SPECIAL PROMOTIONAL ISSUE

ames Histo-Logic®

A Promotional Bulletin for Histotechnology Edited by Brent Riley August, 1987

Dr. J.B. McCormick Enriched By The Heritage of Histotechnology

Editor's note: This is the second article about Dr. James B. McCormick, the man responsible for many of the innovative changes in histology.

The first article, printed in the June issue of *Histo-Logic®*, explored the ways Dr. McCormick's inventiveness has made the histotechnologist's job easier. This article looks at Dr. McCormick as a weaver, blending a fascination for history with visions of the future to create tools the histotechnician can use today.

Dr. James B. McCormick's fascination with history may come as a surprise to those who think of an inventor as strictly a future-oriented individual. The successful inventor must certainly be able to look into the future and visualize things that don't yet exist. But Dr. McCormick is quick to point out that we sometimes fail to realize the significance of the past in the inventive mind of today. In fact, with Dr. McCormick, it is his fascination with history that fuels his inventiveness.

If anyone ever invents a time machine, Dr. McCormick would probably be one of the first volunteers for a trip into the past. He would no doubt journey to 17th century England where he would spend countless hours discussing philosophy, art and science with great scientists such as Robert Hooke, one of the early developers of the microscope and microscopic technique.

Dr. McCormick is a prolific inventor, responsible for developing many of the instruments and supplies used by histotechnologists today. And he continues to develop new ideas for the future. But to bring his inventions to fruition, Dr. McCormick understands the need to reach into the past.

Most of us tend to look at "new" inventions as unique. But Dr. McCormick believes that most inventions are simply examples of current technology applied to old ideas.

According to Dr. McCormick, the value of history is not limited to the inventor. It is something we can all appreciate, enjoy and utilize. It doesn't matter who we are or what we do, knowing and understanding our heritage will not only enrich our lives, but our professions as well.

A tour of Dr. McCormick's home and office gives one a clearer picture of his involvement with history. He is an avid collector of antique optical instruments. The lower level of his home is a museum, containing hundreds of antique instruments, spanning some 300 years. And he can explain the significance and origin of every feature on every instrument. "These instruments represent three centuries of problem solving," Dr. McCormick said. "Each element is a separate invention, resulting from an incentive to solve a specific problem."

Compound microscope (Marshall) replica, c. 1700. John Marshall advertised this microscope for viewing the circulation of blood in 1693.

Recently, Dr. McCormick held a "mini-congress" in his home. The topic was historical instruments. Museum curators and instrument collectors from around the world, including Oxford, Cologne, Geneva, and Florence were among the 75 who attended.

Dr. McCormick has even gone as far as to reproduce a number of these antique instruments to be used as curriculum resources in studying the history of science. In fact, one of these reproduction instruments is part of the J.B. McCormick, M.D. Award that is presented annually at the NSH Convention/Symposium.

Dr. McCormick believes that histotechnologists would benefit from knowledge of the history of their profession. "It is their heritage," he said, referring to the evolution of microscopy. "The protocol of the histotechnologist's job today inhibits the tendency to experiment and extend his or her own feelings into the task. Having a historical perspective would give him a greater license to develop a pallet of colors that might reflect his own ability and feelings. Therefore his work would be more satisfying to himself, and to the pathologist."

Believing histotechnologists would benefit from knowledge of the history of their profession, Dr. McCormick has compiled a series of eight books detailing that heritage.

Through his Science Heritage, Ltd. publishing company, Dr. McCormick has compiled a series of eight books which detail the heritage of the histotechnology profession. The books, the *History of Microscopy* series, include facsimile editions of historical works from authors such as Robert Hooke, Andrew Pritchard, and John Quekett, and more recent manuscripts from Brian Bracegirdle as well as Dr. McCormick himself.

"The books are an enrichment to give a higher level of quality to life within the work place, and the quality of the product of that work," explained Dr. McCormick. "Within these eight books are all the literature resources that one would need to know where everything came from and what the thought processes were in their development. I look at these as my tools of life in the sense of my profession as an inventor in the histology/microscopy area."

The series begins with Robert Hooke's *Micrographia*, published in 1665. "With his microscope and tools, Hooke provided a lot of the clearest thinking of his time," Dr. McCormick said. "In the preface of the book, he discusses the philosophical relationship between science, information, and problem solving."

The preface discusses the need to "rectify the operation of the senses, the memory, and reason." Hooke then sought to extend the senses through the use of his microscope, improve the memory with his elaborate and minutely detailed engravings, and illustrate the power of reason by recording his observations and queries.

Hooke is one of Dr. McCormick's favorite authors. "I feel that in the lexicon of words . . . and the process of thinking . . . and the resource of library, everyone that is in the field of microscopy and micrology should have this book in their library as roots," Dr. McCormick stated.

Hooke and the other early authors detailed the techniques that were used to prepare specimens for observation. They also wrote detailed descriptions of the things they observed. They were mainly concerned with form, and paid little attention to function.

Throughout much of the 19th century, there was little general awareness of the discoveries made with the microscope, but there was a great appreciation for the aesthetics of microscopy. "They didn't know what it was," explained Dr. McCormick, "but they knew that a particular beetle was pretty, so they collected the beetle for its artistic appeal. When the technicians, or the preparators as they were called, worked at the bench preparing slides, they were more concerned with the beauty than they were with the content of the subject."

Compound, screw-barrel microscope (Robertson) replica, c. 1750. This instrument, which converts to a solar microscope, is an unusual modification of the screw-barrel microscope.

These early technicians prepared intricate designs using such things as diatoms, butterfly eggs, and scales from insect wings. They were microscopic mosaics and fine works of art, arranged in the shape of snowflakes, Venetian glass bottles, and cornucopia with butterflies hovering over them. Contests were held to see who could create the prettiest slide. "But in the process," Dr. McCormick commented, "they developed techniques for mounting and viewing that are essentially unchanged today." Dr. McCormick's collection includes thousands of 18th and 19th century slides.

Simple microscope, spring object holder replica, early 19th century. Basically a magnifying glass, this lignum vitae microscope demonstrates the simplest form of controlling the specimen/lens distance.

By the end of the 19th century, science began to change its concentration from form to content. Classification systems developed, and the subject became more important than technique. "The *History of Microscopy* series gives the reader a chance to relive that experience," explained Dr. McCormick.

One of the books in the series was written by Dr. McCormick. It is a synopsis of 18th century microscopes, and explains the attempts of scientists to improve the image seen through the microscope. Scientists thought the image could be improved by gaining better mechanical control of either the apparatus or the object they were trying to view. "They thought the image was blurry because it was shaking," explained Dr. McCormick. "They didn't know that it was the lens that was distorting the image because of its spectral display of colored light. So the biggest problem was that they didn't have a color-corrected lens.

"The more people know about what others have done to solve problems in the past," he continued, "the more easily they can sort out their own thoughts and solve their own problems.

"The ultimate payoff for me is that individuals who read these books will be stimulated to bring new thoughts to bear on old problems. By surveying all the solutions that have ever been suggested for lasting common problems, if there is a clever thinking individual with that resource in mind and everything behind him, he now has an opportunity to take a fresh step forward and generate a new thought."

Relatively speaking, little has been written about the history of histotechnology. But with this compilation of the great works of microscopy, histotechnologists can get a feel for their roots. "They will acquire a new feeling about themselves and a new respect for their work. Perhaps some will even experience a new dream. I hope that it at least satisfies their need to know what their roots are in the profession," Dr. McCormick concluded.

Without a doubt, this series of books is the result of a genuine labor of love. For Dr. James B. McCormick, they represent a step forward while moving backward in time.

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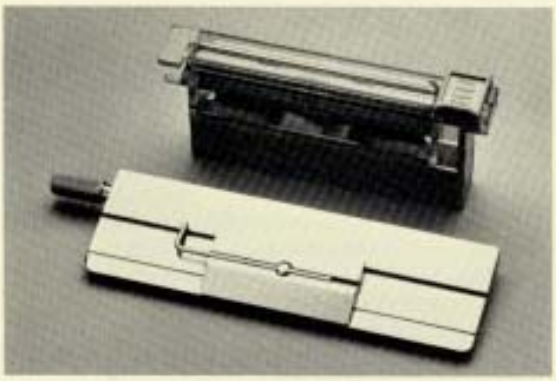

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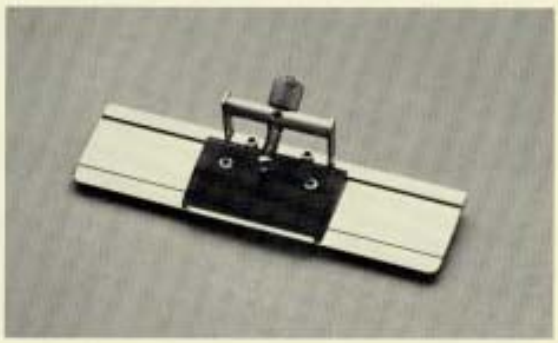

The Universal Cryostat Holder fits almost all microtome/cryostats, including I.E.C., Bright, Leitz, Lipshaw and other popular models. It has a centered blade-fixing plate with a special black coating to enhance specimen visualization and prevent rust. Blades are easily and firmly clamped into place with a screw-down mechanism. It also has a conveniently-located antiroll plate to ensure rapid, quality sections.

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Another Successful "Wet" Workshop

by Lemar Jones

Historic Williamsburg, Virginia was the site of the 11th Annual Practical Stain Technology "Wet" Workshop and Seminar, March 8-13. Thirty-five participants from throughout the United States and Canada attended the workshop. The participants included newcomers to the histotechnology profession as well as veterans.

The workshop staff included Lee Luna, workshop director from American Histolabs, Inc.; Bart Wenger from the Armed Forces Institute of Pathology; and Darlene Nix and Shelley Burns, also from American Histolabs, Inc.

The workshop sessions, which began on Monday morning, were arranged so all participants had an opportunity to perform the various staining procedures and view their work through microscopes.

At the first session, Mr. Wenger lectured on "Chemistry and Staining Mechanisms." The Grocott, Brown-Hopps, and Warthin Starry special stains were then performed. Two immunoperoxidase stains, the Avitin-Biotin S-100 Protein and the Peroxidase-Antiperoxidase Melanin, were also executed. Mr. Luna then lectured on "Tissue Identification of Connective Tissue, Skin and Epithelium."

The following day began with Mr. Wenger discussing "How and Why Reactions, Salts, and Other Chemical Combinations Work in Staining Mechanisms." The Movat, Hall's for Bilirubin, Dieterle, Phosphotungstic Acid Hematoxylin, and Southgate's Mucicarmine special stains were performed next. Mr. Luna ended the day with another lecture on "Tissue Identification."

"Silver Solutions and Staining Mechanisms" was the first topic discussed on Wednesday, March 11. Mr. Wenger shared some of his "secret" methods to help the participants work more effectively with these difficult stains. The Smith-Atkinson for Mast Cells, Rhodanine for Copper, Dahl's for Calcium, Giemsa, and Crystal Violet special stains were then performed. The day ended with a lecture from Mr. Luna about "Mast Cells, Pigments and Amyloid."

Mr. Wenger and Mr. Luna presented "The Staining Mechanisms of Bacteria, Hematoxylins and Microtomy" to start the day on Thursday, March 12. Several special stains were then performed, including the Acid Fast technique, Methyl Green Pyronine, Alcian Blue, Churukian-Schenk, Manual Reticulum, and modified Azan. Later, Mr. Luna lectured on "Muscle and Other Related Tissue."

The final day of the workshop introduced Tanaka's stain for Hepatitis B Surface Antigen, Miller's Elastin stain, Lendrum for inclusion bodies, and a Hematoxylin and Eosin. Short lectures were held between the staining sessions, and Mr. Luna concluded the workshop with a lecture on "Decalcification."

Certificates of completion were provided to all workshop participants. For more information about next year's annual workshop, contact Lee Luna at American Histolabs, Inc., 7605-F Airpark Road, Gaithersburg, MD 20879.

Having Trouble with GMA Techniques?

Those of you who are occasionally frustrated by poor or unsatisfactory results from GMA procedures may benefit greatly from a little known yet excellently prepared technique manual titled *Plastic (GMA) Microtomy; A Practical Approach.*

The manual, written by Robert King, details general and specific techniques involved in the preparation of Glyco Methacrylate slides and gives special attention to staining and bone marrow techniques. For those interested, this manual costs less than $15.00 and can be obtained by contacting:

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The product code of the green cassettes is 4174, and they are available in cases of 500. Both the gray and green biopsy cassettes, as well as the 10 different colored Uni-Cassettes, are available through Scientific Products Division (formerly American Scientific Products).

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Annual Meeting of the Michigan Society of Histotechnologists

Have you ever wondered how the format of your state histotechnologists' society meetings compares to those of other states? This article reviews the meeting recently held by the Michigan Society of Histotechnologists. We don't know if it is typical of most states, but we thought you might be interested in what another state society is doing.

The 13th annual state meeting of the Michigan Society of Histotechnologists was held June 4-6 at the Radisson Hotel in Lansing. The meeting began with a social hour on Thursday evening, June 4. Wine and cheese were served and attendees had an opportunity to meet and talk with each other.

The meeting was open to non-members as well as the 165 members of the society. Attendance at the state meeting was about 125, excluding faculty and exhibitors.

Friday morning began with a presentation of scientific papers concerned with veterinary and surgical pathology. Some of the presentations were given by pathologists, while others were made by histotechnologists; three of the speakers were students reporting on their research at area hospitals. In the afternoon, five hands-on workshops were held, including workshops on titration, and on the special stains used for the diagnosis of AIDS. After theses workshops, a hospitality suite was open to the participants, and a banquet was held in the evening.

Saturday began with a general meeting to elect new officers and discuss the current business and plans of the society. Six more scientific papers were presented after the meeting. Saturday afternoon was filled by four more workshops, including sessions on automatic staining, and microwave staining for silver stains.

Exhibits by 20 manufacturers were open throughout the meeting.

Evaluation forms filled out by all participants indicated that everyone felt the meeting was a worthwhile investment of their time.

"Flash Back To The Future With Miles," Don't Miss It!

Are you planning to attend the National Society of Histotechnology Convention/Symposium in Seattle on October 11-16? If you are, don't miss the Miles "Flash Back To The Future" fifties party.

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In the next few weeks, you'll receive a pair of 3-D glasses. Write your name, address, phone number, and the institution you represent on the back of the glasses and deposit them in the bowl at the Miles Booth, #110, for a very special drawing.

The party is scheduled for Tuesday night, October 13. So if you plan to be there, don't be square. Come and rock around the clock. Dig?

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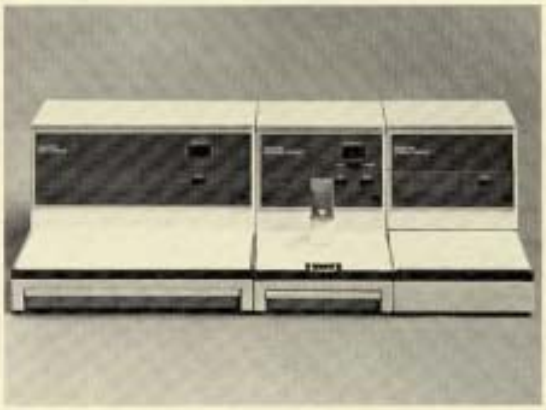

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