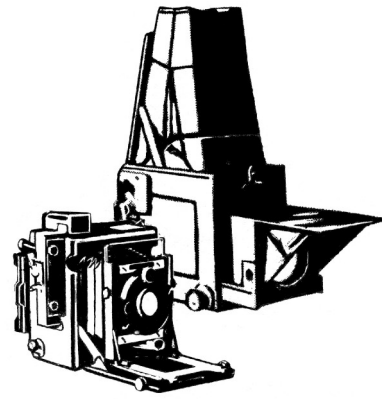


GRAFLEX HISTORIC QUARTERLY

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ARTHUR L. PRINCEHORN AND HIS CAMERA

By Ken Metcalf
with Linda Grimm

Historical background for this project has been provided by Dr. Linda Grimm who taught at Oberlin College in Ohio. She became interested in Arthur L. Princehorn while researching with her students the history of the college's nineteenth century anthropological collection. (<http://www.oberlin.edu/library/digital/occec/>) Linda's research stimulated this article through the discovery of a mystery camera in the George Eastman House collection, determined here to be the second of three cameras built by A. L. Princehorn. Linda tracked down photos that Princehorn took at Glen Island and interviewed his descendants. In addition, she searched the Frank M. Chapman records in the Department of Ornithology at the American Museum of Natural History, seeking documentation for his association with Princehorn.

The purpose of this article is to determine if the camera made by Arthur Princehorn in 1899 was the model for the Folmer & Schwing Graflex or other cameras, and if not, what was its role in the evolution of cameras.

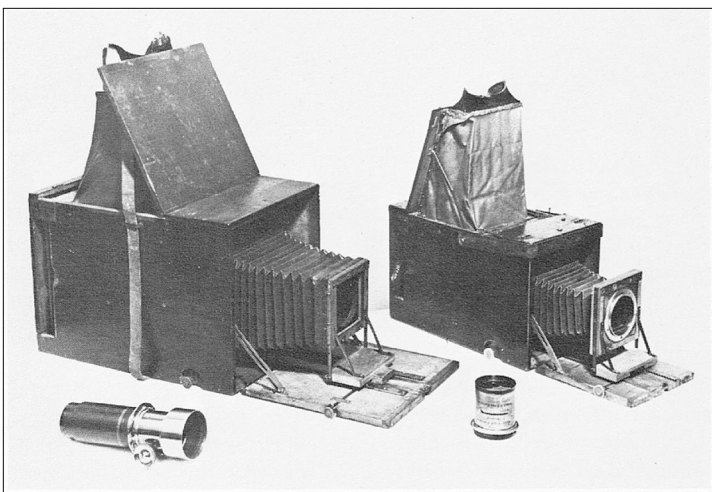
Arthur L. Princehorn

Linda Grimm writes that in the fall of 1894, Arthur L. Princehorn set out from Ohio for New Rochelle, New York, with his bride, Agnes, to begin a new career as a photographer and naturalist at John H. Starin's Glen Island Resort. There he joined his former Oberlin College colleague, Lewis M. McCormick, in a program to develop a natural history museum at the famous family day resort on Long Island Sound. The skills they brought were honed in the college museum and included mounting specimens (taxidermy), maintaining displays, and organizing materials for laboratory classes. In addition, they both had years of experience as amateur field naturalists and shared an avid interest in photography. This was a rare opportunity for two very talented young men, and by all indications they made a great success of it over the ten-year period they worked at Glen Island. The museum grew year-by-year as Lewis gathered material on trips to distant locales in Europe, Africa, the Middle East, Asia, and the Pacific. They continued to prepare specimens from the local area and develop exhibits to excite the public's interest in natural history. Mr. Princehorn increasingly used photography in his work, seeking images of animals in both natural and captive settings. On one occasion he installed a camera in the wall of the museum and took photos at intervals of nesting robins located on a ledge outside. Glass plate slides, still in the possession of Arthur's descendants, as well as newspaper accounts, tell us the two gave magic lantern presentations for visitors on a variety of topics as part of their effort to share knowledge about both the natural world and some of the diverse peoples who inhabited it.

Sometime around 1898, Arthur decided to try to develop a camera with a shutter speed fast enough to capture clear and sharp images of the natural behavior of animals. He hoped these images would help him to pose his taxidermy specimens in natural ways. He described the evolution of his project and provided annotated images of the camera he built in an article that appeared in the magazine *Photo Era* in April 1901. (The article is available on Box.)

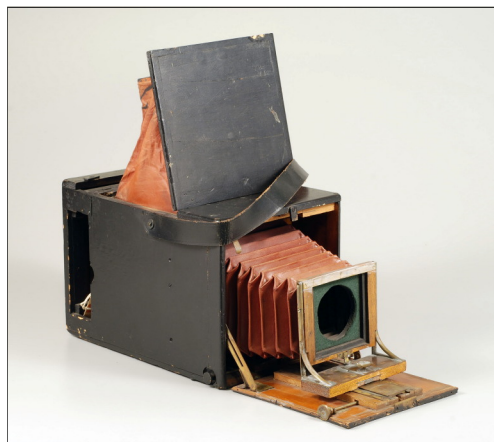
While he said there was nothing particularly new in any of the component parts of the camera, their arrangement allowed him to achieve something new and unique in conception. With the fast lens, he could now capture all kinds of activity that had previously eluded him in his animal photography. These same advantages took on a new and even more dra-

matic application when it came to photographing people. In the late 1890s, John Starin initiated the practice of bringing different cultural groups to Glen Island for summer residences. Perhaps the most exciting from the public's perspective was the 1901 visit of a group of Brule Sioux from South Dakota. They came with their tepees, elaborate regalia, ponies, war equipment and families to set about entertaining the public with dances, sham battles, and camp visitations. With his fast-action camera, Princehorn was able to capture complex shots of the excitement and drama of the sham battles. These photos demonstrate the true merits of his invention because of the number of people involved and the complexity of the action. The photos are clear, and it is possible to track the action across the multiple images of the event. They are truly remarkable images for their time. See images on page 5.



5x7 and 4x5 Princehorn cameras owned by grandchildren.

Arthur built three cameras, two of which are still in the hands of family members (chronologically cameras 1 and 3 shown above). Camera number 2, which he built for Frank M. Chapman, ornithologist at the American Museum of Natural History, has had a more complex history. Chapman paid \$50.00 for the camera with the intention of photographing birds in flight.* He succeeded in this task and published images of Brown Pelicans from Pelican Island Florida in 1901. At some point, Chapman must have parted with the camera, for it appeared, according to family history, in the corporate collection of the Folmer Graflex Corporation in Rochester, New York, in the 1930s. How this came about we do not know. But its presence in this collection suggests that the camera may have represented an event in the history of their product, such as a prototype for the large-format single-lens reflex camera that William Folmer of Folmer & Schwing patented in 1901 and 1902. The history of the company after 1930 involved numerous changes in corporate names and alliances, and the fate of the camera became unknown. Fortunately, a likely candidate has turned up recently in the collections of the George Eastman House Museum that we can compare to the known examples. This in turn provides a fresh opportunity to reassess Arthur L. Princehorn's achievement in the development of the first large-format stop-action camera.



Camera number 2, donated to the George Eastman House by Graflex.

Certainly the Princehorn family has always believed Arthur's camera was the predecessor of the Graflex. This is shown by an exhibit in the Oberlin College Library that dates to the same time as

the sighting of Princehorn's camera in the Folmer collection. Titled, "The Camera Reflects a Century," the exhibit was divided into three parts. The first celebrated the 100th anniversary of the invention of the daguerreotype, while the third was devoted to the work of some outstanding contemporary photographers, including Arthur's son, Arthur Ewing Princehorn. The middle part focused on the turn of the century work of Arthur L. Princehorn and commemorated him as "the inventor of the first speed action camera." The original camera, lens and carrying case were included in the exhibit, along with some of Arthur's early photographs. An accompanying text describes the camera as much like the modern Graflex, with the first focal plane shutter made in this country and boasting a speed of around 1/1000th second.

The Camera

Based on my (and others') analysis, along with the existence of the Princehorn cameras, an Eastman House inventory tag and camera, Graflex advertising material, and Princehorn records, was the Eastman House camera the "first model Graflex"? Also, did the Chapman camera become a Graflex camera, and were the claims of Graflex or Princehorn correct? Also, should the Princehorn camera be considered the first stop-action large-format single-lens-reflex camera?

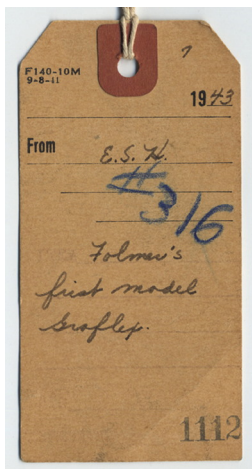
The Eastman House Camera

First, is the Eastman House camera a Graflex? On page 3 is the inventory tag that came with the camera, when it was donated to the Eastman House.

Based on comparisons done by Todd Gustavson, Jim Princehorn and others, there is a very high probability that the camera was made by A.L. Princehorn, and the tag created by "E.S.H." (probably Edson S. Hinline, Chief Engineer at Graflex) in 1943, is not correct. In addition to the visual comparison, the workmanship is not consistent with cameras being produced by Folmer & Schwing around 1901.

Second, is the Eastman House camera the "first model" Graflex? As explained later, it may have been "the model for the first Graflex."

It is highly likely that the camera purchased by Chapman from Princehorn is the Eastman House camera. There are several theories of how this happened.



1. Chapman may have given the camera to Folmer simply as a gift, as an historical anecdote for their collection, which could have later been misattributed to Folmer.

2. Folmer may have traded the camera for a then-current model Graflex, or Chapman may have initiated a trade. Linda found a letter in the archives of the Department of Ornithology, American Museum of Natural History, from Mr. Chapman to Folmer & Schwing offering to trade advertising space in Bird Lore for a long-focus Graphic.

3. Quarterly editor and Graflex collector Les Newcomer thinks one possibility is that Folmer saw the Princehorn camera, designed his own camera around it, then traded his camera for Princehorn's crude prototype camera, which would have been a big upgrade for Mr. Chapman. Or, maybe, Folmer just wanted to have the first American SLR in his collection, and the origin got mixed up later.

4. Linda found that there is a paper tag on the Eastman House camera with "American Museum of Natural History..." printed, and a hand notation of "Made in June 1, 1901." This tag could have been placed on the camera when the museum's Mr. Chapman purchased it from Folmer & Schwing, or it could have been placed on the camera when it was loaned to an exhibit of early cameras. Unlikely, though possible, the camera could have been returned to F&S or Graflex by mistake, thinking it was their camera.

5. Todd believes because the collection of Graflex cameras given to the Eastman House contains a number of historical non-Graflex cameras, this may have been one of those, and somehow got renamed/tagged incorrectly.

Unfortunately, there is not enough information to determine the role the Princehorn camera played in the development of the Graflex and other cameras.

Graflex Claim

Was Graflex's claim that the camera in their collection was the first Graflex correct? As noted above, not so much. Those who take a close look at Graflex generally conclude that their cameras were well-made and that the advertising made them and the company look even better.

Princehorn Claims

Were the Princehorn claims valid? Here are some statements made by him and his relatives:

Mr. Arthur Ludwig Princehorn (unpublished biography) "His camera might be said to be the Granddaddy of the Graflex which has been so popular in newspaper work, and also 'the first candid camera' as it made the taking of action pictures a reality."

Hand Camera for Bird and Animal Photographers, 1901, A.L. Princehorn.

"Dropping into the taxidermist shop of the American Museum of Natural History, New York City, one day I found Mr. Rowley, the chief taxidermist, deeply interested in the construction of a camera for bird and animal work.

Having experienced some of the difficulties of this work myself it did not take me long to see the advantage of this new camera and become interested myself.

I set about to construct one for myself, using by his permission some of his ideas.

While there is nothing particularly new in any of the parts of the camera, the scheme as a whole puts the operator in perfect control, after the shutter is set and the slide drawn, of his focus and exposure, the whole attention being given to the ground glass."

Letter to Mr. Harry Burdick Photo Retailing Magazine from A.E. Princehorn and Allen Bailey, March 3, 1938.

"In answer to your letter of February 26 concerning the material on the first focal plane camera made in the United States, we are enclosing proof as to its authenticity.

The first focal plane camera, the candid of its day, was constructed in the winter of 1897-1898 by Mr. A. L. Princehorn, the father of one of the signers of this letter. An identical camera was later built for and purchased by the American Museum of Natural History in New York.

We believe that if you will compare the camera in the possession of the Folmer-Schwing Company with the pictures which we are submitting, you will find them nearly identical to the first focal plane camera. We are of the opinion that the camera in the display cases of the Folmer-Schwing Company is none other than the one constructed by Mr. Princehorn for the American Museum of Natural History after he had made his first cameras.

We are very happy to submit these proofs to you and trust that they will meet your approval and at the same time will be of great interest both to you and to your readers eventful milestones in the history of photography."

Linda found a newspaper clipping from 1939 describing a 100th anniversary of photography exhibit at Oberlin College that says, "The next section of the exhibit figures around 1899 and commemorates the work of Arthur L. Princehorn, who was the inventor of the first speed action camera in 1899. This part of the exhibit includes the original Prince-

horn camera...” From James Princehorn, the grandson of A.L., comes what appears to be a caption, and probably from the 1939 exhibit. “First speed focal plane shutter camera constructed by Mr. A.L. Princehorn in 1897-1898.”

Called the First ‘Candid’ Camera (unpublished paper from James Princehorn) “The original model of the modern Graflex was built by Arthur Ludwig Princehorn in 1899. From Chapman’s duplicate the present-day Graflex was designed.”

From these quotes, made over a number of years, a summary of Princehorn views emerges. Each is followed by a comment.

1. The Princehorn camera was the “Granddaddy of the Graflex.”

Comment - Princehorn’s article appeared in January 1, 1901, and a Folmer focal plane shutter patent was applied for in June 1901. Although unlikely, it is possible that, due to the detail given in the Princehorn article, the Folmer patent could have been created from the Princehorn article.

2. Their cameras were not based on originally developed components, but a unique combination of those components.

Comment - Agreed. A focal plane shutter was made by Thornton-Pickard and Ottmar Anschütz (GHQ Volume 12, Issue 3) which predates the Princehorn and Folmer & Schwing cameras. The use of a reflex mirror in the American-made Patent Monocular Duplex of 1884 and other cameras also predates the subject cameras. Also, in 1900 Rowley published an article that shows a number of features used by Princehorn.

3. The original model of the Graflex was designed and built by A.L. Princehorn in 1897-1898.

Comment - As noted, there is no definitive answer to this assertion. There is no public record in 1897-1898 to support this claim.

4. Their camera was the first “speed” focal plane camera made in America.

Comment - Probably not. Another contender is Francis Blake, who “designed a focal plane shutter that allowed him to take photographs with exposure time of 1/1000 to 1/2000 of a second.” (“The Photography of Francis Blake,” by Megan K. Friedel, Massachusetts Historical Society, accessed 21 February 2014, <http://www.masshist.org/features/online/photographs/blake>.)

His camera is part of the Museum collection and appears to be a Blair Hawk-eye Detective, modified to use his focal plane shutter. His work was published in the American Amateur Photographer and Anthony’s Photographic Bulletin, in 1891, and his photographs were exhibited in Boston and Philadelphia. Like Princehorn, he apparently never applied for a patent for his shutter.

5. Because Graflex said it was the “first model Graflex,” and the camera was a Princehorn camera, the Princehorns felt their camera was the first Graflex.

Comment - Princehorn logic is sound, but as previously set forth, for various reasons, the Eastman House camera is not a Graflex.

A feature that facilitated fast-action pictures is the release of the focal plane shutter when the mirror is released. Both the Princehorn and Graflex cameras had this feature. According to Cameras by Brian Coe (page 134), Dr. Krügener’s Normal-Reflex of 1891 also had this feature.

Conclusions

Unfortunately, we do not know for sure what role the Princehorn camera played in the development of the Graflex, Reflex Camera, or other cameras, or what role other cameras played in the development of the Princehorn camera.

Todd Gustavson believes that if imitation is the sincerest form of flattery, then the Princehorn claim of being the “Granddaddy of the Graflex” is yet another way to measure the success of a product. Had the Graflex not been a successful camera, Princehorn would not have made this claim.

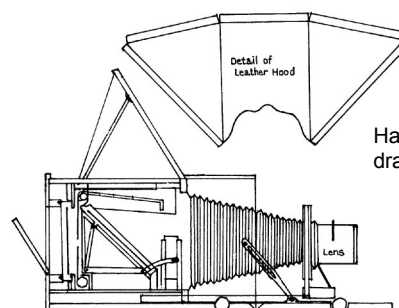
Having set forth all of these facts and hypotheses, Rob Niederman believes the greatest contribution of Mr. Princehorn is that if his camera is not THE missing link, it would certainly be A missing link between the 1890s long-focus self-casing cameras and the Graflex and Reflex cameras.

^{*}In Chapman’s book Bird Studies With A Camera, he claims that “The reflecting camera now in my possession was designed and made by John Rowley of the American Museum of Natural History...”

Graflex collector and Quarterly author, Thomas Evans, has a plausible explanation: “Thinking about the question whether Frank Chapman had John Rowley’s camera or Arthur Princehorn’s camera, since John Rowley and Frank Chapman worked together at the American Museum of Natural History during this time, and they and Arthur Princehorn all knew each other, it could be that Chapman borrowed Rowley’s camera, described it in his 1900 book Bird Studies with a Camera, then later purchased Princehorn’s camera.”

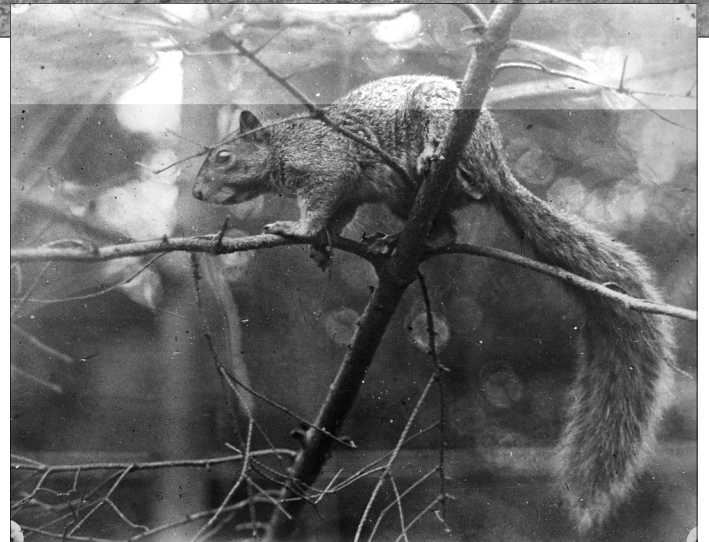
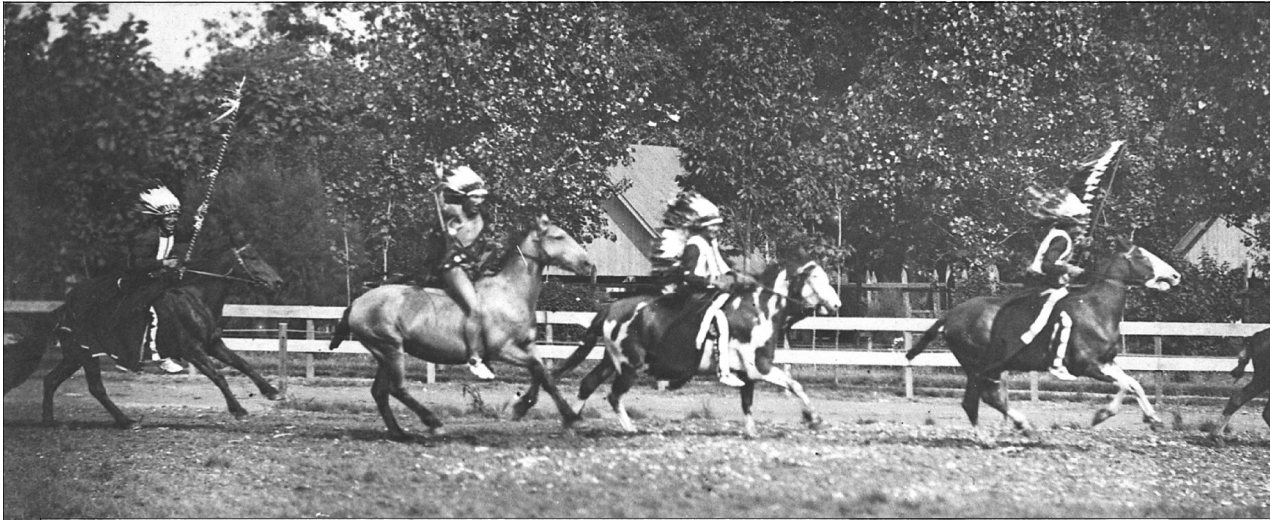
Ed: Unfortunately, no picture of Mr. Princehorn with his camera has been found, and the camera in the picture on page 1, according to Thomas Evans, is probably a Century View Camera, which was made by Folmer & Schwing starting around 1905.

Page 8 presents some chicken versus egg comparisons.



Hand copy of Princehorn camera drawing from his 1901 article.

Photographs taken with Princehorn cameras



All black and white images provided by the Rutherford B. Hayes Presidential Center and the Princehorn Family.

Brown Pelicans by Frank Chapman from Bird Lore volume 3, page 5, 1901.



TWO GRAFLEX HOME PORTRAIT BODIES MADE FOR BIG BERTHA USE

By Doug Frank

All Big Bertha 5x7 cameras began as modified Graflex camera bodies, although the Graflex factory never officially made any complete Big Bertha cameras. However, by the 1940s, it was producing modified Home Portrait 5x7 bodies designed to be adapted to Big Bertha use.

Although the Detroit News credits itself with making the first Big Bertha camera, Graflex never recognized this company as either being the inventor nor a leader in Big Bertha manufacturing. The Detroit News did, however, produce them for itself and supposedly other newspapers as well. Indeed, there were several companies making the Big Bertha cameras eventually, some of which put their own nameplate on the unit while others did not. In any case, all of these cameras began as a Graflex Home Portrait body as manufactured by Graflex.

The camera for sale on eBay recently has a serial number that is very close to the one on my camera*, which I had modified in 1979 to have focusing capabilities and take a standard portrait lens. The eBay camera is on the left, and my completed and modified one is on the right.

The eBay camera looks exactly like mine did when I purchased it, although mine was 100% mint in a factory box. The eBay camera has no focusing mechanism, nor did mine when I purchased it. It is simply a Home Portrait body with a shutter, mirror, revolving back and focusing hood.

The hole in the front of the body is where the Big Bertha modification was to begin. Big Bertha cameras never needed any focusing rails, because the focusing mechanism was on the lens barrel itself, which was operated by a vertical lever going forward and backward. I enlarged the hole in the front of my camera body in order to mount a set of bellows. Then I cut channels for focusing rails and installed a knob and shaft to operate the fabricated rails. Finally, I

added a front standard, so the resulting camera could be used like any 5x7 Graflex Home Portrait camera (See my recent article in the GHQ, Volume 18, Issue 3).

Evidently, my Home Portrait body and that of the eBay camera must have been two of the bodies that Graflex modified to be adapted to Big Bertha use, although neither was made into a Big Bertha. Because of the closeness of the serial numbers, however, they are undoubtedly of the same vintage.

* Serial number 468513 versus 468552. The serial number book shows 50 units scheduled for production in 1950, long after the camera was dropped from catalogs.



1941 Home Portrait catalog illustration.

Folmer Graflex Dealer's Price List February 1, 1940

CUSTOM EQUIPMENT FOR THE PRESS FIELD

The newspapers and the news photo syndicates of the nation have depended through the years on cameras manufactured by Graflex. Thus, it is but natural that they have turned to Graflex for such custom built equipment as would serve their specialized needs. To meet those needs, Graflex has refined the so-called Big Bertha camera and the Ringside camera so that they are acknowledged as the finest available. Details follow:

The 5x7 Big Bertha Cameras

Basically, most of the so-called Big Bertha cameras consist of an especially altered 5x7 Home Portrait Graflex into which there is installed a long focus lens. In many quarters, though, the 5x7 Home Portrait Graflex regularly equipped with any of the regular lenses offered for it well serves the news field, but without exception it is necessary that such cameras be especially equipped with the standard high-speed Graflex focal plane shutter rather than the special shutter which is standard equipment on the Home Portrait Graflex. The 5x7 Home Portrait Graflex when especially equipped with the standard high-speed Graflex focal plane shutter [1/1000] is normally referred to as the "special press model." Prices for it are as follows:

Special Press Model 5x7 R.B. Home Portrait Graflex without lens List \$245, Net \$163.33.

[When completely made up with a 40" f/8 Dallmeyer Telephoto lens, base plate, gearshift, diaphragm ring, etc., the price became \$942.]

REVIEWS.....



Mizu-san The World and War

Long-time Quarterly subscriber, Graflex collector and photographer, Frank Pereto, would like to introduce our readers to photojournalist Fred O. Waters.

<http://www.dailymail.co.uk/news/article-2520138/Photojournalist-Fred-Waters-dead-age-86.html>

Mr. Waters, along with co-author Joe C. Culpepper, wrote an engaging book, Mizu-san - The World and War, which is available from Amazon and other sources either as a print-on-demand or Kindle edition for around US\$6. In the introduction, it is stated that “Photographers relied on the boxy Speed Graphic, a versatile and reliable camera, but very limited by today’s standards.” Within the text, there is no mention of the Speed Graphic, although it is pictured three times, and in one instance the caption reads “My most prized professional possession is a trusty 1947 Graflex Speed Graphic camera.”

So, why review this book? First, to call attention to his camera and, second, to review the lively text.

First, the camera appears to be a combination of a Pace-maker body and a post-war Anniversary front standard and focusing scale. Les Newcomer says the following: “The camera may be a pre-introduction transitional or post purchase kluge? I can’t tell. While many parts (bed, body) are interchangeable, so much more of the Anniversary and Pacemaker bodies are so radically different, I would be surprised if Graflex let out a mix-breed camera.

The lens and the post-war standard certainly fit the time frame for a married piece to leave the factory. If the front

standard trim were black, I would say this was a post-sale marriage between some army surplus and a newspaper’s camera. But the trim on the front standard fits the time of transition.”

Second, the writer has a compelling story told in an engaging, frank and vernacular way, and is well worth reading. Mr. Waters knew and wrote about journalists, military men, actors and politicians in an engaging and forthright manner.

SHORPY

<http://www.shorpy.com/>

This website has a wealth of images, with 8x10 prints usually priced at a reasonable \$5. If you use the “Graflex” search, you will find interesting images of press photographers on the White House lawn, remnants of Graflex cameras from the crash of the airship USS Shenandoah, and a compelling picture of a travel photographer. With a free membership, you can add posts to individual pictures.



- Friday @ the DoubleTree Hotel, evening Reception.
- Saturday @ [George Eastman House](#), The Symposium, brought to you by TPHS since 1970, brings together those who make history in the field of photographic history.
- Sunday @ the DoubleTree Hotel, **Trade Show & Swap Meet** features antique cameras, images, books, & ephemera.
- Tour George Eastman House, a National Historic Landmark, its gardens, and the International Museum of Photography & Film.

For more information, see www.tphs.org.

Graflex Historic Quarterly

The Quarterly is dedicated to enriching the study of the Graflex company, its history, and products. It is published by and for hobbyists/users, and is not a for-profit publication. Other photographic groups may reprint uncopyrighted material provided credit is given GHQ and the author. We would appreciate a copy of the reprint.

To access Box files, use this link.

<https://app.box.com/s/xjzixd02xsy69cr35oeu>

Chicken or the Egg...or Evolved Chicken?*

From the broad and deep George Eastman House Technology collection, curated by Todd Gustavson, comes the Patent Reflex Hand Camera, first patented by Calvin Rae Smith (number 418,764 in 1890) and possibly manufactured around 1899-1900 by the Reflex Camera Company of Yonkers, New York.

There are significant differences: The Reflex camera had internal bellows and a short 6½" Rapid Rectilinear lens (probably f/6 or f/8), while the Princehorn camera had a fast f/2.2 8x10 focal length lens on a long-draw drop front.

There are similarities: Both had 4x5 sizes, and both were a box-form reflex camera with a focal plane shutter. The Reflex company reduced the difference with their Long Focus of 1903, which adopted the drop front and long bellow draw (21½"). The Reflex company again changed their design in 1906 by attaching a lens-board to a front standard, thus becoming much more like the Graflex.

Todd believes Princehorn built a telephoto version of the first model Reflex Camera. As can be seen, most of the controls line up, they use very similar methods/hardware on the focusing hood, and the locking mechanisms are almost identical.

*Todd's title.

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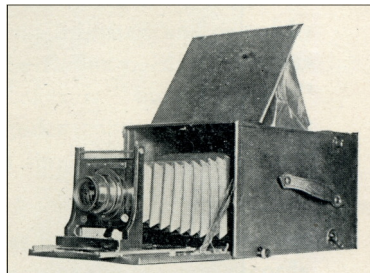
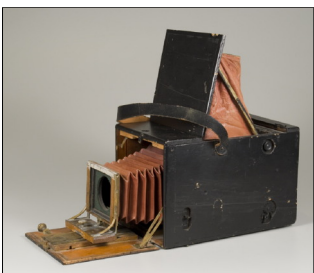
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In all photos, the Princehorn camera is on the left, and the Patent Reflex Hand Camera is on the right. Photos courtesy George Eastman House.



Far left, Princehorn camera, courtesy George Eastman House, ca 1901. Left, 1903 Long Focus Reflex camera, courtesy of Rob Niederman.