

## 25 Years Ago in the JBPA/JBP

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*In this column we look back at the content and imagery found in the Journal of the Biological Photographic Association (JBPA), later renamed the Journal of Biological Photography (JBP). This column examines important articles from 25 years ago. In doing so, we gain some insight into those legacy photography techniques of that time.*

### OPEN ACCESS

#### 25 Years Ago in the JBPA/JBP

Thomas St. John Merrill, FBPA (a regular contributor to this column) once commented that, “Photography has not changed all that much over time - only the tools have changed.” Tom is correct. We’ve certainly come a long way since those old 35mm Kodachrome slides, and we continue to embrace new equipment, technology, and techniques in our creation of images.

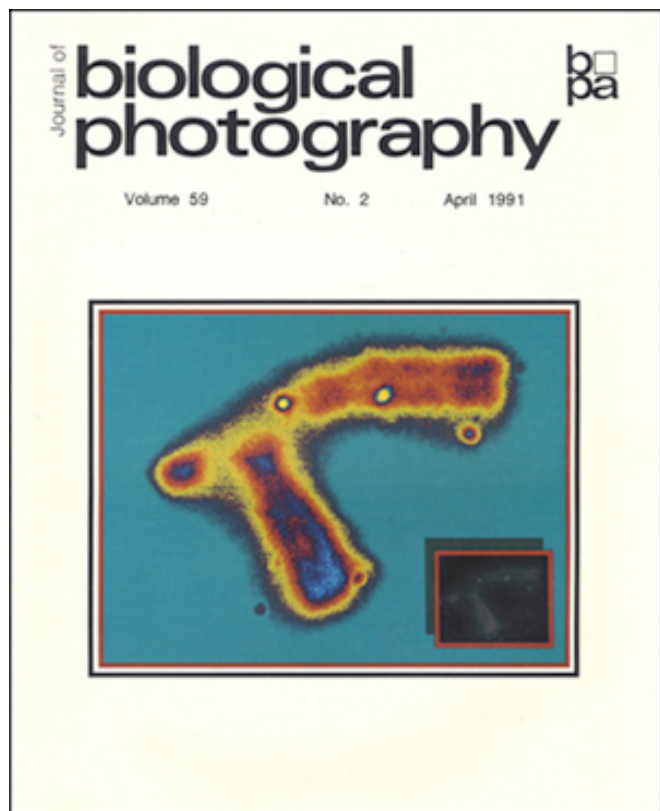


Figure 1. Cover of JBP Vol. 59, No. 2, April 1991

For this column we review some of the content from *JBP* Volume 59, No. 2. The cover of this particular *JBP* issue featured an enhanced photomicrograph of a mouse chromosome that carries the gene for Down Syndrome. Medical photographer, Scott Kilbourne created this computer-enhanced image for publication (Figure 1). Scott was a pioneer in digital image manipulation, and this image speaks to his expertise and skill in that area.

In this same issue, author/photographer, Dr. Leon Le Beau offered, “Photography of Very Small Biomedical Objects.” This article represented the ninth article in Le Beau’s series about small object photography. This ten-page article included an in-depth discussion of macro lenses, macrophotography stands, lighting systems (including fiber optic electronic flash), suspended wet-specimen set-ups, prism reflectors, and adjustable specimen stages. Dr. Le Beau was a microbiologist and a master photographer, so he readily understood both the science and art of his work. Le Beau’s lengthy article was complete with illustrated diagrams, photos of his set-ups, lighting comparison tables, exposure suggestions, and detailed equipment descriptions. Additionally, he provided 26 references for further reading on the subject.

Dr. Le Beau’s article described the unique characteristics of biomedical subject matter, writing that this subject matter may come in all shapes and sizes. Some objects may be 5 to 6cm in length or width, while others may be as small as 1mm. As examples, the author listed some of his common subjects, including: biopsy specimens, extracted teeth, rodent brains, zoological specimens, small bones, cysts, insects, leaves, flowers, test tube cultures, and even small jellyfish. Proper handling of these various specimens presents unique challenges for the photographer. Dr. Le Beau stated that these specimens often would require “uncommon photographic techniques.”

One more traditional equipment set-up featured a Nikon F3 camera body, the PB-4 (or PB-6) bellows, and a 55 Micro (macro) Nikkor lens complete with a PK-3 extension ring. This flexible system easily provided a range of magnification from 0.2X to 35X (Figure 2). Higher magnifications required switching the 55mm MicroNikkor to either a 35mm or 19mm focal length lens. These wider lenses, when combined with maximum bellows extension, offered increased magnification ratios.

Another imaging system in Le Beau's studio featured a Bogen Light Modulator stand with a frosted acrylic-top light table and two articulating arms with tungsten lights. Le Beau called these arms "light pipes". These tungsten lights were modulated by narrow glass tubes to provide a spotlight effect. Different sized glass tubes were available to vary the lighting effect. The base of the Modulator featured a high intensity lighting system with a large 5 x 7 inch transillumination port. Included on this Modulator box was a vertical camera support stand. Located between the camera and the Modulator base was an adjustable stage (Figure 2).

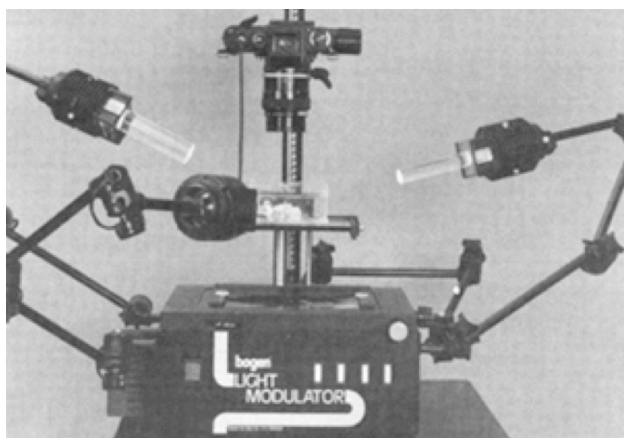


Figure 2. Bogen Light Modulator macro stand seen with tungsten "light pipes"

In this article Dr. Le Beau offered tips for enhancing or maintaining an appropriate texture. He suggested that in order to achieve appropriate texture lighting, the photographer needed at least one-third more light coming from one direction.

Dr. Le Beau also described a homemade dark-field illumination box that he had constructed from Crescent Board. This box contained an optical glass top, and it featured open sides and a black background area. A smaller inner box was constructed with a 45-degree angle foil reflector. Once the inner box was inserted, colored light could then be projected through the open-ended box onto this angled reflector. The reflector added a color background, if that was the desired effect (Figure 3).

The article included a discussion of the Labjack Photo Stand with side illumination provided by fiber-optic adjustable arms/cables. This set-up was used when transillumination was not required. Colorvue paper was used for subject backgrounds offering a rich, smooth background color. The Labjack provided yet another tool for the biophotographer, allowing repeatable and consistent results from specimen to specimen.

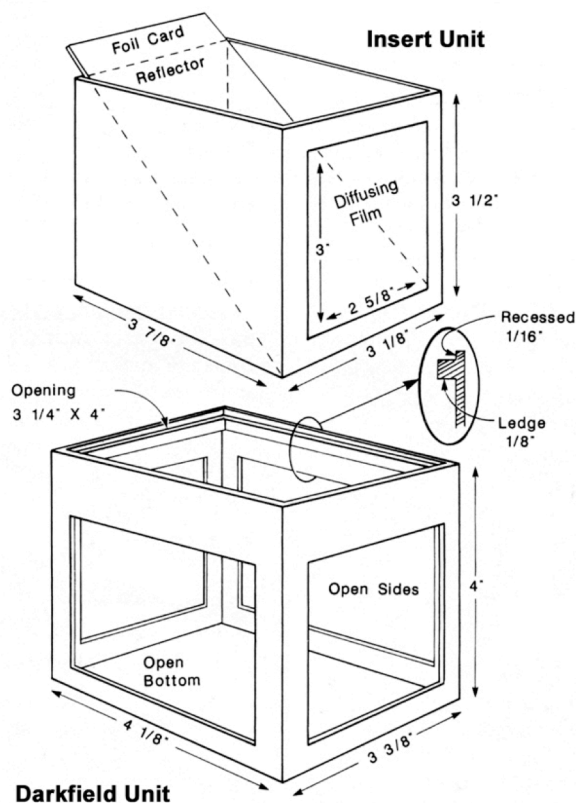


Figure 3. Hand made darkfield specimen box

Near the end of the article, Dr. Le Beau included samples of the images made with the equipment he had described. These images reflected Le Beau's deep appreciation and keen interest in the science and art of close-up photography (Figures 4, 5, 6.).

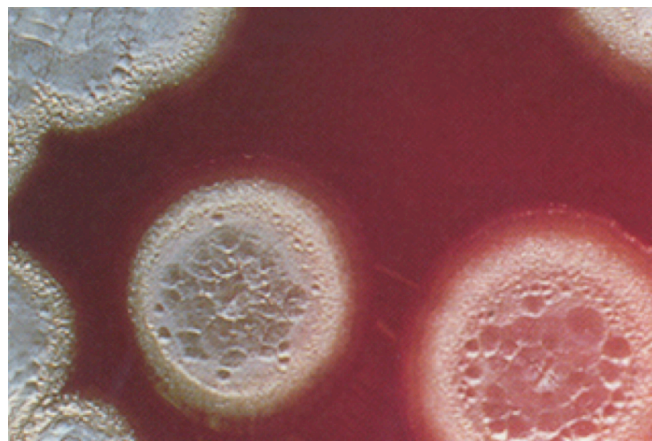


Figure 4. Colonies of *Pseudomonas aeruginosa* (bacteria)

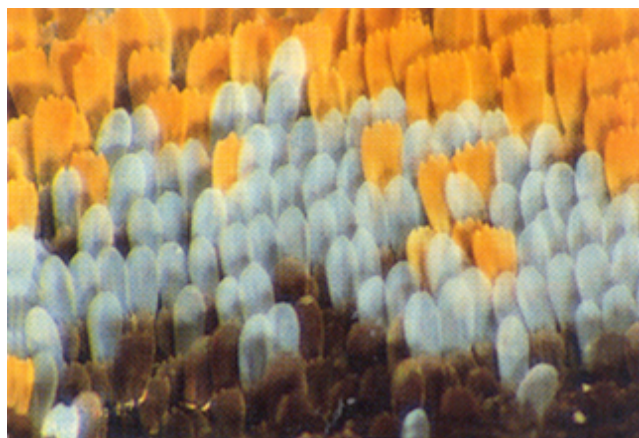


Figure 5. Butterfly wing scales photographed at 20X.



Figure 6. Small leaf

For further reading, Dr. Le Beau's previous small object photography articles were included in the following issues of *JBPA/JBP*: Vol. 44, No. 1; Vol. 48, Nos. 1, 2, 3; Vol. 49, No. 1; Vol. 50, No. 1; Vol. 55, No. 1, 3

#### About Leon J. Le Beau, Ph.D., FBPA, FIMI

Dr. Leon J. Le Beau was a Full Professor at the University of Illinois Chicago, where he taught courses in microbiology, pathology, and medical photography. As well, while at UIC he served as Associate Dean of International Studies and Director of the Clinical Microbiology Laboratory. Dr. Le Beau also enjoyed a faculty appointment in the Department of Biomedical Visualization, and served as an Adjunct Professor of Medical Photography at the Rochester Institute of Technology. Dr. Le Beau retired from UIC in 1992, but soon returned to the classroom at the College of DuPage (Glen Ellyn, Illinois) as a medical photography instructor.

Born in Kankakee, Illinois, Dr. Le Beau graduated from the Divine Word Missionary Seminary in Techny (Illinois), and attended Elmhurst College before enlisting in the Army during World War II. During the war, Leon served in the South Pacific as a bacteriological technician in the Army's Medical Department (5th Medical Laboratory Detachment). He returned to Chicago in 1946 but remained in the Army as a reservist, retiring in 1980 as an Army Lieutenant Colonel.

Leon received his bachelor's degree in bacteriology from the University of Illinois at Urbana-Champaign in 1947. He later received his master's and doctoral degrees in microbiology from the University of Illinois Medical Center campus.

From 1963 to 1966, Leon and his family lived in Thailand, where he was appointed visiting professor of microbiology at Chiang Mai University. Soon after arriving in Thailand, he helped stem a cholera outbreak and traveled into the remote mountains to vaccinate isolated villagers.

During the late 1960s, Dr. Le Beau became fascinated by the relatively new field of medical and biological photography. He worked tirelessly at perfecting his macro-photography techniques, and he became an expert in the photography of microbiological subjects. He was particularly interested in the photography of glass test tube cultures, colorful petri dish bacteria, and other backlit biological subjects. His slide lectures at many AMI and BCA meetings were filled with beautiful samples of his work that often included "how-to" schematics of his studio set-ups. Many of us can remember Leon scurrying into meeting rooms and lecture halls with two or three Kodak slide carousels under his arm.

Leon was a colleague and friend, and he continues to be missed by his friends and family.

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*The author wishes to thank the Le Beau family for providing relevant background information.*

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