breathtaking vistas of such faraway places as the newly opened American West.

The stereograph vogue lasted into the 20th century when inexpensive photo reproduction eclipsed its popularity. Millions of stereographs produced between the 1870s and the 1920s were moved to attics and forgotten.

But in the last 20 years, stereographs have been rediscovered by historians, collectors and American Indians. The Smithsonian Institution in Washington, D.C., recently acquired from a private collector one of the largest and rarest collections of American Indian stereographs from this period.

Paula Fleming, archivist of the Smithsonian’s National Anthropological Archives, says it’s no surprise that stereographs often depicted American Indians.

"Other Americans of the time, many of whom had never seen Indians, were fascinated by newspaper accounts of the battles out West," she says. The Indians were being pushed off their land by settlers and the U.S. Army — often with brute force — and onto reservations, clearing the way for westward expansion.

The new Smithsonian collection, part of the National Anthropological Archives in the National Museum of Natural History, consists of nearly 1,500 early stereographs, as well as a unique photo album of Sioux Indians and their families.

The collection was assembled by George Allen, a retired attorney from Lawrence, Kansas.

"The breadth, quality and uniqueness of the Allen Collection make it a national treasure," Fleming says. "Early photographs are an increasingly valuable source for research on North American Indian history and culture."

One photo in the Allen Collection, for example, taken in September 1876 during the Sioux wars, shows a group of Sioux prisoners. Behind them flies a flag that belonged to Gen. George Custer, killed months earlier in the battle of Little Bighorn.

The Archives is the principal center for such photographic research. The Allen Collection — which does not duplicate other photos in the Archives — will complement greatly the Archives’ photos from the same time period.

Allen, a charter member of the National Stereoscopic Association, a group of enthusiasts and collectors, purchased his first stereograph in a Kansas antique shop in 1955. As his interest in the cards grew, so did his collection — to nearly 25,000 stereographs. In addition to Indian subjects, he collects views of Western towns, mining camps, canal boats, railroads and a variety of other places and events.

"The 19th-century views of American life fascinate me," Allen says. "How the stereo cards could have been overlooked as a source of history up to the 1970s, I can’t imagine. With the stereoscope, one can be an armchair wanderer in the past."

Allen made a special effort to collect the Indian stereographs by Stanley Morrow, one of many frontier photographers represented in his collection. Morrow grew up in Wisconsin and, when the Civil War broke out, joined the Seventh Wisconsin Volunteer Infantry Regiment. After seeing action in a number of battles, he was transferred in 1864 to volunteer reserve duty at Far Lookout Prison in Maryland. There, he learned the photographic trade from the famed Civil War photographer Mathew B. Brady.

Morrow struck out on his own as a photographer after the war. In 1869, he moved West with his wife and young daughter and opened a photographic studio in Yankton, Dakota Territory (now South Dakota).

A man who liked the outdoors, Morrow was not content with formal, studio portrait work. Soon after his arrival in Yankton, he made a trip up the Missouri River. The photographs from this trip — converted to stereo cards — were so popular he took many more Missouri River trips.

During these travels, Morrow photographed military posts in the Territory as well as the villages where Cheyenne, Sioux, Mandan, Hidatsa and Arikara Indians lived. His portraits include those of such famous American Indians as Spotted Tail and Red Cloud.

"The many unique Indian portraits by Morrow and other early frontier photographers in the Allen Collection will be an abundant resource to Native Americans and professional researchers alike," says Dr. JoAllyn Archambault, director of Native American Indian Programs at the Museum of Natural History.

"Thousands of Indian people have visited the museum over the years to look for images of their ancestors," she says. "They have generously shared their knowledge of the people and places in the photos with the Archives' staff.

"The Archives has made these images available to native people, who have used them in tribally produced educational materials, cultural centers and their own homes."

Archambault knows the value of such collections firsthand. Among the newly acquired portraits was a... (Continued on next page)
The Netherlands in Stereo, 1857 - 1920
A Review by John Dennis

Nederland 1857/1920 gezien door de Stereoscoop is nothing less than a grand time-machine tour of The Netherlands through stereographs assembled by Leonard de Vries. From idyllic country lanes to the crowded streets and squares of Amsterdam, the book's 167 full views present a fascinating record of more aspects of Dutch life than generally thought to have been captured in stereo. Much of this is due to the many fine views by amateur and local stereographers mounted on plain stock with handwritten (if any) titles. Through these we are treated to images of street vendors, children, amusement piers, horse cars, trolleys, construction projects, people at work, parades and people in their homes. The fact that the text is entirely in Dutch matters less with every page turned.

Leonard de Vries made his selection of views with more than a traveologue or a "slice of life" approach in mind. Some of the views are of the unusual or even the inexplicable — much like the scenes a true time traveler would come upon, focusing in on random streets, canals and houses throughout that country from 1857 to 1920. There are two views of Nadar's photographic balloon being inflated — one indoors — in September 1865. A cobblestone street bridges a canal in a detailed hyperstereo of Middleburg. A woman and a child sit at one end of a large and gloomy kitchen, while another view titled only "Knikkeren" shows three men playing marbles in a courtyard while another stands watching on stilts and another watches from a window and a child stares at the camera from a doorway. A 1911 view shows Anthony Fokker with a monoplane being towed from a hangar.

There are of course the more expected views of busy streets and marketplaces and canals. Some are by major publishers, some by amateurs, but all provide images of a real and vibrant society. Interestingly, the only two views showing quaint children in wooden shoes are both by major publishers, one of them Keystone. To the extent a difference exists, this is more a book for avid viewers of stereographs than for collectors, and a good deal of time can be spent looking into these excellent reproductions. A very fine half-tone screen allows good detail to be seen even in the smaller images of some of the amateur views. The cards are reproduced at about 95% of actual size with enlargements of halves of some views appearing every three or four pages. The book opens with a 21-page history of stereo photography from Wheatstone to the latest spliced SLR cameras.

If a work of this quality and variety can be created from stereo of just The Netherlands, imagine the publications that could result from similar efforts with views from other countries around the world. Nederland could serve as a fine model for a whole series of country-by-country stereo books with only two changes needed. A spiral or plastic binding would allow pages to lay flat for easier viewing, but most important would be a better lorgnette viewer to be included with any such books. The one in Nederland distorts images worse than any dime-store toy or cereal box prize. Experienced stereo enthusiasts will have other equipment to use, but many who buy the book will be missing the real quality of the reproductions if they must depend on the viewer that comes with it.

(One of the views is headed "Looking through a hole in the wall of time" — which would make a fine title for some future book of similar intent, and is a phrase worth remembering in any case.) Nederland 1857/1920 gezien door de Stereoscoop, Leonard de Vries, Amsterdam, 1989, 144 pages, soft-cover, text in Dutch. International distribution by 3-D Book Productions, PO Box 19, 9530 AA Borger, The Netherlands. Price (including air mail postage) is $24.50 by international money order, personal check, bank check, or currency.

INDIAN VIEWS ENHANCE ARCHIVES
(Continued from page 26)

previously unknown stereograph of one of her ancestors, a Sioux chief named Two Bears. Despite the unhappy circumstances when the photos were made, she says, "the 1,500 Allen photos in the Smithsonian's archives will be of great service to all American Indians whose ancestors are pictured in them."

The Smithsonian's National Anthropological Archives is located in the National Museum of Natural History, 19th Street and Constitution Avenue N.W., Washington, D.C. 20560. The hours are Monday to Friday, 9 a.m. to 5 p.m. Researchers and others interested in examining the collections should call for an appointment, (202) 357-1976.
Those of us who enjoy our stereo views, whether we make them or collect them or both, are often puzzled when we don't get the proper response or appreciation when showing someone an impressive view. One can spot the situation immediately (deja vu all over again as Yogi Berra was known to say). First that hesitant looking in the viewer, then fussing a bit with the focus (running the slide all the length of the bar and back in the case of a standard print viewer) and finally some lame statement which suggests they haven't seen anything at all but are trying not to embarrass you by pretending they have. No point in pursuing it further. 

...it is hopeless. You are left holding a virtually perfectly mounted stereo view which has been received as if one of the halves had been put on upside down.

The answer to this puzzlement may be contained in an observation written in one of the Alpha circuits folio notebooks by veteran Society member Glen Peterson of Bronxville, NY. It is something which deserves wider circulation from time to time. It really affects how 3-D is received in general and may explain why it isn't as widely appreciated as we in the fraternity of stereo addicts believe it deserves.

"DO WE ALL SEE STEREO EQUALLY?"
by Glen Peterson.

"From the book: Principles of Stereoscopy, by Herbert McKay (1948), I was shocked to read that there are many people who lack stereo perception. [I've had this book since the publication date, but had previously only skipped about in it due to its textbook style]. McKay states that several ophthalmologists and optometrists were asked about average conditions and the consensus was that fully 1/3rd of all adults have practically no stereo perception! Furthermore, only some 15% of the other 2/3rds have fully developed depth perception (stereopsis). All agreed that training would considerably develop those who are deficient. Claims have been stated that use of stereograms in the home or office will produce such improvement.

The group that Society members fall into have such acute stereo perception that we probably assume all others are similar. Part of this ability is the eye exercise/training provided by the pursuit of stereo. By contrast, our current generation ... who spends much of their lives indoors (and watching television) are training themselves to a limited range.

I well remember my airplane pilot physical examination and the part involving stereopsis. Two upright posts the size of pencils mounted on sliding bases were connected to a loop of a string. The examinee was to adjust them until they were even, ... the same distance away. You could only see the posts through a small field of view into a larger box, so there were no shadows to guide you and you had to do it several times to eliminate luck. Stereopsis is of particular value in one's ability to land a plane!

I once made stereos of the infant son of a photographer I worked for when only 20 years old. I was hooked on stereo even then, but it hardly interested the child's father: he didn't want to be bothered to even look at the views of his son! Now I think I understand why he reacted this way. He probably did not have the visual capacity to appreciate stereo! This may very well account for the lack of public acceptance and interest to match our enthusiasm for stereo."

(Continued on page 36)

Society member Wes Kobylak shares with us this effort, which earned many positive comments in the print folio. Titled "Cube 2," the collage was inspired by an article in the July '86 PhotoGraphic. All three sides of the cube are within their own window, and "aligning them was a nightmare" according to Wes.
"Lustrous" Stereo and a Very Early Color Process

by Neal DuBrey

I have here in my hand a fat leather-bound volume published in 1903 — Discoveries and Inventions of the Nineteenth Century. In the chapter which deals with photography there are two items new to me, and which I feel sure will be of interest to other NSA members.

The section on Stereography is accurate, usual, and complete, although one fact given that is not in other references is the mention of projected anaglyphs "as contrived by Rollman" being used and exhibited by Duboscq. I was not aware of that.

What really fascinates me is the "Lustrous" stereo pair reproduced to illustrate an effect of "dark polished crystal." This does work, and the principle is explained. It is the well-known sparkle effect when light reaches one eye (or one lens) but not the other, as is often encountered with reflections.

This is the first time I have seen this annoying effect made some use of. It more usually gets in the way. Perhaps it might be possible to go further by drawing a many-faceted "diamond" with some facets showing light in the one half of the pair and dark in the other? Maybe one of our 3-D graphics experts would like to experiment?

The other mention here is of a color photography process dating from 1890. (The same year as I've's first patent for his Kromskop system with triple film and filters, as fully described by Paul Wing in the SW color issue of March/April 1988, and briefly mentioned in this book.)

This alternative process is quite a different approach and was invented by a physicist, Mons. Lippmann, of Paris. It is remarkably simple. A glass plate is coated to a greater depth than usual with a normal sensitive emulsion, and is then topped with a reflecting mirror surface (Mercury). Exposure is then made in a camera through the glass, the principle used being that of wave interference.

A ray of blue light, for example, will pass through the emulsion, to be reflected off the mirror surface to react with itself. The light waves will either reinforce, or cancel. This leads to the formation of extremely fine striations of silver in the processed emulsion, darkest where the rays have reinforced the most.

When the plate is viewed in white light our example ray, again blue, and its reflected ray, will pass more easily throughout the blue-formed striations than will rays of other colors. And so an image of the original subject emerges, in full color.

There are a number of points which bother me with this interesting process. I am wondering, as no doubt you are too, how the emulsion is developed, fixed, and washed, while sandwiched between glass plate and mirror. Perhaps the mercury surface was removed and then replaced? Not easy.

But it must have worked, and worked well. For at the Academy of Science in Paris in 1891, Mons. Lippmann is reported to have successfully exhibited to great acclaim, "Photographs of a stained glass window, of a dish of oranges and red flowers, and of a gorgeously hued parrot, all in their natural tints."

So why didn't the process catch on? I would say that the "one original only" limitation counted against it, as was the case with the daguerrotype. Also, it was probably tricky to view.

All the same, the simplicity of the idea intrigues me and I would like to try it. It would seem to be simpler to start off with a surface silvered mirror, coating the thick emulsion on to this, rather than the other way round. Just how does one go about making and coating an emulsion? Those early photographers, who could do all this as a matter of course, certainly had their special skills, now quite lost to us. ☐
The mystery of the Engle Clock, one of the "Unknown" views in the Sept./Oct. '88 issue of Stereo World, has finally been solved. The clock has recently been acquired, undergone thorough restoration, and put on permanent display at the Watch and Clock Museum of The National Assn. of Watch & Clock Collectors in Columbia, Pa.

For many years the clock was stored in barns in New England, and through the efforts of Dr. Engle's great granddaughter, was finally

(Continued on page 37)
3-D video programs have proliferated over the past few years. Articles in this journal and other publications have documented the many approaches to achieving stereoscopic television images, including anaglyph techniques, the Pulfrich effect, and stereo pairs, either side-by-side or over-and-under. Certainly the most successful method, however, is the alternate field or "eclipse" system.

Essentially, the system involves recording left and right eye images on the two alternate fields that together comprise one picture frame. Upon playback, the right and left views are shuttered in rapid succession through the use of liquid crystal viewers, so that the respective images are seen by the appropriate eyes. Properly done, the 3-D can be stunning.

This is the method used in the Toshiba SK-3D7 video camcorder currently being sold. It has been effectively utilized in Sega home video games, Amiga personal computer programs, as well as many industrial applications.

One might expect a logical extension of all this to be home video versions of classic 3-D motion pictures in the alternate field format. Actually, a few such movies have been available for four years in Japan in the VHD video disc format with its companion 3-D adapter. Unfortunately, that video format has not been exported to other countries, and is incompatible with the laser disc system.

Enter Michael Starks, of Advanced Images company, a 3-D enthusiast, researcher, and inventor. The NSA member from Ross, California, has studied motion 3-D systems around the world (see accompanying article), and has cultivated a special interest and expertise in the alternate field video technology.

Mike has designed and built a Stereo Glasses Driver that interfaces a video cassette recorder with liquid crystal viewers for watching alternate field encoded video tapes. The current model of the Driver includes a synchronization adjustment to help assure precise matching of the video output and the LCD shutter rate.

I've used the system with demonstration tapes supplied by Advanced Images, and am excited about the future of the medium. The 3-D is much superior to other video methods, presenting continuous depth and roundness of images, not just two or three flat planes. The system allows effective through-the-window stereo, with minimal ghosting. The Stereo Glasses Driver and LCD glasses work with all video systems (PAL, NTSC, SECAM), as well as with most computer systems, but the movies have not yet been converted to PAL and SECAM.

The Stereo Glasses Driver can now be purchased through Advanced Images, along with many 3-D movies on video tape. Purchasers can use any of the LCD 3-D viewing glasses commercially available, such as those sold by Sega or Amiga. Or, Advanced Images will sell you the viewers for $50.00 each. The Driver sells for $150.00, which includes an AC transformer cord.

Current available movies are Domo Arigoto, Fantastic Invasion of the Planet Earth, Hawaiian Fantasy, Sexcalibur, The Chambermaids, Hannah Lee, Japan in 3-D, 3-D Animation Festival, The World of 3-D, Criminals, The Stewardesses, Cat Women of the Moon, Hideous Mutants, The Starlets, Experiments in Love, First Kisses, and others, in VHS or Beta, at $50 each. 8mm, Hi-Band 8mm, or SVHS formats are $70 each. To order, or to obtain more information, write to Advanced Images, P.O. Box 1650, Ross, CA 94957, or call (415) 479-3516.

CORRECTION
3-D Movies: A History and Filmography of Stereoscopic Cinema by R.M. Hayes is not available from the author. The book's price is $45.00 from the publisher, McFarland & Company, Box 611, Jefferson, NC 28640. It is also available from Reel 3-D Enterprises (#1053) at the same price. (Add $3 shipping for either source.) See July/Aug '89 Stereo World, page 40.

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ARIZONA LANDMARKS:

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

by Bruce Hooper

Arizona Landmarks have always been popular subjects for local Arizona photographers and the major stereo publishers in the eastern United States. The most popular local subjects were Oak Creek Canyon's Red Rock Country, the Casa Grande ruins, Montezuma's Castle and Well, and Mission San Xavier del Bac. The most popular Arizona subjects that were published nationally by twentieth-century stereographers and by local eastern and major nineteenth-century stereographers were the Grand Canyon and the Hopi Mesas. A major factor in the local and national popularity was accessibility. Most of these areas became more accessible with the growth of settlements and the construction of the railroad. All of these areas functioned as tourist attractions to local residents and those travelling west to California. Stereographers helped to satisfy demand for views of these areas.

Views of these areas usually took up most of the local photographer's negative file because there was always a demand for them. Some areas such as Canyon de Chelley were less frequently stereographed due to its remoteness in the far northern part of the Territory. After O'Sullivan's stereographs during the Wheeler Survey about the only person who would have taken any stereographs of Canyon de Chelley was George Benjamin Wittick. The popularity of the previously mentioned subjects assured their publication as stereographs because they represent the West's natural wonders.

The Casa Grande Ruins are situated in the Gila Valley at an altitude of 1,422 feet. They are located nineteen miles northeast of the town of Casa Grande, forty miles south of Phoenix, two miles northwest of Coolidge, and twelve miles southwest of Florence. The Ruins also lie one and one-half miles south of the Gila River about fifty miles above where the Gila joins with the Salt River. The Casa Grande Ruins are in the Sonoran desert and are some of the best preserved southwestern Indian ruins.

The earliest inhabitants were the Hohokam, who settled in the Gila and Salt River Valleys around 700 A.D. These people irrigated the land and constructed one-room wood and dirt houses. There were hundreds of miles of canals in use by the tenth century used to grow corn, beans, squash, pumpkins, and cotton to support the population of over ten thousand. In the twelfth century, Pueblo Indians from central and northern Arizona migrated to the area to farm. They introduced a new architectural form of massive walls of solid caliche which would support multi-room, multi-story dwellings. Caliche is formed when calcium carbonate bearing ground waters lose moisture or carbon dioxide. It varies in hardness and density and may be impervious to water.

Casa Grande's Big House was constructed by these Indians during the fourteenth century. It towers above all the other structures at Casa Grande and was used to enable farmers to observe canal maintenance, water regulation needs, and as a lookout to marauding parties of Indians. By the end of the fifteenth century, this area was abandoned. The ruins of these walled villages were not seen by Europeans until the latter part of the seventeenth century.

In November 1694, Father Eusebio Francisco Kino, a Spanish Jesuit missionary, became the first European to document the existence of Casa Grande. During November 1697, Father Kino and a large party of soldiers and Indians visited the area. On October 30, 1775, a group of about 240 persons led by Lt. Col. Juan Bautista de Anza and the Franciscan Friars Pedro Font, Francisco Garces, and Tomas Eixarch reached the Gila River in the vicinity of Casa Grande. They were on an expedition to settle Monterey, California. On October 31, 1775, some members of the expedition examined the Casa Grande ruins.

Americans did not see the ruins until the 1830s when they were visited by frontiersmen who scratched their names onto the walls of the Big House. This practice was continued by later travellers until the appearance of the walls was destroyed. On November 10, 1846, General Kearny, commanding the Army of the West against Mexico, saw the Casa Grande ruins with a party of...
men that probably also included Kit Carson. Kearny was exploring military routes to California through the southwest at the time. In July 1852, members of the Mexican Boundary Survey that included John Russell Bartlett saw and sketched the ruins. The Casa Grande ruins were bought from Mexico as part of the Gadsen Purchase in 1854. Many explorers, archaeologists, and tourists visited the ruins throughout the nineteenth century. In 1880, the Southern Pacific Railroad built a terminal twenty miles away from the ruins. Legislation to protect and repair the Casa Grande ruins was passed on March 2, 1889 and was followed by further legislation during the early 1890s that eventually protected the site by law. The Casa Grande ruins became the first of Arizona's landmarks to be protected by law. By 1903, the first roof was constructed over the Big House ruin. The roof was a corrugated iron structure supported by redwood beams. Other roof and
canopy structures followed. Casa Grande became a National Monument by Presidential Proclamation on August 3, 1918.

Photographic documentation of the Casa Grande ruins did not begin until the 1870s. The center of attraction of these early photographers and those afterward was the large squarish structure described earlier in this article as the Big House. Charles Gentile of San Francisco, California probably was the first to photograph the ruins on his tour of Arizona Territory from 1871 to 1872. This is speculation on my part, because I have not seen any images before 1877. Henry H. Buehman of Tucson might also have photographed Casa Grande before 1877. Early in 1877 George H. Rothrock became the earliest to stereograph the Casa Grande ruins. He was followed in December 1877 by Enoch Conklin, a journalist from New York City who stereographed the Casa Grande ruins published by the Continent Stereoscopic Company and the negatives were no doubt taken by Conklin.

The party consisted of Dr. H.R. Allen, of Indianapolis, F. H. Steel, of Oil City, Alexander Whilden and J. K. Wallace of Philadelphia, Cols. C. W. Tozier and J. D. Graham of San Francisco, J. E. Conklin of New York, Col. William G. Boyle, a well-known mining engineer, and the present writer. Mr. Conklin, who is an artist and journalist, having with him a field apparatus, took some excellent stereoscopic views of the ruins. The visit was made December 13th, 1877, and several hours were devoted to the examination.

There are views of the Casa Grande ruins published by the Continent Stereoscopic Company and the negatives were no doubt taken by Conklin.

The most famous photographer to stereograph these ruins was Carleton Emmons Watkins of San Francisco. Watkins stereographed Casa Grande some time between April 30th and May 2nd, 1880. These are the finest views ever taken of the Big House and nearby ruins. He also took a number of non-stereoscopic views of these ruins. Views of Casa Grande in Watkins New Series are numbered consecutively from 4837 to 4841.

Buehman continued to take stereoscopic and non-stereoscopic views of the Big House after 1880. Other photographers from Tucson, Phoenix, Globe and Tombstone probably also took photographs of the Casa Grande ruins from the 1880s onward. Many photographs and stereographs show people standing among the walls of the Big House.

The Casa Grande ruins were frequently photographed during the nineteenth century because they were easily accessible due to their closeness to the Railroad and to neighboring towns. A photographer would not have to travel very far by stage or by rail in order to visit these ruins. Before legislation was passed to protect these ruins there was frequent vandalism of the Big House and the surrounding ruins. The results of the destruction of these ancient monuments appear on some of the earliest photographs and stereographs of the area. In 1891 Cosmos Mindeleff photographed Casa Grande for the Bureau of Ethnology in Washington in order to show how badly the ruins had been vandalized so that more legislation could be passed to protect them. The famed Los Angeles book collector Joseph Amasa Munk photographed the ruins using a Kodak camera during the 1890s. These prints were used as illustrations in his books Arizona Sketches and Southwest Sketches, both published during the early 1900s. I do not know if
Underwood or Keystone ever sent
any staff photographers to Arizona
to stereograph the Casa Grande
ruins. The only staff photographer
whom I have been able to identify as
being in Arizona was Keystone's
Phil Brigandi, who was in the state
in 1925. I do not know if he
stereographed the Casa Grande
ruins. Any stereographs of Casa
Grande after 1900 would show the
canopy over the Big House.

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of Van Valkenburgh's "The Casa Grande
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government reservation and a National
Monument," Kfoa. 27 (3) (February
1962)].

The Big House, Casa Grande by Watkins, 1880. (Courtesy of Arizona Historical
Society Library, Tucson.)
Another title can be added to the growing list of books illustrated, like *Stereo World*, with side-by-side stereo pairs. This 28 page stereo-essay by NSA member Don Rittner bears the lengthy title, *HELLO, GOODBYE — Disappearing Artifacts and Landscapes of the Hudson-Mohawk Valley.* Like other recent publications of its type, *Hello, Goodbye* presents one view per page using images from 2½" to 2½" wide for free viewing or viewing with the included Taylor-Merchant folding viewer.

The work is a 3-D look at artifacts and landscapes representing three hundred years of European history in New York’s Capital District region. Subjects range from boot scrapers to old post road markers, industrial works, unique landscapes, hitching posts, canals, covered bridges, etc. As well as representing stereography in its documentary mode, the bleak winter settings of the views add a somber element which reinforces the intended message that many of the scenes presented could be changed beyond recognition by the time you could manage to visit this area of New York state. A couple, in fact, are dark enough to nearly obscure the artifact itself but are saved when fused into stereo.

*Hello, Goodbye* does the three most important things that a book of its type needs to accomplish. First, it makes you want to see more of the threatened treasures of the area, and in some cases more views of a particular scene. Second, it makes you want to learn more of the details behind several of the subjects, or to hear the stories that must exist about them. Third, it makes you realize how many things and places in your own area could vanish at any time — and that many deserve good stereo documentation worthy of possible publication or exhibition. Archeologist, environmentalist, historian and stereographer Rittner has shown what can be done when these interests are combined. If his book helps preserve even a few of its subjects, it will be more than worth the effort. But its greatest influence could be the inspiration of similar publications in dozens of other areas of the country.

*Hello, Goodbye* is available for $21 from Hardcopy News Service, P.O. Box 1562, Troy, NY 12181.

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**SOCIETY**

(Continued from page 28)

More Recent Studies?

I, for one, would like to see an up-to-date study of this aspect of stereo perception and a much more thorough one than anything I have seen in the past. Perhaps it’s out there, I haven’t made a library search. How many people don’t see stereo at all? Are the numbers as pessimistic as Glen Peterson suggests? I recall an engineering Ph.D. who held an academic administrative position and who never seemed to appreciate the difference between cross-eye viewing and normal viewing on the same view ... if he saw anything at all it was pseudo and he never seemed to enjoy what he was seeing. An equal lack of depth perception in dealing with people led to his demise, though I can’t say that one was related to the other. I don’t believe I ever made any progress with him in stereo, but since he seemed to be aware that he should see something, he never really said he didn’t.

_Society Membership_

Those interested in joining the Stereoscopic Society should write to the Corresponding Secretary, Jack E. Cavender, 1677 Dorsey Avenue, Suite C, East Point, GA 30344.
ENGLE CLOCK LIVES!
(Continued from page 30)

located.

We visited the museum in October, and had the pleasure at that time of meeting Dr. Engle's grandson, Dr. John D. Engle and his wife, of Hazleton, Pa.

The clock is a marvel of moving parts, having 48 moving figures — among them the twelve apostles, three biblical Marys, as well as Molly Pitcher with Continental soldiers. There are also two separate organ selections.

Dr. John D. Engle, grandson of Dr. Stephen Engle with displayed clock. (Photo by R.F. Holstein).

The Museum is located at 514 Poplar St., Columbia, PA 17512. Columbia is on the Susquehanna River, approx. 10 miles west of Lancaster on Route 30. The Museum is open 9-4 Tues. thru Sat. Closed holidays. An admission fee is charged. (See also Stereo World, Jan./Feb. '89, page 29.)


cell

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AUCTION: Stereo views, viewers, tru-vue, View-Master, etc. Disasters, sports, cartoon, comic, Disney, states, foreign, scenic, children, instructional, etc. LSASE Schneider, 7245 W. Palo Verde, Peoria, AZ 85345.

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3-D COMICS for View-Master reels, etc. Send for list. David Vopicka, 2905 Espanola NE, Albuquerque, NM 87110.

SHAKER VIEWS, and 1500 other selected stereo views in stock. Will trade only for stereo views or literature. Greg Taylor, 1005 Lincoln, NE 68502.

GOLF VIEWS for trade. I have 46 stereo views of Keystone 50 card set in original box. All cards are in Excellent condition and include shots of Bobby Jones. I would like to trade for Zeppelin and Balloon stereo views. Please contact Wendell K. Foster, 522 E. Southern Avenue, Springfield, OH 45505 or call (513) 323-0679.

Wanted

I BUY ARIZONA PHOTOGRAPHS! Stereo views, cabinet cards, mounted photographs, RP postcards, albums and photographs taken before 1920. Also interested in xerographs of Arizona stereographs and photos for research, will pay postage and copy costs. Jeremy Rowe, 2331 E. Del Rio Dr, Tempe, AZ 85282.

PUERTO RICO stereo views or other types of visuals. Jose Olmo, 65 West 106 St., 3-C New York, NY 10025.

FLORIDA, GEORGIA, ALABAMA; stereo views, or other format, any subject. Buy or trade. Best prices for unusual subjects. R. Cauthen, PO. Box 490342, Leesburg, FL 34749.


STEREO CLUB FORMING in New York City area. Call Barbara Taff (212) 567-5291 for further information.

MARBLES. Children playing with marbles. Hard to tell sometimes, so look closely at your cards. Thanks. Larry Svakina, 2822 Ten-nyson St., Denver, CO 80212.


MUYBRIDGE VIEWS. Top prices paid. Also Michigan and mining - the 3 Ms. Many views available for trade. Leonard Walle, 49525 W. Seven Mile, Northville, MI 48187. (313) 348-9145.

LANSING, MI. memorabilia of all types including stereo views, photos, postcards, advertising, catalogs, etc. Permanent want by collector. David R. Ceterino, 9879 Bismark Hwy. Vermillion, MI 49096.

BRITT AND HELLER. Anything by Peter Britt of Jacksonvile, Oregon, and Louis Heller of Yekka or Fort Jones, California. Mauzy, Box 9, Brownsville, CA 95919.

STEREO REALIST slide storage cases, chests, and files in Exc or better condition. (Must contain Realist logo) Mark Willka, 200 SW 85th Ave., Portland, OR 97225. (503) 297-7653.

As part of their membership, NSA members are offered free use of classified advertising. Members may use 100 words per year, divided into three ads with a maximum of 35 words per ad. Additional words and additional ads may be inserted at the rate of 20c per word. Please include payments with ads. We can not provide billings. Deadline is the first day of the month preceding publication date. Send ads to the National Stereoscopic Association. P.O. Box 14801, Columbus, OH. 43214, or call (614) 927-2830. A rate sheet for display ads is available upon request. Please send a SASE.
WANTED

NEBRASKA AND KANSAS stereo views. Also, other photographic formats of significant interest. Don Ulrich, 1825 South 23rd, Lincoln, NE 68502.

WHITMAN. Any photograph wanted of Walt Whitman or his circle, Hans Christian Anderson or Lewis Carroll. Moutz, Box 9, Brownsville, CA 95919.

A REVERE or TDC Stereo Colorist camera in good working order. Contact: Steven Cook, 4807 Bedford Blvd., Wilmington, DE 19803.

MR. ICE CREAM desires stereo views where ice cream or soda fountains are the primary image. Especially desired are Auntie's Centennial stereo views and old soda fountains. Allan Mills, 1115 West Montana, Chicago, IL 60614.

VIEW-MASTER "Chinese Art" Books & Model D Focusing Viewer System. Must be 100% orig. and complete, with (slip cases & storage chest). Also, all GAF, Sawyers & VMI (Old-New/Mint/Still Sealed) 3-reel packets in cellophane. Daniel Skop, 128 Margaret Ave., Winnipeg, Manitoba, R2M OW4.


NEW YORK CITY stereo views, 1860-1940; street scenes, buildings, Brooklyn Bridge, Central Park, etc. Also Brooklyn and Greenwood Cemetery stereo views, all sizes need. Also looking for: Department of Parks, Allis Chalmers; Richard A. Haines, 611 Park Ave., New York, NY 10021.

STEREO AUTO GRAFLEX 5 x 7, Mentor Stereo Reflex 6 x 13, Stereulux folding stereo camera 6 x 13 cm, Richard Taxiphot 8 1/2 x 11 cm, Gaumont handheld for glass plates Mark II, Mark III, Mark IV, Dallmeyer 300 Palm Avenue, Carpentaria, CA 90310, (805) 684-4487.

BOOKS (used/cheap): Verferda, World of 3-D; Darrah, World of Stereographs; Schwartzman, Bodies of Light, Landscapes; Waak, Stereo Photography; Earthling Corp, Stereographics; Hlymsky, Image Nation 3-D Issue #22; Burder, Photographing in 3-D; Reis Ins Land 3-D Dimension; Professor Jastrow's 3-D Illusions; Brewster's old book; other technically good or very creative stereo books. Nancy Castro, Rt. 6, Box 66F, Fairmont, WV 26554, (304) 366-5926.

CHICAGO WORLD'S FAIR, 1933-1934 stereoviews, photos, and all items wanted. Daniel Saks, 365 Hill St., San Francisco, CA 94114.

INFORMATION by anyone currently making tissues, vectorograph prints, hand-drawn stereo images, or Wheatstone-style views. I am an artist doing experiments and college research. Nancy Castro, Rt. 6, Box 66F, Fairmont, WV 26554, (304) 366-5926.

NORTHWEST OHIO stereo views, real photo post cards, all size pre-1910 photos, esp. small towns such as Sycamore, Tiffin, Green Springs, Clyde, Bascorn, Bloomville, Attica, Fremont. Also Grosse Isle Island, Mich. John Waldsmith, P.O. Box 191, Sycamore, OH 44488.
May 6 (CA)
Pasadena Antique & Collectible Camera Show & Sale, Pasadena Convention Center. Contact Bargain Camera Trade Shows, Box 5352, Santa Monica, CA 90405. Call 213-396-9463 or 578-7446.

May 13 (CA)
Second Sunday Camera Show, Pasadena Antique & Collectible Camera Show & Sale, Pasadena Convention Center. Contact Bargain Camera Trade Shows, Box 5352, Santa Monica, CA 90405. Call 213-396-9463 or 578-7446.

May 13 (NJ)

May 13 (CA)
Santa Monica Camera Show & Sale, Santa Monica Civic Auditorium. Contact Bargain Camera Trade Shows, Box 5352, Santa Monica, CA 90405. Call 213-396-9483 or 578-7446.

May 20 (NJ)
2nd Annual Tri-County CC Photo Fair, Bloomfield High School, 160 Broad St., Bloomfield, NJ. Contact, TCCC, Box 108, Glen Ridge, NJ 07028. Call 201-667-8867.

June 10 (GA)
Atlanta Camera Show & Sale, Peachtree Corners Hilton, Norcross, GA. Contact Photorama USA, 20219 Mack Ave., Grosse Pointe Woods, MI 48236. Call 313-884-2243.

June 10 (NJ)
Second Sunday Camera Show (see May 13)

June 10 (CA)
Culver City Camera Show & Sale, Veterans Memorial Auditorium, Culver City, CA. Contact Bargain Camera Trade Shows, Box 5352, Santa Monica, CA 90405. Call 213-396-9463 or 578-7446.

June 17 (IL)
Chicagoland's Camera & Photo Show, Holiday Inn, Rolling Meadows, IL. Write to Box 72695, Roselle, IL 60172. Call 708-894-2406.

June 23, 24 (OH)
Ohio Camera Swap, 68 Shadybrook Armory, Cincinnati, OH. Contact Bill Bond, 8910 Cherry, Blue Ash, OH 45242. Call 513-891-5266.

June 29-July 2 (NH)
NSA 1990 - The national convention returns to Manchester, NH this year with a unique theme and an experienced team. Holiday Inn at the Center of New Hampshire convention facility, Manchester. (See article by Larry Wolfe in this issue.)

NOTICE!
COLLECTORS AND DEALERS

Now you can attract hundreds of new buying and selling prospects. List your name, address and interested buying (or selling) categories in the 1990 Who's Who in Collectibles and Antiques Directory. This prestigious guide is sold nationwide by mail to over 5,000 qualified people every month! For your annual listing, by category, simply send a one time fee of only $25.00 (up to five different categories) to: Collectors Network, Pub. Dept., 516 Fifth Ave., Suite 507, NY, NY 10036. (Receive two free copies per listing. Order add’l copies at $12.95 each.)
NEWVIEWS
(Continued from page 25)

at someone who knows. This is as true for stereo as for other aspects of photography.

A brief history and explanation of stereography is given, illustrated by two stereo pairs. Reel 3-D Enterprises is the only supplier mentioned, and there is no listing of labs doing stereo slide or print work. A Nimslo is shown, but no mention is made of the Nishika or of the fact that processing is still available. These shortcomings are balanced by the paragraph describing the NSA and Stereo World, complete with addresses for each and for the Holmes Library and the Stereoscopic Society. If the book becomes as well used a reference work as reviewers like those in the Boston Globe and the New York Times anticipate, the NSA may need to get a larger PO Box.


The Muppets
in 70mm 3-D

One of the items to be found in the new 3D International Newsletter is the news that Muppeteer Jim Henson will produce a 3-D Muppet movie for the Disney-MGM theme park in Florida around May of 1990. Format and technology will be the same as Captain EO.

THE BRACKETT DISSOLVER
CUSTOM MADE 3-D PROJECTOR WITH SLIDE DISSOLVE

The Brackett Dissolver features the most desired and professional projection technique...

Dissolve Slide Transitions
The Brackett Dissolver is like two stereo projectors in one compact unit. This unique design provides features not found in any other stereo projector.

STANDARD STEREO FORMAT
- Accepts Realist format slides in glass and cardboard mounts up to seven sprocket size (24 x 28MM).

DEPENDABLE/SIMPLE OPERATION
- Manual operation gives the operator complete control of dissolve rates.

NEW CONCEPT CARRIER
- A totally new concept in slide carrier design eliminates slide jams. Four precision stainless steel guide brackets position slides of any thickness in accurate focus and registration.

BRIGHT ILLUMINATION
- Four efficient halogen lamps provide high light output at low wattage.

USES INTERCHANGEABLE KODAK PROJECTION LENSES
- Four Kodak flat field projection lenses — the standard of the audio-visual industry.

EFFICIENT COOLING
- Two quiet fans operate continuously to cool both sides of the slides and the optics.

CONVENIENT LENS CONTROLS
- Dual and single focus controls. Closely grouped vertical and horizontal lens controls.

TOP OF PROJECTOR SLIDE STORAGE
- Built-in shelves store slide trays on top of projector for easy insertion and removal. Projector uses economical memo pad trays.

SOUND SYNC. LIGHT
- A cue light on the projector, operated from one track of any two track tape recorder, signals the operator to change slides.

EASY LAMP REPLACEMENT
- Hinged cover provides easy access to projection lamps.

COMPACT AND LIGHTWEIGHT
- L13" x W17" x H7". WI. 24 lbs.

This projector is custom made in limited quantities. The current price is... $1655. For ordering information or additional details write:

Brackett Engineering
P.O. BOX 493 E. Sandwich, MA 02537
Tel. (508) 888-2180

ARCHIVAL SLEEVES: clear 2.5 mil Polypropylene

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Russell Norton, P.O. Box 1070, New Haven, CT 06504-1070
SHIPPING: $4 per order. Institutional billing.
The Arizona Landmark Walpi, about 1890. From a stereo negative by George Benjamin Wittick. See the "Hopi Mesas" installment of the series on Arizona Landmarks by Bruce Hooper on page 14.