T
ex was appointed President and
t-member of the NSA Board of
Directors at the National Conven-
tion in Canton, Ohio, Aug. 1980.
Since then he has guided and direct-
ed the organization to unprecedent-
ed growth, more than doubling its
membership from a little over 1000
to some 2400 members today. Tex
has shown extraordinary devotion
to the NSA during his long tenure as
President. He has been responsive to
the needs of the Association, and to
the wishes of the members as the
trend has swung more towards ac-
tive participation in modern 3-D. He
has unselfishly shared his great
knowledge in the collecting field
through his own publications.

First and foremost Tex worked to
place the NSA on a firm financial
basis, carefully controlling expendi-
tures and building income through
substantial donations both in size
and numbers (over $6,500 from 247
members this last year). He per-
sonally provided considerable finan-
cial support initially to place the
NSA in a solvent position and has
continued this aid to develop new
programs. His has been a hands-on
management style, observing and
assessing most every detail of the
operation.

Tex has provided encouragement
and support for the outstanding bi-
-monthly magazine Stereo World,
which has grown under his tenure in
quality, size and circulation. It has
become known around the world
and is certainly one of the finest
photographic magazines anywhere.

Under Tex’s leadership the annual
national conventions have
flourished, moving to a different
city each year, alternating between
west coast, midwest and east coast.
They are now considered the largest
image trade fairs in the country as
well as providing outstanding and

extensive stereo exhibits and au-
dio/visual presentations.

Many new programs were estab-
lished by Tex including publication
grants to further research on articles
for Stereo World; encouraging more
volunteers to get involved in running
the NSA; membership donations be-
yond annual dues for which he per-
sonally prepared acknowledgement
certificates to each donor; annual
recognition and service awards for:
Fellow of the Year, Meritorious
Service, Edward B. Berkowitz award
for best article in Stereo World,
Memorial award for best article
dealing with a current stereo sub-
ject, Generous Financial Support of
the NSA and a special Distinguished
Support award.

The reprinting and distribution of
publishers’ and photographers’
stereoview catalogs has been active-
ly pursued by Tex and he has in-
troduced the publication of stereograph back lists. In addition
he has established the important
NSA Book Service to conveniently
provide to members numerous pub-
lications on stereo photography and
a wide range of related photographic
topics, handling the procurement
and distribution of the books him-
self (which he proposes to continue).

When the opportunity surfaced to
acquire a substantial stereograph
collection, Tex acted swiftly and
positively, meeting with the estate
executor and providing all the neces-
sary information and assurance for
its proper care and safe-keeping.
Thus the Helen D. Mosley collection
of fifteen thousand views was don-
ated to the NSA’s Oliver Wendell
Holmes Stereoscopic Research Li-
brary at Eastern College, Pennsylva-
nia. Subsequently he obtained a
grant for a computer and a file sys-
tem for the library and an additional
grant for further support of the
library.

His initiative, drive and enthu-
siasm as President will be greatly
missed, but the NSA is fortunate to
have Tex continue as a member of
the Board of Directors.

We wish him well in all his en-
deavors.

Louis H. Smaus
Chairman, Board of
Directors, for the officers
and members of the NSA
Volume 16, Number 1
March/April 1989

NSA Board of Directors
CHAIRMAN
Louis H. Smaus
MEMBERS
Paul Wing
T.K. Treadwell
Susan Pinsky
Dieter Lorenz

NSA Officers
PRESIDENT
T.K. Treadwell
SECRETARY
John Weiler
TREASURER
William Eloe
VICE PRESIDENT, REGIONAL AFFAIRS
Tom Rogers
GENERAL BUSINESS MANAGER
Linda S. Carter

Stereo World Staff
EDITOR
John Dennis
ART DIRECTOR
Mark Willke

Copyright ©1989 by the
NATIONAL STEREOSCOPIC ASSOCIATION
ISSN 0191-4030

IN THIS ISSUE
Havana Glen: The Forgotten Natural Wonder .................. 4
by Donald K. Weber and Brandt Rowles
3-D at Photokina — for Specialists Only? .................... 12
by Dieter Lorenz, translated by Richard Mills
The Quagga: An Extinct Animal Stereographed from Life .. 16
by Richard C. Ryder
Jacob Berg of Grand Forks, D.T.: Stereographs of
the Flood of April 1882 ....................................... 22
by Bruce Hooper
Post Crypt: More on Stereo Cemetery Photography .......... 26
by Laurance Wolfe
Shoshone Falls: The Niagara of the West ..................... 30
by Bruce Hooper
Hyperstereo: A Solution to Modern Aviation Problems? .... 36
by Bill Copeland

REGULAR FEATURES
Editor's View .................................................. 2
Letters .................................................................. 3
The Society ...................................................... 19
Newviews ......................................................... 20
The Unknowns ................................................... 33
Classified .......................................................... 38
Calendar ............................................................ 40

Stereo World is published bimonthly by the National
Stereoscopic Association, Inc. Annual dues: $22 third
class U.S., $30 first class U.S., Canada, and foreign service,
$40 international air mail. All memberships are based on
the publishing year of Stereo World, which begins in
March and ends with the January/February issue of the
next year. All new members received will commence
with the March/April issue of the current calendar year.
When applying for membership, please advise us if you
do not desire the back issues of the current volume.
Material in this publication may not be reproduced
without written permission of the NSA, Inc.

Front Cover:
Jim Morrison in stone, surrounded by
the gifts and words of fans in the famous
Pere Lachaise Cemetery in Paris. From
the feature on page 26 by Laurance
Wolfe (a sequel to his Jan./Feb. '87 arti-
cle on tombstone stereos) this one titled
"Post Crypt." Stereo by Pat Payne.
15 Years

The NSA and Stereo World are now 15 years old, and continue to grow with much of the energy and some of the same confused self-consciousness of any teen-ager. World-wide membership is now near 2400, and the reputation of the magazine places it near the top of most lists of photo-historical, collector, or specialty publications, whether commercial or non-profit. To repeat some lines from the editorial in the tenth anniversary issue: "We have reached this point only because so many people contributed their time, work, money, knowledge and creative talents to various NSA projects during those years. The work load on some individuals has at times been tremendous — and their continuing efforts prove that like the three dimensional images that involved us all in the first place, there is some special element of depth to people's interest in the goals of the NSA."

Commenting on the growth of NSA membership and Stereo World, outgoing NSA president Tex Treadwell reported some interesting statistics in a recent letter. "It is also abundantly clear that this growth would not have occurred if the NSA had remained just a club for stereo collectors. Basically, during the life of the NSA, the attics have been emptied of old views; the days when one could pick up a bushel of stereos at any antique shop are long gone. And as in any seller's market, prices have gone up. A collector nowadays has to be rich to put together a general collection of quality views. Due to this combination of shortage and expense, the number of members interested solely in older views has remained roughly constant for the last ten years. Look at these statistics:

<table>
<thead>
<tr>
<th>Year</th>
<th>&quot;Collectors&quot;</th>
<th>&quot;Shooters&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>72%</td>
<td>28%</td>
</tr>
<tr>
<td>1984</td>
<td>64%</td>
<td>36%</td>
</tr>
<tr>
<td>1987</td>
<td>58%</td>
<td>42%</td>
</tr>
<tr>
<td>1989</td>
<td>48%</td>
<td>52%</td>
</tr>
</tbody>
</table>

The NSA's growth has come in stereo fields other than vintage views: taking stereo photographs; collecting the more recent stereo materials such as View-Master; 3-D books and TV; and the newest fields of holography and computer stereo. We have seen a diversification of interests, as people who were originally interested only in vintage views, for example, have broadened out into taking their own stereos."

This trend reported by Tex (based on responses to questions on renewal and directory forms) is reflected in the pages of Stereo World only in a general way, and even if continued, will probably result in more expansion of contemporary coverage than reduction of historical material. In terms of both proposed and submitted articles, that seems to be the trend (so far) of the way members are devoting their research and writing efforts. The happy result, with a growing membership, will be more of both types of material and an expanded publication that continues to cover every aspect of stereo imaging, past and present.

Remember, you don't have to be a historian with a doctorate or a col-

Keystone No. 32741, "Mount Hood, Oregon, from an Airplane-Fairchild Aerial Surveys Inc." This aerial hyper of what (from a different angle) would later become the 1989 NSA Convention logo is the sort of image that could be seen as a live, moving video 3-D image by airline passengers if the bit of speculation in the second part of the Editor's View ever became reality. Planes approaching Portland from the east often pass Mt. Hood at about this distance and altitude.
Translation:
I'm writing to say how much I enjoy Stereo World. After years of wondering about stereo and some attempts at 3-D on my own, all successful enough to lead me on, you can imagine how delighted I was to discover you people shared a like interest and had done so in more successful ways.

I free-view all the pairs in each issue with no trouble whatever, and I like your mix of articles.

What prompted this letter is a caption in the "Anschluss!" article in the May/June 1988 issue. In commenting on the slide set, the caption indicates that the picture of the Jews in a church setting was puzzling. I was puzzled, too, until I got hold of a German-English dictionary and roughly translated the title!

I am not conversant with German, but 30 years spent as an editor has taught me where to look for puzzle solutions.

The caption on page 26 leaves no doubt that it is very serious anti-Semitic propaganda. It says roughly: "Judaism in action, performing ritual murder in the Pilgrimage Church." The charges of ritual murder have been mounted against the Jews for centuries in the mistaken belief that they condemned Christ to death.

This, however, is obviously fairly advanced propaganda in a campaign that led, as you know, to wholesale slaughter of Jews and others in the Death Camps.

There is no puzzle. Nazis were and are anti-Semitic and given to the most crude manners of expressing it. The fact that it was included in the set was to show that all this sweetness and light was okay, but the party was busy at the old stand just as always. It also indicates that the Nazis were unable to make a "nice" set of slides without a nasty shot at the people they hated.

Thanks for doing a great job.
Sam Wetmore
Birmingham, Alabama

My own guess is that the view was included in that "soft sell" Nazi propaganda set because, like the welcoming crowds, it represented an element in Austria that already existed. An anti-Semitic display found in a church was probably seen as a piece of folk art that would help build the Nazi case WITHOUT having to resort to their own crude messages. This was there waiting for them to exploit.
— Ed.

Future To The Back?
Would you please change "A Listing of Coming Events" to "A Listing of Past Events" since the last 3 issues I have received have all arrived after the listed events have passed.
Douglas Johnston
Phoenix, AZ

Along with the obvious need to get issues of Stereo World published closer to their calendar dates, the need continues for a volunteer to take responsibility for the compilation and production of the "Calendar" column. If anyone is interested, let us know!
— Ed.

Stereo Captions
I am a recent member of the NSA and have enjoyed Stereo World magazine very much. I had the fortune of receiving the collar issue as my first one and was overwhelmed by the professional quality: it's hard to return to black and white after something like that, although, I have been equally pleased with those articles and stereo views, as well.

I work in computer graphics here at ARAMCO and my job involves making computer displays of all kinds, including stereoscopic ones. I find that a terminal user feels better viewing a stereoscopic display when the title appears directly over or under each of the two views. To relax one's eyes in order to fuse the two images of a stereo pair and then have to switch back to normal viewing to read the title is very disconcerting to a user. This brings me to the point of my letter:

I feel that the stereoscopic views you publish would be greatly enhanced if the captions could be repeated for each view with appropriate spacing so that the text appeared to be within valid stereo depth bounds. If you were to print the captions to stereoscopic pictures stereoscopically, your readers, who, after all are interested in stereo, could, by simply moving their eyes to the caption text, read it and return smoothly to viewing the stereo image.

Ross F. Householder
Dhahran, Saudi Arabia

Properly placed stereo captions do go better with stereo images, but to use them in the reproduction of vintage views would require that readers' eyes skip down past the non-stereo existing captions and boarders on the cards, to fuse the Stereo World captions. In the case of contemporary stereograph reproductions, the idea is more feasible and has been considered. Any lengthy captions, of course, would take up considerable space — or would need to be set in rather small type. Then there's the question of whether the caption should appear at the window or at the same plane as the main subject of the view. In the end, time and space will be the limiting factors, although some articles could lend themselves more easily to the idea than others, and someday the temptation of such a logical concept may lead us into some deeper captions . . .
— Ed.

Perhaps you could even use STEREO CAPTIONS to EMPHASIZE things.

Perhaps you could even use STEREO CAPTIONS to EMPHASIZE things.
Havana Glen
The Forgotten Natural Wonder

by Donald K. Weber and Brandt Rowles
Land immediately south of New York’s Seneca Lake is infiltrated by scenic streams, valleys and glens, all remnants of the last ice age. Several miles south of the Schuyler County small town of Watkins Glen and closer to the smaller town of Montour Falls (formerly called Havana) lies beautiful and essentially pristine Havana Glen.

People residing outside of New York State may be familiar with the name Watkins Glen because of its annual Grand Prix automobile race. Millions of people also have visited the mid-town state park and scenic glen, which has been an enormously popular and well-photographed tourist attraction for well over a century.

The name Havana Glen is known only to some Schuyler County denizens, a few history buffs and photographic history cognescenti. Although the rise and fall of Havana Glen as a tourist attraction was tied closely with the development of Watkins Glen, few contemporary visitors to the cement-tiered and steel-railed walkways of Watkins Glen have any idea that an equally attractive but unspoiled glen exists only a few miles away. Today's Havana Glen is mostly inaccessible and unvisited. It was not always so.

With the end of the Civil War, Americans began to turn their interests to more rustic, tranquil and pleasant pursuits such as tours of scenic wonders and “pic-nics.” America's new system of railways allowed average people easy access to excursions and travel over great distances. Advertising and low railroad fares made remote scenic areas such as Havana Glen interesting and reachable. Alert entrepreneurs opened up formerly remote and untraversable sylvan glens to accommodate and profit from increasing numbers of travelers. In 1863, Morialdeva Ellis opened Watkins Glen (then called Freers Glen). The summer of 1867 witnessed the opening of Havana Glen.

Previously, anyone clambering through Havana Glen would do so at substantial personal risk. Although the glen had been known since the time of the Indians, it wasn’t until the members of the local Masonic Lodge, in an admirable surge of civic pride, pooled their efforts to make the glen accessible. In July of that summer, the sounds of carpentry were first heard in the glen. Fewer than four days of labor were required to make the first section accessible. This included construction of a sixty-foot oak staircase up the side of Eagle Cliff Falls and the building of approaches to Curtain Cascade. Soon thereafter, the Masons completed the Herculean chore of constructing a triple staircase through the central gorge and a bridge above the stream just above. This was the last structure completed in 1867; a simple path-way was dug along the remainder of the glen. The other structures and paths required for safety and convenience were added in later years. Although its opening required considerable expense, no admission fees were charged.

The glen was first called McClure’s Glen, after the stream that flowed through it. It was alternately named Masonic Glen to commemorate the members of the Masonic Lodge who made it available to the public. Not until the early 1870s was it primarily called by its present name.

During the opening season, numerous picnics were held in the amphitheatre area. The largest was on September 18, 1867 - a Grand Masonic Picnic and Festival. James G. Clark, a long-forgotten “poet-vocalist” attended and wrote, “A person seeing this spot can never forget it, and the sight is well worth a journey from Utica to Havana. There were perhaps 5,000 persons present at the Pic-nic - some say 10,000 and the majority of them explored the glen.”

Newspaper reviews were ecstatic, in the fustian prose of the day. “This romantic spot has just been opened to visitors and is one of rare beauty,” “In many respects we think it surpasses the famous glen at Watkins,” “Sublime, magnificent and challenges the admiration of the world,” “... it is far ahead of any-

G.F. Gates, No. 2., “Havana Glen Scenery, Crystal Rapids looking up.” CA 1870. (Sylvan Rapids.)
thing we have seen."

As its fame began to spread, national publications wrote detailed descriptions of journeys through the glen. Scribner's avoided the usual comparisons with Watkins Glen by stating "... the two glens are not rivals, but complements, and the sight of one heightens rather than lessens the enjoyment of the other."

By 1879, Havana Glen was acquired by Col. E.W. Cook and Mr. E.M. Cass. Col. Cook ran the area below the glen, the grand entrance amphitheatre, and Mr. Cass ran the glen itself. Mr. Cass once made the incredible claim that "The Glen is the most unique, beautiful and remarkable gorge in the world. It is a stupendous picture, making the gorge rival the Grand Canyon, with more water!"

Railroads serving the area prepared pamphlets on it. Stereoviews and cartes-de-visite were taken to be sold. Not only local photographers but also national firms such as Underwood and Underwood recorded its beauties. A guidebook with Albertype photos by the famous photographer Charles Bierstadt was published in 1875. Even epic poems were written, all proclaiming the splendors of the glen. And the people came. In 1881, nearly ten thousand people paid admission to the glen. In the same year, a race track was built in the amphitheatre area to attract even more visitors.

Throughout the 1880s and 1890s Havana Glen seemed to be a never-

B. Rowles, 1984, "Eagle Cliff Falls."
ending source of revenue. However, in 1906, a seemingly unrelated event began the decline of Havana Glen as a tourist attraction. In that year, the State of New York purchased Watkins Glen and made it a state park. Gone was the $1.00 admission fee. Havana Glen, still in private hands, still charged admission. As a matter of simple human nature, people preferred the free attraction. Even with reduced admissions, the decline of Havana Glen was rapid. The stairs, bridges and walkways could no longer be kept in repair and the glen became unsafe.

In 1919, a local company purchased the glen and tried to revive interest in it. The proximity of the free Watkins Glen caused failure of the venture. In 1928, a bill was introduced to the New York State Legislature to make Havana Glen a state park, but because of outside interests and the nearness to Watkins Glen, the bill did not pass. The glen was sold to its present owner, the town of Montour, in 1937.

There have been occasional attempts to make parts of the glen viewable. Over a decade ago, a Havana Glen Corporation was formed. They cleaned up the amphitheatre area, repaired the pavilions and built a permanent swimming area. They also made the first part of the glen, as far as Eagle Cliff Falls, open to the public. No attempt has been made to go further, and the majority of Havana Glen remains virtually inaccessible.
It is possible to reconstruct a trip through the glen by the use of early guidebooks and stereoviews. We can turn back in time to when Havana Glen was in its prime; the walkways, staircases and bridges would be intact, and the glen would echo with human voices, all marvelling at the natural wonders.

What follows is a compilation of quotations from various guidebooks.

“We first enter the Grand Amphitheatre, which is a flat area of more than thirty acres in extent situated near the first gorge of the glen. Here we leave our carriage and make our exploration of the Glen on foot.

B. Rowles, 1982, "Interior of Council Chamber."

The Glen is on the eastern side of the valley, and the general course of ascent is from east to west. After purchasing our ticket at a small booth we begin our trip up the glen. The entrance, with its wall of limestone, is covered with a wealth of mosses, lichens and ferns. Following the path and going towards the east, soon after entering the first gorge we come to Portal Cascade.
"We cross the Sylvan Bridge and pause for a moment to behold the foaming waters (Sylvan Rapids) beneath our feet. Here we notice the water-worn and rocky channel which has taken ages for its completion. Although Portal Cascade is not over 10 or 12 feet in height, still as the beginning of a long series of waterfalls it does not go unnoticed.

"As we advance, we obtain a fuller view of the large and spectacular Eagle Cliff Falls. These falls, over fifty feet in height, are the highest in the Glen. We are told that they obtain their name from an old eagle's nest located on the opposite wall. Ascending the long staircase up the side of the falls we come to one of the most spectacular formations in the Glen - the Council Chamber.

"The facings of the rocky sides are so evenly cut or worn as to give this wonderful natural chamber a singular artistic appearance. The Council Chamber is sixty feet in length and about twenty-five feet in width. Standing on the bridge which crosses it we have a fine view of the rapids above. Following the path we have a fine view of the gorge.

"Now we arrive at Curtain Cascade, which is considered one of the finest views in the Glen. Curtain Cascade is actually two waterfalls. The lower fall is about eight feet high and appears in the form of an apron or curtain. But, the name is derived from curtain rock which is nearly hidden from view by the foliage to the left."
"Leaving this point we cross over the bridge which leads to the Central Gorge. A second bridge recrosses the stream and after following a short path we find ourselves gazing upon the wild and startling scenery of Central Gorge.

"A pool named the Witches Cauldron is at the bottom of this spectacular formation. To reach the top, we must climb two long staircases, each about fifty feet in length. These form the Jacob's Ladder of Havana Glen. The first crosses the gorge towards the south to a landing halfway up the southern cliff, from which the second extends to the top of the northern wall. From about midway on the Ladder we obtain a view of the Bridal Veil waterfall. This waterfall, some fifty feet in height, sweeping gracefully over the steeply inclined rock is a silvery shower when viewed in bright sunlight.

"Leaving Central Gorge we cross Cavern Bridge. A short distance from this bridge, on the north bank of the stream, we see a huge pillar of rocks nearly detached from the main column. Here we see openings or caves caused by the action of water years ago. Among those is one known as the Indian Oven. We see that it is several feet in height and over ten or twelve in length. Nearby in the Hermit's Cave, situated twenty feet above the bed of the stream. Here on the south bank, we ascend a short flight of stairs and go through a natural formation known as Cavern Tunnel. The Tunnel is about three feet wide, eight feet high and perhaps twenty feet in length.

"To the east, after leaving the Tunnel, we come to the Whispering Falls, so named from the gentle murmurings of the water over the rocky bed as contrasted with the other Cascades.

"Upon leaving those Falls we enter the area known as Glen Chaos. Here we encounter a mass of fallen rocks solidly imbedded in the stream bed. It is generally presumed that a great rockslide occurred here centuries ago. As we continue our ramble we approach Echo Falls so named for the double measured sound of the rumbling waters. Climbing over the rocks, perhaps twelve feet in height, we enter an interesting area known as the Glen of the Pools. Many basins or wells of various sizes are found here. Among these are two circular ones known as the Rival Pools. The next point of interest is Fairies Cascade. At its base is found a beautiful pool - the deepest in the Glen. The charms of this unpretending cascade are enhanced by the beauty of its situation and surroundings. Not far above it are several singularly shaped pools - one resembles a helmet, another an artist's pallet. Many varieties of moss are seen in all parts of the glen, but especially notable in the forest grotto near this cascade.

"From this charming Cascade our pathway leads along the northern bank of the ravine. Soon, we catch a glimpse in the distance of Summit Falls which is twenty feet high with a rounding face. Below the Falls we pass the two rock formations known as the Petrified Hats.

"Our journey is now over. We have walked over a mile and a quar-

ter through one of the prettiest and most wonderful of Glens.

What of the glen today? Schuyler County has taken over maintenance of the park below the entrance to the glen. Here you can enjoy a "pic-nic" as the Victorians did. You can even see a small part of the glen itself. There is a reconstructed pathway along Portal Cascade leading to Eagle Cliff Falls. Here you are stopped by an enormous cliff of sheer rock. We do not recommend that you attempt to see the rest of the glen as it is not only posted but also very dangerous.

Recently, there has been a new interest in Havana Glen. A developer from across the State planned to build three waterslides in it. Local environmental advocates became upset at the prospect of the overload that this could put on the ground water, soils and ecology of the glen. A petition opposing such commercial exploitation indicated that many local people considered that Havana Glen is "an irreplaceable natural resource ..." A classic environment vs. commercial exploitation has been fought and won. No waterslides will be built.

Perhaps Havana Glen will again reopen. Presently, there are upgrades being made to the amphitheatre and to the walkway and stairs leading up to Eagle Cliff Falls. It is very unlikely that the rest of the glen will become safely available to the public. For the unopened parts

(Continued on page 21)
Opinions at the photokina were quite divided. If you asked the diehard 3-D enthusiasts among the amateur photographers, you were told that the big breakthrough was just ahead. But if you listened to the industry representatives, they usually said, oh no, we're not doing anything in that area. After all, there's no demand for it. Just think of the quantities you'd have to sell to make production worthwhile. So who's right? We don't know, because you can't get sales figures for products that aren't being manufactured. But as in so many other areas, the truth seems to lie somewhere between these two extremes.

In any case, two mail-order businesses for 3-D products thought it worth their while to attend photokina 1988. The first was 3-D-Foto-World of Basel, with its large catalogue of accessories. The second was the firm Stereo-Optik Renate Grosch of Dietzenbach, which shared a booth with Kindermann, at which they jointly announced a small guide to 3-D photography.

There was nary a stereo camera to be seen at Cologne this year, with the exception of a "3-D camera in Swiss cheese look" from 3-D-Foto-World, which, even if only a gag, was certainly original. Designed to look like a piece of Emmentaler cheese, it is a stereo camera obscura assembled from cardboard cutouts. (See Stereo World Sept./Oct. '88, page 31.)

The French Hectron, first introduced here in 1986, was nowhere to be found, even though a new model is out. Its German distributors (Scoptimax, Garbsen) even erroneously stated that it was no longer being made, which nevertheless did not prevent them from including the camera in their price lists! The industry specialists had been expecting a 35mm stereo camera from Russia, but it did not make it to Cologne. According to Soviet representatives at the Technointorg booth, only test models have been produced thus far, and they are currently being evaluated in Russia. The first production models, scheduled for 1989, will be sold only in Russia. The Soviet Trade Organization in Moscow will decide when the camera will be exported.

An interesting refinement was to be seen at the booth of the Swiss firm Solecta: the combination of two Roundshop 35 panorama cameras made by Seitz Phototechnik AG. (This type of panorama camera that revolves around a vertical axis has been shown at several earlier photokinas.) Turning by means of a gear drive, these cameras point in the same direction at a fixed separation of 180 millimeters. This allows them to shoot 360 degree panoramas. Unfortunately the presentation was very lackluster. The picture examples, themselves less than expressive, were hanging on an unfavorably situated side wall of the booth, and couldn't even be viewed stereoscopically. The exhibitors said the stereo viewers had been misplaced.

Beam-splitter attachments with prisms or mirrors for camera lenses (with focal distances from 50 to 55 mm on up) that subdivide 24 by 36 mm or larger formats into two stereo views, remain available, as are the required stereo viewers. Sources include Pentax, Stitz (whose stereo products, despite pronouncements to the contrary by the manufacturer at the previous photokina, are still being made, although they weren't exhibited here), and a new, low-cost version from Franka made in Taiwan.
Along with its well known, marginally improved, and rather extravagant 35 mm stereo viewer Stereofix-Macromax (with its four-element lenses with 5x magnification), Emo exhibited a new SLIDE-BAR system, suitable both for sways movement of cameras for stereo pictures and for placing two identical cameras next to each other. It is available in lengths up to 3 meters, with so-called carousels used to attach the cameras.

Novoflex will soon be introducing a new, improved SLIDE BAR with a 14 cm TRACK, which, like its predecessor, is suitable for stereo photography. Similar devices, which generally have smaller TRACKS, are also available from other firms (like Hama, for example), but without any indication that they can be used for stereo photography.

Genuine improvement has been made in the area of stereo projection. The device developed by Eckhart Oehmichen, already described as the best existing stereo projector, but previously made only by hand, is now being manufactured as the RBT 3-D Slide Projector 101. It is fully automatic, with its own cassettes for the international stereo format 41 by 101 mm (both views are in a mount), for which special, glassless stereo slide mounts are available. Their use is supposed to eliminate the “warping” that is otherwise so common with glassless mounts.

Previously introduced stereo models built from dissolve projectors, in which single views are placed individually in 5 by 5 cm mounts, were also shown. One was the Rolleivision 35-Stereo from Rollei Fototechnic, and another was the two projector Eumig-Kombination from Silma International. There was also a similar combination of Kindermann projectors that is distributed by Grosch.

Bonum was again represented by its reliable series of 5 by 5 cm stereo slide mounts. Reflecta continues to offer its silver screen, but doesn’t mention that these are most suitable for stereo projections. Harkness (Borehamwood, Great Britain), on the other hand, which specializes in the professional film industry, made no secret of the fact that its “Silver spectral” and “Spectral 2000” projection materials are recommended for stereo projection.

An example of the suitability of Dawaco screens for stereo back projection was a stereo video study by TC-Studios Fred Oed of Ludwigs-
The RBT 3-D projector, formerly the Oehmichen projector. (See Newviews, Nov./Dec. '87, p. 34.)

This year, the photo measurement systems based on amateur and professional cameras, which two years ago were seen at the exhibits of four different manufacturers, were to be found only at Rollei-Fototechnic's booth. The other firms (Bronica, Hasselblad, and Leica GmbH) still make these systems, but apparently did not think that photokina was the right place to market them.

Judging by what was seen in Cologne this time, there have been interesting developments in the holography marketplace. (But it should be noted that this 3-D process only played a minor role here.) Ilford again presented sample applications in which its holographic films and its recently released discs have been used. But this time commercial applications were the focal point, and not "pure" art, apparently because the market for them is more promising. There were holograms used in doors and windows, as well tiles and restaurant tabletops, built into automobile bodies, and even as "clouds" on room ceilings. Peter Heip's holographic fable with a genuine film hologram (and already in its third printing from Wittig-Fachbuchverlag) was used as an example of book illustration.

The Photography Department of the Technical University of Cologne has also reduced its holographic efforts in the area of the fine arts. It has put technical uses more in the foreground, and has made particular strides in the area of holographic interferometry. Consequently, it exhibited only three holograms, one of which, however, was particularly interesting. A picture of a motorcy- cle rider, this is probably the first European holographic stereogram to be produced that transforms a sequence of photographic images taken from different positions into a hologram. It was made in association with the now defunct Holoart GmbH.

The holograms of the Optical Institute of the Academy of Sciences of the Soviet Union, displayed at the Technointorg booth, were in strong contrast to this. As was the case two years ago, they were purely representational. One of them, 120 by 100 cm in size, depicted a sculpture of a mother and child. Entitled "Not for War," it was probably also meant to serve political purposes.
Finally, a holographic camera, the HOLOMEX/SOL Viewcam by the SOL Group Ltd. of Great Britain, was on display. It can be used to make reflection and transmission holograms up to 30 by 30 cm, and the camera itself can be used to view them.

In concluding, a few things at photokina in which 3-D was marginally involved should also be mentioned. One example was a lottery held by Varta Batterie AG. The main prize was a small stereo viewer with two stereo pairs and directions on how to make stereo photographs with regular cameras. At the booth of West German Radio Cologne, Matthias Zimmermann, a member of its editorial staff, had prepared a nice little exhibit entitled “Fernsehen” (seeing at a distance). Documenting over 150 years of photo, film, and television history, the exhibit included stereo cameras, stereo viewers, and a number of old stereo pictures, including a stereo daguerreotype. “At the Sweet Harbors of Asia,” an exhibit of the Agfa Foto-Historama put together by Bodo von Dewitz, was on view at the Romisch-Germanisches Museum. It included a series of historical stereo pictures by Underwood & Underwood, which unfortunately could not be viewed in stereo. 3-D was also the focus of one other exhibit. The Museum for Holography and New Visual Media in Pulheim presented “40 Years of Holography.”

Addresses of Some Firms Exhibiting Stereo Equipment at Photokina '88

Dawako Screen Projektionstrager GmbH, Postfach 1152, 2202 Barmstedt
3-D-Foto-World, Postfach, 7858 Weil/Rhein und Postfach, CH-4020 Basel
Emo-Optik, Arthur Seibert, Postfach 1469, 6330 Wetzlar
Franka Photographic Corp., P.O. Box 17-9, Taipei, Taiwan
Harkness Screens Ltd., The Gate Studios, Station Road, Borehamwood (Herts) WD6 1DQ, Großbritannien
Heinrich-Hertz-Institut für Nachrichtentechnik Berlin GmbH, Einsteinufer 37, 1000 Berlin 10
RBT Raumbildtechnik GmbH, Karlstraße 19, 7307 Aichwald 4
Scopitmax, Dietrich Kempski, Ottostraße 11, 3008 Garbsen
SOL Group Ltd., Coombe Road, Hill Brow, Liss, Hants, Großbritannien
Solecta, Friedy Kurz, rue des Moulins 20, CH-2114 Fleurier
Stereo Optik Renate Grosch, Mainstraße 13, 6057 Dietzenbach
TC Studios Fred Oed GmbH & Co. KG, Alt-Württemberg-Allee 89, 7140 Ludwigsburg 88

Universal photo Slide bar system from Emo-Optik.

Holographic camera from the SOL Group Ltd.

Viewer and holders for 2X2" pairs from Franka.
Early in the eighteenth century, the sturdy and fiercely independent Dutch farmers of South Africa began to move in large numbers into the interior, away from the immediate environs of the Cape of Good Hope, where they had settled in 1652. This movement continued for well over a century and culminated in the mass migrations of the “Great Trek” of the 1830’s. Wherever in the hinterland his ox-drawn wagons and land hunger took him, the Boer made severe inroads upon the great game herds that roamed the African plains — springbok, gnu, zebra, cape buffalo, elephant, and quagga — a relative of the zebra that looked rather like it had tried stripes and then thought better of the idea.

The quagga was a sandy brown or chestnut colored animal, with only the head, neck, and shoulders being striped, and the legs and tail tending toward white. The animal’s name was more or less self-imposed, an imitation of the strange explosive bray it shared with the rest of the zebra clan.

Similar in its habits to the Burchell’s or common plains zebra (of which there were at least four distinct races), the quagga was an inhabitant of the open grasslands in the central and southern portions of the Orange Free State and the semi-arid Karroo region of Cape Colony. During the dry season, small family bands were widely scattered across the parched veldt, sometimes seeking shelter in wooded valleys or kloofs. With the coming of the rains and the return of sufficient vegetation to the plains, the smaller groups massed together in herds of a hundred or more animals, often grazing intermingled with gnu or other large herbivores.

Between the Orange and Vaal Rivers the herds shared their range with those of the common zebra. This zebra becomes less conspicuously striped the farther south one proceeds across its territory, leading some authorities to classify the quagga as an extreme southern form of this animal. Since there was also considerable variation among the quagga population and the southernmost race of the plains zebra is now also extinct, we may never know for certain whether the quagga in fact constituted a truly distinct species. It is generally conceded, however, that the quagga and Burchell’s zebra were very close to that elusive and somewhat arbitrary boundary.

European familiarity with the quagga began early. There was a live specimen in England by 1751, where it was erroneously described as the female of the then little-known zebra, a case of mistaken identity that persisted for three decades. During the late eighteenth and early nineteenth centuries, several quaggas were part of the Royal Menagerie, being kept at various times at both Kew Palace and Windsor Castle. Lord Morton and the Earl of Derby also maintained quaggas on their private estates.

Sheriff Parkins of London took matters a step further, harnessing a pair of the semi-striped equids to his phaeton carriage. This odd convey-

---

“The Quagga (Asinus Quagga)” - #27 by Frank Haes, 1864; an enlargement from the earliest known quagga stereograph. The quagga’s scientific name was changed when it was determined that all living equids fall within a single genus. (Courtesy of John C. Edwards.)
quaggas to be the most attractive of all the zebras, Sir William Cornwallis Harris remarking that their coats "sparkled like mica."

But by 1859, the year Charles Darwin mentioned them in *The Origin of Species*, quaggas were already in serious trouble. The chief problem apparently was that the Boers took a rather dim view of game herds that competed directly with their own stock. And while the Boer himself found the quagga's flesh less than appetizing, he was not so particular when it came to feeding his numerous native retainers. What was worse, the quagga's habit of running a short distance, then wheeling to gaze at its pursuer made it an easy mark.

Hunted ruthlessly both for food and hides (the latter being used extensively in the manufacture of sacking), the abundant herds were rapidly decimated and the quagga ceased to exist in the wild sometime around 1870. The last documented shooting of a wild quagga apparently dates from 1861, although another source states that a final shipment of captive animals was made to Antwerp in 1870. Only a handful still held out in European zoos. The last one, an old mare, died in Amsterdam in 1883. For the quagga it had been a classic case of being in the wrong place at the wrong time.
the wrong time. Accessibility had come perhaps half a century too soon for conservation ethics to catch up with weapons technology and the advancing frontier. Ironically, if the zoos of the 1850's had had the captive breeding programs we have today, the quagga probably could have been saved.

Today, remarkably little direct physical evidence remains of this once prevalent animal — seven complete skeletons, twenty-three skins, and a few skulls. That and the photographs.

Although most sources state that there are only three known photographs of a living quagga, there are in fact at least five, all of a single mare kept at the London Zoo from 1851 to 1872. Furthermore, at least three of these images are stereographs. The earliest of these was taken by Frank Haes (1832-1916), who produced the first major series of approximately 200 "Animals in the Gardens of the Zoological Society of London." These views, #47 and #48, were possibly taken as early as the summer of 1868, as the discovery of an annotated purchase date of June 21, 1869, on another view in the series suggests. The first of these York views also frequently turns up as a pirated copy, which may help to explain why it is more widely reproduced than any other quagga photograph.

The remaining two photographs of the London quagga, which are not known to exist as stereographs, are reproductions taken from originals whose present whereabouts is unknown. One of these was copied for the collections of the London Zoo by F.M. Duncan (1873-1961), Librarian of the Zoological Society. The other is in the possession of the British Museum [Natural History]. These are the two images that have generally been neglected by previous writers. For both, the date of the original image and the identity of the photographer remain unknown, although Haes is a possibility.

What became of this particularly photogenic quagga? For a long time it was believed that her skin had been discarded and that the skeleton had gone to the British Museum. But in 1909 the British Museum specimen was found to be that of a stallion presented to the Zoo by Sir George Grey and in fact the stable-mate of our quagga from 1858 to 1864. The mystery persisted until 1952, when the missing skeleton was located at Yale, where it had lain since its purchase by the noted paleontologist Othniel C. Marsh in 1873. Further checking revealed that the skin had not been lost as supposed but had in fact been sold to the Royal Scottish Museum in Edinburgh by the very same London taxidermist who contacted Marsh.

When England's last quagga died on July 15, 1872, others still lived in Berlin, Amsterdam, and possibly Antwerp. Yet to date, despite a fairly extensive search by John C. Edwards of London, no photographs of any of these animals have been found. (Virtually all of the records of the Berlin Zoo were destroyed in Allied air attacks in 1943.) Nor have any views surfaced from South Africa. These five images then may in fact constitute the quagga's entire photographic portfolio.

Oddly enough, after more than a century, the quagga is back in the news. In June of 1984, in a report to

(Continued on page 35)
The Stereoscopic Society offers stereo photographers a chance to participate in several types of folio activities. Those who work in transparencies in Realist format circulate their pictures in either the Alpha or Beta circuits. The new 2X2 circuit is designed to accommodate those who produce stereo from matched pairs of transparencies mounted in standard 2X2 35mm mounts. Printmakers and other large format workers participate in either or both of the regular (about 25-30 members) or 'Speedy' (limited to 12 members) folios.

1988 has seen a considerable growth in the membership of the Society and we are now in the position where both Alpha and Beta transparency circuits have reached membership limits beyond which they do not feel comfortable. In practice, about thirty members result in a year of travel time for a folio. As a result it has been decided, for the time being, to institute a waiting list for the Realist format folios. Vacancies, as they occur, will be filled from the waiting list. We are not satisfied with this as a permanent solution but are not ready at this time to try to institute a third Realist format circuit.

The print circuit is also expanding but is willing to accept additional members even if the travel time takes a little longer. If the current growth continues through the next year some reassessment of the Society's situation will be in order. Although this presents some problems we must deal with, it is pleasant to see this growing interest among photographers in producing stereo images.

Cartoon Stereo

Wil Metcalf, one of the mainstays of the Print Circuit, always likes to experiment and comes up with some clever ideas. He has long enjoyed the blunt and stylized humor of the old commercial "comic" stereo views. It occurred to Wil that they have much in common with newspaper and magazine cartoons. Those usually occur as single panel jokes and some could be adapted to presentation as a stereo view. Among his first experiments was an inspiration from a cartoon by Jim Unger for Universal Press Syndicate in which a woman gets double duty out of her telephone cord by drying wash on it while chatting on the phone.

Wil, with the help of his wife, has successfully combined the old with the new to make his version of a 'neo-classic' comic card. Remember that one of the charms of the old cards was their predictability. The joke must be told according to the formula, following in every detail the prescribed pattern. Wil points out one difference between the stereo view and the corresponding cartoon version of a joke. He notes that a cartoon contains only the essential elements and nothing else, while a stereo view can have a lot of clutter added, the more the better for stereo effect.

Wil promises that there are more on the way and, for one, wait impatiently. I never had enough of the old gems.

Questions concerning Society membership should be directed to Corresponding Secretary Jack E. Cavender, 1677 Dorsey Avenue, Suite C, East Point, GA 30344. 

"I'd better go...he's waiting for his lunch," by Stereoscopic Society print circuit member Wil Metcalf.
On September 13-16, the 1989 Photographic Society of America (PSA) annual convention is being held in Scottsdale, Arizona. The 3-D program line-up is diversified and exciting with four days of 3-D (and 2-D) slide programs. Non-members may attend and enjoy the many benefits of a convention of this type. From 3-D slide programs to a Stereo Division Banquet to a Stereo Division "Den" to meet other interesting 3-D people, the convention offers many opportunities.

Starting at 9:00 a.m. on Wednesday Sept. 13th with "SPACESHOTS: Adventures in 3-D" by Ron Labbe, a state-of-the-art multi-image 3-D slide program featuring some of the greatest stereo images ever produced. Computer programmed and set to a lively original soundtrack, Spaceshots proves that 3-dimensional photography is no fad or gimmick. Beginning with many spectacular images from the Victorian era, each generation of stereo is well represented right up to today's avant garde. Classic Tru-Vue and View-Master, as well as 1950's and 1960's amateur and professional photography are highlighted.

"THE LATE PAT WHITEHOUSE SHOW" presented by Harold Whitehouse is an inspiring audio-visual album of scenic, nature and mood sequences by the late Pat Whitehouse, who was a widely acclaimed stereo photographer in Great Britain. Pat was a past president of the Stereoscopic Society of Great Britain and was awarded a Fellowship with the Royal Photographic Society for her close-up photography of nature subjects captured with cameras of her own making. Her shows are a unique combination of integrated commentary, music or the sounds of wildlife, and 3-D photography. World reknowned for her "Hallelujah" sequence and many others, this show is a tribute to a woman who made a major mark in the world of 3-D photography.

"TRAVELS ON NEXT TO NOTHING: A 3-D Travelogue starring Underwood & Underwood's James Ricalton" created by Susan Kempler & Doreen Rappaport has been shown at two past NSA conventions. This 3-D slide show is a re-creation of a lantern slide travelogue given by James Ricalton, a prolific Underwood & Underwood 3-D photographer from 1880 to 1925. The show takes you back to the era when stereoviews were state-of-the-art media communication. It transports the viewer back in time to Egypt's pyramids, the Spanish-American War in the Philippines, the Boxer Rebellion, the glory and pageantry of India's royalty and much, much more. Ricalton was talented not only as a photographer, but also as an educator, explorer, writer, lecturer, and museum curator.

The New Jersey Committee for the Humanities awarded these two researchers a grant to produce this 3-D presentation, which has evolved into the present highly polished sound/slide production.

PSA STEREO DIVISION HALL OF FAME #5" presented by Mel Henningson is a compilation program of top award winning 3-D slides created by PSA stereo photographers over the past three decades. This gives a well rounded perspective on landscape, table-top, black light, portraits and every category of 3-D photography.

"PSA SLIDE OF THE YEAR JUDGING" is a marvelous event to watch as three judges determine the Slide of the Year and the top 10 honorable mention slides from a group consisting of only award winning slides from the past year's inter-
national 3-D slide competitions. “PSA STEREO SEQUENCE EXHIBITION” is a program of narrated slide sequences made by stereographers from around the world. The great variety of subject matters and photographic techniques make this a fascinating program. “SPONTANEOUS 3-D MEMBERS SLIDE PROGRAM” organized by Susan Pinsky, APSA, is just what it sounds like. Anyone attending is invited to bring 5-10 slides to share with the group. Full of surprises! Just for fun! Come and participate!!

“PSA INTERNATIONAL STEREO EXHIBITION” is a beautifully produced program made up of all the accepted slides from the 1989 PSA International Stereo Slide Exhibition. Representing 3-D work from more than a dozen countries and close to 100 different photographers.

The convention is being held at the exquisite Hyatt Regency — Gainey Ranch Scottsdale Hotel. For more information contact: Ed & Jane Sargent, APSA’s, 3160 E. Main St. #105, Mesa, AZ 85203.

The Depths of Humor

Even those who’ve never had much interest in 3-D comic books may be tempted by 3-Dementia Comics from The 3-D Zone (Number 15). All the stories and illustrations in the book are humorous treatments of 3-D itself, as found in movies, comic book publishing, and television. As publisher Ray Zone says in the introduction, “3-D lends itself to a humorous treatment.” Gonzo journalism gets a 3-D movie review treatment in “3-Detour” starring a dog named Pointer S. Toxin. “3-D-T’s” is a new 3-D version of an original story by Joe Kubert and Norman Maurer, originators of 3-D comic books in the 1950’s. Converted from a 1953 flat, 4-color issue of Whack: the story details some of the actual legal entanglements involved in 3-D comic publication in the 1950’s. For those who failed in every try at free viewing the images in Tony Alderson’s “Everyone’s Guide to Freevision” (Stereo World, Nov./Dec. ‘88)

3-Dementia offers the original satirical piece from which some of the practice drawings were taken. Tony’s 3-D Jonestown was published in 1985 as the world’s first freevision 3-D comic, and relates with some rather biting humor his experiences in the 3-D television business. As presented in 3-Dementia, it is without doubt the first time drawings have been printed for either anaglyphic OR freevision 3-D on the same page!

3-Dementia Comics is available through the 3-D Zone catalog (PO Box 741159, Los Angeles, CA 90004) for $2.50 plus $1 postage and handling. (Number 158 of the magazine Amazing Heroes, which may still be available in some comics stores, is devoted to 3-D comic publications and includes background information and illustrations on the history of 3-D, as well as mention of the NSA.)

New ISU Rep for North America

Effective immediately, the new North America representative (pro tem) for the International Stereoscopic Union is Karl F. Dudey, 1207 - 83rd St., NW, Bradenton, FL 34209.

Karl is the brother of Frederick Dudey who lives in Germany and currently serves there as treasurer for the ISU. He will receive payments in Dollars for subscriptions and maintain liaison with the ISU pending the appointment of an ISU member in North America volunteering for the job.

The ISU is now under German stewardship. At the end of this year, control goes to France, where plans are already under way for a big Congress in 1991 — perhaps in Cannes or Monte Carlo. There is much 3-D activity in Europe, and the ISU is a fine way to keep in touch. Contact Karl Dudey or Paul Wing if you are interested in learning about the duties involved in the position of a North American ISU representative. They are not unduly time consuming.

Complete 3-D

While many other computer magazines have offered 3-D illustrations in connection with articles on 3-D computer graphics, the April ‘89 issue of VAR Business will be printed completely in anaglyphic 3-D, from ads to photos to cover to headlines and drawings. Although not all the articles concern 3-D graphics, the subject is covered in the special issue, which will be distributed to subscribers and at computer industry sales shows. Newviews will try to make available a mail-order address for the issue in a future column.

Havana Glen

(Continued from page 11)

of the glen, it is as Neal wrote in his poem:

“The glen, the glen - the silent glen! Oh, how I love its solitude.”

Photohistory Postscript

As a result of our research revealing the opening of the glen with wooden walkways in the summer of 1867, it is definite that Dr. John Towler’s “Amateur Photographic Exchange Club” series on the glen was made at least several years after the club ceased to exist. Not only was John Towler never listed as a member of the APEC, but he also issued a similar series of Watkins Glen stereoviews with labels similar to the Havana Glen labels. The appearance of the mounts, labels and images is very similar to the Havana Glen series. We conclude that Towler’s Amateur Photographic Exchange Club labels from Watkins Glen and Havana Glen were not part of the original exchanges. We believe that he made sets to sell, although firm evidence for this belief is lacking.
Jacob Berg
of Grand Forks, D.T.

Stereographs of the Flood of April 1882

by Bruce Hooper

Grand Forks is today the seat of Grand Forks County in eastern North Dakota at the junction of the Red River and Red Lake River. It is located 90 miles south of the Canadian border and 70 miles northwest of Fargo. It is the center of trade and agricultural processing and where University of North Dakota is located. There is also an Air Force base, a Minuteman missile complex and a branch of the U.S. Bureau of Mines located in or near the city. The population in 1980 stood at 43,765.

The town of Grand Forks is only about 120 years old. The first settlement was made in 1869 with the construction of a rude log hut by Captain Griggs, of the firm, Hill, Griggs & Co., in company with Captain McCormick. Grand Forks was the second permanent settlement by white families in what was to become North Dakota. French-Canadian explorers, traders and trappers for Hudson’s Bay Company named Grand Forks nearly 100 years before the first white settlers came to the area. Before 1870 it was referred to as Grandes Fourches or La Grande Fourche, but after 1870 the official post office name became Grand Forks.

The settlement of Grand Forks began in 1871 spurred by trade brought in by steamboat traffic on the Red River and further stimulated in 1880 by the construction of a branch line of the Northern Pacific Railroad. In 1880 the population of the city was only 1,705 and in 1881 the town was incorporated. After 1880, Grand Forks was a boom town because at the close of 1881 the population stood at about 4,000. Most of these immigrants were Scandanavian, Canadian, German and Irish.

R.R. Bridge and High Water — Spring 1882 by Jacob Berg. Orange/lavender mount (Author’s Collection).
The first stereographer in Grand Forks was William Caswell who arrived about 1875. He was succeeded by Jacob Berg, a Norwegian immigrant, who came to Grand Forks from Minneapolis in 1881 where he had been working with the Swedish photographer, John H. Oleson at 307 Washington Ave. South. Sometime in 1881 he arrived in Grand Forks and set up a studio in the upper part of the Ottawa Saloon, but this gallery was destroyed by fire on December 18, 1882.

In 1885, Berg's studio lists at 132 South Fourth Street. Berg also appeared on The Dakota Territorial Census of 1885, which did not give his occupation, but did give his age that was 23. He also had a 26 year old brother named Hans and a mother, C. Berg who was 51. Berg's advertisement for 1885 suggests his older brother might also have been a photographer because it says "The Best Artists." I have no idea how many operators he had.

He advertised himself as a photographer and dealer in picture frames, mouldings, steel engravings and in later years, albums and Norwegian views were also included. His was "The Finest Gallery in the Northwest, The Best Artists, The Best Instruments, The Best Material".

Berg sold stereographs and cabinet cards. His flood stereographs are on orange and yellow/lavender standard and cabinet mounts with printed legends on the front and manuscript captions on the back. The three views that I know about all have different printed legends suggesting later issues published after 1882. The earliest of these probably are on orange/lavender mounts rubber stamped "JACOB BERG, / GRAND FORKS, D.T." while later issues probably are on yellow/lavender mounts printed "J. BERG, Landscape Photographer. / GRAND FORKS, D.T." and "J. BERG, - Photographer. / GRAND FORKS, D.T."

All three stereographs show the St. P.M. and M. R.R. bridge with the roof of the same shack lying underneath along with other debris in successive negatives. Later views also show men standing on the bridge.

One view even shows what looks like a train coming out of the back of the bridge. All of these stereographs look as if they were taken on the same day or over a two or three day period.

Strangely, this railroad bridge is mentioned in reports about the flood appearing in the Grand Forks Daily Herald between April 12 and 20, 1882. The first report about the flood appeared on the front page of the Daily Herald on April 12, 1882 titled, "The Rampant River" and describes the following catastrophic act of nature:

"The river still booms upward. The water reached a point last night at 12 o'clock, about three feet higher than the highest point last year. Old settlers think that the rise will continue for two or three days yet in which case, at the present rate, an elevation above the present line of at least eight feet may be looked for. This all depends, however on the ice gorges; and if, none of importance occur, little further apprehension need be felt. Considerable damage has already been done, notwithstanding the people had ample warning and plenty of time to betake themselves and their chattels to more secure places. Shanty town is completely inundated. Houses are floating around in each other door yards in the most promiscuous style. Some of the settlers have taken the precautions to moor their residences, and those which are secured are not floated very far out,

of place. Live stock has been taken from submerged stables and turned loose for safety. The water reached the houses in the timber at the south end of Third street yesterday, driving many families out, and those who do not leave are obliged to move upstairs. Major Hamilton's residence is entirely surrounded, and Mr. Cooley was obliged to move out. Among the dwellers of the flats below Viets mills, there was a general exodus—most of the Shanty town inhabitants were able to take their personal effects with them, but several waited too long in vain hopes that the water would subside before they were reached and found they had no time nor plan to secure their goods, yesterday. The more unfortunate class were out in skiffs fishing their flatsam and jelsam from the general debris. Most owners of wood and logs on the bank have thrown booms around their property. The logs which have escaped are mostly culls, and are not of great value. At the brewery there is six feet of water in the cellar and about three feet in the engine room. Large buildings have been moved distances, and are frequently jammed out of shape... The railroad bridge is intact and is not of danger at the present stage of the water. Should it rise six or eight feet more there would be cause for apprehension... About six o'clock last night the ice broke at the forks, and a vast body containing an area of several acres commenced moving down the stream. The first obstacle the ice field encountered in its mad career was the railroad bridge but the irresistible force behind it propelled it onward, breaking the great cakes into smaller ones, and it continued on its
way unobstructed until it struck the barge of the pontoon bridge. This it carried a considerable distance down the stream, snapping the cable with which it was made fast ashore. The barge was finally secured, however, and hauled into the bank out of reach of the running ice. The river looked at that time as though the railroad bridge.

Another huge chunk lies above the railroad bridge. It gorged in the bend below the boat while the men probably are residents of Shanty town.

The river fell nearly three feet yesterday and most likely was when Berg remained in Grand Forks until his death. He married Christina Langord in December 1883 and was a photographer in Grand Forks until about 1900. He died sometime after 1918. Although most of his photographs are interesting, his flood stereographs are an important record of a major catastrophe and are the only record of this event.

The railroad bridge mentioned in this article was part of the St. Paul, Mninn. & Man. Railroad line appearing on the map above Viets Mill.

There were at this time two other railroads under construction in Grand Forks: The Duluth and Winnipeg and the Minnesota Dakota Northern. The flood, in spite of the flood, reached 6,000 at the end of 1882.

Sources
Daily Herald (Grand Forks, D.T.)—April 12, 16 and 20, 1882.


Institutional Sources
Minnesota Historical Society, St. Paul, Minnesota.
State Historical Society. North Dakota Heritage Center, Bismarck, N.D.
University of North Dakota, Elwyn B. Robinson Dept. of Special Collections, Chester Fritz Library, Grand Forks, N.D.

The final article on the flood appears in the April 20, 1882 Daily Herald and mentions the following about the railroad bridge:

Yesterday the river fell nearly three feet and the railroad bridge is out of danger... One or two more houses drifted down against the west approach of the railroad bridge. The top of the bridge rest is found to be lodged in a position which, when the water recedes will be dry land. The piles on which the rest is secured are still solid in the water and when the river goes down the rest may be replaced on the piles at comparatively slight expense...

This article marks the floods ending and most likely was when Berg took the stereographs appearing in this article. I suspect most of his negatives of this catastrophe were destroyed in the December fire, explaining why so few stereographs exist today.

Berg remained in Grand Forks until his death. He married Christina Langord in December 1883 and was a photographer in Grand Forks until about 1900. He died sometime after 1918. Although most of his photographs are interesting, his flood stereographs are an important record of a major catastrophe and are the only record of this event.
More On Stereo Cemetery Photography

G raveyard views ranging from the stark burial plot of an unknown man in Texas to serene surroundings of the final resting place of Christa McAuliffe, victim of the nation's first airborne tragedy of the space program, recently have been photographed in stereo by NSA members. The efforts grew from a suggestion in the article "Stereo-tombs" in the Jan./Feb. 1987 issue of Stereo World.

The interesting results fashioned by these NSA folks reveal the camerapersons as having variously a real artistic bent, a journalistic sense, an eye for architectural beauty, a love of nature, and a feeling for the ecology — as well as considerable stereographic expertise.

"There's no more lively place than a cemetery to capture 3-D pictures," said a sage whose name escapes memory.

The possibilities in a cemetery confirm the words of that man of wisdom: Aside from the geometric forms and shapes in marble and granite which lend themselves so readily to pictures in depth, there are unusual sculptures and designs on sepulchres and tombstones; the words of epitaphs which arouse one's curiosity ("Behold me now as you pass by, as you are now so once was I, as I am now, soon you shall be, prepare for Death and follow me"); the gravesite of a once-prominent individual; the colorful flora spreading cheer in what might otherwise be a dreary place; and the many examples of exquisite stone carving.

Behind the View

For each of the cemetery views they shot, NSA's stereographers prepared a thoughtfully-researched short background summary. The view of Albert Sidney Johnston's open-air vault, fascinating as it is by itself, is considerably enhanced when one surveys the life of he who is entombed.

Johnston graduated from West Point, class of 1826. His entire career was Army, with active service launched in the Black Hawk War, General Winfield Scott commanding. In 1836, Johnston served in Texas and became an Adjutant General in the Texas Army. He led a troop of volunteers in the Mexican War, (1846-1848) and rejoined the U. S. Army in 1849. After posts on the western frontier and in San Francis-
co, Johnston resigned in 1860 to join the Confederate Army, despite being offered prestigious opportunities with the Union Army. He was a Rebel General when he “fell at Shiloh,” April 6, 1862.

Initially, Johnston’s remains were interred in New Orleans. In 1867 the Texas State Legislature had the body removed to the Texas State Cemetery in Austin. A cage-like structure at the grave envelops a life-sized sculpture of Johnston on his death litter. Sculptress Elisabet Ney (yes, that’s the spelling) created the memorial in 1903.

**Small Can Be Big**

In vivid contrast to the stereo view of the Johnston tomb, another Texas view discloses a grave in the small rural Macedonia Cemetery. On a red clay and gravel hill, a couple of hundred yards behind Macedonia Baptist Church, one grave stands out. Not for its beauty, although it projects a sort of primitive grace. A puffed-up mound of dirt and gravel positioned almost beneath an arbor vitae tree, this grave covers the mortal remains of an occupant unknown.

Prior to World War I, so the story goes, there was a mill operating in the Macedonia area. Power was derived from a steam engine. Came a day when boiler problems crippled the mill operations. A stranger passing by observed the halt in activity and offered his services, explaining that he had some knowledge and experience relative to boilers.

The Good Samaritan was — unfortunately — blown to Kingdom Come when the boiler exploded. Appreciative locals provided “a decent Christian burial.” The words “unknown man” were scratched on the red sandstone marker they provided. Time and the elements have long since erased the notation.

**Graffiti Galore**

Scratches of another kind mar a small white bust atop a simple marble slab in the Père Lachaise Cemetery in Paris, France. The cemetery is the repository of the mortal remains of such world-renowned figures as Chopin, Gertrude Stein, Balzac and Oscar Wilde.

Hidden among the large stone vaults in Lachaise is a tiny, narrow grave marked only by the aforementioned bust which rests on the also-mentioned slab. Here, they say, lies Jim Morrison, lead singer and songwriter of the rock group, “The Doors,” who died in Paris in July of 1971, aged 28. For reasons best known to themselves, there are those who doubt the singer still rests here.

The lips of the bust are stained from cigarettes and wine, a memorial gesture it has been suggested, of those fans of Morrison from the generation most closely affected by the Vietnam War. Several translators would be needed to convey understanding of the graffiti painted and scratched in a number of languages on the surrounding vaults.

There may be a certain fond bond uniting rock fans with graveyards. A view in a Key West cemetery shows an above-ground tomb with the name of the rock group, “Pink Floyd,” spray-painted for all the world to see.

**McAuliffe Marker**

In another era, under equal service-to-the-country circumstances, Christa McAuliffe’s memorial would probably be much on the order of that of Albert Sidney Johnston. Elaborate, grandiose, ornate. A tribute in stone to the gallant lady who was to be America’s first ordinary citizen in space, some might think, would vie for memorial attention with outstanding American monuments. It would be similar, perhaps, to those honoring 19th century patriots, titans of the business world, financiers, scientists and the like. But no. No towering granite needle piercing the sky over...
The McAuliffe grave. No cherubims or seraphims garnishing a gargantuan mass of stone. No fence to stay visitors from edging too close.

Christa McAuliffe's grave marker is a vertical slab of polished black granite much like that of the Viet Nam Memorial in Washington, but no taller than a young child nor wider than a classroom door. The mirror-like surface is incised with one word, "McAuliffe," on the rear facet. The front contains a loving, touching biography in a few words highlighted by: "She helped people. She laughed. She loved and is loved. She tried to protect our spaceship earth. She taught her children to do the same."

From the rear of the McAuliffe plot on the hillside, one sees thousands of marching cemetery markers, the Merrimack River valley, and the picturesque hills beyond. In back are hundreds of trees. Two small maples, planted at the time of the interment, flank the headstone.

Looking at the McAuliffe marker, the broad sweep of landscape in front of it, and the sky which McAuliffe sought to penetrate, one has an awesome, breath-taking feeling. Peace.

**Minor Mystery**

The mini-cemeteries that dot the countryside in rural areas offer some special surprises for the stereo-taker. Northwestern New Jersey — at a spot not far from the village of New Hampton — is the site of a mini-cemetery that surrounds an even minier-church. The Mount Lebanon Grange is now headquartered in the building.

Most of the thirty-odd tombstones in this tiny graveyard bear dates from early nineteenth to the beginning of the twentieth century. There are two headstones which attract particular attention. One attests to the life and death of one George W. Beatty. The other stone is far less pedestrian.

"The second stone," writes the producer of the stereo view, "marks the spot where Elizabeth, consort of Mr. Beatty, lies."

"If Elizabeth was his wife," the question arises, "why doesn't it say so on the stone? Were George and Elizabeth, after death, in *flagrante delicto*?"

"George's secret," the stereo taker concludes, "is buried with him."

**A South Carolina Cemetery**

Trinity Episcopal Cemetery in Columbia, S.C., is an *ante bellum* graveyard which looks as though it were scrubbed daily with soap and water. Its spotless look and charm are as unique as its proximity to the State Capitol Building and the State.
Supreme Court — hardly a tombstone's throw away. Many of South Carolina's historical greats — dating back to the Revolution — are buried at Trinity. Part of the spacious cemetery — the DeLeon section — is devoted to the last resting place of Jewish families. It was, early on, the United States which offers conduct-tours.

Tours, by appointment only, are also conducted by another Trinity Church, one whose claim to recognition lies mainly in its location in lower Manhattan, New York City. Trinity Cemetery is adjacent to the mouth of Wall Street which daily swallows up a teeming mass of insiders and outsiders in the morning and disgorges them in the early evening.

Trinity Churchyard, New York City chapter, may be the site of the most traversed cemetery in all of Christendom. When the weather is good (and the New York Chamber of Commerce claims that is more than two-thirds of the time) clerks and stenographers and maintenance people and brokers and visitors and, in fact, anyone who chooses to —

stroll through Trinity during the lunch hour or before or after, sometimes studying the headstones, often pausing to lunch from paper bags or to chat with friends. They find in Trinity a delightful respite from the world of computers and fluctuating prices. And they can gaze upon the stones of such American historical luminaries as Robert Fulton and Alexander Hamilton.

The handful of views produced by the contemporary brotherhood of stereo practitioners seems to prove one thing. When compared with the cemetery views produced by Anthony, Soule, Kilburns, and the many small town and rural nineteenth century view-makers, today's producers come out ahead.

One need merely look at a single vintage view to realize that there is a certain vital ingredient absent from these old stereo scenes of Green-Wood, Mt. Auburn, and other monuments and plots in cemeteries of varying sizes.

The modern attitude about what was mournful yesterday has eliminated the sadness associated with those old views. Today's stereo-graphers bring life to the cemetery view!

EDITOR'S VIEW

(Continued from page 2)

lector with 100,000 views or a NASA researcher to write about a stereo subject that interests you. Articles don't need to be long or provide the "last word" to be of interest. Sometimes even a very limited piece can prompt others to share your interest and to find sources or images never before covered. If you're not sure, write and ask about a particular project, but write!

Fly the DEEP Skies

New applications of stereo imaging concepts are always interesting to hear about, and NSA member Bill Copeland has come up with one relating to aviation safety in his article "Hyper-Stereo: A Solution to Modern Aviation Problems?" in this issue. Only time will tell whether or not the FAA and/or pilots would be interested in viewing real-time hyperstereo images of potential obstacles in or near the flight path. But the idea does inspire the thought that passengers could enjoy speeding through the dramatic cloud hypers provided by wing-tip mounted video cameras, projected in 3-D far polarized viewing on the cabin screens.

A similar system could provide hyperstereo vistas of clouds or ground scenery from either side of the plane, but with an adjustable base rather than the set wing-to-wing separation discussed in the article. Dual cameras would cover the same side view, but the image from one would be stored for projection very slightly later, for fusion with the live image from the other camera. The amount of delay, as with any aerial hyperstereos, would determine the effective separation and depth of the image. This could be tied to the speed and altitude of the plane for the best average viewing, or altered for special live 3-D views of nearby cloud formations.

The first few exclamations of "wow, look at that!" from passengers with glasses would inspire the sale of polarized glasses to nearly everyone on board at a high mark-up, paying for the system and providing a new promotional gimmick and income source for failing airlines.

Camera Shift Platform Correction

The caption at the bottom of page 33, Jan./Feb. '89, failed to mention that the Tee nut is inserted from the TOP side of the platform base—a vital point, regardless of how tightly it is driven into the center hole. Our apologies to designer Al Meyers, who points out that Tee nuts this size are ½" long, and easily reached by tripod screws.

— Ed.
Shoshone Falls

The Niagara of the West

Stereography, 1868-c.1900

by Bruce Hooper

The Shoshone Falls is one of Idaho's most impressive natural wonders. The Falls were discovered by Wilson Price Hunt in 1811 and for many decades thereafter the chief attraction for immigrants passing through Idaho to Oregon. Shoshone Falls is considerably higher than Niagara, plunging 212 feet over a great basaltic horseshoe rim nearly a thousand feet wide. The Falls are located on the Snake River about twenty or twenty-five miles southeast of the town of Shoshone, located on the Little Wood River and at the junction of the Wood River Branch of the Oregon Short Line Railroad. During the nineteenth century a stage brought tourists from the town of Shoshone to the Falls.

Development of the Shoshone Falls into a tourist area did not begin until the 1880's. The falls at this time were privately owned. In September 1883, Dr. W.M. Johnson of Ketchum, Idaho Territory sold the falls to Dewey & Stone and Mr. Clark of the banking firm of Dornell, Clark & Larabee of Butte, Montana. The new owners were worth over $3,000,000. The firm later consisted of Dewey, Creighton,

Stereograph taken from the bottom of Shoshone Falls by Martin Mason Hazeltine, 1884 or 1886 (Courtesy of the Oregon Historical Society)
Clark and Stone. They proposed to go to work immediately and make a first class summer and tourist resort of the Falls. The firm was called the Shoshone Falls Improvement Company and consisted of capitalists from Omaha, Nebraska and Butte, Montana. In February 1884, they were in the process of constructing a hotel with capacity for 100 guests, completing three thousand feet of grade for a toll road from Shoshone to the Falls and in the process of constructing a ferry boat. In July 1884, Register Pound of the United States Land Office and J.J. Tracy visited the Falls and found accommodations consisting of a tent hotel supplied with comfortable cots, clean beds and a table well supplied with fresh farm produce.

For reasons unknown to me the construction of the hotel was slow. In James L. Onderdonk's *Idaho: Facts and Statistics* published in 1885, he mentions on page 28 that a hotel is to be built shortly with ample accommodations. In an extract from a letter to the *Omaha Republican* appearing on page 31 of J.M. Rice's *Idaho. How to make money in Idaho Territory* published in 1886, the unidentified writer says that Messrs. Dewey, Creighton, Clark and Stone who own the falls property will erect their elegant hotel on the south side of the Snake River on a lovely little bench several hundred feet above the river, but in plain sight of all the towering bluffs, the several cascades and the mighty cataract.

Evidence of development at the Falls does not appear until the publication of J.M. Goodwin's article titled "The Snake River Country" appearing in the January 1989 issue of the *Overland Monthly*. In his article are photographs taken along the Snake River including a photograph of the Shoshone Falls, Thomas Moran standing on the natural bridge at the Falls and a photograph of the ferry boat above the Falls. All of these photographs were taken by William Henry Jackson in 1892.

In this article Goodwin describes the ferry, the hotel and the toll road. On page 9, he says that in the canyon above the Falls a ferry permits safe crossing of the river over deep and comparatively still water. On page 10, Goodwin says that a few miles below Shoshone Falls is a side canyon and part of this canyon has been cut down, leaving walls three hundred feet high and making space enough for one of the prettiest and most romantic homes to be found anywhere. He adds that by blasting off the walls, building high retaining walls and hauling dirt for a roadway, there is access to this wonderful place by a good road circling around like the letter S going from one level to another until the end is reached at the river. The hotel probably was not completed until the late 1880's or the early 1890's. Shoshone Falls is today a state park, although during the first part of the twentieth century it was dammed for irrigation purposes, so now at certain parts of the year the Falls do not run.

Timothy H. O'Sullivan was the first to stereograph the Shoshone Falls, while on the King Survey of the Fortieth Parallel from 1867 to 1868. Clarence King describes how the photographic apparatus was transported down to the Falls in Onderdonk's *Idaho: Facts and Statistics*: "The descent of 400 feet from our standpoint to the level of the river above the Falls has to be made by a narrow winding path among rough ledges of lava. We were obliged to leave our wagon at the summit and pack down the camp equipment and photographic apparatus upon carefully led mules. By mid-day we were comfortably camped on the margin of the left bank, just above the brink of the Falls. My tent was pitched upon the Natural Bridge, Shoshone Falls, Idaho by Martin Mason Hazeltine of Baker City, Oregon, 1884 or 1886 (Courtesy of the Oregon Historical Society)
edge of the cliff directly overhanging the rapids. From my door I looked over the cataract and whenever the veil of mist was blown aside I could see for a mile down the river.”

O’Sullivan first stereographed the Shoshone Falls in September 1868, taking views from behind, below and from the south bank of the Falls. He was accompanied on this expedition by King and a small detachment of soldiers from the surveying party. Stereographs of the King Survey were published in 1873, 1876 and through 1880 on official and blank mounts. All are rare and I have no idea which numbers are of the Shoshone Falls.

In November 1874, alone at the Shoshone Falls, he took his last stereographs after leaving the Wheeler Survey. Three negatives from this visit were published as part of a fifty card stereograph set published by the Wheeler Survey in 1875. The first, number 48, is from the top of the Falls, the second, number 49, shows the main Falls and the third, number 50 shows the gorge and the natural bridge in the foreground. All are on official Wheeler Survey mounts imprinted “EXPEDITION OF 1874” on the recto on 4”×7” yellow/white mounts.

The next major stereographer of Shoshone Falls is Martin Mason Hazeltine of Boise, Idaho from late 1883 to 1884 and Baker City, Oregon from 1884 to 1903. A number of stereographs were published in 1884 and 1886 on buff and orange/lavender mounts using an endless variety of imprints suggesting different series and captions mostly in manuscript on the recto and verso of each mount. Hazeltine took a lot of views from various points at the top of the Falls. He even took some views from below the Falls and of the natural bridge.

In 1892, William Henry Jackson and Thomas Moran travelled along the Snake River and visited the Shoshone Falls, while on their way to Yellowstone National Park. Photographs were taken that appeared in the January 1898 issue of the Overland Monthly. These represent the most comprehensive documentation of tourist development of the Falls. Stereographs might have been taken because during that same year Jackson and Moran visited the Grand Canyon of Arizona and stereographs are known to exist from this expedition. The last stereographer known to have visited the Shoshone Falls was Olaf P. Larson of Squirrel, Idaho, during the early 1900’s. His views are on standard size curved gray mounts. The only stereograph I know of is captioned “Shoshone Falls Idaho, Niagara of the West.” The Shoshone Falls is one of Idaho’s greatest natural wonders, although more needs to be found of the stereographic documentation at the Falls.

Sources


ANNOUNCING
THE NSA
“MONOGRAPH” SERIES

Is it a contradiction to publish a monograph about stereographs? Aside from any misconceptions arising from pseudosemantics, an actual gap has developed in stereo publications. There are articles which are too long to run in Stereo World, but too short to fill a book. As a result, some material has gone unpublished, or has been cut or serialized to appear in the magazine. To fill this gap, the NSA has instituted its “Monograph” series, coordinated by Tex Treadwell.

The monographs can be on any subject, photographer, or area, and can be up to 50 pages long. This means that lengthy quotations from source materials or long lists of views can be included for the benefit of those wishing to learn about a subject in more depth (if you’ll pardon the expression) than is possible in Stereo World. The material will be in computer memory storage, so material can be updated easily.

Reproduction will be on high quality xerox. Text and line drawings will reproduce excellently; photographs will be adequate for viewing or reference, but not of course of the quality found in Stereo World. These publications will be for sale at the cost of printing (about 10¢ a page).

So far, the monographs have been produced on Heywood, George Stacey, and the London Stereoscopic Company’s “North American Series.” Others are in preparation. If members have information or views from these photographers, they are urged to get in touch with Tex Treadwell. Those who would like to contribute articles can also contact him; assistance is available on locating views, editing, typing, and printing.
The shared mount images shown on pages 18 & 19 of our Nov./Dec. issue drew our first response this month. Stu Butterfield recognized the street level blizzard scene as being Poultney, Vermont, a small town located some 25 miles west of Rutland along the New York State border. A while back, Stu purchased a group of cabinet size views by two photographers from that part of Vermont...B.C. Kinney of Pawlet and F.M. Rood of Poultney. Included in the group were several views of the Blizzard of '88. Our particular image was the work of Kinney. As for information about the snowstorm itself, a brief note in a recent issue of Photique magazine capsuled the blizzard as "devastating New England, New York and New Jersey from March 11 to 14, 1888, claiming 400 lives and causing millions of dollars in property damage." A note was made that the Blizzard of '88 was the earliest natural disaster to be visually recorded extensively by both amateur and professional cameramen. Further information is available in a pictorial book entitled Blizzard! The Great Storm of '88 by Judd Caplovich. This book was published last winter to coincide with the snowstorm's 100th Anniversary.

Stu had no information to relate about the flip side picnic scene but surmised it may have been nearby Lake St. Catherine. That lake's location on the road between Poultney and Kinney's home base of Pawlet would seem to make it the most logical possibility. We would still like to hear from anyone who might be in possession of cards by other professional photographers who utilized both sides of the mount for the display of their prized images.

From the same issue, p. 20, the "Old City Hall" was indeed an old city hall and its location was Portland, Maine. Built in 1825 to serve as a market house, the structure was converted for use as a city hall seven years later. Its demise came in 1888 when the wrecker ball struck in favor of the Civil War monument still visible to the modern day tourist. This information has been supplied by Earle Shettleworth of the Maine Historic Preservation Commission. With his letter he enclosed a copy of another stereoview of the same subject in the Commission's collection. That view reflects the origins of the structure through the inscription "Agricultural Warhouse" which is clearly visible in the lintel above the ground level entrance. In our view, the existence of lettering is apparent but it is not legible.

Other comments have been received from Alan Mueller, Joe Lee, Mary Grassick, Bill Darrah, and Harriet Hayes. Their responses have corroborated information already relayed in the Jan./Feb. edition of this column. This is just a note of thanks for taking the time to respond to some of our inquiries.

This issue, our first two views have been sent to us by John Waldsmith. John is in possession of both of the original negatives and has supplied us with contact prints from which our images have been copied. The most striking feature in the first image is the three arch stone bridge that has been constructed over a creek or small river. It is reminiscent of the bridges often seen in Gardner's photographs of the Antietam Battlefield and may well still stand somewhere nearby in Maryland's Piedmont Region or perhaps just across the border into either Virginia or Pennsylvania. Two farmhouses and two barns can be viewed grouped together in the flat across the bridge. John believes the image was taken in the 1930's. The pole in the foreground with its evidence of telephone service and electrification would tend to support this or a slightly later date since the more outward rural areas in this region often did not have electricity availa-
ble until near the end of the Depression in the late 1930's.

John's second image shows the construction or renovation of a classical styled structure. Based on what appears to be a partially completed dome over the central portion of the building and the lack of any type of stairway before the columns at the front, the structure is probably undergoing its initial construction. Visible at the extreme right is a blurred motion of a Depression Era work/delivery truck, thus adding credence to a possible 1930's dating of both this and the previous image. There is a good chance this building still exists and it may be photographed here near enough to completion to allow it to be both recognizable and identifiable to one of our readers today. Perhaps (and this is pure conjecture based upon not much more than gut feeling) the most likely type of location for the building would be on a university campus. If so, someone might now realize that they are actually stereoviewing a part of their alma mater!

Our third image presents us with a view of at least nine scattered wood or log dwellings in a forbidding western mountain valley. Other structures probably exist, hidden from our sight here by a knoll rising to the photographer's right. Looking at the view through the stereoscope, one keeps wishing the photographer had set his camera on that knoll instead of the one he chose. The surrounding hillsides are mostly barren.
and rocky with only a scattering of small pines and other scrubby growth. A single large tree stands nearly dead center to the image. Just to the right of that tree are two larger buildings complete with a smoke-stack type structure jutting skyward probably some 30+ feet. This may well be part of a mining operation and thus provide us with a logical reason for the very existence of any populace in the area. Handwritten on the verso of the cream-colored cabinet mount is the identification "Hungry Gulch." From all outward appearances, the name certainly seems appropriate enough! Hazarding to venture a guess, Nevada (perhaps even the area around Virginia City) would seem a possible location. Hopefully, one of our western experts can either confirm or refute that with some certainty.

Our final view, mounted on 1860's style yellow stock, shows a two story house, with a front entrance that protrudes forward from the main structure. A wrap-around porch seems to circle the entire house and that in turn is fully enclosed by a low but elaborate iron railing. An unusual architectural feature for a residential building is the arched second floor windows. They seem designed to match the main entranceway one level below. The curiosity about the house comes from the handwritten script beneath the image stating "Lincoln's Country Seat." This caption is repeated in a different but still old hand on the reverse side. In addition, a narrow but full card length paper label pasted on the verso states "Photographed and entered according to Act of Congress, in the year 1866, in the Clerk's Office in and for the District of Columbia." Was this a getaway spot for Lincoln near Washington or is that reading something into the label that was not intended?

We are once again accepting views for publication through this column. If you have some "unknowns" of historical or visual interest that you feel could benefit from the service provided by this featured article, please send them (along with sufficient return postage) to the address below. Please heed a four view maximum limit. Receipt of your views will be acknowledged and you will be advised of an approximate publication issue. Since this process may take a year or more, you may wish to first contact me with xerox copies of the images you wish to submit in order to set up a schedule.

Send views (including return postage) and information about these or other past Unknowns to Dave Klein, 14416 Harrisville Rd., Mt. Airy, MD 21771.

QUAGGA (Continued from page 18)

the American Society of Biological Chemists, scientists from the University of California at Berkeley announced that they had succeeded in isolating and reproducing fragments of DNA from a 140-year-old quagga skin in a museum in Mainz, West Germany. Hailed as a major breakthrough, the recovery of such genetic material may prove to be the key in more clearly defining the exact relationship between the quagga and its living relatives.

Whether or not the quagga constituted a truly distinct species is hardly a burning question, even among zoologists. Nevertheless, it is of some interest to us. For, although the much lamented passenger pigeon appeared in a beautifully tinted view taken in 1870 by Haines of Albany for "Hurst's Stereoscopic Studies of Natural History" [See July 1978 Stereo World], Haines' view depicts only mounted specimens in a museum and these three quagga stereos may well be the only views of an extinct species taken from life. The author wishes to express his thanks to Dorcas MacClinton of Hamden, CT and John C. Edwards of London, Eng., for their considerable assistance in the development of this article. Mr. Edwards in particular passed on to the author his discovery of the elusive fifth quagga photograph.
The Problem
When a pilot guides a Boeing 747 gracefully off the end of the runway, he swims into the third dimension and, in only seconds, sees the earth from an entirely different perspective. This experience of movement through space is one that attracts many people to the profession. The problem is the pilot can see little of the space around him and, if we think about it a little, he really can't see the clouds, the mountains, or other aircraft in three dimensions—only two.

Even though the pilot can't get a license to fly without good stereo vision, his eyes are too close to each other for the job they have to do! In order to see stereo, you have to have a baseline (distance between the eyes) appropriate to the distance of the objects you're looking at. Sure, the pilot sees the inside of the cockpit in stereo, but that's not what he's moving through. He is moving through space at a speed of about nine hundred feet per second (600 miles per hour), so the objects he's interested in seeing are many miles from the plane. For most of his flight, what he sees outside his window is virtually irrelevant to his job. So a pilot doesn't see in stereo. He and his plane are the equivalent of a giant cyclops flying through the sky, seeing only straight ahead and with just one narrow slitted eye. How can he survive with so many other aircraft up there? To make matters worse, mountains, storm clouds, and tall radio transmission towers reach out to pull him down.

His primary source of help is a great bureaucracy on the ground that has lots of two dimensional green screens that track aircraft as little fuzzy dots. The "controllers," as they are called, can talk to the pilot over their radios and inform him when mountains, storms, and other air traffic intersect his path. This system works, as long as there aren't too many other aircraft and as long as the screens are working properly.

The most important rule of flying is that a pilot is ultimately required "to see and be seen." If he hits something, it is "pilot error!" But what can he see to avoid, if he physically cannot distinguish a hawk a half kilometer away from a Gulfstream II that is 10 kilometers away? Is it pilot error not to be able to distinguish the relative distances and sizes of objects among which he must fly? Is it pilot error when he can't discern the three-dimensional geometry of the hills and valleys? Are the valleys connected by passes or are they blocked by a saddle? You could determine that easily if the features were on the scale of a child's sandbox.

Another source of help comes from airplane manufacturers, who are adding expensive computer equipment to automate the cockpit. In new planes, much decision making is taken out of the hands of the pilot. The flight path is automated and the computer takes over the control wheel. Of course the computer cannot see a thing in any dimension. It's not doing much...
more than running prerecorded control tapes selected according to the phase of flight and reading inputs from inertial sensors. Some people in the computer business are a little frightened of this trend. They can't help but think of Murphy's Law: What can go wrong, will go wrong!

Despite the power of computers, none in the world has the vision and image processing ability of a human being. The pilot's eyes and understanding of spatial relationships cannot be replaced by any configuration of hardware and software. On the other hand, it's possible that they can be enhanced by computer. We can process video images very fast by computer—enhance the image of nearby traffic, enhance the sharpness of edges, and project three-dimensional guidance on the screen. But the computer cannot see in front of the plane.

Hyper-Stereo Vision to the Rescue

A lot of the complicated and expensive instrumentation installed onboard an aircraft and on the ground could be replaced, if we could produce a good stereoscopic view of the space around the pilot. I'm not talking about range-finding or the recording of images for later viewing. I mean that it is possible for the pilot to fly the plane by looking out of a different kind of window. One in which clouds would look more like pillows than large opaque walls; mountains would look like the hills and valleys of a child's sandbox; tall radio transmission towers would stand out like large dangerous spikes in the flight path; and the pilot could visually separate other aircraft by distance, as easily as a baseball fielder separates a fly-ball from the Goodyear blimp!

The best way to accomplish this is to increase the distance between his eyes; i.e., increase the stereoscopic baseline. Such a view is called "hyper-stereo," and is well described in technical books on stereovision such as *The World of 3-D* by J.G. Ferwerda (published by the Netherlands Society for Stereo-photography). Since no practical form of cosmetic surgery can greatly enhance the distance between the eyes, a stereo high-resolution television system seems to be the best approach.

In normal stereo vision we view objects from arm's length out to a practical maximum of about 200 feet and distinguish the relative positions fairly comfortably. The normal distance between our two eyes (our stereo baseline) that attains this perception is about 2.5 inches. See Figure 1. In order to view an object from 3 miles to 15 miles, the ballpark range a pilot would need, the base would have to be much larger. According to *The World of 3-D*, a given baseline yields a favorable stereo effect for distances from around 30 times that baseline to 1000 times. If 15 miles is the maximum distance the pilot needs to see in stereo (at 300 miles per hour, this gives him stereo vision out to about 3 minutes in front of the plane), then the baseline must be about 82 feet. Since modern transport aircraft have wingspans considerably greater than this (the span of the Boeing 727 is over 100 feet and that of a 747 is nearly 200 feet), such camera separation is quite practical. Figure 2 illustrates such a system.

With the hyper-stereo of his environment the pilot can resume his more natural role. He can readily find his way through busy air traffic and through many complex ground terrains that he would not consider flying in otherwise. Best of all, he can have that beautiful experience of movement through the third dimension that attracted him to flying in the first place. 

---

**Fig. 1. Normal stereo baseline.**

**Fig. 2. Hyperstereo system on-board an aircraft.**

3-D PRINT VIEWERS. American Optical. Stock clearance. 50¢ ea. per dozen. 25¢ ea. per 100. Also, Penthouse model stereo cards, $2.50 per 8 views. Brochure for stamp. Hollywood Stereo, Box 7331, Burbank, CA. 91510.

STEREO WORLD READERS: The new "Excel" viewer is made specifically for quality viewing of 3-D Books and magazines. Hooded, with quality lens and pedestal stand, $19.95 plus $3 UPS, G.H. Sergio, 760 Clawson St., Staten Island, N.Y. 10306.

VIEWMASTER PERSONAL Camera, x-sync with PC plug, Exc + with VG case, original instruction book, $120; Realist stereo slide changer, for projecting one (flat) frame of stereo slides with Realist 620 projector, complete with conversion lens, new in box, $8; Dozens of Sawyer's reels (including rare Navy training reels), SASE for list. Please add USPS, Mark Willke, 200 SW 89th Ave., Portland, OR 97225. (503) 297-7653.

WHITING'S PATENT UNIVERSAL Stereograph Library (over 400 cards) reproduced in color from original stereoscopic photographs. Make offer. Derthick, 2437 S. Second, Alpena, MI. 49707.


ANTIQUE SOUVENIR COLLECTORS NEWS. Everything from souvenir china to stereo views! Send 2 stamps for sample copy. Box 562, Great Barrington, MA. 01230.

ANTIQUES PHOTOGRAPHY Mail Auctions. Daguerreotypes, Ambrotypes, Tintypes, CDVs, Cabinet photos, stereo views, and miscellaneous. Hundreds of interesting vintage photographs. Great variety of subjects. Three or four auctions per year. $2 for illustrated catalog, or $5 for next three auctions. Prices realized mailed out after each auction. Don Ulrich, 1625 South 23rd, Lincoln, NE. 68502.

As part of their membership, NSA members are offered free use of classified advertising. Members may use 100 words per year, divided into three ads with a maximum of 35 words per ad. Additional words and additional ads may be inserted at the rate of 20¢ per word. Please include payments with ads. We can not provide billings. Deadline is the first day of the month preceding publication date. Send ads to the National Stereoscopic Association. PO. Box 14801, Columbus, OH. 43214, or call (419) 927-2990. A rate sheet for display ads is available upon request. Please send a SASE.

For Sale


STEREO SPRING CLEANING SALE— Bargain prices on hundreds of stereo views, 3-D comics, books, movies, memorabilia, and more. Send long SASE for list. Bill Shepard, 17350 E. Temple Ave., #399, La Puente, CA. 91744.

3-D NUDES. Professionally produced. High Quality, super sharp color stereo slide sets. Send only $1 P&H for our explicit brochure. You must be 18 years or older to request this material. Raffaelli's Classics, PO. Box 46106 Dept SW, Los Angeles, CA. 90048.


STEREO VIEWS ON APPROVAL: Views at $1 and $2 each made up into subject lots. Select those you want and return balance and $2 each made up into subject lots. Write or call for details: Blaine E. Shepard, 2267 89th Ave., Portland, OR 97225. (503) 297-7653.

STEREO VIEWS ON APPROVAL: Views at $1 and $2 each made up into subject lots. Select those you want and return balance and $2 each made up into subject lots. Write or call for details: Blaine E. Shepard, 2267 89th Ave., Portland, OR 97225. (503) 297-7653.

FRENCH TISSUE VIEWS, and 1500 other stereo or cartede-visite items particularly wanted. David Hooper, 36, Flag Lane, Chestor CH2 1LE, England, U.K.

Trade

TRADE, BUY AND SELL: Card mounted views. (Australian, Canadian, and British stereo or cartede-visite items particularly wanted). David Hooper, 36, Flag Lane, Chester CH2 1LE, England, U.K.

WANTED

JOHN ROGERS stereo cards wanted of School/ days and The Photographer. A.J. Maine, 3025 Spring St., Racine, WI. 53405, (414) 634-0734.

KITES, wanted photos and stereo before 1950, also early aero photography taken by kite, illustrations, books, etc. ... Send photocopy with price. Please write to: Michel Dusarie, 14, Avenue Capitaine Piret, 1150 Brussels, Belgium.

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

OFFERS MADE on rare early views in excellent condition. Also, Indian and J.J. Hawes. No curve mounts. Kent Appollo, 2415 N.W. Lovejoy, Portland, OR. 97210.


OKLAHOMA, Oklahoma Territory, Indian Territory, stereo views. Cabinet photos, stock certificates, deeds, allotment papers or paper memorabilia. Buy or trade. Send copies, prices, want list to: David Reeh, PO. Box 4231, Tulsa, OK. 74159.

RAUMBILD-VERLAG (German Third Reich 3-D books with viewer & cards). Call Ron (206) 277-8935 or write Ron Martin, 16156 138th Ave SE, Renton, WA. 98058.


OLD STYLE NIMSO pre-paid mailers—any size. Phil Kantor, 150 W. Pike St., Canonsburg, PA. 15317, (412) 746-4861.


TOLEDO, OHIO and area, any stereo views but esp. views by Trost of the great flood of 1883 and views by Van Loo of the Hall Block fire of 1882. Also Corte-Scope sets and views (no viewers unless with views), stereo views, CDVs, cabinet cards & real photo post cards of small Ohio towns esp. Sycamore, Tiffin, Findlay, Nevada, Upper Sandusky, Carey, Ashland and Bucyrus. John Waldsmith, PO. Box 191, Sycamore, OH. 44462.

NEBRASKA AND KANSAS stereo views. Also, other photographic formats of significant interest. Don Ulrich, 1625 South 23rd, Lincoln, NE. 68502.
WANTED

BOXED SETS & lace makers any format. Ron Blum, 2 Hussey Av, Oaklands Pt. S.A. 50406 Australia.

ARGENTINE VIEWS wanted, early cards only, no Keystones. Also any early non-stereo views of Argentina, albums, etc. Mike Kessler, 25749 Anchor Circle, San Juan Capistrano, CA. 92675, (714) 661-3320.

STEREO VIEWS showing street cars in Scranton, PA., Strano, CA. 92675, (714) 661-3320.

Yreka or Fort Jones, CA.

COLORADO STEREO VIEWS, cabinets, CDVs, real photo post cards, and large photographs of talented young photographers, including George W. Chamberlain, CH. Clark, Goodman, Charles Weitfle, Joseph Collier, and especially views of Quincy, Illinois. Please describe and send photo or price on approval. Will also trade for Illinois and Missouri views. Phil Germann, Box 195, Quincy, IL. 62306.

MILWAUKEE, WISC. stereo views, books, prints and maps plus any all-wood cameras. Dave Gorski, 1326 Garfield Ave., Waukesha, WI. 53186 or call (414) 542-3059 evenings.

NEED SOURCE for metal-glass folding military type desk stereoscopes. Plain or with binocular alternator as used in studying air photos. George Gyrnik, 314 12th St, Winder, GA. 15963.

MICHIGAN STEREO views, including entire set of historical value, especially views of Quincy, Illinois. Please describe and send photo or price on approval. Warren Smythe, 258 Cumberland Rd., Auburn, NSW 2144, Australia.

LITHUANIA and MISSOURI stereo views. Especially views of Quincy, Illinois. Please describe and send photo or price on approval. Will also trade for Illinois and Missouri views.写者 Rodriguez, PO Box 112005, Miami, FL. 33111.

FLORIDA STEREOs of historical value, especially Tallahassee, Tampa, Gainesville. Price and describe or send on approval; highest prices paid for pre-1890 views. No St. Augustine. Hendriksen, PO. Box 21153, Kennedy Space Center, FL. 32815.

STERLING 800 Deluxe viewer, it's identified by red focusing knob. Any condition, from Junkers for parts to Mint. Dennis Sherwood, 49004 N. Kenosha Road, Zion, IL. 60099.


WESTERN MARYLAND stereo views by Bishop Brothers of Cumberland. Looking for cards and historical information on Bishop Brothers. Send xerox copies to Alice Bampton, 31 Pine Tree Drive, Audubon, PA. 19403.

PRECISION FOLDING STEREO VIEWER

For all standard

Realist 3D stereo slides.

Glass or cardboard mounted. Folds flat, weighs only 1 oz.

Prepaid minimum order $10.00. Add $1.00 for shipping and handling.

FREE CATALOG AVAILABLE.

TO ORDER CALL TOLL FREE

800-223-6694

STEREO WORLD March/April 1989 39
**Calendar**

<table>
<thead>
<tr>
<th>Date</th>
<th>Location/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 14</td>
<td>(CA) 3rd Santa Monica Camera Show &amp; Sale, Santa Monica Civic Auditorium. Contact Anton at Bargain Camera Trade Shows, Box 5352, Santa Monica, CA 90405. Call 213-396-9463 or 213-578-7446.</td>
</tr>
<tr>
<td>May 21</td>
<td>(Ont.) Photographic Historical Society of Canada 15th annual Photographic Fair, Leaside Memorial Gardens, 1073 Millwood Ave., Toronto, Ont. Canada. Contact Mark Singer, c/o PHSOC, Box 115, Station S, Toronto, Ontario M5M 4L6 Canada. Call 416-221-8888.</td>
</tr>
<tr>
<td>May 21</td>
<td>(CA) Buena Park Camera Swap Meet, Sequoia Club, 7530 Orangethore Ave., Buena Park, CA. Call 714-786-8183 or 714-786-6644.</td>
</tr>
<tr>
<td>May 21</td>
<td>(IL) Chicagoland's Camera and Photo Show, Holiday Inn, 3405 Algonquin Rd., Rolling Meadows, IL. Contact CCPS, Box 72695, Roselle, IL 60172. Call 312-894-2406.</td>
</tr>
<tr>
<td>May 21</td>
<td>(IN) South Bend Camera/Computer/Video Swap Meet, Century Center, South Bend, IN. Contact Roger L. Smith, Box 6486, South Bend, IN 46544. Call 219-256-6573.</td>
</tr>
<tr>
<td>May 27, 28</td>
<td>(OH) Ohio Camera Collector's Society Annual Camera Photofair, Park Hotel, 900 Morse Rd., Columbus, OH. Contact John Durland, Box 282, Columbus, OH 43216. Call 614-885-3224.</td>
</tr>
<tr>
<td>May 27 - June 4</td>
<td>(Germany) International Stereoscopic Union Congress, Berlin &amp; Frankfurt, Germany. (See page 46, Nov./Dec. '88 Stereo World.)</td>
</tr>
<tr>
<td>May 30 - June 1</td>
<td>(Quebec) International Conference on Three Dimensional Media Technology, Grand Hotel, Montreal, Quebec. (See Newviews, Jan./Feb. '89 Stereo World.)</td>
</tr>
<tr>
<td>June 4</td>
<td>(PA) Delaware Valley Photographic Collectors Association, Spring Show, George Washington Motor Lodge, King of Prussia, PA. Contact DVPCA, Box 74, Delanco, NJ 08075.</td>
</tr>
<tr>
<td>June 11</td>
<td>(NJ) Second Sunday Camera Swap. (See May 14)</td>
</tr>
<tr>
<td>June 18</td>
<td>(CA) Buena Park Camera Swap Meet. (See May 21)</td>
</tr>
<tr>
<td>June 18</td>
<td>(IL) Chicagoland's Camera &amp; Photo Show. (See May 21)</td>
</tr>
<tr>
<td>June 25</td>
<td>(CA) Ventura Camera Show &amp; Sale, Harborview Marina Resort, 1050 Schooner Dr., Ventura, CA. Contact Anton at Bargain Camera Trade Shows, Box 5352, Santa Monica, CA 90405. Call 213-396-9463 or 213-578-7446.</td>
</tr>
<tr>
<td>July 9</td>
<td>(NJ) Second Sunday Camera Swap. (See May 14)</td>
</tr>
<tr>
<td>July 15, 16</td>
<td>(MI) 6th Detroit Summer Photorama USA, Southfield Civic Center, Southfield, MI. Contact Photorama USA, 20219 Mack Ave., Grosse Pointe Woods, MI 48236. Call 313-884-2243.</td>
</tr>
<tr>
<td>July 16</td>
<td>(CA) Buena Park Camera Swap Meet. (See May 21)</td>
</tr>
<tr>
<td>July 16</td>
<td>(IL) Chicagoland's Camera &amp; Photo Show. (See May 21)</td>
</tr>
<tr>
<td>August 4-7</td>
<td>(OR) NSA Portland 89 — The 15th annual convention of the National Stereoscopic Association! Red Lion Inn Lloyd Center, Portland, OR. Friday through Monday. Contact NSA Portland 89, Box 10691, Portland, OR 97210. Call 503-771-4440.</td>
</tr>
</tbody>
</table>

---

**World's Largest 3-D Photo World**

**Mail Order Selection of 3-D Photography!**

**3-10 D Foto World**

---

40 STEREO WORLD March/April 1989

only so seemingly real! Only $2.99.

These reproductions are of authentic stereoviews. The quality is excellent: they will snap to life in a 3D stereoviewer such as the reproduction Holmes Stereoviewer that we offer.

USE THE ADVANCE REBATE PLAN AND SAVE ON SHIPPING

#14.

#15.

#12.

#2.10

#3.

#30.

#16.

#34.3D

#29.

#33.

#32.

#31.

#3.

#30.

#2.

#4.

#5.

#6.

#7.

#8.

#9.

#10.

#11.

#12.

#13.

#14.

#15.

#16.

#17.

#18.

#19.

#20.

#21.

#22.

#23.

#24.

#25.

#26.

#27.

#28.

#29.

#30.

#31.

#32.

#33.

#34.

#35.

#36.

#37.

#38.

#39.

#40.

#41.

#42.

#43.

#44.

#45.

#46.

#47.

#48.

#49.

#50.

#51.

#52.

#53.

#54.

#55.

#56.

#57.

#58.

#59.

#60.

#61.

#62.

#63.

#64.

#65.

#66.

#67.

#68.

#69.

#70.

#71.

#72.

#73.

#74.

#75.

#76.

#77.

#78.

#79.

#80.

#81.

#82.

#83.

#84.

#85.

#86.

#87.

#88.

#89.

#90.

#91.

#92.

#93.

#94.

#95.

#96.

#97.

#98.

#99.

#100.

#101.

#102.

#103.

#104.

#105.

#106.

#107.

#108.

#109.

#110.

#111.

#112.

#113.

#114.

#115.

#116.

#117.

#118.

#119.

#120.

#121.

#122.

#123.

#124.

#125.

#126.

#127.

#128.

#129.

#130.

#131.

#132.

#133.

#134.

#135.

#136.

#137.

#138.

#139.

#140.

#141.

#142.

#143.

#144.

#145.

#146.

#147.

#148.

#149.

#150.

#151.

#152.

#153.

#154.

#155.

#156.

#157.

#158.

#159.

#160.

#161.

#162.

#163.

#164.

#165.

#166.

#167.

#168.

#169.

#170.

#171.

#172.

#173.

#174.

#175.

#176.

#177.

#178.

#179.

#180.

#181.

...