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COVER: No. 483. Interior of City Hall.
3-V! — THE FUTURE HITS HOME

Combining the new technology of video image control with the old concept of the anaglyph, 3-D television has finally arrived as the latest element in today's "video revolution." It brings with it the initial advantage of being one of the most widely anticipated developments in the history of mass communications.

Ever since the 1930's, science fiction writers and the press in general had often included references to 3-D TV in their stories and predictions concerning the future. The "Tri-Dee," "3-V," "Deepies," or similar cute names for stereoscopic image transmission became, for many, not just a vague promise of an eventual improvement like color TV, but almost an obligation for the future—and one of its tangible harbingers. Unlike the advent of space travel, the presence of 3-D TV would be hard evidence, right there in the living room, that "the future" had indeed arrived!

Cable systems and video recorders might have a wider social and technical impact, but their introductions were missing the drama and mystique supplied by 3-D TV's 40 year head start in popular fiction and the public imagination.

For several years, of course, various closed-circuit stereo television systems have been developed and used with special monitors and viewing devices. (See STEREO WORLD, May, 77 page 25, and May, 79 page 18.) What brought this bit of "the future" into 1982 living rooms was the FCC's recent determination that the 3-D Video (TM) process was "compatible" enough with non-stereo viewing to be licensed for broadcast. The following months have seen a snowballing effect of successful promotions, large audiences, and more stations scheduling the 3-D movies distributed by the company on videotape. (See NEWVIEWS, in this issue.)

Just how close the process comes to the expectations built up over the years will only be learned after the novelty value of the first broadcasts wears off and 3-D movies, original tapes, and live shows are placed in competition with similar, flat programming. When the Portland CBS affiliate scheduled a 3-D film for mid June, a local independent station quickly scheduled "Revenge of the Creature" in 3-D for a week earlier! (Perhaps assuming that audiences would fall off sharply for any subsequent 3-D broadcasts.)

Reports from NSA members and others around the country all mention viewing problems with 3-D broadcasts such as moment-to-moment variability of the depth effect and ghosting in the anaglyphic colors that seems worse in some scenes than in any projected anaglyphic film. The lower contrast of the underwater scenes in "Revenge of the Creature," however, seemed to help the process—at times it was about as good as any anaglyphic image can get. This of course just made the less effective sequences all the more frustrating and no doubt led many people to a more intimate relationship with their color, hue, and contrast controls than they had ever thought possible.

The video translations of some films are apparently better than others and it would be shortsighted (especially for stereo enthusiasts) to dismiss the process as a failure after seeing only one or two examples.—Remember the early color broadcasts!? The application of computer/video technology to anaglyphic stereo has just started, and its initial commercial success could facilitate continued research and refinements. Image masking techniques might be possible that would selectively tone backgrounds and/or limit contrast in areas most subject to ghosting. Virtual pixel-by-pixel control of color, contrast, and register for every point in an image might make

Out of the past and into the future? The Creature seeks his revenge from the depths of a cathode ray tube.
3-D videotapes superior to anaglyphically projected films and, in some cases, even to polarized projection.

In the ultimate quest for the way to bring the best 3-D images to the most people, 3-D TV will have to wait for the eventual switch to high-resolution cable and broadcast systems that can provide images of at least over 1000 lines per inch on the screen. But that gets us back into the business of predicting the far-flung future.

For the present, 3-D TV is something not to be missed. If development continues and the process evolves to become an integral part of video programming, you can say you saw it from the first broadcast. Or, if it vanishes from the scene in a few months, you can later tell of having experienced a rare moment in the history of electronic communications.

John Dennis

DEADLINE FOR NEXT ISSUE IS AUGUST 10th. (FOR ARTICLES AND ADS)

Comment

STEREOSCOPIC LICENSE

My interest in stereo photography began in 1949 as a hobby. I was a charter member of the Chicago Stereo Club and was its 2nd president in 1953. I have been active in the Stereo Division of PSA since 1952. After my retirement and move to Sun City, I have been doing some stereo commercially in Phoenix. If one "rings enough door bells" a person can meet a lot of people who would be interested in using stereo as a selling tool for their products. As you can see from the enclosed photo, it pays sometimes to advertise. Looking forward to receiving your publication.

Fred T Wiggins, Jr.
Sun City, Arizona

HELP WANTED

For some time it has occurred to me that some form of album system would be the best way of storing and displaying my favorite views. I have in mind some kind of clip folder of about the same format as Stereo World with transparent Mylar or other archival quality (insert) pages with pockets to take three views per page. I have written to manufacturers (e.g. Photofile) with no luck—and obviously the production run necessary to produce such a system would be beyond the resources of any individual collector.

So it occurred to me that if a sufficient number of members were also interested in such a system that the N.S.A. could take it on as a potential source of revenue—and the folders could also prove to be a handy storage system for Stereo World itself!

Of course such a system may already exist—if anyone knows of one I’d be pleased to hear from them.

Nigel Lendon
Balmain, Australia

A smaller album is discussed in this issue’s Holmes Library Report.
—Ed.

TWO SIDES OF THE 3-D COVER QUESTION

I just received my May/June issue of STEREO WORLD and am delighted! I love the wrap-around cover. I had to get the magazine about eight feet away before I could fuse the images but a little practice should improve that. Please continue this style cover. I find convergence somehow unnatural and unpleasant and strongly vote against that option.

The new layout, typestyle, variety of stereos, and especially high quality printing are most welcome. I would gladly pay more to keep the quality high and sincerely appreciate the efforts of all those who give of their time to produce this superb publication.

Robert J. Pelc
Lewisville, NC

I have received the May/June issue of STEREO WORLD and your invitation for comments on the cover stereogram idea. Sadly, the pictures are pseudo for cross viewing. Viewed in a large reflex camera parallel viewing they are in good stereo. I can make the following suggestions.

The quickest way to view them is to put the magazine flat on the carpet and cross view from the comfort of your chair. I would also suggest that the card chosen for illustration have a very high depth quality—almost hyper. Many old cards were made this way. The reason is that enlarging a stereogram decreases its depth and vice versa. Glad to see that the standard of the magazine is maintained. The Queen Victoria article was well done.

Arthur Girling
London, England

These are fairly representative of the few responses that have come in so far. We need to hear from more people in order to make any final decision about how and if the stereo cover idea will be implemented. Besides, I just love to get post cards.
—Ed
On the morning of July 5th, 1866, a large portion of the city of Portland, Maine, lay in smoking ruins. Here and there flames still licked fitfully at charred beams and silhouetted the fragile shells of the more substantial buildings of brick and stone, some of which appeared intact in form although the substance was gone. In all, the fire had destroyed some 320 acres—1500 buildings, including the Customs House, the newly completed City Hall, the Natural History Museum (for the second time), the city's largest industrial facility, nine hotels, eight churches, three libraries, and every bank, newspaper, and law office that Portland could boast. The homeless numbered perhaps 13,000. Among the smaller establishments burnt out were the photographic firms of J. P. Burnham, C. G. Carleton, A. S. Davis, J. H. Dupee, J. P. Hazeltine, G. M. Howe, M. F. King, and B. F. Smith & Son. The latter at least evidently saved much of their equipment for, within a few days, B. F. Smith & Son had reopened for business at 16 Market Square.

It is hard for us today—familiar as we are with the Chicago Fire, Johnstown Flood, San Francisco Earthquake, and other more notorious disasters—to gauge the impact of the Portland Fire on American history. For Portland in 1866 was one of the leading commercial centers of the United States, fourth in imports and fifth in exports of all American cities and, since the completion of the rail link with eastern Canada, threatening to replace Boston as New England's premier metropolis. The Prince of Wales had visited the city during his American tour in 1860 and Portland had even built the $125,000 Victoria Pier in an unsuccessful effort to pry the mammoth transatlantic steamship Great Eastern away from New York City. Portland, in short, was a city on the make.

John Soule’s Catalog Listing of Portland Fire Stereographs

For the Stereoscope.

Ruins of the GREAT FIRE IN PORTLAND, Me.
JULY 5th, 1866.
Photographed July 12th, 13th and 14th.
By J. F. SOULE.

667 Brown's Sugar Refinery.
664 Looking Down Main Street.
666 Looking down Middle St., from Free St., U. S. Custom House.
670 Looking down Middle St., from North Printing Office, foot Free St., showing portion of Union Street.
671 Looking down Middle Street, from Rich's Printing Office, showing portion of Temple and Exchange Sts. and U. S. Custom House.
673 Ruins of U. S. Custom House.
674 Casual Railway Building and portion of Middle St., from U. S. Custom House.
675 Looking Up Market and Free Streets, from U. S. Custom House.
676 Ruins of Federal and Congress Building, from U. S. Custom House.
677 Looking Down Exchange Street, from U. S. Custom House.
678 City Hall, from U. S. Custom House.
679 & 80 Looking up Exchange from Fore Street, Custom House and City Hall in distance.
801 Looking Northward from Fore Street, at foot of Exchange.
802 City Hall.
803 Interior of City Hall.
804 Congress, from Pearl Street, looking north east.
805 Federal, from Pearl Street, looking north east.
806 Pearl Street, from Federal, looking down.
807 St. Stephen's Church.
808 Tenia on Mansion's Hill, from the Observatory.
809 Panoramic View of Burnt district from the Observatory, looking north west.
810 Panoramic View of Burnt district, looking down Congress Street, from Observatory.
811 Panoramic View from Observatory, looking westward, showing Burnt district on Mansion's Hill.

AMERICAN VIEWS

Ruins of the GREAT FIRE IN PORTLAND, Me.
JULY 5th, 1866.
Photographed in September.

821 Natural History Building, Congress Street.
822 Middle, from Union Street, looking north east.
824 North, from Market Street, looking west.
825 India, from Congress Street, looking east.
826 Pearl, from Congress Street, looking west.
827 Cumberland, from Pearl St., looking north east.
828 E. E. Irish's on Locust Street, Catholic Church in distance.
With the close of the Civil War and the return of her soldiers to civilian pursuits, Portland’s prospects had never looked brighter than on July 4th, 1866, and city officials had promised a fireworks display that would be “the most brilliant ever exhibited in this state”—a pronouncement that would prove bitterly ironic. The fireworks were just the frosting to top off the day’s program, which included a horse race, rowing regatta, balloon ascension, parade, and baseball game with rival Boston. And beyond this, the circus had come to town. Although the aeronauts never got off the ground and the baseball team lost, by late afternoon most folks were quite pleased with themselves and looking forward to the evening’s entertainments.

About this time, a fire broke out in a pile of wood shavings in the boatyard of Deguio & Dyers on the Commercial Street waterfront. What actually triggered the blaze is uncertain—a child’s firecrackers, a carelessly thrown cigar, sparks from a passing locomotive, the theories are conflicting. All this quickly became academic. With much of the city’s fire equipment involved in the Independence Day festivities, the flames soon spread to the eight-story Brown Sugar House. Once firmly established there, the conflagration fanned out through the city’s business and residential districts, impelled by a strong southwest wind. Despite the heroic efforts of the local firefighters and the arrival of additional equipment overland from as far away as Bath and by boat from Boston, the fire raged for fifteen hours before burning itself out on the sandy slopes of Munjoy Hill. Miraculously, in its wake the fire left only two confirmed deaths.

Even while Henry Wadsworth Longfellow, Portland’s native poet, was lamenting that his birthplace resembled the ruins of Pompeii, photographers began to explore the

No. 467. Brown’s Sugar Refinery.

No. 469. Looking down Middle St., from Free St., U.S. Custom House in distance.
CENTRAL PORTLAND IN 1866

Showing Extent of Fire and Photographic Locations
Employed by John P. Soule, July 12-14, 1866

1. Commercial Street—Brown Sugar House
2. Rich's Printing Office—Middle & Free Streets
3. U.S. Customs House
4. Fore & Exchange Streets
5. City Hall
6. Congress & Pearl Streets
7. Federal & Pearl Streets St. Stephens Church
8. Munjoy Hill Observatory
wreckage. The Portland Fire of 1866 was the first major urban disaster of non-military origin to be extensively documented in photographs. This was largely due to the efforts of Boston photographer John P. Soule, who issued the most commonly encountered (though by no means the only) group of stereographs of the ruins.

Soule actually took two separate groups of stereographs of the disaster, an initial series of twenty-five views photographed on July 12th, 13th, and 14th, and a later supplemental group of seven additional views taken in September. It is with the first group that we are primarily concerned here, since they provide a comprehensive and largely interlocking panorama of the fire’s aftermath and also allow us to make some conclusions as to the activities of the photographer himself.

Using some of the procedures developed by Bill Frassanito in his book on the Gettysburg photographers, it is possible to reconstruct at least tentatively the movements of Soule during the three days he spent photographing the Portland ruins. The wide dispersion in the location of Soule’s stereographs plus the severe dislocation of the local photographic establishments argue strongly that Soule operated from a photographic wagon and furthermore that he brought his own vehicle up from Boston rather than making other arrangements locally. It is also entirely consistent with the internal evidence of the stereographs to assume that Soule’s first series was issued in the same sequence in which the group was originally taken and the following discussion is based on that premise.

One of the first things that Soule would have wanted to see upon his arrival was the location where the fire started. So on the morning of Thursday, July 12th, he would have guided his wagon to the boatyard on Com-mercial Street. Perhaps there were no notable ruins here. At any event Soule took no views of the boatyard itself but exposed his first view (#467) from approximately this location, looking across Commercial to the ruins of the Brown Sugar House that had exercised such a devastating influence on events.

He then drove his wagon up one of several northward leading streets to Free Street, turning east on Free and stopping to take four views (#468-471) at the corner of Free and Middle Streets, the last two from the roof or upper stories of Rich’s Printing Office, a three-story triangular building on the corner. This had barely survived the blaze as the fire swept up the far side of Free Street devouring everything in its path and then doubled back a short distance on the far side of Middle Street. For a time, the print shop was in fact a wedge thrust into a sea of flame, protected only by the southwest wind that elsewhere was giving the firefighters such fits.

From here, the most prominent ruin visible was that of the U.S. Customs House several blocks to the east

No. 470. Looking down Middle St., from Rich’s Printing Office cor. Free St., showing portion of Union Street.
after Middle Street, and Soule headed his photographic van in that direction. Climbing to the roof of the Customs House (so thoroughly damaged that it later had to be torn down), Soule found an unparalleled panorama of the disaster and took his next seven exposures (472-478) here. Among these are views which show his previous location at Middle and Free Streets and his next stop at the foot of Exchange Street. They also include views of the Canal Bank Building (which ironically had chosen the phoenix as its symbol—having been burnt out once before), St. Stephen's Church, and the new City Hall, the walls of all three buildings still standing despite gutted interiors.

No. 472. Burnt district, looking Southwest from U.S. Custom House. (Rich's Printing Office is clearly visible at rear center.)

This probably ended Soule's efforts on July 12th (the next views are taken in bright sunshine with long shadows from the southeast, indicating an early or mid-morning exposure). Before leaving the top of the Customs House, Soule did however plan several promising locations for the morrow.

By about 9:00 or 10:00 on Friday morning, Soule had arrived at his next destination, a four-story building just outside the fire zone opposite the foot of Exchange Street. It was clear that the most impressive views of the Customs House with its rounded southern face could be obtained from here and Soule had probably noted this fact the previous afternoon while at the Customs House. He made three exposures here (479-481) and then proceeded up Exchange Street, around the Customs House, and down the two additional blocks to the remains of the new City Hall, taking one view of the southeast corner of the building (482) and another of the gutted interior (483).

No. 473. Canal Bank Building and portion of Middle St., from U.S. Custom House. (E. Berkowitz collection).
No. 475. Burnt district, looking Northeast from U.S. Custom House, showing St. Stephens Church.

Despite the massive destruction evident in this view, City Hall eventually recovered from its wounds. The interior debris was removed, the exterior walls strengthened, and the building rebuilt from within. Unfortunately this historic building was torn down early in the twentieth century to make way for the present structure.

From City Hall, Soule then drove east on Congress Street one block to Pearl, turned right, and stopped to take one exposure (#484) before continuing south one block to the corner of Pearl and Federal. Here Soule took three views (#485-487), the first one being a carbon copy of that taken on Congress Street, the two views looking northeast along a line of charred shade trees and the ruins of relatively uninspiring private residences. Soule now turned his attention to the south, to the imposing wreck of St. Stephen's Church, the third and last item on the agenda that had been established on the roof of the Customs House the previous afternoon. Soule's last two views taken from this location show the church to considerable advantage.

I suspect that this ended Soule's work on Friday afternoon. The final four views would be taken about a mile to the east. Given the difficult and time-consuming procedures involved in wet-plate photography, it is not surprising then to find that our postulated itinerary for Soule results in only twelve stereographs on Thursday and nine on Friday, the lesser number of exposures on the second day being compensated for by the fact that Soule probably shot from four as opposed to three locations.

Did Soule feel that his job was done and planned to

No. 477. Looking down Exchange Street, from U.S. Custom House. (The large building at the far end of the street is Soule's next shooting location.)
leave Portland at this point? Perhaps only on Friday evening he learned of the panoramic potential of the observatory on Munjoy Hill away to the east. Or it may be that his plans already included this. In any event, it seems that on Saturday morning Soule drove his wagon out to Munjoy Hill and climbed the lighthouse-like observatory there (as one can still do today). What he saw undoubtedly pleased him, since he took four stereographs (#488-491) forming an overlapping panorama from Portland Harbor to the south sweeping past the burnt district and ending with Back Cove on the northwest. Once again the shadows would plainly indicate a mid-morning exposure.

No. 481. Looking Northerly from Fore Street, at foot of Exchange.

An interesting feature of these views is the vast array of Army tents in the foreground, some of the 1500 supplied by the federal government as temporary housing for those rendered homeless by the fire.

Soule then returned to Boston and published his views. It should be remembered that, although this hypothetical reconstruction of Soule’s activities conforms to the available evidence, it is nonetheless somewhat speculative and may well be in error in at least some details.

This brings us to the second set of Portland stereographs, those taken in September, and a number of interesting questions arise here. Why did Soule take the trouble to revisit Portland and issue these supplemental views which are certainly less inspiring than the first group? And why are they so difficult to find? For although the individual stereographs in Soule’s first group are not uncommon, those in the second group are downright rare. It seems quite possible for a dedicated
collector to assemble the entire first group without even seeing one of the views from the second set. It is however possible to examine all but one of these in the collections of the Maine Historical Society and the Portland Public Library.

Let us return then to Boston with Soule in the third week of July and attempt to construct a plausible chain of events to explain this phenomenon. It is early summer, even then the height of the tourist season, and large numbers of people pass through Boston on their way to visit the stricken city. Many are buying stereographs. This much is confirmed by contemporary accounts. Soule finds his sales of the Portland series going extremely well. As time passes, he perhaps begins to wonder whether, in going to Portland so soon after the fire, there are certain features he neglected to photograph—features that would be marketable as stereographs. So Soule decides to revisit the city and take additional views as the brisk sales seem to demand.

He travels north again in September but the results are somewhat disappointing. Much of the debris has by now been cleared away and there is little of real interest left to photograph. Nevertheless he takes a small number of views and heads back to Boston. The only building of any note in the new group is the Natural History Museum. The other views are interesting to the historian in that they show the progress that has been made in demolishing some of the ruins and the first steps of reconstruction. But this can hardly be expected to generate much appeal among Soule's customers.

By now too the tourist business has slacked off and
other events have distracted the nation's attention from Portland. The new views are generally uninspiring and lack the immediacy of Soule's earlier effort. Sales lag badly. The new series will be rare simply because few copies are printed and fewer sold. (Judging from the frequency with which Soule's first series stereographs are encountered bearing revenue stamps, it seems likely that perhaps one-quarter to one-third of all the Portland views marketed were sold within one month of their initial appearance).

For John Soule it is a minor disappointment quickly forgotten as he moves on to other activities. How could he be expected to know that in his two visits to a ravaged city in the summer of 1866 he has not only been recording history but making it as well?

Portland today is far different from the city Soule visited. Even the street pattern was altered somewhat in the wake of the fire. Nevertheless it appears that, in addition to the old observatory, at least two of the buildings used by Soule as photographic locations still exist. The office building located in the wedge where Free meets Middle still retains the unmistakable aura of Rich's Print Shop. And the building on Fore Street opposite Exchange, from which Soule took his first three views on that long-ago Friday the thirteenth, is now a craft shop catering to the summer tourist trade. The old Customs House,
once Portland's most impressive building, was not so fortunate. Its site is now occupied by a rather innocuous parking lot.

FURTHER READING: Two recent general accounts of the fire are extremely worthwhile, William David Barry's "A Night to Remember" (Down East, November 1979, pp. 32-41) and Earle G. Shettleworth's "The Day Portland Burned: July 4, 1866." (Portland Evening Express, July 4, 1866); the latter is a special newspaper supplement and unfortunately is rather difficult to obtain. See also my own "Portland's Fiery Fourth" in an upcoming issue of American History Illustrated.
The old observatory on Munjoy Hill from which Soule took views #488-491: stereographed in the early 1870's by M. F. King, one of the photographers burnt out in the Great Fire of 1866. Built by Captain Lemuel Moody in 1807, the observatory still exists today.

KEYSTONE—MAST IN 3-D

A promising new photographic history magazine has come into existence in the form of the Bulletin of the California Museum of Photography, published at the University of California, Riverside, Volume 1 Number 2 of the Bulletin is devoted entirely to the Museum's Keystone-Mast Collection of stereo views, negatives, and miscellany.

The text includes brief discussions of the historical significance of stereographic images and of the history of the Keystone View Company and the Keystone-Mast Collection itself. A supplement included in the issue provides a nearly complete geographical index of views in the collection. Best of all, the magazine reproduces in full stereo a sampling of 31 views from the collection to illustrate various topics in the text. Included are self-portraits of B.L. Singley, Philip Brigandi, James Ricalton, and D.H. Ashton. On the cover is a view of the B.W. Kilburn Order Department in 1905. A plastic viewer (Realist Manual type) is included with the issue. Subscription to the CMP Bulletin is through membership in the California Museum of Photography, University of California, Riverside, CA 92521. (See classified ad in this issue.)

More details about the CMP and the collection can be found in STEREO WORLD Vol. 9 No. 2, pages 20-23.
Henrik Ibsen

The most dangerous enemies of truth and freedom are the majority! Yes, the solid, liberal, bloody majority—they're the ones we have to fear!... Who forms the majority in any country? The wise or the fools?... In the name of God it can't be right that the fools should rule the wise. So wrote Henrik Ibsen in his drama, *Enemy of the People*, as he struck out against small-minded citizens intent only on advancing their fortunes. Similarly, he criticized politicians who lacked both courage and principle. Dr. Stockman, the town physician in *Enemy of the People*, speaks for Ibsen when he says, "I can't stand politicians! I've had all I can take of them! They're like goats in a plantation of young trees! They destroy everything..."

Ibsen, however, was a friend of the people, no matter who they were. He could not be accused of being either liberal or conservative and never pleaded the cause of any particular social class, political party, or religious faith. His genius was to hold a mirror before the people in order that all could see their own foolish ways.

As one of the world's greatest writers, Ibsen used the theatre like a preacher uses a pulpit. To him, the theatre was not simply for entertainment, but rather a place where basic principles of life could be re-thought and old customs and tenets questioned.

He was not only a critic of society in his dramas, *The Wild Duck, Enemy of the People,* and *Ghosts;* he also explored the unconscious and its effect upon one's behavior. In *Peer Gynt,* the play for which Edvard Grieg composed his memorable suite, Ibsen depicted the struggle between the divine purpose of our lives and human egocentricity. *Peer Gynt* is the story of "a compromiser who thinks only of himself, shuns work and suffering."

In a book Ibsen presented to a friend he wrote, "To live is to war with trolls in heart and soul."

All through life Ibsen experienced such struggles. Born in 1828 in Norway into the home of a well-to-do merchant, he was the beneficiary of family wealth and social position. But his father soon went bankrupt and the family was stricken with poverty. Young Ibsen faced the ostracism of the aristocracy and was forced to attend a middle class school. He left home before he was sixteen, worked long hours in an apothecary, failed entrance examinations to the University, and was constantly the brunt of criticism for his strange and idealistic views. Using every spare moment to read the works of literary giants, he soon began to write, "courage I have and strength for something better."

His poems were published in the capital city newspaper and his literary career began. His dramas were not well received at first though he was appointed stage manager and theatre poet at the Norwegian National Theatre. Here was the opportunity for him to select plays for production, assign roles, oversee rehearsals, and determine the scenery. He not only worked through 145 plays by French, Danish and Norwegian playwrights, he also wrote one play annually as part of his contract.

After marriage at the age of 30, he once again fell into poverty. His plays were called senseless, immoral and unpoetic. But such comments reflected more upon the critic than upon Ibsen. He was a man ahead of his generation as he spoke out for national liberty, a proper acceptance of females, truth, and human idealism.

(continued on page 26)
Like something designed for a stereo "What is it?" Quiz, this projection from the back of a white aphid was enlarged 1200 times with a Scanning Electron Microscope. Tiny surface formations create insect's camouflage.

Stereography and the SEM

by Norman B. Patterson
Leaping spider, 30X.
Eight simple eyes come in three sizes. One of this female's two fangs shows an injury.

Those of us who are especially interested in stereography are aware that every advancement in the capability of producing photographic images was soon examined for its possibilities in 3-D. The desire to capture whatever we can of the world “in the round,” so to speak, has kept stereography alive and healthy regardless of whether the current popular response was interest or ennui.

Optical microscopes have been with us much longer than photography has and yet, though legions of microphotographs have been produced, one may be hard-pressed to recall seeing any decent ones in stereo. The basic and fatal problem is the extremely shallow depth of field obtainable with such instruments. Improved techniques in close-up photography have done better and we are regularly seeing startlingly good stereos in the form of color transparencies. These usually feature revealing hypostereo views of small but familiar subjects in nature. But for high magnification, good stereos obtained by optical means remain elusive.

It was in 1935 that Knoll put forth the suggestion that a focused electron beam sweeping across a specimen would cause a current to be produced that would record the surface features. Primitive experimental models were produced in 1938 by Von Ardene and in 1942 by Zworykin, Hillier and Snyder. Still, it wasn’t until 1965 that the first commercial model of a Scanning Electron Microscope (SEM) was produced at Cambridge, England. Its revolution was about one-thirtieth of a micron which is roughly one-millionth of an inch. To me, the crisp

Spider spinnerets, 700X. The thread material is extruded through the small tubes which cover the organs.
rendering of surface detail and fine depth of field attainable remains a source of amazement and delight, however much one uses a SEM.

Although the number and variety of SEMs has proliferated since 1965, they are expensive instruments. This, combined with the understandable likelihood that SEM operators may not be experienced photographers, let alone stereographers, perhaps explains why the production of stereo views using the SEM has not been widely heralded. That fine photographs can be obtained with the SEM has been ably demonstrated whenever the photographic aspects have been properly attended to along with the microscopy. For example, the power of David Scharf’s superb SEM pictures reproduced in his book, MAGNIFICATIONS, (Schroken Books, 1977) are as much the product of his photographic skills as they are attributable to the fine instrument he used. Unfortunately, he does not address the question of making stereo pairs in the book.

A number of technical papers have been published, including a considerable output by A. Boyde in London, regarding among other related matters, the use of stereo pairs to make quantitative measurements of microscopic subject matter. Whether the stereo halves so produced were used for viewing in the ordinary manner, I do not know. Such measurements can be made without regard to viewing. Rather, displacements are calibrated using the two halves and calculations are made from this and a knowledge of the angle of rotation that the sample has undergone between the exposures.

Thus far, there seems to have been minimal interest in publishing SEM stereos for the enjoyment and edifica-
Proboscis and underside of thorax of a green aphid, 150X. This is the part of the culprit that destroys your favorite plants.

In undertaking to do so I put forth several premises which I hope would be followed in presenting SEM stereos. Good photographic practices are in no way inconsistent with scientific applications and we should not accept less. Stereographs made by any process should meet the basic tenets of stereo theory and be accurately aligned and cropped for comfortable viewing. When showing, in 3-D, the microcosm revealed by the SEM, so far as possible the scene should appear natural and correct, however strange the subject matter may be to us.

The stereographs illustrated in this article were made by the author at The Behrend College of the Pennsylvania State University Division of Natural Science & Engineering, Erie, PA. They were prepared using an ISI M7 table model SEM.

**HOW IT WORKS**

An electron gun with a heated tungsten filament is the source of electrons. These are then accelerated through an anode into a column which focuses the electron beam by means of magnetic lenses. An extremely small diameter probe is thus produced which sweeps across the specimen. As in a television picture tube, deflection coils control the electron beam sweep. The column must be kept immaculately clean and the process takes place under high vacuum conditions.

Leaf detail, 300X. Newly forming leaf bud of swedish ivy house plant is a busy place. Capturing the hairs, trichromes, etc., before they collapse in the vacuum is a real challenge to the photographer.
As the electron beam probes a spot on the surface of the specimen, the surface reacts by releasing secondary electrons. It is these secondary electrons which are commonly used in imaging the subject. Thus, the probed spot is 'read' by an electron detector which includes an electron collector coupled with a scintillator, light pipe and photomultiplier tube. The response of the probed area as measured by the release of secondary electrons is noted and in the end determines the brightness of a corresponding spot on a TV picture tube. As the probe sweeps rapidly over a region of a sample's surface a picture is constructed on the TV screen based on the differences in response of the various surface features to the electron probe.

The column and specimen chamber are under vacuum so that the specimen itself must tolerate both vacuum and electron beam as well as to be able to emit secondary electrons.

The use of secondary electrons has several effects. First among these in importance is that the SEM primarily reads the surface of the sample. The relative brightness of the different areas scanned varies considerably according to the nature of the surface features and the angle of the primary electron beam. At optimum choice of
brightness and contrast a remarkably detailed picture of the surface is produced. The depth of field is phenomenal and far beyond anything obtainable using other types of microscopy. In appearance it looks much like a scene shot at about f-8 with a good camera lens. This makes it possible, if we can control the details, to obtain natural pictures of very tiny subjects indeed.

Although the magnification range for this process is 5X to 250,000X, the machine I use begins at 30X and in producing quality stereographs I seldom work above 1,000X. I do have decent views made at 3,000X but the difficulties of good stereo increase along with the magnification. While continuing to work on improving my procedures, I am bound by certain minimum standards in judging good stereo. I do not care to release views until they meet these minimums.

The ratio of the size of the TV (Cathode Ray Tube) screen to the size of the area swept by the beam is the magnification attained. A sad note for color enthusiasts is that not only is the process color blind but the concept is meaningless to the beam.

PREPARING THE SAMPLE

The preparation of the subject prior to examination presents a complicated question and there are a number of ways of dealing with it. It is the nature of some specimens that they can be examined in their natural state without special treatment. However, others cannot withstand the abuse of the vacuum or the electron beam without delicate structures collapsing or rupturing. Methods currently in use involve coating with carbon and gold, critical point drying, and freezing. These procedures each may get one involved in varying degrees of trouble, expense, or both.

Most of the stereographs illustrated with this article were made without special treatment on a fresh specimen. Under such conditions the natural conductivity of the subject, while it lasts, can give optimum results. The process was carried out at moderate speed so that the negatives could be obtained without anomalies appearing between the two stereo halves. In tribute to the difficulty of achieving this, I accumulated many more good halves (flat pictures) than I did good wholes (stereo views).

As one might expect, many problems arise when treating specimens of varying types. For example, subjects are often 'gold plated' to enhance the secondary electron production and/or to aide the discharge of primary electrons which otherwise can cause an effect called 'charging' that is disastrous to picture quality. Delicate surfaces cannot always bear up well under gold coating and other preparatory methods and often such methods are needed. Still, in order to obtain the pictures which most accurately represent the true appearance of the surface in its living state one should do as little as possible that might disturb it (not an easy task when it is recalled that it must withstand high vacuum conditions).

THE PHOTOGRAPHY

Getting high quality photographs from the SEM requires, as does all good photography, endless fussing and attention to detail. All of the usual problems of black and white photography are present to their fullest and any problems related to the SEM just add to that.

SEMs are equipped with photographic attachments. A copying camera which cups over the TV screen and is fitted with a Polaroid back is fairly standard. This will suffice for purposes where instant pictures are adequate to the circumstances. But if quality is important one must pay more attention to the photography and a negative is called for in many cases. I use a small Graflex or Crown Graphic camera which is usually fitted with a 120 roll film adapter. Good B&W films such as Kodak Plus-X or Verichrome Pan are quite adequate to the task.
The method of obtaining stereo is limited somewhat by the nature of the device. There are several ways to move the sample in the electron beam which may possibly produce acceptable stereo views. All of the SEM views shown here are products of the 'lazy-susan' method. That is, the sample is tilted in the beam through a measured angle between the exposures. There are many pitfalls and a number of details must be properly dealt with. One drawback is that it can be likened to slide-bar stereo in which a flash gun is attached to the camera and moved with it (a method that can produce objectionable effects). A rotation angle of about $2\frac{1}{2}^\circ$ is nominal (representing a ratio of subject distance to lens separation of approximately 25 to 1 in stereos of standard subjects). This must be adjusted to the subject itself. Deep objects such as insects may need less rotation and flat subjects may need considerably more. As a rule of thumb, however, rotations greater than 4 or 5° should be looked upon with suspicion in most cases. Obtaining stereo by motion perpendicular to the electron beam presents another set of problems and I have not as yet experimented enough with that approach.

NOTES ON THE VIEWS

Leaping Spiders. These little fellows measure about one-eighth of an inch and are often seen anytime during the warm seasons. They are particularly good subjects for the SEM. Sporting a handsome set of eight simple eyes, they seem to have better vision than the run of their relatives.

Being small, they can produce a limited amount of thread material compared to their larger cousins. But they are very good at tacking down and otherwise using what they have to achieve their purposes. The thread is formed through two spinnerets (larger spiders have more) by extruding the viscous liquid through many microscopic tubes after which it is coalesces into a single strand and hardens in the air. Illustrated is the external appearance of the spinnerets magnified 700 times.
Two fangs are used to inject digestive juices into a meal and later to draw out the nutritious liquids. Often, the scars of earlier battles are apparent on the contenance of these feisty little spiders, giving rise to visions of mighty combat within the framework of their world.

Aphids. These so-called plant lice come in many, many varieties. They are especially cooperative subjects for the SEM in their natural state. Ants tend some of them like cattle and, I am told milk them for a useful substance taken from two 'honey pots' protruding from their upper posterior. These are seen illustrated in full view of a white aphid on the underside of a raspberry leaf.

Also illustrated is the proboscis and underside of the thorax of a green aphid. It is with this feeding organ that the damage to your favorite plants is done. Liquid pressure, it is said, is sufficient to produce flow up the proboscis when it penetrates the leaf and sucking is not required. (This stereograph was the only one in viewcard format accepted for exhibition in the 1982 Potomac International Exhibition of Stereo Photography).

Leafscapes. Exotic vistas are found on leaf surfaces when sufficiently magnified. Veins, hairs, trichromes, and other surface features come in a multitude of forms. They are often delicate structures and speedy work is called for in order to get stereos without serious flaws due to dehydration and rupturing of the tiny structures.

Larger Objects. In many cases, interesting subjects are too large for the SEM. It is still possible to limit ones' observation to portions, such as foot and eye, which are suitable substructures and of interest in their own right.

The world of the SEM is strange, esoteric, and an endless revelation. But, however interesting the picture which appears on the CRT, there is nothing quite like the later treat of seeing it in stereo when the halves are brought together and an acceptable view has been attained.

Display console (right) and Electron Column (left) of ISI M7 SEM. The sample chamber and orientation controls are at the foot of the column.

Thanks TO OUR MANY SPECIAL FRIENDS who have sent donations since the list appeared in the March issue

KEYSTONE MEMBERS
Wilma Bohannan
David R. Hoy

FRIENDS OF THE NSA
Wayne Blanchard
Joseph P. Fallon, Jr.
Philip S. Kantor
W. Van Keulen
Richard D. Loftin
Edward L. Whiteman

DONORS
Donato Bracco
Craig F. Daniels
Theophil Schweicher

Over the life of the NSA, many members have given generously to the organization—in time and effort, with donations of library materials, and by absorbing local expenses of the society. These contributions have helped NSA to do more than the bare minimum for its members. As you know, with this year's renewals, we invited members to make donations above their dues, to permit us to go even further. We were amazed, and extremely delighted by the response. This has been tremendous encouragement to the volunteer workers who make NSA what it is, and on their behalf, sincere thanks. Unless you have specified some particular purpose, we'll use the donations where they will do the most good for the greatest number, and try to make you glad you gave.

T.K. Treadwell, President
We received one response to the unknowns featured in the MAR/APR issue. Larry Gottheim sent a xerox of the back of an A.E. & A.J. Alden view listing scenes of the Mill River flood in Hampshire County, Massachusetts on May 16, 1874. He suggests that the view at the bottom of page 27 might be from that disaster.

This month Audrey and Morrie Greenberg have submitted an interesting pair of cards. A flat yellow view with round corners, labelled "Oil Regions of Pennsylvania" shows a bridge that no doubt one of our sharp-eyed readers will recognize.

The Greenberg's second card is also yellow, but bears no title or other writing. It appears to be set in a park or cemetery with several children looking on. The writing on the statue is tantalizing because it can't quite be read.
Our best guess is that the largest of the three words is something like “Bichat.” Any guesses?

Tex Treadwell offers a yellow card which he believes is of French origin from around the 1860's. In it a group of well-dressed men are doing something with flexible tubing of large diameter. What at first look like valves are actually chairs and stools. Could they be preparing to inflate a balloon? Perhaps some of our aviation experts will know.

Another of Tex's cards is a green one by H.P. Macintosh of Newburyport, Mass. However, the subject doesn't match any of the 72 titles listed on the reverse. Judging from the water pipes and the roof which can be opened we'd guess this was Macintosh's photo studio. Can any of our photo buffs confirm this theory?

We have enough additional unknowns on hand now for the next few issues. Thanks for the good response. If you have any on the table ready to take to the post office please hold on to them until further notice. We also appreciate the complimentary letters you've sent. If you have any information about current or past unknowns please send it to Neal Bullington, 137 Carman St., Patchogue, N.Y. 11772.
THE STEREOSCOPIC SOCIETY
AMERICAN BRANCH

THE SOCIETY

from the Society Notebook

The untimely death of Edward Berkowitz, member #710, has left the Society and the Beta circuit saddened. It is a loss that cannot be replaced and we are the poorer for it. Our heartfelt sympathy goes out to his family. We will remember his enthusiasm for stereoscopy and will be grateful for the opportunity we had to share it with him.

OVERSEAS PRINT FOLIOS REVIVED

On a much brighter note, a long sought objective has been attained. Print Secretary Bill C. Walton has been notified by Mr. P.B. Wearing of the United Kingdom Branch of the Stereoscopic Society that the print folios have resumed circulation over there and we will shortly receive the first of the new overseas offerings to circulate here and then in Australia before returning to England for the next round. A second folio has already been initiated in the United Kingdom and will follow the first in due time. At its inception in 1893 and as it was reformed after the first world war, The Stereoscopic Society circulated print folios with a unified membership list around the world. Members were listed throughout the British Isles, North America, Australasia, and Malasia. Although this tradition has been maintained with the transparency circuits, international print folios had ceased to exist. We welcome their return.

The self portrait print folio has just about completed its round and I will ask that the members donate the portraits to the Society activities. Details on how this is to be done will appear in the Viewsletter.

LOST IN NEW ZEALAND

Lou Smaus reports some unfortunate news from the transparency circuits, "Rod Lambert wrote and said two OX folios have been lost in New Zealand and he's tried all that he can with the P.O. but to no avail so far. He sent me several copies of the enclosed list of contents. I hope eventually they will show up. We never lost a folio in modern times to my knowledge." Along with a list of the folio contents, New Zealand Secretary Lambert explains.

"Both of the folios were apparently lost by the New Zealand Post Office and efforts so far to trace them have been unsuccessful. It is not impossible that they might surface somewhere but it is extremely unlikely and members should consider the (listed) slides to be lost, probably forever.

Everything that can be done has been done to locate these parcels but unfortunately one can only do so much with a bureaucratic system and anything further is a futile exercise. That the postal service has lost two folios within 6 months and that these are the first N.Z. has lost in this way since 1924 shows the decadent nature of the service, and of our society with the theft of mail bags becoming more prevalent.

As regards the future I am at a loss to suggest a remedy as alternate forms of folio transmittal would be prohibitively expensive for most of our members. I would like you all to believe that we do treat every folio with care and respect but the above sad performance will doubtless make this hard to accept. I can now only offer my sympathy for a loss which is both yours and ours, with the hope (which cannot be a promise) that it will not happen again. Roderick Lambert, Hon. Secretary. (N. Z. Section)"

One of the missing folios circulated in the American Branch as an Alpha folio and the second as a Beta folio.

CHANGE IN ADDRESS

Our Corresponding Secretary has moved from the wintry blasts of Minnesota to the sunny climes of California. Hereafter, persons interested in joining the Stereoscopic Society should write to William Shepard, Corresponding Secretary, 425 North Morada Avenue, West Covina, CA 91709.

Current members should also address their requests for folio envelopes or other supplies to Bill at the new address.

PERSONALITIES IN PERSPECTIVE

(continued from page 15)

He became recognized as a literary giant because of his unusual ability to create life-like appearances in his characters. He broke down the social barriers by being the first to write tragedies about ordinary people, not only kings and queens. And he developed the literary technique of allowing the characters themselves to unfold the meaning of the action rather than using overheard conversations or intercepted letters to tell the story.

When in 1906 he died, the Norwegian government gave him a state funeral before 12,000 mourners. Over his grave stands a monument bearing the simple and appropriate symbol of a hammer. The famed Nobel Prize novelist Luigi Pirandello wrote, "AFTER SHAKESPEARE, I UNHESITATINGLY PLACE IBSEN FIRST."
"NEWVIEWS" brings you current information on what is happening in the stereo world TODAY: new equipment, developments, magazine or newspaper articles, 3-D events— anything new in the world of stereoscopy. This column depends on its readers to supply information and news clippings. Don't assume we've heard of everything. Send all information or inquiries to: David Starkman, P.O. Box 35, Durate, CA 91010 U.S.A.

NIMSLO-FIRST-HAND USERS REPORT

Yes, the NIMSLO 3-D is real. I got mine in the mail April 4, thanks to my credit card and a friendly Florida camera dealer. (As of this writing they are reportedly on sale all over Florida.)

The first impression of the NIMSLO camera is sort of odd for a user of 25-year old stereo slide cameras like myself. Although there are four lenses, the body is smaller in all dimensions than any conventional stereo camera. It is also much lighter, weighing a slight 12 ounces compared to the hefty 2 pounds 2 ounces of my trusty Busch Verascope F40 (or 1 1/3 pounds for a Stereo Realist.)

Besides the lack of weight the most significant feature of the NIMSLO is its simplicity. The design is clean and functional, professionally all black, with a slightly spongy leatherette covering. There is the usual shutter button, a single-stroke film advance lever, the rewind knob with flip-out crank, and a single control; a switch which changes the electronic automatic programmed shutter from ASA 100 to ASA 400. This is literally a point-and-shoot camera where you (set the ASA, load the film) press the button and Nimslo does the rest. Once I got over the odd feeling of not having to check my settings I found I could put my full concentration into the composition of the nearly full-sized image framed with a bright line in the viewfinder.

Red and green LED's (light emitting diodes) indicate in the viewfinder if there is sufficient light for a good exposure. Over-simplified instructions indicate not to have any subject closer than 6 feet to the fixed-focus lenses. (In reality this rule can be violated if you stay within the depth of field for F5.6 30mm lenses and limit the background to neutral subject material.)

So, the overall feel is of a well-built, modern electronic camera. My only suggestions to improve this model of the camera would be to add a lock to the shutter button (it's too easy to make an accidental exposure if the film is advanced and the shutter cocked) and perhaps a yellow LED to indicate when the camera has automatically set itself to the lowest speeds (1/30th at 5.6). There is no bulb setting, either.

Nimslo 35mm 3-D Camera and Opti-lite flash.

Cropping is another factor to be considered in the picture composition. With slides, picture loss is minimal. But I was shocked to discover that when I compared the 18 X 22mm negatives with the corresponding prints, I was getting the equivalent of a 15 X 18mm area printed. This is nearly a 32% loss of picture area! Just for comparison I took some negs to a 1-hour print lab and had no trouble getting half-frame flat reprints. Although the prints were slightly larger (3 1/2 X 5" vs. 3 1/2 X 4 1/2") the area lost at the sides and bottom was identical, with only the

was fairly pleased with the results. While the prints in no way compare to 3-D slides in quality, depth, and roundness, they exhibit many levels of depth to the unaided eye, and are far superior to any of the lenticular 3-D postcards that I have seen. The depth of field is sharp from front to back, although there was some lenticular alignment problem in just a few of the pictures. The color was quite good and rich. There is definitely some of the cardboard cut-out effect, and the whole image appears to be a miniature 3-D scene. Compared to a flat print they have a definite novel appeal, and the response when shown to numerous non-3-D friends have been amazement and enthusiasm.

For the prints to be effective, stereo composition is even more important than on conventional 3-D slides. Outdoors there should also be something at the six-foot distance from the camera, and all of the depth effect tricks used to enhance flat images should always be used to add more roundness to the scene.
An actual stereo view of a NIMSLO print gives a fairly close reproduction of the depth effect in this typical snapshot situation. While roundness and depth are limited, what doesn't show here (besides the color) is the fascinating way the prints pop effortlessly into 3-D in your hand, in an album, or lying amid a clutter of other things on a table. From almost any angle the extra ½" of picture size at the top accounting for any difference. Although I'm sure that a custom lab could supply a full-area reprint, my conclusion is that NIMSLO is just slightly higher than industry standards for cropping of machine-made prints. This tempts me to add a second bright-frame to the already excellent bright frame viewfinder; one to show what will appear on the negative and one to indicate print-cropped area. The lesson is to allow extra room at the sides and top so that people are not needlessly amputated.

To conclude, I will be the first to admit that there is no comparison between stereo slides and NIMSLO prints—slides are infinitely better, have more roundness, sharpness, and a life-like depth range. Compared to flat prints, however, the NIMSLO prints do quite well, and definitely add a third dimension to the print medium. Since nearly 80% of the photographic market consists of print snaphooters, NIMSLO may achieve their goal of 800,000 cameras sold in the U.S. over the next 2 years—unless the Kodak Disc System takes over the entire market.

NIMSLO marketing has indicated that 8×10" reprints won't be available until later this year. I'll certainly look forward to having some of my favorite NIMSLO prints enlarged!

NEW STEREO PROJECTOR?
The Sun Screen Industrial Co., Ltd. of Japan has demonstrated a new stereo projector. Although this is a prototype, future production, including an automatic slide changer, is being considered. The “Sun Stereo Projector” model 300 boasts two 75mm F2.5 lenses with two 300 watt quartz-halogen lamps for high light output. The case is self-contained, while controls are easily accessible on top of the projector. Manual slide carriers are available for both 2"×2" separate stereo pairs as well as ASA standard 1 ¾×4" mounts. There is apparently no curtaining feature. I repeat, this is just a prototype and not available yet. If the situation changes it will be announced in a future NEWVIEWS.
3-D TV SWEEPS THE NATION!

In the last "Newviews" I mentioned the FCC approval of the 3-D Video (TM) Process for over-the-air broadcast. Since that writing 3-D broadcasts are literally sweeping the nation, with 30 different cities scheduled for May broadcasts. Included were Los Angeles, San Francisco, Washington D.C., Philadelphia, and St. Louis. Spurred on by an average of tripled ratings and doubled market shares for 3-D TV broadcasts, new stations are signing up daily. Using the 3-D Video Camera system, San Francisco boasted the first LIVE (not taped!) over-the-air 3-D broadcast in the U.S.

Los Angeles experienced original 3-D videotaped material in the buxom form of "ELVIRA—Mistress of the Dark," the sexy vampire lady who hosted "The Mad Magician" in 3-D. Not only was Elvira in 3-D, but original "3-D" songs were written for the show. Reactions to the 3-D quality are mixed. There is still a small amount of ghosting in the anaglyphic system, and depth extremes are reduced to create "compatibility" for viewers not using the red and blue glasses. Still, most people are somewhat impressed, with only a small percentage of real complaints. The most active films in circulation are "Revenge of the Creature," "Gorilla at Large," and "Dynasty."

LAST MINUTE SAN JOSE NOTES

The National Stereoscopic Association's conference program will begin Friday afternoon and run on the following schedule:

Friday, August 6: 3-6 PM
Saturday, August 7: 4-6 PM
Sunday, August 8: 2-5 PM

A printed program of topics to be covered will be available Friday. Sunday's sessions will be given over entirely to contemporary stereo topics.

The competitive and invited exhibits (see the March-April and May-June issues of Stereo World) will open on Friday, August 6, at 1:00 PM together with a special display of modern stereo slides and prints by the Stereoscopic Society.

If you have the time and inclination, either before or after the convention, you can visit several other fine exhibits of historic western stereo views elsewhere in the San Francisco Bay Area. Beginning August 5, the Bancroft Library on the University of California campus at Berkeley will display some of the best and most interesting views from their extensive Muybridge collection. The other exhibits will be mounted at the Wells Fargo Bank's History Room in San Francisco (475 Sansome St., 11th floor) and the California Historical Society, also in San Francisco, at 2099 Pacific Ave.

UC RIVERSIDE PHOTO MUSEUM ADDS CURATOR

Edward W. Earle, an expert in the study of stereography, has been named curator of the Keystone-Mast Collection of stereographic negatives and prints at the California Museum of Photography.

Earle, currently librarian/archivist for the Photographic Resource Center in Boston, will join the museum staff based at the University of California, Riverside, on June 7.

He will become the first full-time curator for the collection of 350,000 images—the largest group of stereos to survive from the turn-of-the-century art. Earle's responsibilities will include the preparation of exhibitions and publications relating to the collection, as well as the administration of cataloguing and conservation projects.

Earle, 31, is the author of "Points of View: The Stereograph in America," one of the definitive works in the field, published in 1979 by the Visual Studies Workshop Press in Rochester, N.Y. He has taught the history of photography at Boston College and at Swain School of Design in New Bedford, Mass.

Earle holds degrees in history from the University of Notre Dame, and in the history of photography and museum studies from the State University of New York at Buffalo (Visual Studies Workshop).

"Together with his numerous articles and lectures, his book established him as an expert with a deep understanding of the social and cultural underpinnings of stereography's popularity in the late 19th and early 20th centuries," said museum director Charles Demarais.

BASICS OF THE 3D VIDEO (TM) SYSTEM

Left and right images are transferred to separate video tapes which are fed in turn through a special 3D Video (TM) processor that electronically colors the left-eye image red and the right-eye image blue-green. The images are then superimposed. The output is a normal signal that is recorded in the usual manner on any videotape format. These are sent to local stations for broadcast as any color tape—for viewing with 3-D TV glasses and conventional color TV sets.
A Carbutt Chronology

This CDV of John Carbutt with his stereo camera was taken in his Chicago Lake Street studio during the early 1860's. (Courtesy the Carbutt Family)

While researching "Carbutt and the Grand Excursion to the 100th Meridian" ("Stereo World", Vol. 7, #2), William Brey located Carbutt's descendants who possessed Carbutt's personal diary, family CDV's and photographic medals. This discovery prompted further research into Carbutt's life which resulted in "On the Frontiers of Photography with John Carbutt". Mr. Brey is currently trying to locate a publisher for his manuscript which includes a listing of Carbutt's stereoviews that was compiled with the help of many N.S.A. members. The following selections from a chronology of Carbutt's multifaceted career provides a glimpse of his many accomplishments that are detailed in this work.

1832-1905

Born in Sheffield, England .............. Dec. 2, 1832
Worked as a Railroad Photographer for the Grand Trunk Railroad in Canada .......... 1853-1857
Worked in a photography gallery in Indiana .......... 1858 or 1859
Operated a studio in Sheffield, England .......... 1861-62
Emigrated to Chicago .......... 1861
Operated Lake Street studio in Chicago .......... 1861-1868
Visit to England .......... Aug. 1862
Married Mollie Ackerman in Plymouth, Indiana .......... April 1863
Visited E. L. Wilson in Philadelphia .......... March 1865
Field trip for Northwestern Union Packet Co. .......... Oct. 1865
Photographed interior of Lincoln's home in Springfield, Ill. in stereo .......... April 1865
Vacation trip to St. Paul with E. L. Wilson and their wives .......... Oct. 1866
100th Meridian Excursion for the Union Pacific .......... Oct. 1866
Excursion to Lake Superior for Northwestern Railway .......... June 1867
Editorial Expedition for the Union Pacific .......... Oct. 1867

Elected 1st Vice President & Corresponding Secretary of Northwestern Photographic Society .......... August 1864
Experimented with Magnesium Light .......... Jan. 1865
Visited E. L. Wilson again in Philadelphia .......... March 1865
Field trip for Northwestern Union Packet Co. .......... Oct. 1865
Photographed interior of Lincoln's home in Spring field, Ill. in stereo .......... April 1865
Vacation trip to St. Paul with E. L. Wilson and their wives .......... Oct. 1866
100th Meridian Excursion for the Union Pacific .......... Oct. 1866
Excursion to Lake Superior for Northwestern Railway .......... June 1867
Editorial Expedition for the Union Pacific .......... Oct. 1867
Photographed the Rocky
Mts. and the Plains
Oct. 1867
Produced 50,000 portraits
for “Biographical Sketches
of the Leading Men of Chicago” 1868
Moved into new studio
at 24 Washington St., Chicago July 1868
Accompanied Solar Eclipse
Aug. 1869
Visited England to pur-
chase rights to the
Woodbury process Fall 1869
Experimented with Wood-
bury process in Wash-
ington Street Studio Early 1870
Demonstrated Woodbury
process at NPA Convention
in Cleveland June 1870
Photographed Drake
Block conflagration
in Chicago Sept. 1870
Moved to Philadelphia
to produce Woodburytypes Oct./Nov. 1870
Superintendent of Amer-
ican Photo-Relief Co.,
1002 Arch St., Philadelphia 1870—1874
Walter Woodbury visited
Carbutt and E. L. Wilson in Philadelphia March 1872
Joined the Franklin Insti-
tute Feb. 22, 1873
Awarded American Insti-
tute Medal for Woodbury
prints on paper and glass 1873
Awarded Franklin Insti-
tute Medal for Wood-
bury Lantern Slides 1874
Began using Collootype process Fall 1874
Moved business to
624 North 24th St.,
Philadelphia Fall 1874
Unsuccessfully intro-
duced Dry Plates July 1875-Mar. 1876
Superintendent of
Photographic Hall at
Centennial Exhibition April to Nov. 1876
Awarded Centennial Medal
for Heliographs 1876
Introduced a new Collo-
graphic process May 1877
Moved business to
54 N. Ninth St.,
Philadelphia 1876
Operated School for
Photo-Mechanical printing Jan. to Mar. 1879
Successfully introduced
Gelatine Bromide Dry Plates Nov. 1879
Elected President of the P.A.A. Aug. 1880
Moved business to 601/03
Market St., Philadelphia May 1881
Introduced extra rapid
"JCB" Dry Plates Dec. 1881
Moved to 628/30 Chestnut St.,
Philadelphia 1882
Patent granted on his
darkroom lantern Apr. 25, 1882
One of the founders of
the Dry Plate Manu-
facturers Association May 15, 1884
Elected President of
Dry Plate Mfrs. Assoc. Jan. 1884
Purchased lot for Dry
Plate factory in Wayne
Junction, Penna. Apr. 20, 1884
Experimented with cell-
uloid for Dry Plates 1884
Moved into new Dry
Plate Factory in
Wayne Junction Late 1884
Introduced Gelatine-Chlo-
ride Printing Paper 1885
Introduced the first
orthochromatic Dry Plates 1886
Produced magnesium
flash powder 1888
Introduced first Cell-
uloid Dry Plates 1888
Supplied Edison with
photographic emulsion
coated Celluloid for
motion picture experiments 1889
Formed the Genie Hand-
Camera Company 1891
Visited England on business May 1892
Won Medal for Dry
Plates at Columbian
World’s Exposition 1893
Introduced non-halation
Dry Plates 1893
Introduced J. C. Devel-
opment Tabloids 1894
Professor Roentgen
announced discovery of X-Rays Dec. 1895
Earliest X-Ray produced
by Carbutt & Dr. Goodspeed Feb. 1896
Introduced World’s
first X-Ray Plates Feb. 1896
X-Ray taken of a four
day old infant May 1896
Obtained patent
on Film Spool Nov. 30, 1897
One of the founders of
the Photographic Manu-
facturers Association 1900
Introduced Vinco
Printing Paper 1900
The Carbutt Dry Plate
and Film Company of
Philadelphia Incorporated 1902
Died in Philadelphia July 26, 1905
Current 3-D Films

CAN THEY GET ANY WORSE?

by John Dennis

After last year's "Comin At Ya!," it seemed pretty safe to assume that 3-D film productions of the 80's could only get better. Then along came "Parasite" and the issue was thrown into doubt. The only certainty to emerge is that the 3-D novelty/thrill is being exploited for every cent of short-term profit that can be gored out of it before audiences notice that they're not even getting most of the crude thrills pictured in the ads, much less anything else.

Like "Comin At Ya!," "Parasite" (directed by Charles Band in Stereovision) made a lot of money in the first few weeks of its release. Produced by Irwin Yablans (Halloween, Halloween II, Roller Boogie, Hell Night, etc) it grossed $2 million during the weekend of March 12-13-14 in 186 theaters. Variety listed it at #5 of the top 50 grossing films for the week ending March 17th and at #7 the next week. After that, it seems to have dropped out of the ratings while at the same time, the classic "House of Wax" (in 3-D re-release) remained high on the list for several weeks.

"Parasite" is set in the near future after some unspecified nuclear disaster has ruined the economy and turned most of the population into sadistic savages. A newly cloned super-worm escapes its dish and instantly jumps into the navel of a scientist who spends the rest of the film trying to kill the thing, sedating it (and himself) with frequent injections. With the only other of the creatures stuffed in a metal cylinder, he drives off to find a place to learn how they can be killed. After a rape scene and some gory, brutal killings have nothing to do with the story, the cylinder is stolen by a gang convinced it contains drugs. Of course when it's opened, the suddenly grown-up creature jumps out and proceeds to slurp its way through a succession of people, all unable to think of anything else to do about it but scream a lot.

 Sporting a set of teeth to make a Great White green with envy, the parasite devours its way through legs and arms, then pops back out through people's faces or skulls in an almost playful and very predictable manner. Only the 3-D effect provided these Hamburger Helper attempts at gore with the slightest shock value or prevents them from being taken as a spoof of "Alien." Several of the special stereo effects were evidently well planned, and if the film had provided any plot or characters worth caring about, the effects might have enhanced the drama and—who knows?—maybe even made it scary!

Predictably, every foreground object the camera passes and every prop not nailed down (including various pieces of some of the characters) end up as far off the screen as it's possible to fuse them.

PRO or REjection?

Of course just seeing the film at all was again a problem for people at many theaters, where projection standards were no better than they were for "Comin At Ya!". The single-strip Stereovision process is far from foolproof, and just can't be ignored along with the other films running at multi-auditorium theaters. Misaligned prisms and filters go unnoticed by the often solitary, inexperienced operators and the film can skip frames so that right and left images go through the wrong prisms and filters. The pseudoscopic results are amazingly slow to bother some audiences, although sometimes the dim, fuzzy images make it hard to notice right away! I had to invert my glasses 5 times at one theater to compensate for the reversing polarization, and STEREO WORLD's regular 3-D Film Columnist, Bill Shepard, saw an entire showing of "Parasite" shown pseudo to everyone who didn't follow his example and invert their glasses.

COMING ATTRACTIONS

The E.O. Corporation of Shelby, NC makes movies with a cool efficiency that became the company motto and brings in profits that attracted the attention of "60 Minutes" a few months ago. One film the program showed in production was "Rottweiler," a sort of canine, 3-D version of "Jaws,". "Hot Heir," a ballooning comedy, is currently in production as another 3-D feature.

The most encouraging rumors continue to be those concerning major studio plans for new 3-D productions and the potential use of dual, 70mm projection systems. A good chunk of the promotional budgets for any such films will need to be spent overcoming the general impression left by the "first wave" of 3-D movies of the 80's and by the manner in which they were often projected. With any luck, there will be enough money (and enlightened self-interest) left over to monitor and maintain projection standards in the theaters exhibiting the new process.

Dripping red with blood, these souvenir glasses were designed for the re-release of Andy Warhol's 1974 "Frankenstein." a production designed, it seems, to be outrageous enough to end forever all 3-D films—or all "Frankenstein" films—or all Andy Warhol films. Little did he know what the 80's would bring—
DINO DeLAURENTIS Presents
~ A film by Stan Donovan ~

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COMING THIS SUMMER
THE FUTURE OF 3-D FILMS—
A VIEW FROM THE PAST

BY John Dennis

Are you one of those people who've long harbored secret, subversive thoughts about the true potential of stereoscopic films? Do you make occasional mental lists of outstanding movies that could have been even better if they'd been made in some 3-D process matching the qualities of the existing production? (My own list includes "Quest for Fire," "Heartland," and "Silent Running"—just for starters.) Do you figure you're in a hopeless minority in this regard? Well, you probably are. But you're far from alone, and in fact, you're in some pretty interesting company.

Long before Hollywood's "discovery" of 3-D in the early 50's, the potential of stereoscopic films had been widely explored through academic, artistic, and popular writings as well as in dozens of actual productions in various lengths and processes from several countries. Although often buried in obscure publications, serious discussions of stereoscopic cinema in the 1930's and 40's had covered many of its unique technical and esthetic questions. Of course few if any of these writers or their ideas were considered by the producers of the 3-D films of the 50's—or later.

No Godard or Fellini or Wells or Kubrick ever committed themselves to seriously exploring the potential offered by 3-D in any of their influential cinematic efforts. (Hitchcock's lone contribution in "Dial M" was stagey restraint.)

But one of the most famous film makers and film theorists of all time, Sergei Eisenstein, did write about his interest in 3-D in the last of his essays on the esthetics of film to be published before his death in 1948. The influential Russian director had helped pioneer the use of sound and color in the Soviet Union and was enthusiastic about the potential he saw in the 3-D films being produced there ("Concerto," "Day-Off In Moscow," and "Robinson Crusoe"). In his essay, he saw the addition of the third dimension as a logical step to follow sound and color in films, with an equal value to its potential contribution to the cinema's growing ability to express a particular view of reality.

For Eisenstein, the three-dimensional film answered "some inner urge" and could satisfy "some unborn requirement of human nature." He wrote of the stereoscopic film as a sort of ultimate art form, towards which various means of expression had been unknowingly striving and evolving over the years. He declared the stereoscopic film superior even to architecture as an art form in the respect that "...no other art has ever furnished an example of so dynamic and perfect transition of volume into space, space into volume, of their splicing and coexisting, and all that in the process of real motion."

In his own films, Eisenstein's greatest innovations included his methods of giving scenes the illusion of depth through his masterful use of lenses, angles, and close foregrounds. After hinting at the loss of these elements of artistic expression in 3-D films that include their own depth, he quickly regained his tone of progressive optimism by concluding that "...stereoscopy's potentialities will with time give us new, unheard-of qualities in the sphere of expressiveness." Mentioning the various means attempted over the years to bridge the "chasm" between actors and spectators in the theater, he pointed out that 3-D could achieve the same goal for the cinema with its own inherent ability to do the equivalent of going "over to the spectator" and to "draw the spectator onto the stage."

Since 1940 the Soviet Union had been developing an entire system of 3-D cinematography and projection on lenticular screens for viewing without glasses. Eisenstein saw the comparative lack of attention to stereoscopic films in the Capitalist West as typical of bourgeois, stagnant conservatism and of its reactionary inability to adapt to new technology and new techniques. For him, Western film interests were simply afraid of progress—technological, political, or artistic. Soviet stereoscopic film production, on the other hand, led him to conclude that "...our country is different. We are always striving for new achievements! ...We are always perfecting the future techniques of expressing our ideas. For the glorious, triumphant, and brilliant tomorrow is ours! (In the days of Stalin, there was no such thing as overstatement in praise of Soviet achievements.)

Just a few years after his death, the American film industry was in the midst of a politically reactionary and artistically conservative period that would probably have surprised even Eisenstein. But what he hadn't foreseen was the impact of television and the ability of Hollywood to "progress" almost overnight into the production of 3-D

(continued on page 37)
Focus on the Past

A STEREOSCOPIC LOOK AT WISCONSIN

by Gordon D. Hoffman

This was the title and theme used to help the Milwaukee Journal celebrate its centennial this past May. It was put together by NSA member Allan Scott, who is a staff photographer for the Journal. It was on display in their lobby for most of the month of May.

Mr. Scott used stereographs from his own collection as well as views from the collections of NSA members Frank Taylor and Gordon Hoffman. Cameras, viewers, and other stereo equipment were also on display from the collection of Gene Picard. The H.H. Bennett Gallery had on loan the original dark-tent and equipment used by Henry Bennett from the same time period as his exhibited views.

There were six panels of stereographs represented along with the cameras, viewers, and Bennett display. The different panels may be seen in the photographs. Stereos used in the display showed many scenes in and around Milwaukee, the only known views of the disastrous Peshtigo Fire of 1871 and views of Madison and other smaller towns around Wisconsin.

It was a super stereo exhibit and shows what can be done to help promote the collection of stereo views. Our hats off to Allan Scott for a job well done.
Our First Visitor: Dr. Steven Hatleberg of Riverside, Pa. was our first visitor to the Holmes Library since the move to Eastern College. Possessor of about 600 Keystone glass slides, he was searching for the detailed narrative descriptions of the slides. In a few minutes we located a book entitled Visual Education, produced by the Keystone View Co.

Dr. Hatleberg looked like he had just found a long lost friend as he leafed through the pages, identified his slides and photo copied many pages for his continued enjoyment.

Dr. "Tex" Treadwell, President of N.S.A. also visited the library, along with Mr. and Mrs. Bill Brey of Cherry Hill, New Jersey. Summertime travelers to Philadelphia are invited to visit us. Come check out your own historical interests. Let us know beforehand so that we can be sure the Library will be open for you.

Stereograph Album: For several years I have looked for a suitable album for select stereocards that I wish to show to friends. I have finally found what I wanted. The Harco Cover Album is ideal. It contains 25 plastic sleeves, open at the top and fastened with two posts. The sleeves measure 8" × 4" and fit in a hard back plastic binder 9½ × 4½. They are manufactured by Harold Cohn and Co. Chicago, Ill. 60657 and are quite inexpensive. I have several of them strategically located around the house for visitors to view. Its a good way to "show off" some interesting cards.

3-D Television: Someone recently sent us a newspaper clipping from "The Wall Street Journal" of March 4, 1982 entitled "German Television Manages to Fall Flat With Program in 3-D." The reporter stated that eight million viewers saw a 45 minute program with a popular strip-tease actress. Both the program and the actress seemed to deliver less than promised.

More than 8 million pairs of glasses were sold for 32c each, which may have been the only aspect that was successful. The attempt was described as being only experimental with little optimism for immediate improvement.

My own viewing of a recent 3-D Television program in the Philadelphia area was most disappointing. The depth perception fluctuated and none of my companions was impressed at all.

Newspaper announcements or T.V. critic's columns should make good readings for some future historian who looks back upon those first attempts. Send them to us, please.

New address—
Now that the library has been moved to the Special Collections Room at Eastern College, all correspondence relating to the library should be mailed to: OLIVER WENDELL HOLMES STEREOSCOPIC RESEARCH LIBRARY, EASTERN COLLEGE, ST. DAVIDS, PA. 19087. ATT: DR. WILLIAM ZULKER

EASTERN MIDWEST REGION SEE'S SPY STEREOS

The N.S.A. had 36 members and guests at their Eastern Midwest Regional Meeting in Columbus, Ohio, on May 29. Members from as far away as New Jersey visited the N.S.A. hospitality room at the Ohio Camera Collectors Society annual Photo Trade Show. Highlight of the afternoon meeting was a stereo hyper viewing device brought by Robert O'Brien, N.S.A. member from Dayton, Ohio. He showed a long film strip which had been borrowed for the N.S.A. meeting from the U.S. Air Force Museum. A similar device was used to "read" the famous U-2 3-D photos taken during the Cuban Missile Crisis. Mr. O'Brien promises an article on the special camera and viewer for a future issue of Stereo World.

After the Trade Show closed on Saturday, members met for dinner at the MCL cafeteria and then afterward met at the Forest Club Party House. John Waldsmith had assembled a special display "The History of Stereo Views—1850's to 1982." Also displayed were excellent macrostereo slides by Dave Huddlle. Pat Wilburn had brought along a group of slides of the Kodak balloon.

After a show and tell session, the members were treated to a 3-D slide show projected by Linda S. Carter. Featured were Robert O'Brien's "trick" multiple self-portraits. By 11:00 P.M. the crowd began to thin but a few dauntless stereo fanatics remained for the projection of View-Master reels.

All agreed it was a very successful regional meeting. Regional Directors, Jack and Pat Wilburn reported they will try to organize another regional later in the year.

NSA DIRECTORY MAILED

The new directory (at last!) has been mailed to all members, and all members in the U.S. should have received one by the time you read this. If yours has not yet arrived, write to Columbus for a copy.
Events

AUGUST 6-7-8
NSA Annual Conference and Show, Convention Center, San Jose, CA—BE THERE!

AUG. 8
Pennsylvania Photographic Historical Society Flea Market, Marriott Inn, Greentree, Pittsburgh. Contact Harold Boyer, 412-843-4774 or PPHS, PO Box 862, Beaver Falls, PA 15010.

AUG. 14-15

AUG. 21
Atlanta Photo Collectors Trade Show. Contact John or Mary Armstrong, 1740 E. Princeton Ave., College Park, GA 30337, 404-767-2205.

AUG. 22
Tri State Camera and Photographica Show, Red Carpet Inn, Milwaukee, WI. Call 212-374-1499 days, 201-994-0294 eves.

AUG. 21-22
Dallas Camera Show, Sheraton NE, Dallas, Texas. Call Bob Norman, 817-732-1194.

AUG 29
Tri State Camera and Photographica Show, Sheraton Hotel, Minneapolis, MN. Call 212-374-1499 days, 201-994-0294 eves.

SEPT. 11
NSA Central Midwest Regional Meeting, Holiday Inn O'Hare Kennedy, 5440 N. River Road, Rosemont, IL. Coincides with Chicago Show. Contact Tom Heseltine, RR #2 Box T-3, Manhattan, IL 60442. Call 815-478-4346.

SEPT 11-12
Chicago Photographic Collectors Society, Camera & Image Sale, Holiday Inn O'Hare / Kennedy, 5440 N. River Road, Rosemont, IL 60018. Contact CPCs, PO Box 375, Winnetka, IL 60093. Call Barney Copeland, 312-252-4848 days.

SEPT 19
Chesapeake Antiquarian Photographic Society Show. Quality Inn, Towson, Maryland. Call Ben Miller, 301-744-7581 or Red Ohison, 301-647-1799.

SEPT. 19
American Society of Camera Collectors Fall 82 Show, Contact Gene Lester, 4918 Alcove Ave., North Hollywood, CA 91607. Call 213-769-6160.

SEPT 25-26

OCT. 10

PHOTOHISTORY - V
OCTOBER 30 & 31, 1982
ROCHESTER, N. Y.

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FIFTH TRIENNIAL SYMPOSIUM
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SUNDAY, OCTOBER 31: AN EXHIBITION AND SALE OF
PHOTOGRAPHICA
* THE VISUAL STUDIES WORKSHOP

THE PHOTOGRAPHIC HISTORICAL SOCIETY INC
BOX 9563 ROCHESTER, NEW YORK 14604

THE FUTURE OF 3-D FILMS
(continued from page 34)
films in order to maintain profits in the face of new competition. In a matter of months, more 3-D films were produced in the U.S. than the Soviet Union had made in a decade. The brief and recurrent fad that resulted, however, fell far short of the fundamental new development in the art of film that Eisenstein and other writers saw as the ultimate result of serious attention to stereoscopic technique and theory. Despite some honest efforts in several 3-D films, the real challenge implicit in their writings has yet to be accepted. Eisenstein remains a somewhat lonely prophet in his faith that, "It is as naive to doubt that the Stereoscopic film is the tomorrow of the cinema as it is to doubt that tomorrow will come."

The essay on "Stereoscopic Film" is included in the 1970 Dover Edition of Notes of A Film Director, by Sergei Eisenstein.
CLASSIFIEDS

As part of their membership dues, all members receive 100 words of free classified advertising. Free ads are limited to a maximum of three (3) a year, with a maximum of 35 words per ad. Additional ads may be inserted at $1 per word. Please include payments with ads. We are not equipped to do billings. Display ad rate is $45 a page "camera ready" (to be reproduced exactly as submitted). Other size ad rates sent upon request. Deadline for all advertising is published each issue at the end of the "Editor's View" on page 2. Special advertising problems should be directed to the National Stereoscopic Association, P.O. Box 14801, Columbus, OH 43214 or call (614) 263-4296.

FOR SALE

THOUSANDS OF VIEW-MASTER REELS for sale from one of the largest collections in the country. A wide assortment of equipment and miscellaneous VIEW-MASTER goodies. All 1939-1967 period. A collector's dream. Send large 37¢ SASE for detailed listing and prices. HARD TIMES COLLECTION, 216 Avalon Avenue, Santa Cruz, CA 95060.

KEYSTONE-MAST COLLECTION: A beautiful introduction to this major resource. Many rare views, identified by photographer and by publisher. 20 pp., plus a 6-page Geographical Index. $5.50 ppd. California Museum of Photography, University of California, Riverside, CA 92521.


STEREOOPTICAN VIEWS, Daguerreotypes, Tintypes, etc., available at Odds N' Ends Flea market, Carroll and South Streets, Frederick, Maryland. Open 9 am to 6 pm, Fridays, Saturdays and Sundays.

IMAGES FOR SALE Send $2 for catalogue of Victorian era cabinets, stereoviews and cameras. $2 refunded with purchase. Michael Chikiris, 530 E. Ohio St., Pittsburgh, PA 15212.

PEEP SHOW NUMES: Original stereo nudes-American-from 1920’s-many different-good to excellent condition, $10 each ppp or $90/dozen. Joel Beren, Box 541, Midtown Station, NY, 10018.

TRADE

STEREO-DAGUERREOTYPE still-life by T.R. Williams. Will exchange for views of Tasmania by John Moran taken on 1874 Transit of Venus Expedition. Information also welcomed. Please contact Nigel Lendon, Box 142, Balmain 2041, Australia.

I HAVE A NUMBER of rare "Vista" viewers (sturdy) by Hanimex with view slides, each with a stereo color transparency. All brand new in original packets (were sold in Australia in the '50s). Good collector's items. Will trade viewer plus 8 slides (32 stereo views) for 16 conventional sharp image views. Write-Ron Blum, 2 Hussey Ave., Oakland's Pk., South Australia 5046.


WANTED

A. C. McIntyre views please. Will pay cash or trade views you collect. Jack Brown, Box 439, RR3, Mallorytown, Ont. #KOE 1RO, Canada.

GOOD VIEWS needed for stereo mail auctions. Prompt returns. Earl Moore, 152 Walnut St., Wooddale, IL 60191.

J. A. Williams of Newport, R.I., stereo, cdvs, cabinets. C. Wesley Cowan, 55 E. Oakland Ave., Columbus, OH 43207.

CATSKILL MOUNTAINS VIEWS purchased, or trade for subjects you collect. Especially desire images of Catskill Mountain House, and other hotels, boarding-houses, cottages, transportation, towns. Please write. Ralph Gosse, Box 5351, Albany, NY 12205.

CAROUSEL & MERRY-GO-ROUND stereo views, photographs, and photographic postcards, any condition. Gail Hall, Box 307, Frankfort, IN 46041.


LAGUNA BEACH, CALIFORNIA views by Hardesty & Armstrong of Santa Ana, CA, or any views in their "Scenes of Southern Calif." series. Irene Evans, Box 551, So. Laguna, CA 92677. (714) 499-2537.

TRU-VUE film strips and Savvyans V-M reels. Esp. Tru-Vue #1306, #1312, #1313, #1314; V-M reels #SM-1 thru #SM-6, #FT-8, #65, #37, #70. Bob Potter, 3433 Randolph, Topeka, KS 66611. (913) 267-3115 ewes.

AMERICAN INDIAN STEREOVIEWS, especially showing reservation life: annuity payments, issue days, boarding schools, agency activities. Occupational and industrial, stereo or non-stereo photos, esp. strikes, labor parades, demonstrations, union halls, etc. Pam and Dick Oestreicher, 5724 Beacon, Pittsburgh, PA 15217. 412-421-5230.

CENTRAL PARK, NEW YORK CITY stereo views by photographers. Also: fine early English sentimental & genre views by Elliott, Sylvestor, etc. Herbert Mitchell, Avery Library, Columbia University, New York, NY 10027. Collect views: (212) 854-8163.


VIEWS, CDVS, CABINETS of famous persons, actors, singers, villains, etc. Also want nude (all formats), little girls, industrial, dogs, cats, Detroit, Quebec, France, Los Angeles, Pacific Northwest. Edward Couture, 1233 S. Curson Ave., Los Angeles, CA 90019.

TURTLES!!! Any photographer, any era. Linda S. Carter, 49 E. Longview, Columbus, OH 43202.

AM MISSIONARY IN JAPAN desiring old views of Japan and Okinawa (Luchu or Ryukyu Islands). Please write us if you have and can sell. Rob & Etsuko Oschel, Box 55, Kadena, Okinawa-Ken, Japan 904-02. Angato!

STEREO FLECTOR, Stereo Jector, or similar device for projecting split-beam stereo pairs with a standard slide projector. Also Tru-Vue film rolls. John Shaanafelt, 1417 Kelowna Ct., Sunnyvale, CA 94087.

HISSONG and HOFF of LaGrange, Indiana views. Also need information about wet plate stereo negs of New Orleans Reservoir, Mobile Cadets Monument, and Leo Dam. Richard Marke, 219 S. Sherman St., LaGrange, IN 46761.

INFORMATION WANTED regarding any stereoviews or other photos related to Russia's Grand Duke Alexis tour of US, 1871-72. For research. Also, top prices paid for fine Sierra freighting/waystation stereos. Jim Crain, 131 Bennington, San Francisco, CA 94110.

INFORMATION WANTED regarding any stereoviews or other photos related to Russia's Grand Duke Alexis tour of US, 1871-72. For research. Also, top prices paid for fine Sierra freighting/waystation stereos. Jim Crain, 131 Bennington, San Francisco, CA 94110.
Early New Orleans views wanted. Also, other Louisiana towns and cities. Peter Liberto, 416 Gravier St., New Orleans, LA 70130. (504) 566-0133.

Colorado stereoscopic views by W. G. Chamberlain; Duhem Bros; Charles Weitflle; W. H. Jackson; Alex Martin; George E. Mellen; Joseph Collier; Frank Dean; James W. Nutter. Pay top cash. David Digerness, 4953 Perry St., Denver CO 80212. (303) 455-3946.

Seeking stereo view cards by Walter Burke or Christchurch, New Zealand and Sydney, Australia from 1850's & 1900's. Will buy or pay for right to copy. Q. Burke, Box 118, Holtville, CA 92250 or call (714) 356-4120.

Baltimore, Maryland—Lincoln Circus. Art Seidman, 59 Caraway, Reisterstown, MD 21136.

Small Town Penna. views wanted. We also sell views. Large list every 60 days. Sample list $1. Jack Stewart, Warriors Mark, PA 16877.


Michigan stereographs and 19th Century Michigan images in all formats wanted. Generous trade or top prices. Dave Tinder, 6404 Coonmead, Dearborn, MI 48126.

Florida stereo views wanted. Send price. Mark V. Barrow, 1130 NW 64th Terrace, Gainesville, FL 32601.

Keystones: any and all I don't have. Will buy or trade. My list available upon request. Also want H. C. White. Charlie Ilgenfritz, 5543 Trent Ct., #210, Alexandria, VA 22311.


Florida Images: stereo, cabinet, CDV, etc. Any subject, any condition. Buy or trade. R. Cauthen, P.O. Box 342, Leesburg, FL 32748.

Eastman house books

Three new books dealing with different areas of photographic technology and equipment of the past have been announced by the International Museum of Photography at George Eastman House. The winter issue of IMAGE, the museum's journal, includes articles on unusual lenses in the collection, historic technological advancements, early color cameras, and a guide to the camera collector's reference library by NSA member S. Franklin Spira. Copies of the journal are $3.50.

ACquisitions 1973-1980 is a 64 page catalog of a 1981 exhibit at the museum. It includes a checklist of 311 prints and information on 39 cameras which are displayed. Five cameras, including a Crockwell Pan Stereo Camera are illustrated. The catalog is $10.00.

Selections from the spira collection documents an exhibition of 22 cameras, viewers, and other items from the collection of NSA member S. Franklin Spira. Objects dating from 1842 to the 1880's are annotated and illustrated along with a table bracketing dates of introduction to the market for each item. The 20 page catalog is $4.00. With a $1.50 postage fee, the books are available from: Technical Publications, George Eastman House, 900 East Avenue, Rochester, NY 14607.
Terms: Please include shipping costs. 1 to 3 views $1, more than 3 views $2. NYS Residents include sales tax. Phone orders held 5 days for payment. Return Privilege for 7 days.

B-1 Airplane - US Air Mail, Cleveland, nice close view loading plane, Keystone #29446, Exc., $18.

B-2 Zeppelin - ZR-3 Acquired by US from Germany, aloft, close view, Keystone #17398, Exc., $18.

B-3 Explorer - Roald Amundsen, discovered of South Pole Inspects ice field, Keystone #13327, Exc., $9.


B-5 - - - Wilson reads war message to Joint Session Congress, Keystone #16770, Exc., $6.

B-6 - - - McKinley and Admiral Dewey review Troops, Oct. 1899, Keystone #10520, G+, $.4.

B-7 - - - McKinley, Dewey and Cardinal Gibbon giving benediction, Keystone #10525, VG+, $.6.

B-8 - - - McKinley and Eight Cabinet Advisors, U & U, VG, $.6.

B-9 Western - Universal City, view from hill overlooks studio buildings and false front western street, nice, Keystone #26385, Exc., $.12.

B-10 - - - Mamitou, Colorado, overview of city, White #12358, Exc., $.7.

B-11 - - - Cathedral Rocks, C.L. Pond #680, VG, $.6.

B-12 - - - Vernal Falls, Hazelmaize, G+, $.5.

B-13 through B-30 are from various Yellowstone National Park series by W. Marshall, Fitchburg, Mass. Copyright 1876, all are on orange mounts.

B-13 - - - Yellowstone River Ser. $5, Successful hunters dressing elk, nice shot, VG+, $.12.

B-14 - - - Mam. Hot Spg. Ser. #93, Central Basin, 8 people posed on mineral formation, VG+, $.10.

B-15 - - - Same series #103, Upper Basin, VG+, $.8.

B-16 - - - Same ser., #100, Basket Basins, VG, $.7.

B-17 - - - Gardner River Ser. #83, Giant's Gateway, VG, $.6.

B-18 - - - Same series #85, Falls North Fork, pleasing scenic, VG+, $.8.

B-19 - - - Same series #80, East Fork Fall, VG, $.5.

B-20 - - - Lower Basins of Mammoth Hot Springs, $89, nice view looking down onto mineral formation, shack built at side, Exc., $.9.

B-21 - - - Upper End of Geyser Basin #7, Steam rises from geyser field in distance, VG, $.6.

B-22 - - - Chimney Point, #105, VG, $.6.

B-23 - - - Yellow Falls & Grand Canon Series, #73, View of canon, VG, $.6.

B-24 - - - Same series #65, Cascade Creek Falls, VG+, $.8.

B-25 - - - Madison & Gibbon's Fork Ser., #2, Madison Falls, VG, $.6.

B-26 - - - Same series #3, Mushroom Cascades, light image, VG, $.5.

B-27 - - - Castle series, #20, crater of geyser and crystal spring, VG, $.5.

B-28 - - - Fire Hole series #47, Upper Falls, VG+, $.6.

B-29 - - - Magic Spring and Pissured Ridge Series #109, Snowy Cascade, lime formation, VG, $.6.

B-30 - - - Tower Creek Series #77, The Tower, VG, $.5.

B-31 - - - Silver Mining Camp, Nevada, nice overview of typical mountain town, Keystone #16759, Exc., $.6.

B-32 - - - Hydraulic Mining, Oregon, Keystone #13796, VG, $.8.

B-33 - - - Totem Poles, Indian Village of Kasaan, Alaska, Keystone #21038, VG, $.7.

B-34 - - - Grandeur of Yosemite Series, W. Woodward, #568 Yosemite Falls, VG, $.5.

B-35 - - - Same series #596, View of Lake Tenaya, Light, G+, $.4.

B-36 - - - Same series #572, Mt. Watkins and Teyana Canyon, VG, $.6.

B-37 - - - Same series #597, North Dome, VG, $.4.

B-38 - - - Alaska Goldrush - miners camp at Chilkoot Pass, Keystone #9195, Gray Mt., Exc., $.6.


B-40 - - - Indian - Mounted Sioux in Full Feather, Nebraska, Keystone #16718, Exc., $.7.

B-41 - - - Blackfeet Medicine Ceremony, Montana, Keystone #30000, Exc., $.8.


B-43 - - - Battleship Maine, close view, Strohmeyer & Wyman, $.4.

B-44 Tissue - Peter de la Cloud (something like that), large group at some type of event, some soil but no tears, G+, $.7.

B-45 - - - Versailles, with some other French I can't read, Fountain in Foreground with group in rear garden, same condition, $.5.

B-46 Exhibition - Louisiana Purchase Expo, Night Scene at Festival Ball lit up, very nice, White #8511, Exc., $.8.

B-47 Celestial Bodies - Keystone views, all exc., #16646 Moon, #16648 Full Moon, #16767 Saturn, #16764 Sun, #16765 Uranus, #16645 Morehouse's Comet, these views are far out, Lot #22.

B-48 Moomachet, Rhode Island - Lot of 7 Cabinet size views including overview, rubber works, flood scene, blizzard '88 scene, fair to VG cond., Lot #21.

B-49 Livermore Falls, Maine - Four views by Peabbles of Town and river, C to VG, $.16.

B-50 Covered Bridge - Mid distance view of bridge w/loge backed up in river, Livermore Falls, Maine, Peabbles, VG+, $.8.

B-51 New York City - NY Stock Exchange with group in front of building, Und., image light but good, $.6.

B-52 New Orleans, Louisiana - Excellent Street scene w/horse drawn street cars and citizens posed as photographer takes view from middle of street, S.T. Blessing, yellow mt., VG, $.10.


B-54 Women at Work - Lot of 5 Excellent Keystone showing women in various industrial settings, Lot $12.
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23-1 Tru-Vue 35mm strip-film stereo viewer. An early model, C. 1930's; two films; Recordex Center and Washington, 2/C-3., in carton w/list of films that were available. VG, $20.


23-3 Jerusalem Through the Stereoscope, Hurbut, 1905. A paperback guidebook for the 35 View U. & U. set. 12mo, 6, small tear at edge of title page & fly leaf, w/map, $8.

23-4 Dr. Hall's Selection of Stereoscopic Charts, Cat. No. 1965. Made by American Optical Company, c.1939. A set of 50 printed views, 21 in color. Set includes novelty cards such as putting the bird in the cage, eye test cards and exercise cards. VG, in carton, $30.

23-5 Leaning Tower of Pisa-Leon & Levy. An impressive glass view of one of the wonders of the world. E, $32.

23-6 The Sphinx and the pyramid-Ferrier, Soulier, Leon & Levy. Another glass view of a wonder of the world. E, $32.

23-7 8877 Isambourl, Le Grand Exemple, Facade (Nabia). A Ferrier, Soulier, Leon & Levy another glass view of the statues at the entrance of the temple ruins. VG, $35.

23-8 Risque Tissue-c.1860, woman in dress with skirt raised above her knees, buttons her shoe; while the inside of her thighs are exposed almost fully. An unusual item, G, tissue without tears, some foxing, $10.


23-11 Bean Engine & Mill. An early English view of the late 1850's, of a small building housing a walking beam steam engine. Large gears and screw augers; some as tall as the building lean on it. Rubble also scattered about. Possibly the result of an explosion. An interesting machinery view. G, $5.

23-12 Continuation View of the Newport, Abegoweny & Hangar Railway, 13(E) England. A green-mt. view, dated 1860, of a spectacular wooden railroad trestle. In the foreground, construction crew pose with saw partially through a wood beam over a pit (another man usually was on other end of saw in pit). VG, $7.

23-13 Harbor View, England. A yellow mt. birds-eye view dated 1861, of a sailing barge in the harbor and the town in the background. Barge has a load of lumber and a wagon, while another wagon rests in the water ready to be put on board. Remiscent of Sutcliffe's work, G, $7.

23-14 175-Interior View Salon American Steamer. An early cream-mt. view by H. Nuttman, Montreal, of the "sitting room" on a large ship (possibly, the Great Eastern). VG, $32.


23-20 Another--Pacific Coast-Orange mt., Cape Horn, Columbia River 1229. A very strong, well-composed view of the cliffs at the water's edge. E, $18.


23-27 202-The American and Horse Show Falls, Niagara. A similar view as above, but not blind-stamped; of Victoria Point with Babbitt's pavilion. The camera is inside with a photographer and people posing. Not tinted, VG, $25.


23-34 1872 Summer Street, Boston Fire, Panoramic view Chauncy St. A birds-eye view of the destruction left by the fire G, $5.

23-35 Draft Horses- Two men, each holding a magnificent work horse. Orange mt., VG, $5.

23-36 Russia-Two U. & U. gray curved-mt. views; Richelieu Street, Odessa and Salt Fields, Soliten. E/VG, $7 for the pair.
