ZEISS HISTORICA

The Journal of the Zeiss Historica Society • Volume 11, Number 2 • Autumn, 1989

The Zeiss Historica Society of America is an educational, non-profit society dedicated to the study and exchange of information on the history of the Carl Zeiss optical company and affiliates, its people and products from 1846 to the present.

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Type-setting and printing: The Warren Press, Inc.
6 Lake Avenue, Danbury, Connecticut 06810.

ON THE COVERS

FRONT COVER: Third Annual European meeting. On August 28, 1989, Society members gather for a group portrait beneath the main entrance to the Carl Zeiss plant, Oberkochen, West Germany.
BACK COVER: A later version (1938) of the "Phoku" photomicroscope apparatus shown in "Lichtstrahlen" (inside back cover).

ILLUSTRATION SOURCES

Front and back covers, courtesy Carl Zeiss, Oberkochen. • Stereo microscope photos by Fred Matthies. • Turmon and Icarette article photos by Joseph Brown. • Lens coating illustrations courtesy of Jan Bisschops • European meeting photos by Larry Gubas, C. Barringer, Jr., H-J Kuc and the Editor. • Optometrist ad courtesy of Michael Fisher. • Zeiss Ikon key service sign and French photo museum photos by the Editor.

NEW BOOKS ON THE WAY

Hans-Juergen Kuc, whose two books on the Contax are already classics, and Paul-Henry van Hasbroeck, author of a definitive giant volume on the Leica, are both preparing new books on the Contax. And the long-awaited second volume of Kurt Juettner's and Bernd Otto's two-volume catalog of Zeiss and Zeiss Ikon cameras is very close to publication. (The first volume, now out-of-print, covered prewar equipment.) The new volume will cover all the postwar models. The Journal will publish full reviews of these new books as soon as they become available.

THE FRENCH MUSEUM OF PHOTOGRAPHY

A vast and remarkable collection of photographic equipment is on display at the French Museum of Photography (Musee Francais de la Photographie). Despite the rather small amount of space devoted to photography at the museum of the Conservatoire National des Arts and Metiers in Paris, interest in equipment is alive and well in France, as a visit to this museum will demonstrate.

The Museum is in Bievres, a small town about 20 miles southwest of Paris, and site of the first aerial photographs taken in France — by Nadar in 1858. Bievres itself is easily reached by train from Paris, leaving from the Austerlitz station. But it's an uphill hike of over a mile from the Bievres station to the Museum, so arrival by car is recommended. The Museum's address is 78 Rue de Paris, 91570 Bievres. Phone: (1) 69 41 10 60 or (1) 69 41 03 60. The Museum is open from 10 AM to noon and 2 PM to 6 PM every day, including Sundays and holidays.

Devoted primarily to photographic equipment rather than to images, the Museum contains literally thousands of cameras and other items. While there is much French equipment on display here, the collection is a truly international one, with much German, American and Japanese equipment as well. Although a bit crowded and dim, the display cases are well organized, and the staff very helpful. A visit is recommended to every collector.

Each year, Bievres hosts a photographic fair like those held in the U.S., with much of interest to collectors on sale. In 1990, the event will be held on Sunday, June 3.

A MILITARY MAST TELESCOPE

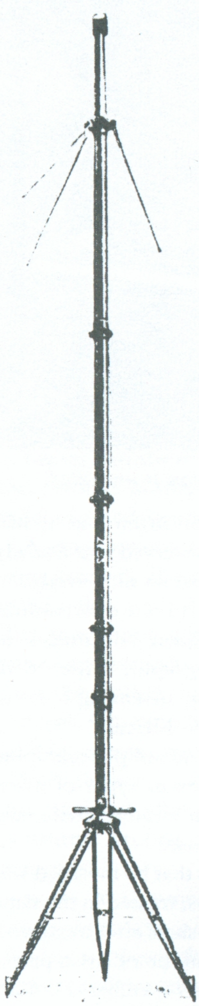
Nicholas Grossman, Rockville, Maryland

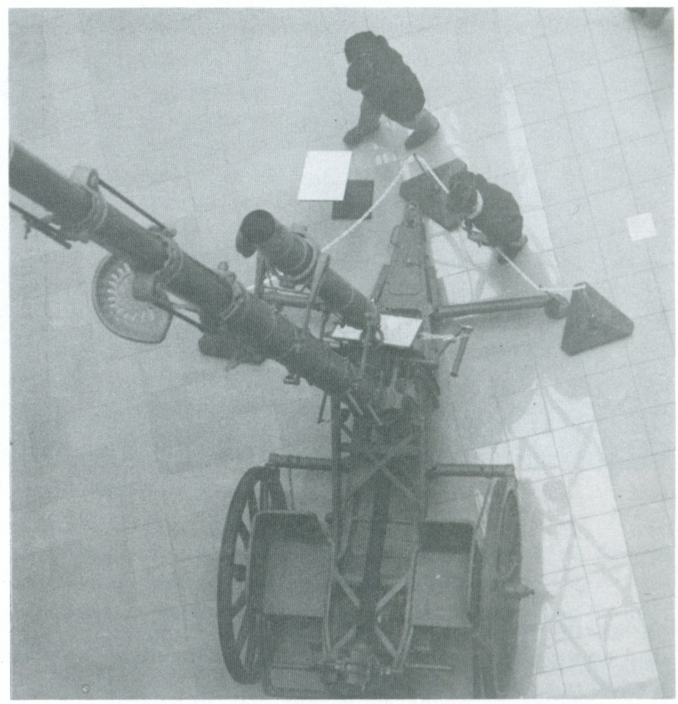
Various optical range-finding and angle-measuring instruments were used by the German military in World War I to assist in the accurate aiming of artillery pieces. Observation ladders were used to enhance stereoscopic effects.

Eventually, it was decided to do away with stereoscopic viewing and to replace the flimsy and insecure ladders with tall monocular mast telescopes. These devices provided observation from as high as 30 to 85 feet above ground level.

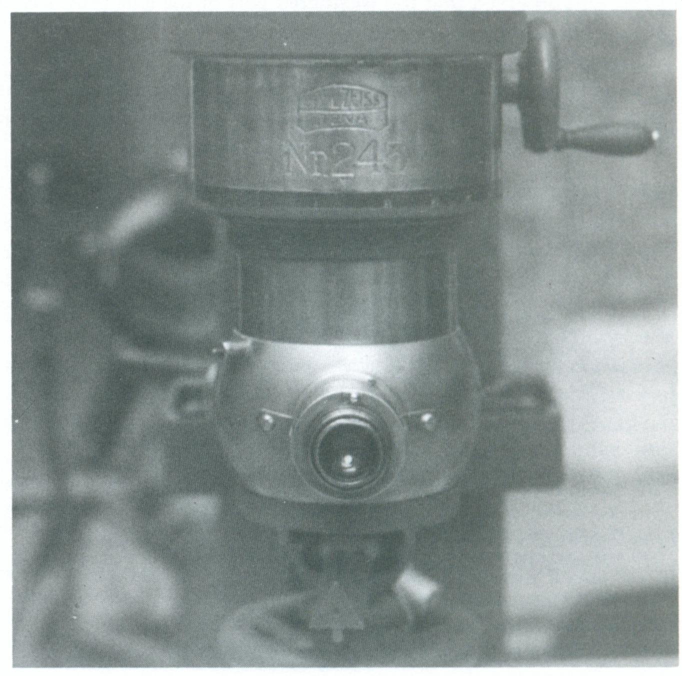
Shown here in contemporary illustrations (taken from "The Zeiss Works and the Carl Zeiss Foundation in Jena" by Professor Felix Auerbach, Fifth Edition, 1925) are a schematic drawing and an actual unit in the field.

One such complete mast telescope is now on display in the Imperial War Museum in London.





Unit at the British War Museum. Tube serves as a structural support; the telescope proper has no tube.



Ocular and mechanical adjusting mechanism. Incised in the brass is "Carl Zeiss Jena" logo and "Nr. 243."

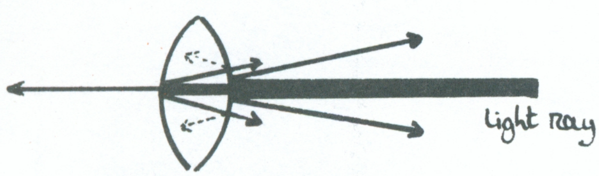
THE DEVELOPMENT OF LENS COATING

Jan E. M. Bisschops, Amersfoort, The Netherlands

Without coating, many photographic lenses would not be practical. Among others, the very popular (but in their optical construction very complex) zoom lenses would be useless without coating.

The story of lens coating starts somewhere at the end of the 19th century. The exact year is unknown, but it was most certainly after 1891. Some sources mention the year 1892. In that year, Harold Dennis Taylor, well known as inventor of the Cooke triplet, was director of T. Cooke & Sons Ltd., in York, England.

Around 1892, a customer sent Taylor an old, weathered lens with a request to repolish it. As a good scientist, Taylor was a curious man. He therefore took a similar but new lens and made negatives with both lenses. Both negative glass plates were exposed for exactly the same time. The result was staggering: On the plate exposed through the weathered lens, more rays of light had formed the image than on the other plate. The weathering of the surface of the lens resulted in a greater transmission of light.



Light is reflected twice by lens: once as it enters, once as it exits.

Taylor had expected this result, I think. In his patent-request, he describes how he held a partly weathered lens above a sheet of white paper and observed that the weathered part of the lens produced a clearer image then the other part of the lens.

Even before 1892, other scientists had experimented with the phenomenon that light rays not only pass through glass but are also reflected by its surfaces. As early as 1817, the German Josef von Fraunhofer is said to have observed this phenomenon.

A stack of twelve glass plates. Center of each has been T-coated on both sides.

Upper half of glass is T-coated, lower portion is uncoated.

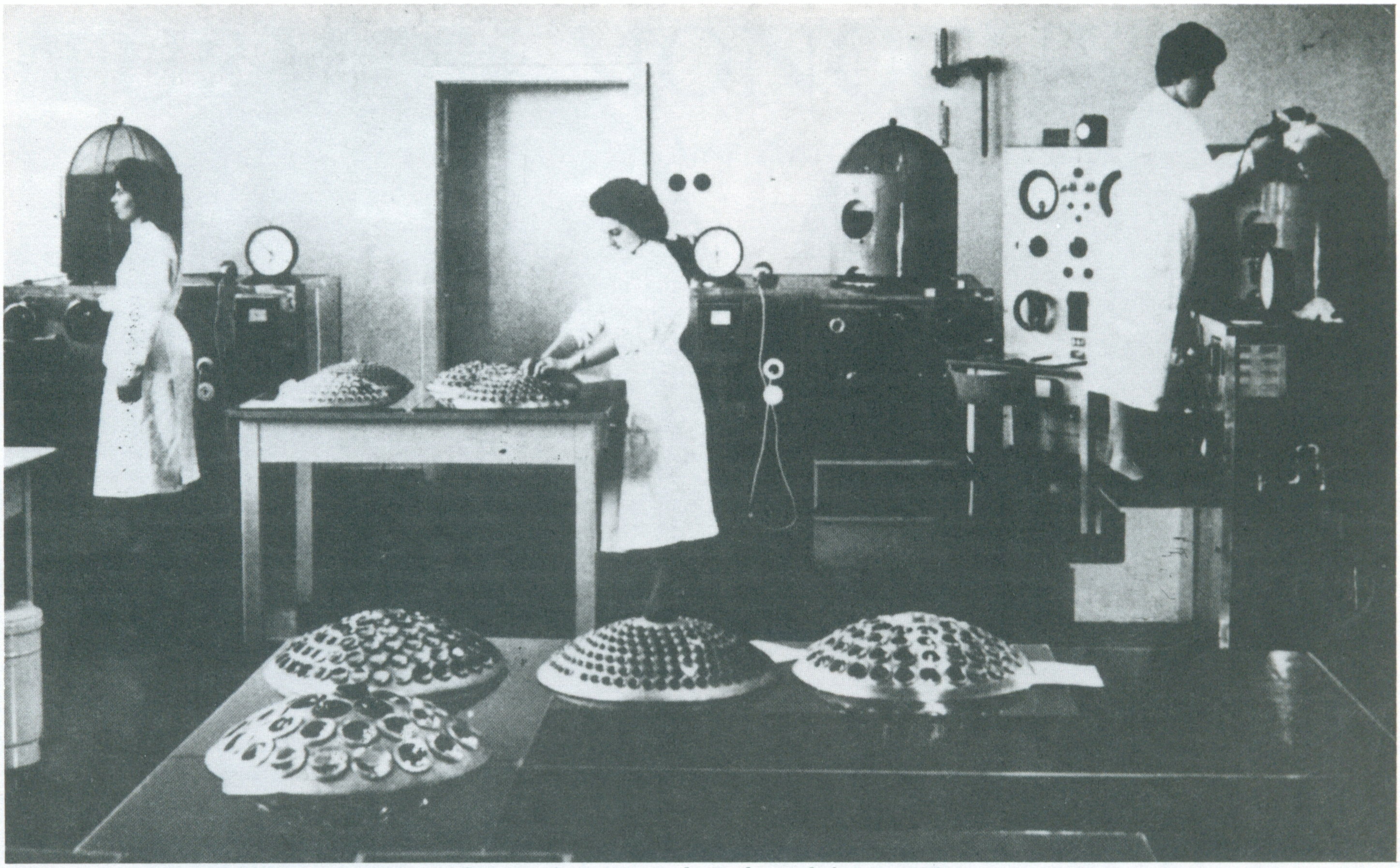
In 1886, Lord Rayleigh mentioned in a publication that he had examined the reflection of glass surfaces. He observed that a newly polished surface reflects more rays of light than an old surface.

Taylor probably knew of these studies. His own observations suggested to Taylor that there could be great advantages to artificially weathering the surfaces of photographic lenses with chemicals. But having the idea was one thing; inventing a useful process was another. That appeared to be very difficult.

One of Taylor's problems was that the elements of photographic lenses even in those days were made of different types of glass. Taylor could not manage to find processes to weather artificially every type of glass that was in photographic use.

An even larger problem was that the process that he invented was unreliable. Two lenses of the same type of glass, treated in the same way on different days, did not appear to be the same after treatment. Nevertheless, on December 31, 1904, he applied for a British patent on his process. The patent was granted on November 23, 1905 (British patent No. 29,561 (1904)).

Now for a little technical explanation. Light rays pass through a



Lens-coating room at the Rodenstock factory, 1959.

lens as everyone has observed. But lenses also reflect light rays and each lens does so twice.

In Taylor's time, both crown glass and flint glass were often used for photographic lenses. In his patent application, Taylor calculated the loss of light by reflection of a lens that consisted of four flint glass elements and two crown glass elements, all of their surfaces in contact with air. Without coating, 48% of the light rays were reflected.

The loss of 48% of the light rays was a serious one. It was even more serious that each of the twelve surfaces of the elements reflected light rays. This caused a tremendous decrease in brilliance because some of the reflected rays were reflected back and thus still reached the negative, although somewhat displaced.

Lenses also absorb light. The thicker a lens, the more light will be lost through absorption. But this is a minor problem compared to reflection and in any event, it cannot be solved by coating.

A more serious problem is that not all colors are reflected in the same quantity. By coating, one is able to make the photographic lens more color neutral if one is able to control the coating process. Taylor was not able to control his process, as he conceded in his patent application.

In the United States, several scientists tried to perfect Taylor's process. Among others, Kollmorgen (1916) and Bugbee worked on it. Bugbee was granted a U.S. patent on September 30, 1919. He used almost the same chemicals as Taylor did. Bugbee's improvement was that he affected the glass surface chemically during the polishing process, using the heat that the polishing process generated.

From a commercial point of view, Bugbee's process was interesting because after polishing no other process was needed. But Bugbee's process also could not be controlled. The duration of the process and the quantity of chemicals had to be calculated exactly for each glass surface. The heat that the polishing process caused had to be included in the calculations. (The more pressure used for polishing, the more heat will be caused.)

In France around 1927, Paul Amy also tried to develop Kollmorgen's ideas. Taylor, Kollmorgen, Bugbee and Amy all tried to increase the transmission of light by a lens by treating the glass surfaces with chemicals.

Treating the glass surface with a thin film of chemicals that stayed on it and lowered the reflection of the surface was another way of attacking the problem. Such a process had already been invented between 1910 and 1916, although for a different purpose. For certain experiments, the reflection of a glass surface had not to be lowered but to be raised. Prof. Wood put a tiny film of collodium on a glass surface and observed a large increase of reflection. Kollmorgen described this in 1916, but did not accept this as a solution for lowering reflection. He continued to try to affect the glass surface itself.

It was not until the Thirties that a method of applying a film of chemicals on a glass surface to lower reflection was described in the scientific literature. Independently, scientists in both the United States and Germany discovered suitable chemicals to decrease reflection.

On Septembr 25, 1935, John Strong submitted the manuscript of his essay on this subject. He had discovered that a film of fluoride and a film of magnesium provided the desired result. Blodgett and Langmuir also developed a method of applying films of chemicals on a glass surface. Their process was published in 1937. But application of their process to mass production appeared impossible.

In Germany, Smakula started research in 1935. As an employee of Carl Zeiss Jena, his task was to invent a commercially useful coating process. Within the same year in which he started to work on the problem, he succeeded in finding the chemicals. In 1935, Carl Zeiss Jena was granted a German patent on the process. But because of its importance for military applications, the patent was kept secret. It was not until 1939 the patent was made public.

East German (Jena) T Coating from the early 'Fifties (left) compared with modern West German (Oberkochen) T coating. Coating on the Biotar is single-layered, while T* coating is multi-layered.*

In the meantime, other German scientists also were working on the problem. An essay by John Strong on the subject was read by Dr. Roeder, as is mentioned in the magazine "Die Photographische Industrie", Vol. 1939, page 726. The author expressed his opinion that it would be a long time before any coating process could be usefully employed. It was clear that the Carl Zeiss invention was still unknown to scholars at that time.

Back to Smakula. On November 30, 1939, his patent was announced (D.R.P. Nr. 685767). Within a few months Smakula published his research in the magazine "Zeitschrift fuer Instrumentenkunde" (Feb. 1940). The patent showed that Smakula used calcium fluoride which he vaporized in a vacuum onto the glass surface. Like Strong, Smakula realized the best results with a fluoride combination. Smakula also took note of the earlier invention of vaporizing in a vacuum.

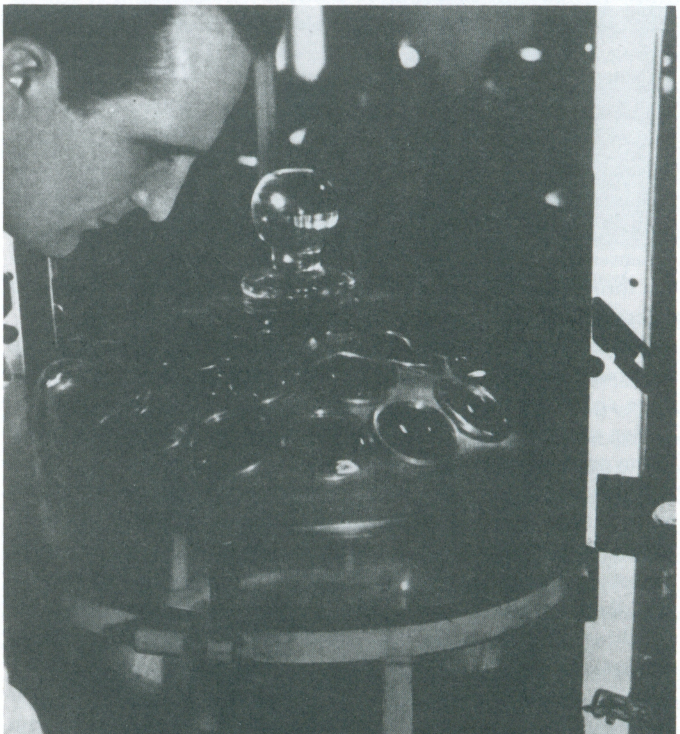
His discovery was twofold. He used the earlier process of vaporizing in a vacuum as a starting point. This contrasted with attempts to alter the glass chemically, which had been tried. Moreover, he discovered a chemical combination (calcium fluoride) that resulted in a satisfying decrease of reflection. And he developed the process into one that was commercially and technically useful for mass production.

Durability of the coating was questionable. In the magazine "Die Photographische Industrie" (Vol. 1941, No. 1, page 2) we read that the problem of durability had been solved. But in May 1941, in the Swiss magazine "Camera", Carl Zeiss Jena stated that coating would be removed by rubbing. For this reason, the outer surfaces of lenses could not be coated at that time. As late as June 1942, amateur lenses were still not being coated by Zeiss. Beginning in 1940, Zeiss called their coated lenses "T-Optik" (T standing for "transparenz" or "transparence").

In September 1941, the magazine "Camera" (page 83) mentioned Leitz "Brillantoptik" or Leitz coated lenses. But it is unlikely that Leitz would have been able to coat lenses in mass production if Zeiss could not yet do it. Nevertheless, it is clear that every maker of lenses wanted to produce coated lenses as soon as possible, in order not to lose a share of the market.

When World War II started, the basic principles of coating had been invented. But some problems still needed much research. Think of multi-coating as we know it today. Each film of coating primarily decreases the reflection of a single color. Thus it requires at least three different coating films to decrease the reflection of all three basic colors. It was not until 1943 that Schott could manage to vaporize a three-layer coating on a lens. And the durability of coatings still required much research.

But Carl Zeiss Jena made coating possible in the first place.



Lens-coating operation at Rodenstock (c.1958).

TURMON MONOCULARS

Joseph K. Brown, San Antonio, Texas

One joy given to Zeiss collectors that no other collectors can have is the existence of the little folding Turmon prism monocular. This unique 8x telescope can unobtrusively bring the opera or symphony goer close-ups of performers at their craft.

Zeiss ad copy in catalog T380E (1928) touts the Turmon as the "Prism Field Glass for the Waistcoat Pocket", and further extols its virtues by claiming, "It is greatly valued by all those who insist on dispensing with any but the absolute needful (sic) encumbrances while touring in high mountain regions or when skiing or flying."

The accompanying illustration shows sibling Turmons. The one on the left, from the Elliott Greenberg collection, is a prewar example with its brown formed leather case. The one at right, the author's, is postwar. It poses beside its black sewn soft leather case. The prewar Turmon, finished in a semi-crackle enamel, has uncoated lenses; the postwar glass is anti-reflection coated and its leather finish is textured. Both are beautiful little optical gems worthy of bearing the Zeiss marque.

One puzzlement (like the product numbers) facing Zeiss collectors (and collectors of Leica, Hensoldt, Robot, Rollei, Kilfitt and others) is the matter of code words. They are a kind of Esperanto which enabled orders to be placed from anywhere in the world without stumbling over language differences. A trip through the Zeiss binocular catalog made available by member Nicholas Grossman gives a typical treasure-trove of code words. Most derive from Latin roots. Take the popular 8x30 prism binocular "Deltrintem". The name refers to the delineation or "drawing" of the image by the optical system. The 6x30 binoculars (or "field glasses" as they are called in the 1928 Zeiss catalog) are sold as hunting glasses...code word "Silvarem", from "silva", the forest.

"Turmon" logically combines monocular with turning or rotation to yield its coined product name. Zeiss gives the 1928 Turmon's specifications as follows:

Magnification: 8x   Objective Diameter: 21mm
Exit Pupil Diameter: 2.6mm   Light Transmitting Power: 6.76
Angular Field of View: 6.3°   Linear Field at 1000yds: 110yds
Weight: 3.5oz.   Price: $24.00

The author thanks Nick Grossman for introducing him to the Zeiss Turmon and for furnishing Catalog T38OE which begins with a couplet to delight the terrestrial telescope user:

"'Tis distance lends enchantment to the view,
And robes the mountains in its azure blue."

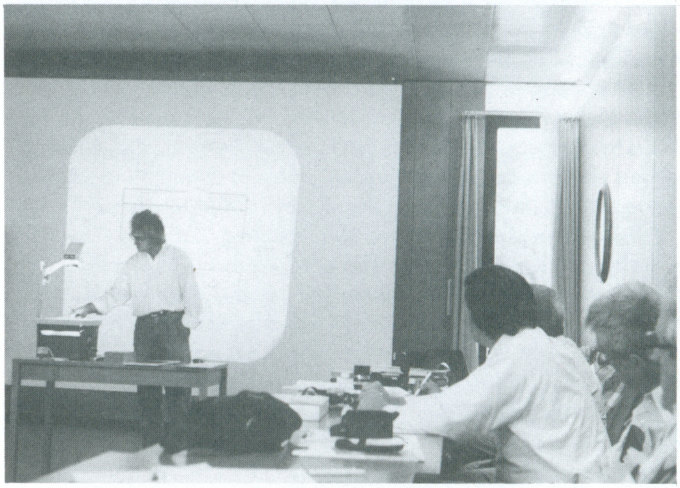
Members shooting worm's-eye views of Neresheim church interior.

At the charcoal pit near Oberkochen. From left to right: H-J Kuc, Marion Husid, Jim Cornwall, Larry Gubas, Dr. Joachim Kaemmerer.

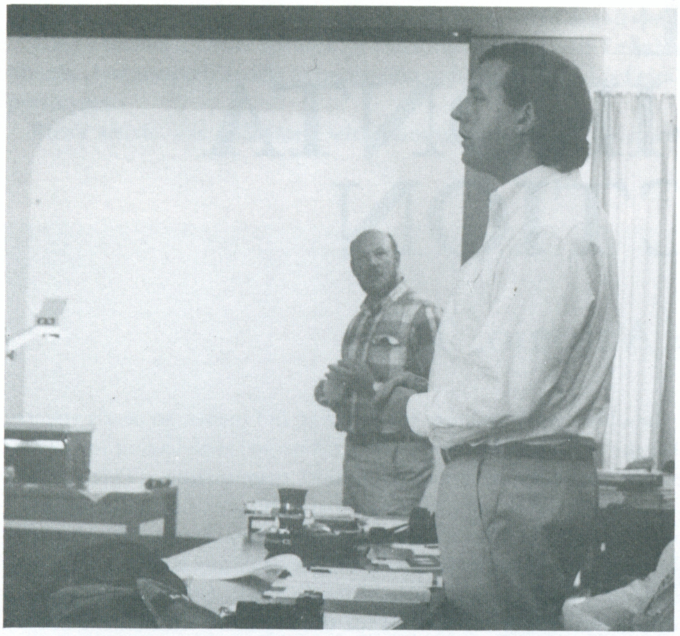
Nasser Salsal of Zeiss with Zeiss Hologon lens mounted on Brand X camera.

Father Daniel of Neresheim Monastery (far right) describes Monastery church to Society members.

Dr. Wolfgang Pfeiffer of Zeiss (left), President C. Barringer, Jr.



Hans-Juergen Kuc makes his presentation on the Contax I.



President Charles Barringer, Jr. (left), Paul-Henry van Hasbroeck.

Formal meeting. Andre Surmont traces family tree of the Contax.

Two gentlemen from Japan: "Fritz" Takeda (left), Allen Numano.

1989 ANNUAL MEETING IN OBERKOCHEN

Beginning in 1987, the Society has held an annual European meeting in West Germany. With a growing number of non-U.S. members, and the costs of international travel, the meeting has been an increasingly popular and welcome addition to the Society's calendar of events.

This year's meeting was extraordinary on three counts: the large number of members attending, the location, and above all, the hospitality and participation of Carl Zeiss itself.

The site of the 1989 meeting was Oberkochen, West Germany. Oberkochen is a small city some 35 miles east of Stuttgart, and present-day headquarters of Carl Zeiss.

The meeting was a four-day event, running from Friday night, August 25 to Monday noon, August 28. Over thirty members attended, coming from Japan, Canada, the U.S., Belgium, Switzerland, The Netherlands, the U.K., and both East and West Germany. Most attendees stayed at the very modern and comfortable Hotel am Rathaus, convenient to the formal meeting which was held in a conference room in the attached Rathaus itself.

Zeiss could not have extended a warmer welcome to the Society. It began with a reception and dinner for members in the Hotel's dining room on Friday evening. Two top Zeiss officials, Dr. Joachim Kaemmerer and Dr. Wolfgang Pfeiffer, devoted their entire weekend to the event.

On Saturday, Zeiss provided transportation for a tour to several local highlights. Chief among these was the 18th century baroque church at Neresheim, last masterpiece of architect Balthazar Neumann. The trip also included stops at a local charcoal-producing pit, and the spring at Koenigsbronn. It concluded with a private visit to the Zeiss Optical Museum (see Zeiss Historica, Spring, 1983) with its treasure trove of Zeiss and other optical rarities of every sort. In the evening, Dr. Kaemmerer, his wife, and his family hosted an informal buffet dinner for members at their hillside home overlooking Oberkochen.

Sunday's formal meeting was devoted to presentations by members. Andre Surmont traced the family tree of the Contax. H-J Kuc discussed the history of the Contax I. President Charles Barringer, Jr., described his work on Contax serial numbers. Bernd Otto spoke on the Zeiss Ikon numbering system. Dr. Kaemmerer displayed and described a number of rare Zeiss prototypes — lenses that never saw the light of day. Dr. Pfeiffer discussed the Zeiss Foundation, both as concept and reality.

On Monday morning, members toured the Zeiss factory itself. Despite the many automated operations here, traditional precision craftsmanship was in evidence everywhere. Perhaps the closest thing to an assembly line was in the cafeteria, where identical hot lunches came rattling down a conveyor at the rate of one every few seconds! The meeting concluded after lunch.

The Society owes particular thanks to Dr. Kaemmerer, Dr. Pfeiffer, and their Zeiss associates for the hospitality they extended to us. And to H-J and Jutta Kuc, for their work in organizing this memorable meeting.

THE ICARETTE-IKONTA CONNECTION

Joseph K. Brown, San Antonio, Texas

A pleasant social evening, a dusty photo annual and Zeiss Historica awareness all came together for me to create this story.

Two couples — my wife and I and two friends — were winding up a dinner get-together when I brought the talk around to precision optics, German cameras, and family photos.

Yes, they had an old camera made by Zeiss. It had been owned by a U.S. veteran of the first World War who used it to record his tour of duty in Germany. They would bring it the next time we were together.

It turned out to be a little Ica Icarette — pre-Zeiss Ikon — but with a Zeiss lens, an Icar f4.5 in a dial-set Compound shutter to 1/100 second. My Abring I (page 108, #339) illustrated it, so I showed our friends their camera in the book and hazarded a value for it based on its well-worn appearance and its missing waist-level finder.

While I had the Icarette at home I photographed it beside what I believed to be its archetypical descendant, a Zeiss Ikon Super Ikonta B, a particular favorite of mine. Of course the Super Ikonta B was a design nearly a whole generation later than the Icarette. But the relationship was to me, inescapable. Both are drop-bed folding cameras with bellows that can be said to be distantly descended from an even earlier type, the folding Brownies of the turn of the last century.

Most folding cameras are in the classic folding pocket Kodak configuration with the film aperture oriented vertically when the camera is in normal taking position. But the Icarette was boldly horizontal in arrangement. The film passed from the user's right to the left. And although the Icarette was furnished with a reflecting "brilliant" finder, its layout almost compelled the user to employ it at eye level, a position which greatly eases the involvement of the photographer with the subject.

In addition, the picture formed was 2x3 inches, so nearly square that the photographer was seldom tormented with having to make a choice between horizontal or vertical composition. (This can be argued as being the reason for the 6x6 Rolleiflex's great success as a picture maker.) The Icarette's nearly square format was carried through and refined to 6x6cm in the Super Ikonta B (first seen, I believe, in American photo advertising in 1935). Here too, the square format was one of the reasons for the Super B's success. It and the Super Ikonta A were two of the few rollfilm cameras carried by professional photojournalists of the 1930s. Arthur Rothstein's famous Dust Bowl photo was made with a Super Ikonta B, and Margaret Bourke-White carried a Super Ikonta A on photo trips through the south.

To aid its commercial success, the Super Ikonta B had the magic of the Zeiss name coupled to a truly impressive wide aperture f2.8 Tessar of 80mm focal length. This lens figured in the reputation of the formidable Ikoflex III and the postwar f2.8 Rolleiflex.

The Icarette had a simple lever-operated focusing movement while the B had gear-driven front-element focusing of its Tessar. This feature caused much discussion among photo amateurs. In this respect it was like the Contax.

The dusty photo annual enters the narrative because of an article, "Modern High Class Miniature Cameras" in the American Annual of Photography for 1915. Charles F. Rice, the author, described the short history of the miniature and prophetically wrote:

"Modern high class miniature cameras may be said to be the by-product or after-thought of the invention of motion pictures, for it was the need of the motion picture cameras that turned the attention of lens makers to the short focal length anastigmat; and the projec-

"Stealing" a picture by taking it at right angles to the direction the operator is looking.

Illustrating article "Modern High Class Miniature Cameras," by Charles F. Rice.

MODERN HIGH CLASS MINIATURE CAMERAS

By CHARLES F. RICE

LIGHTNESS, compactness and portability are cardinal virtues possessed by all small cameras, but only recently have these virtues been linked with the high efficiency of the anastigmat lens. The Modern High Class Miniature Camera is the result. Its capabilities are interesting and significant—yes, more. When the great majority of photographers awake to the possibilities of the short-focus anastigmat lens, the practise of photography is likely to be revolutionized!

Little cameras we have had for many years. Over twenty-five years ago I bought my first camera—a little wooden box that had a ten-cent lens in one end and accommodated a 2x3 plate in the other. This camera had no shutter. The exposure was made with a cap. A pretty poor equipment? Yes, but it would take photographs, and it was as good as anything of its size on the market. Then roll-film came into popularity. Ingenious shutters were invented. Ten years ago the No. 2 Brownie was as good and efficient a camera as could be obtained in the 2x3 size. It used roll film and had a rotary shutter, and in these respects was more convenient and efficient; but the Brownie had an inexpensive lens, too, and the quality of its results was no better than that of the little wooden box of the former period.

Modern high class miniature cameras may be said to be a by-product or after-thought of the invention of motion pictures, for it was the need of the motion picture camera that turned the attention of the lens-makers to the short-focus anastigmat; and the projection of a ten-foot image from the tiny film was a striking demonstration of the possibilities of enlarged pictures from small negatives.

Enlargement from portion of Icarette Film Negative.

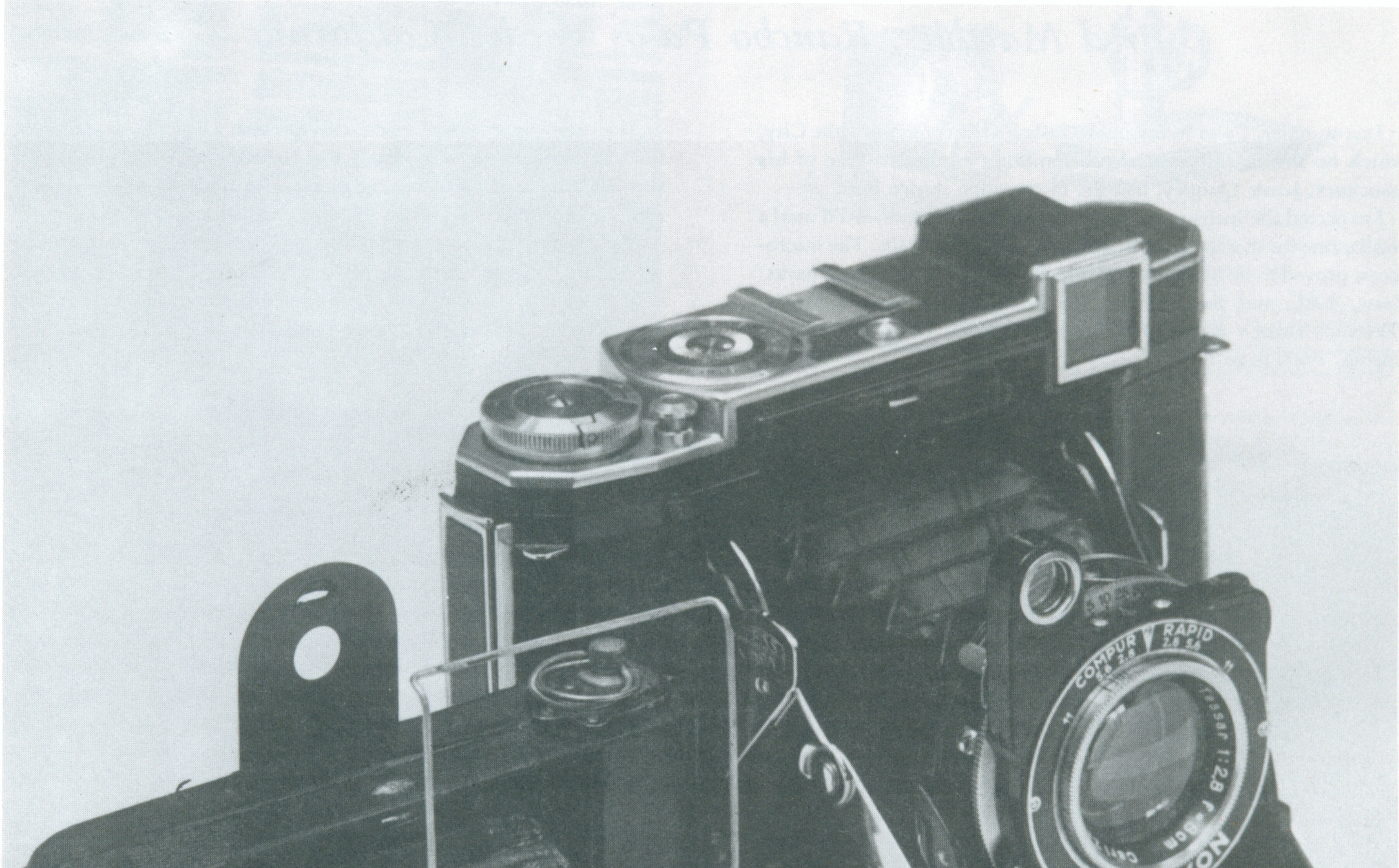
Illustrating article "Modern High Class Miniature Cameras," by Charles F. Rice.

tion of a ten-foot image from the tiny film was a striking demonstration of the possibilities of enlarged pictures from small negatives."

(One wonders if Oskar Barnack, at that time working with Leitz in Wetzlar, had seen this article in translation as he worked on his Leica prototypes.)

Rice's article was illustrated with photographs from miniature negatives. One in particular was identified as having been made in an Icarette. Further, the lead illustration shows a photographer using a miniature camera to "steal" a picture by pointing it at right angles to the direction he is facing.

That's the shot that ties this story together. Because the little camera shown hard at work is none other than the Ica Icarette.



Kindred spirits: the Ica Icarette and Zeiss-Ikon Super Ikonta B. Their designs are separated by over twenty years but they have the same general layout and share the 120 (B2) film size. For the use of the Icarette in the photograph, the author thanks Dorothy Morse Cooper, whose late father, Walter Ronald Morse, a member of the 301st Engineers, bought and used this Icarette in Germany after World War I.

A ZEISS/B&L STEREO MICROSCOPE

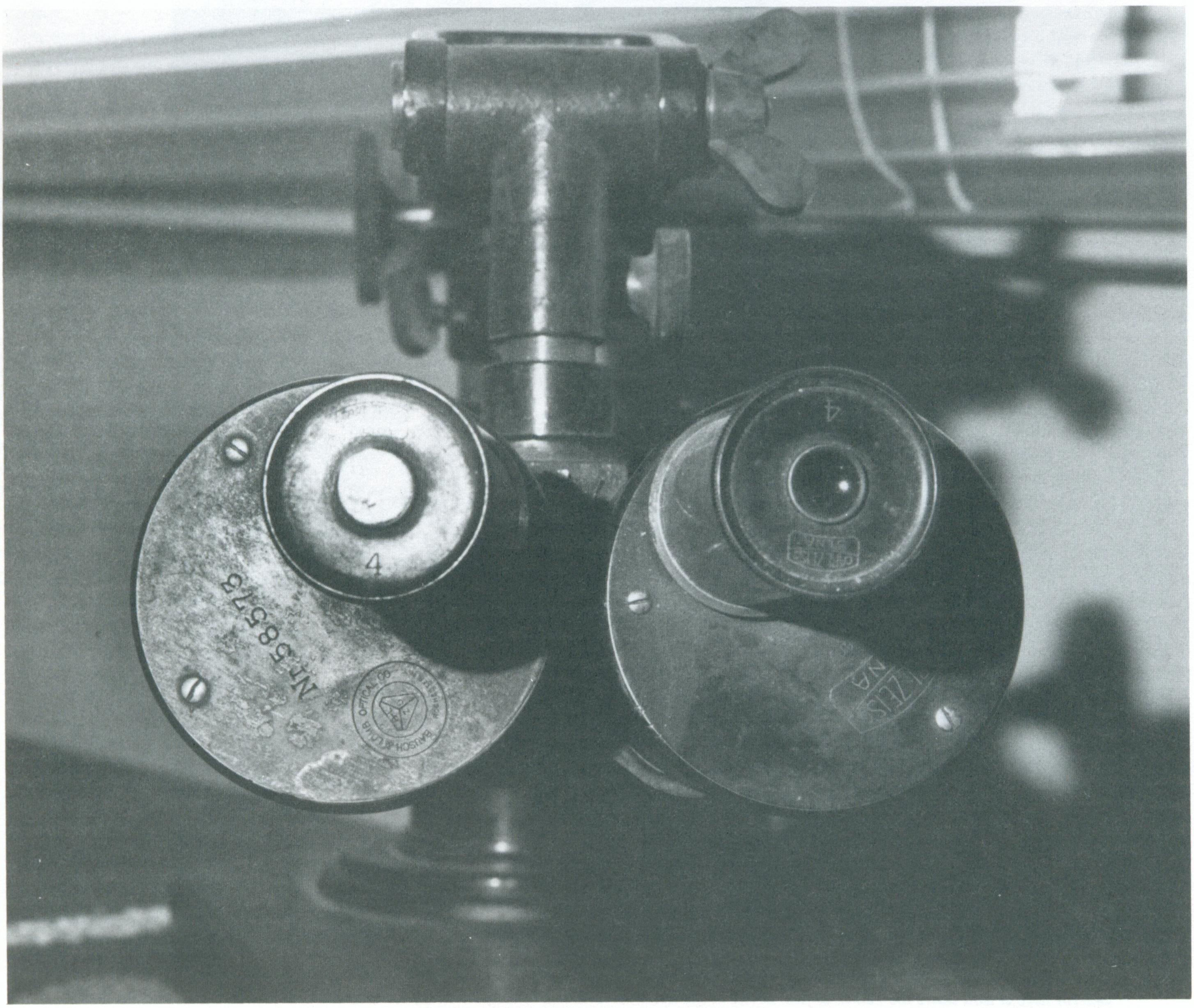
Fred Matthies, Rancho Palos Verdes, California

Last summer, I was in my father-in-law's office in Salt Lake City, which he shares with several other mining engineers. One of his associates, James Quigley, had the microscope shown here.

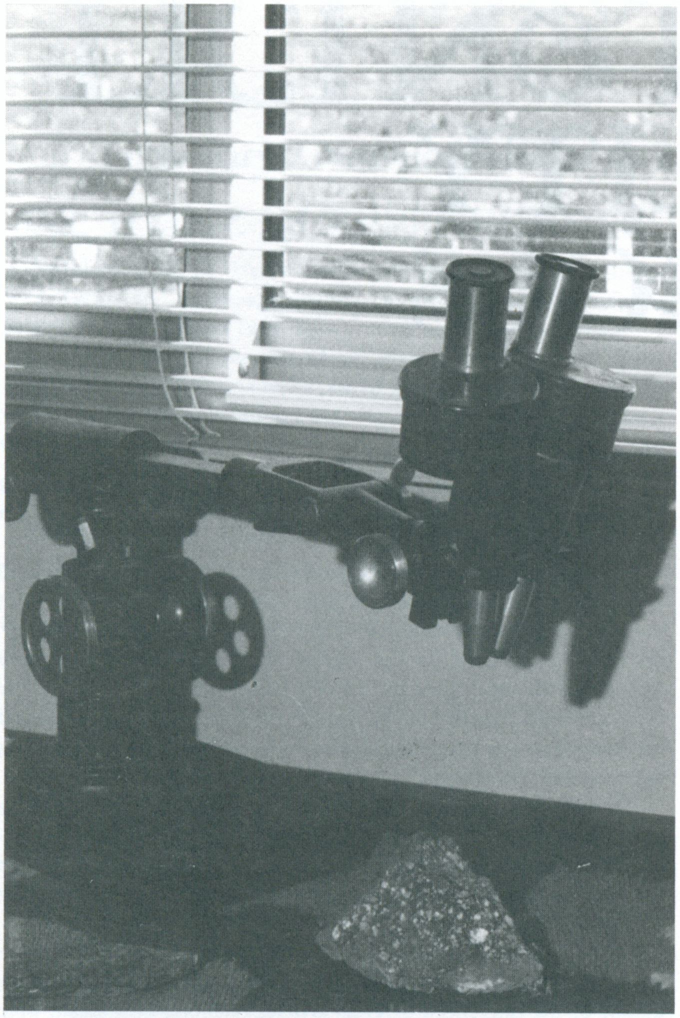
I expected the instrument to be of Leitz manufacture, as I'd used a similar one for dissection in biology classes in the 1940s. The microscope proved to be by Zeiss, bearing not one but several trademarks: Zeiss, B&L, and Saegmuller. (See Nicholas Grossman's article, "Zeiss — Bausch & Lomb Chronology", Zeiss Historica Journal, Spring, 1987, page 14.)

The carrying case is of wood, and has seen a lot of hard use in the field. It measures approximately 9 x 10 x 22 inches, and has fitted slots in it to keep instrument and accessories in place while being carried up and down very steep inclines on the back of a mule.

Mr. Quigley obtained the equipment from his father-in-law who was a mining engineer in Upper Michigan. The original purchase date was in the late 19th century. The microscope, still in use whenever needed, is expected to be used someday by Mr. Quigley's son, who is also a mining engineer.



Left-hand prism drum carries the B&L/Saegmuller trademark and serial number (58573); right-hand side, the Carl Zeiss Jena mark.



The apparatus in working position above a geological specimen.

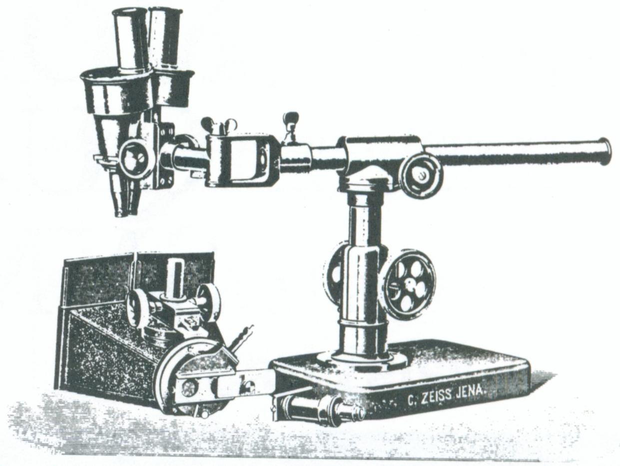


Fig. 18.
Stereoskopkamera nach Drüner und Stativ X^b
(1/4 nat. Größe).

Die **Kamera** besteht aus zwei prismatischen Körpern, die unter demselben Winkel gegeneinander geneigt sind, wie die beiden Tuben unsrer binokularen Stative. Am oberen Ende werden die Einstellscheiben oder dünne Blechkassetten für Platten 6 cm : 9 cm eingeschoben.

Am unteren, auf der Figur dem Beschauer zugewandten Ende ist der **Zeit- und Momentverschluß** angebracht. Durch Ziehen an der kleinen Perle, die ganz unten sichtbar ist, wird er gespannt. Links von der Perle ist ein kleines Hebelchen angebracht, das zum Einstellen des Verschlusses auf „Zeit" oder „Moment" dient. Das Auslösen erfolgt pneumatisch oder auch mit der Hand, indem man auf den dünnen, aus dem Schlauchansatz hervorsehenden Stift drückt.

Zum Schutz gegen Staub kann ein Schieber in die Schlittenführung für die Objektive eingeschoben werden, auf der Figur ist er teilweise entfernt.

Die Kamera ist (wie der binokulare Tubus) für sich mit Zahn und Trieb versehen; das den Trieb enthaltende Stück trägt ebenso wie bei dem binokularen Tubus einen Zapfen, der gestattet, bei Benutzung von Stativ X^b beide Apparate gegeneinander auszuwechseln. Bei Stativ X^a dient der Zapfen zum Befestigen der Kamera an einer besonderen, auf dem Tisch dieses Stativs festzuschraubenden Säule.

The instrument shown with stereoscopic camera attachment in the 1903 Zeiss Microphotographic Equipment Catalog, 5th edition.

The three pairs of oculars carry both the Zeiss and B&L O.C. logos. Magnifications are not marked.

MORE ON QUALITY SYMBOLS

"Prime Quality" symbol on a 1000 mm. f5.6 mirror lens.

In the Spring 1988 issue of the Zeiss Historica Journal, the Prime Quality "Q" mark was explained, using various East German optical products as examples. Since the statements in the accompanying text were only partially correct, the following clarification may be helpful.

At the time of the production of the products illustrated (ca. 1960), it was decided that the Office of Material and Product Testing of the German Democratic Republic would perform national quality control and testing of all industrial products. They would be performed on the basis of obligatory standards and other quality and testing regulations to assure the quality of products made in the German Democratic Republic. This office established and assigned regulated quality-identification markings. The following classification symbols were established:

(1) The "Q" designation was assigned to products of excellent quality that would lead or influence the international state of the art. Such products would be of better quality than the average quality of similar products offered on the world market. Products marked "Q" would be of a superior level of scientific and technical accomplishment compared with other leading international products.

(2) The symbol of a triangle surrounding the numeral "1" was to be placed on high-quality products.

(3) The same triangle, but with the numeral "2" inside was to be placed on products of acceptable quality. (This designation is not pertinent here.)

It is important to emphasize that the testing certification was valid only for a specified time period. After expiration of the time period, the testing had to be repeated. The repeated attainment of the "Q" mark was predicated on the premise that each unit thus marked would be fully equivalent to that of a master sample in respect to the fabrication and quality of the finish. Thus quality was assured and maintained *not by selection of fabricated products*, but by controlling the complete fabrication process for a given product.

The Office for Material and Product Testing was subsequently replaced by the Office of Standards, Measurements and Product Testing. And while the marking of the quality designation to the product was abandoned, the procedures for quality designation remained in place.

Editor's note: The above article was received from one of our readers in Germany, then translated into English. The Editor and the author of the referenced original article, Nicholas Grossman, were pleased to receive this clarification.

"Triangle/1" symbol on an 80 mm. f1200 mm. telescope objective.

LICHTSTRAHLEN

Light Rays: Notes of Interest to Those Interested in Zeiss and Its History

DR. HEINZ KUEPPENBENDER

On July 4, 1989, Dr. Heinz Kueppenbender died in Heidenheim, West Germany, at the age of 88. Dr. Kueppenbender was the designer of the Contax camera.

As a member of the Board of Management of Carl Zeiss, Oberkochen, West Germany, he played a pivotal role in rescuing the Carl Zeiss Foundation and in constructing a new Zeiss factory after the Second World War.

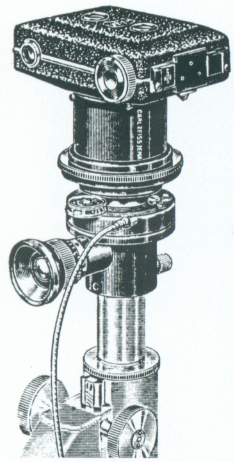
THE EDITOR BLUSHES

The Editor apologizes for two errors for which he was responsible in the Olympia Sonnar story in the Spring 1989 issue. First, the camera shown on the cover is clearly a Contax II, not a IIa. And the German photographer shown with the gunstock outfit on page 5 is Lothar Ruebelt, not Ruebelf.

KOLIBRI-PHOKU MICROSCOPE CAMERA ATTACHMENT.

(Made by Carl Zeiss, Ltd., 37-41, Mortimer Street, London, W. 1.)

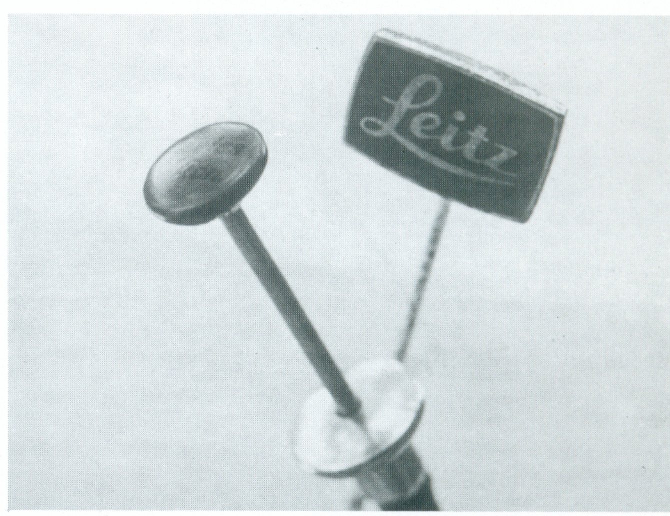
This attachment for a microscope is for taking photo-micrographs in rapid succession on roll-film. It comprises a little film camera for taking pictures of 3 × 4 cm. size, but fitted with a tube by which it is attached to the lower part of the instrument in which are prisms and an eye-piece (by which the subject can be observed) and an Ibsor shutter for making the exposures. The optical equipment of the attachment is such that the magnification obtained in the photographs taken on the Kolibri film is 5 times that of the microscope objective. When using an alternative attachment for 12 × 9 cm. plates ($4\frac{3}{4}$ × $3\frac{1}{2}$ ins.), the magnification is 10 times. The Kolibri-Phoku, which is a typical example of the fine mechanical workmanship of Messrs. Zeiss, is sold at £18 4s. in wooden case. The price of the attachment for plates is £7, including focussing screen and two metal dark-slides.



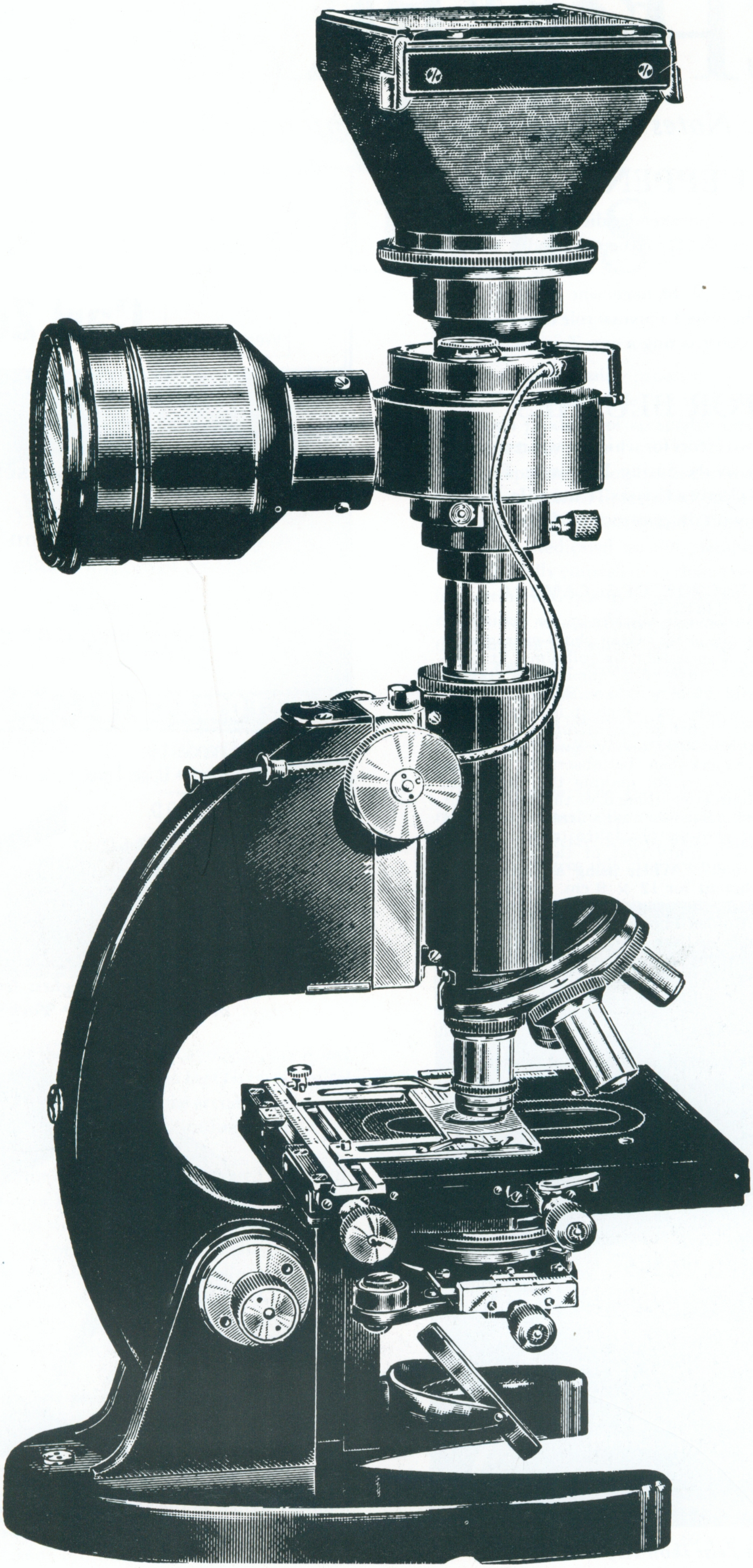
The rare Kolibri microscope camera, as shown and described in The British Journal Photographic Almanac for 1934. (These Almanacs are an excellent source of contemporary information, and can often be found for sale at photo shows).

Hard-to-find Zeiss eyeglass lenses are available from at least one New York City optometrist.

Both shoe repairs and Zeiss Ikon Key service can be found at Number 16 Kantstrasse in West Berlin.



"WHAT IS IT?" IDENTIFIED. The mysterious round object shown in the Spring 1989 "Lichtstrahlen" was correctly identified by Joseph Brown as the head of a Zeiss Ikon cable release. Here, he has photographed it in more recognizable form with an item bearing another famous name.



Zeiss microscope with "Phoku" attachment for photo microscopy. This "Miflex" camera unit is for 6x9 cm. film or plates.