HISTO-LOGIC®

No reader should utilize materials and/or undertake procedures discussed in HISTO-LOGIC articles unless the reader, by reason of education, training and experience, has a complete understanding of the chemical and physical properties of all materials to be utilized and the function of each material by which any procedure is accomplished.

Editor, Lee G. Luna, D. Lit., H.T. (ASCP) | Technical Bulletin for Histotechnology Published: January, April, July, October | Vol. VIII, No. 2 - April, 1978

Method for Reprocessing Dried Tissue Specimens

An Editorial

There are numerous ways in which tissue specimens can become "dried out" and therefore may require reprocessing. This may be the result of *tissue processor malfunction, improperly processed paraffin blocks, and tissue which has dried before or after fixation.* The methods provided below will accomplish reprocessing of tissue which has dried.

Solutions:

Formol-Sodium Acetate (Stock)

Formaldehyde, concentrated (38-40%)	10.0 ml
Sodium acetate	2.0 gm
Tap water	90.0 ml

Formol-Glycerol (Working)

Formalin-Sodium Acetate (Stock)	90.0 ml
Glycerol (glycerin)	10.0 ml

Methods:

Tissue Processor Malfunction: If tissues dry before being exposed to the paraffin bath due to processor malfunction (tissue basket hanging in air) *follow steps 6 and 7* of reprocessing schedule.

Dried Tissue: If tissue is dried either before fixation or after fixation *follow steps 6 and 7* of reprocessing schedule. Examples of this might be tissues which were inadvertently left out of fixation overnight, or fixative evaporated from container, or specimens obtained from a cadaver discovered some days after death, that had been exposed to the elements, resulting in hard brittle tissue.

Improperly Processed Paraffin Blocks: If upon microtomy, paraffin blocks do not section well because of improper impregnation of paraffin, reprocessing can be accomplished by *following steps 1 through 7.*

Reprocessing Schedule

1. Molten paraffin — 1 change for 1 hour.
2. Xylene — 3 changes for 1 hour each.
3. Absolute alcohol — 2 changes for 1 hour each.
4. 95% ethyl alcohol — 2 changes for 1 hour each.
5. Running tap water — 30 minutes.
6. Formol-glycerol solution — Until tissues become soft. In most instances this will occur within 5-8 hours. Note: Extended exposure to the formol-glycerol will not harm tissues.
7. Place tissue in tissue processor and proceed with routine processing schedule. If your schedule includes several formalin fixation stations, it is not necessary for tissue to be exposed to these steps.

NOTE: The formol-glycerol tissue softening method has been used successfully in our laboratories for some time. One must remember, however, that the suggested procedures may require some modifications of the exposure time to achieve desired results.

The formol-glycerol (working) solution has been used by the editor for fixing brain. The softening effect of glycerin on CNS prevents the tissue from becoming brittle. The procedure for fixing brain will be published in a future issue of Histo-Logic.

Compliments from Australia

Sometime ago I was accidentally made aware of the existence of Histo-Logic, and was delighted by this useful and most informative publication. Through the kindness of Lab-Tek, I now have a complete set of Histo-Logic articles, am on the mailing list and have benefited greatly from the numerous hints and methods contained in these bulletins.

For me they have also filled a gap in communication with fellow Histotechnologists, partly resulting from the rather geographically isolated regional center in which I work. Histo-Logic is always most welcome in the mail. The news on progress of Histotechnology in the U.S. is most interesting and I envy my American fellow Histotechnologists the excellent Symposia and National organization. There is nothing to compare with this high standard here in Australia, where Histotechnology scarcely rates a mention in Annual Scientific meetings of Medical Technologists.

On several occasions I have been tackling a problem or method that I recalled having read about in Histo-Logic. However, because of my poor memory, finding the relevant article within the seven volumes of Histo-Logic was another matter. This prompted me to index the bulletins, thereby greatly extending their usefulness to me. I feel that there are possibly fellow Histotechnologists who would, for a variety of reasons, welcome an index to Histo-Logic. With this in mind, I respectfully submit for your editorial consideration, my Author and Subject Indexes for Volumes I through VII of Histo-Logic. I thought that an index similar to these enclosed could be issued as a separate to Histo-Logic and supplemented at the end of each year with a yearly index using the same basic layout. I emphasize that these indexes were originally produced for my personal use and thus the Key Words and Cross Referencing may need substantial revision to bring it into line for more general use. I would welcome your criticisms.

My congratulations to you and Lab-Tek on the production of Histo-Logic, indeed a valuable contribution to Histotechnology.

Yours Faithfully,
Mr. Leigh Winsor, FAIMT, AIST
School of Biological Sciences
James Cook University
Queensland 4811
Australia

Editor's Note: *The index will be published in the October, 1978 issue of Histo-Logic.*

Atlas of Artifacts

AN ATLAS OF ARTIFACTS Encountered in the Preparation of Microscopic Tissue Sections, is now available from Charles C. Thomas. This Atlas, written by S. W. Thompson and Lee G. Luna, contains over 450 photographs illustrating many of the artifacts plaguing the histotechnologist and pathologist. More importantly, however, the narrative provides information on how the artifact was produced, how it can be eliminated or prevented, and means of identification. The Atlas sells for $21. Ordering information can be obtained by writing: Ms. Diane Enger, Advertising and Sales, Charles C. Thomas, 301-327 Lawrence Avenue, Springfield, Illinois 62717.

Suggestions for Successful Processing of Brains

Edyth Simpson
Washington, D.C. 20306

The fixation, processing, embedding, sectioning and staining of the brain requires special handling and special procedures. It would be difficult and a mammoth undertaking to expound on all facets of brain technology since many factors would have to be considered. For example, size of brain or size of the specimen obtained for processing, whether the brain is from a human baby or from an animal would affect the exact procedure. The following comments are limited to certain aspects of brain technology but it is felt they will be extremely helpful in the production of quality microscopic slides of this organ, the processing of which presents an interesting challenge to histotechnologists.

Processing Adult Human Brain

1. The entire brain should be suspended in 20% buffered neutral formalin within a large container for 24 hours.

20% Buffered Neutral Formalin

Formaldehyde, concentrated (37-40%)	200.0 ml
Distilled water	900.0 ml
Sodium phosphate monobasic	4.0 gm
Sodium phosphate dibasic (anhydrous)	6.5 gm

2. Place brain in fresh 10% buffered neutral formalin for 2-4 weeks. Change fixative solution frequently. (We change solution daily.)
3. At this point the brain can be grossed (macrosectioned) either into slices or blocked into conventional size specimens ready for processing. **NOTE:** If the brain specimens show signs of improper fixation, place specimens in a fresh change of fixative solution until specimens are completely fixed.
4. Wash specimens in cold running tap water for 4 to 6 hours.
5. Transfer specimens to 80% alcohol for 16-24 hours.
6. Place specimens on tissue processor utilizing the following 24 hour schedule:

Tissue Processing Schedule (24 Hour)

95% alcohol	2 hours
95% alcohol	2 hours
95% alcohol	2 hours
100% alcohol	2 hours
100% alcohol	2 hours
100% alcohol	2 hours
100% alcohol-chloroform (equal parts)	2 hours
Chloroform	2 hours
Chloroform	2 hours
Paraffin	2 hours
Paraffin	2 hours
Paraffin	2 hours

Note: Place under vacuum* for one hour. This step is optional but highly recommended.

*Tissue Tek II Vacuum Infiltrator, Lab-Tek, Naperville, Illinois.

Processing Human Baby Brain

The consistency of baby brains often differs from that of adults and therefore may require a slight modification in the manner they are processed. If this is the case, follow steps 1-3 of the schedule provided for processing adult human brain specimens and the following:

4. Wash in *slow* running tap water for 1 hour.
5. Transfer specimen to 70% alcohol for 24 hours.
6. Place specimen in 80% alcohol for 24 hours.
7. Place specimen on *tissue processor utilizing the 24 hour Tissue Processing Schedule.*

Processing Monkey Brain

Monkey brains are fixed following the same schedule provided for processing adult human brains (steps 1-3) above and the following:

4. Wash specimen in tap water for 4-6 hours.
5. Transfer specimen to 80% alcohol for 24 hours.
6. 80% alcohol for 24 hours.
7. 80% alcohol for 24 hours.
8. Place specimens on *tissue processor utilizing the 24 hour Tissue Processing Schedule.*

Remarks:

1. It is important to realize that in steps 1, 2 and 3, the entire brain is suspended in the fixative solution and no incisions are made on the brain. The use of 20% formaldehyde speeds the penetration of the fixative.
2. Specimens should not exceed 4 mm in thickness when utilizing the 24 hour processing schedule.
3. Processing solutions should be kept clean of debris or contaminants.
4. Chloroform is preferred as a clearing agent since xylene tends to make tissue brittle.

Suggestions for Embedding Brain Specimens:

1. Tissue specimens should be placed as flat as possible. Do not use too much force when flattening since brain tissue may be brittle and may crack with the force, introducing an artifact.
2. Cool paraffin at room temperature. Then place pan or embedding mold in cold running water to complete hardening.
3. It is important to prevent movement of the tissue after the paraffin has hardened slightly since movement at this time may produce bubbles in the paraffin, which in turn causes lines across the tissue. These lines simulate knife lines.
4. Brain specimens should be embedded individually since multiple embedding may cause sectioning problems.

Suggestions for Sectioning Brain Specimens:

1. When sectioning, never freeze brain tissue. It is preferable to cool the microtome knife.
2. Floatation water bath temperature should be 43° C.
3. Slide warming table temperature should be 40° C. If slides are dried in an oven, also maintain the oven temperature at 40° C.
4. Trim excess paraffin from each side of the paraffin block. This enables the sections to stretch out with greater ease as they come off the microtome knife.
5. Should you have difficulty in obtaining a compression-free section, try one or all of the following suggestions:
   A. Turn the microtome wheel slower but with an even motion.
   B. Soak the block with cold water. Be careful not to oversoak the brain specimen as this may cause thick (more than 6 microns) sections to fall off during the staining process.

Tissue-Talk

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Tissue-Talk

National Society for Histotechnology Symposium/Convention

The Fourth Annual Symposium/Convention of the National Society for Histotechnology will be conducted at the Skirvin Plaza Hotel, Oklahoma City, September 25-29, 1978. The Symposium activities will be using both the Skirvin Plaza and Sheraton Hotels to accommodate the 19 workshops on Monday and Tuesday. The Sheraton is one half block from the Skirvin with an underground concourse hopefully completed by September.

The Skirvin Plaza is serving as the housing agent and once their rooms are full, reservations will be sent to the Sheraton to accommodate overflow. Please complete hotel reservation card and mail directly to the Skirvin Plaza.

Registration forms may be photocopied if more than one individual from the same activity wishes to attend. Mail registration and check to: **REGISTRAR, P.O. BOX 36, LANHAM, MARYLAND 20801.**

The following lecture review sessions are primarily for individuals taking the Thomas Edison examinations in preselected subjects.

Subject	Instructor	Date	Time
Introductory Histotechnology/ Histochemistry	Jules Elias	Mon., 9/25/78	9AM-4PM
Human Microscopic Anatomy	Freida Carson & Tom Palmer	Tues., 9/26/78	9AM-4PM
Current Concepts in Health and Disease	Jules Elias	Tues., 9/26/78	9AM-4PM

Chemistry audio visual equipment will be available for those interested.

All exams will be given from 7:00 to 9:00 AM on Wednesday, 9/27 and Thursday, 9/28. Two exam days are set for those who wish to take more than one exam during the week.

Meeting Schedule and Evening Activities

Activity	Date	Time
House of Delegates	Sun., 9/24/78	9 AM - 5 PM and 7 - 10 PM
Executive Board & Board of Directors	Mon., 9/25/78	9 AM - 5 PM
Workshops	Mon., 9/25/78 Tues., 9/26/78	9 AM - 4 PM
Exhibits Open	Tues., 9/26/78 Wed., 9/27/78 Thurs., 9/28/78	7 - 9 PM 9:30 AM - 4 PM 9:30 AM - 4 PM
Scientific Sessions	Wed., 9/27/78 Thurs., 9/28/78 Fri., 9/29/78	9 AM - 4:30 PM 9 AM - 4:15 PM 9 AM - 12:45 PM
NSH Membership Meeting	Wed., 9/27/78	4:45 - 6 PM
Thomas Edison Exams	Wed., 9/27/78 Thurs., 9/28/78	7 - 9 AM 7 - 9 AM
Lab-Tek Cocktail Hour & Buffet Banquet	Thurs., 9/28/78	To be Announced

Installation of NSH officers will be conducted during banquet activites.

PLEASE RESERVE THE FOLLOWING ACCOMMODATIONS

Skirvin Plaza HOTEL
P.O. Box 1677
Oklahoma City, Oklahoma 73101

☐ MR.
☐ MR. & MRS. _____
ADDRESS _____
CITY & STATE _____
FIRM _____
ARRIVAL DATE _____ TIME _____
DEPARTURE DATE _____
REMARKS _____
_____

National Society for Histotechnology Symposium/Convention September 24-29, 1978

Bed	1-Person	2-Persons
Queen/King (1 bed)	$28.00	$33.00
Double/Double (2 beds)		$34.00
Junior Suites	$40.00	$48.00
Suites	$90.00 and up	

Additional person per room, $5.00 per person. Please circle accommodations desired and **return by September 10, 1978!** Free parking for registered hotel guests.

Check or money order **must accompany** registration. Payable to: National Society for Histotechnology. Mail Registration to: Registrar, P.O. Box 36, Lanham, Maryland 20801.
Please Note: Reimbursement of registration fees will be made upon receipt of cancellation notification prior to September 13. **No refunds will be made after this date.**

DO NOT USE THIS SPACE

Name: _____ (Last) (First) (Initial)
Home Address: _____ (Street) (City) (State) (Zip)
Employer: _____
Address: _____ (Street) (City) (State) (Zip)
Employer Telephone No.: (Area Code) _____

Please check functions you desire to attend:

Scientific Sessions ____ $40 (Wed. - Fri.)

Banquet: ____ $15 (Thursday evening)

EXAM REVIEWS:
____ Histotechnology/Histochemistry (Monday)
____ Human Microscopic Anatomy (Tuesday)
____ Current Concepts in Health & Disease (Tuesday)

WORKSHOPS

Monday
No. 1 ____ $30 (all day)
No. 2 ____ $30 (all day)
No. 3 ____ $30 (all day)
No. 4 ____ $30 (all day)
No. 5 ____ $20 (AM 1/2 day)
____ $20 (PM 1/2 day)
No. 6 ____ $20 (AM 1/2 day)
No. 7 ____ $20 (AM 1/2 day)
No. 8 ____ $20 (AM 1/2 day)
No. 9 ____ $20 (PM 1/2 day)
No. 10 ____ $20 (PM 1/2 day)

Tuesday
No. 11 ____ $30 (all day)
No. 12 ____ $30 (all day)
No. 13 ____ $30 (all day)
No. 14 ____ $30 (all day)
No. 15 ____ $20 (AM 1/2 day)
No. 16 ____ $20 (AM 1/2 day)
No. 17 ____ $20 (AM 1/2 day)
No. 18 ____ $20 (PM 1/2 day)
No. 19 ____ $20 (PM 1/2 day)

(Check only AM or PM for No. 5; do not check both times.)

Non NSH members must add $5.00 for each workshop and $10.00 for the scientific sessions.
Canadian registrants please remit fees in U.S. currency.
Please Check: Is this your first attendance to an NSH Symposium/Convention? Yes____ No____
Are you an NSH Member? Yes____ No____

Workshops

Monday, September 25, 1978

1 Anatomy and Histology for Histotechnologists
Dr. Jess Hensley **9 AM - 4 PM**

This program is designed for laboratory personnel with little or no formal training in histology. The objective of the course is to instruct participants in cell, tissue and organ recognition as a background for quality control in histotechnique. The course format is lecture and demonstration.

2 Introduction to Stain Mechanisms
Jack Wenger **9 AM - 4 PM**

Workshop is presented in lecture form and the following subjects discussed in depth: introduction to electrolytes; salt-protein formations; isoelectric points and how we use them; mordant dyeing; practical applications and various facets of silver reactions, including mechanism of argyrophil and argentaffin reactions; principles of bacterial staining, and mineral reactions. This course was PACE approved April 5, 1977; PACE number 77294.

3 Building a Foundation for Management
Ed Sokol, Miles Laboratories **9 AM - 4 PM**

Abstract not received by publication date. Workshop has been presented numerous times previously. Past experience indicates this is an excellent management workshop.

4 Laboratory Safety and Health in Histotechnology
Norman V. Steere, P.E., & Diane Burica **9 AM - 4 PM**

This six hour short course will describe and illustrate safety measures which can be taken to protect personnel in the histopathology laboratory, to comply with OSHA standards, and to meet safety requirements for accreditation by CAP and JCAH. Subjects to be discussed include: hazard recognition and assessment, electrical safety, chemical handling and storage requirements, exhaust ventilation, exposure monitoring, carcinogen safety standards, emergency procedures, and waste disposal.

***5 Special Stains Wet Workshop** **8:30 AM - 12 Noon**
Jan Lundy & Kathy Henderson **1:30 PM - 5 PM**

This is a **half day** wet workshop which will be repeated in the afternoon in order to accommodate more registrants. Stains to be covered include: rapid GMS, rapid Masson Trichrome, rapid PTAH, night blue for acid fast organisms, and Gomori's Stain for pancreatic islet cells.

***6 Embedding**
Mary King **9 AM - 12 Noon**

This **half day** workshop will cover fixation, trimming or grossing, cassettes, processing, placement in mold, and cooling blocks. Hints and tips for cutting will include laying out on water bath, picking up and placement on slide.

***7 Histology Laboratory Mathematics**
Marcia Lubbes **9 AM - 12 Noon**

This **half day** workshop is designed to give the histotechnologist a strong basic background in mathematics, calculations and accuracy. Those interested would possibly be students preparing for registry exams, those needing a review, or possibly technologists not strong in computing percentages, molecular weights, molar solutions, etc. Simplicity may be first encountered in the course, but knowledge of units and atomic weights and charts must be stressed before actual standard mathematics can be presented. At the end of the workshop participants should be able to compute, calculate, or equate any mathematical problem encountered in the laboratory.

***8 Identification and Demonstration of Infectious Agents Common to Man and Domestic Animals** *(Limit - 25)*
Argelia Toledo **9 AM - 12 Noon**

Agents to be discussed: blastomyces; cryptococcus; histoplasma; toxoplasma; actinomycetes; acid fast organisms; spirochetes; viral inclusion; monilia (candida); mucor; aspergillus; sporotrichosis; dermatophilus (streptotrichosis). Histopathology will include: invasion; sites; tissue reaction. Demonstration: (1) Specific methods. (2) Discussion of special stains used for demonstration: PAS; PAS-Diastase; Grocott's Methenamine Silver; Luna-Parker Giemsa; mucicarmine; Ziehl-Neelsen; Brown & Brenn; Gram's; May-Grumwald Giemsa. (3) Identification and demonstration of infectious agents with special stains. A comprehensive study of infectious agents will be included using kodachromes for demonstration of these agents under H&E and special stains. Class set and list of methods used will be issued to each participant.

***9 Diagnostic Cytotechnology**
Jo Dee and Rena Beard **1 - 4 PM**

Abstract not received by publication date.

***10 Technique for Light Microscopy Preparations Embedded in a Methacrylate Plastic Medium** *(Limit - 40)*
Phyllis James **1 - 4 PM**

Workshop includes a step by step participation in preparing slides for light microscopy with tissues embedded in glycol methacrylate. Procedure includes embedding or blocking of tissues, knife preparation, cutting, mounting and staining. The discussion with participation, would point out, not only the parallels and similarities of the water soluble plastic to the paraffin technique, but would also demonstrate, with little practice, the many simplifications and actual ease of handling sections by this method.

Tuesday, September 26, 1978

11 Chemistry: Its Organization, Principles and Application
Dr. John Herrington **9 AM - 4 PM**

Topics to be covered in this workshop include: (1) Atoms: history; electrons, protons and neutrons. Atomic number and weight; organization and use of the periodic chart of elements. (2) Compounds: bonding, ionic and covalent. Predicting reactions and how atoms will combine. Ionization. (3) Acids and Bases: dissociation constants. pH. Buffers. Why buffers are necessary. Preparing buffers. (4) Organic compounds and a little biochemistry; the cell and its chemical organization. (5) Chemistry and Colors: Dyes. Stains. Resonance and the formation of colored compounds. The effect of pH on color.

12 Management as it Relates to the Supervisor
Jerry Doty **9 AM - 4 PM**

Topics to be covered: (1) Overview of management. (2) Organizational behavior. (3) Leadership - formal and informal including: group dynamics, case studies and group projects.

13 Immunofluorescence in Laboratory Diagnosis of Autoimmune Disease *(Limit - 40)*
Dr. Donald Tourville **9 AM - 4 PM**

Lecture presentation will include: immunopathology of autoimmune disease including liver, collagen, kidney and skin diseases; clinical significance of B and T Lymphocyte Studies. The wet workshop will cover: basic physics of transmission and incident light fluorescence microscopy performance and interpretation of immunofluorescence procedures including RNA, DNA and mitochondrial indirect FA techniques. Workshop is PACE approved.

14 Tissue Identification
Lee Luna & Edna Prophet **9 AM - 4 PM**

The primary objective of this workshop is to give each participant a basic knowledge of the microscopic structures of some of the commonly processed organs in the histopathology laboratory. It is anticipated that each histotechnologist will be sufficiently motivated to do further study on his/her own to gain an in-depth knowledge of histology. The knowledge gained can then be applied to determining properly stained slides. In addition to learning the morphology, participants will be taught how to recognize the proper staining qualities of numerous special stains.

***15 Cryotomy** *(Limit - 25)*
Marilyn Augustine & Betty McKinney **9 AM - 12 Noon**

This workshop will concentrate on the use of a closed cabinet

cryostat and an open-top model cryostat. Freezing and staining of frozen section specimens will be included. There will be individual and group demonstration of various frozen section equipment under supervision of the faculty.

***16 Electron Microscopy Techniques**
Bob Evans, LKB Instruments, Inc. **9 AM - 12 Noon**
Abstract not received by publication date.

***17 Medical Photography**
Kent Wood **8:30 AM - 12 Noon**
All aspects of medical photography will be discussed. Two of the most important and most emphasized categories will be:
Medical Photography: teaching (photos, slideshows, procedures); publication (pamphlets, articles); documentation; P.R. (house organs, pro publications); reference files (slides, archival files).
Histology: coverglass selection, staining time, specimen thickness, folds, nicks, and mounting media.
Techniques discussed: polarized (bright-dark-w/red), darkfield, phase, interference, Nomarski, Rheinberg, fluorescence, oil immersion.

***18 Making the Diagnosis: Histotechnologists and Pathologists**
Dr. John Budinger **1 - 4 PM**
Abstract not received by publication date. However, personal communication with Dr. Budinger indicates this new and innovative workshop will be extremely beneficial to those attending.

***19 Basic Instrument Maintenance: Histology Laboratory**
Ernestene Sims **1 - 4 PM**
This "hands on" workshop will attempt to instruct the histotechnologist on the day to day adjustments, minor repairs and major maintenance of basic types of instruments in the laboratory: tissue processor, microtome, automated microtome knife sharpener, and small miscellaneous accessories used with these instruments.
Processors to be reviewed are the Technicon Mono/Duo and Ultra units and the Lipshaw Trimatic. Microtome instructions will be for the American Optical Model 820, the Leitz Models 1212 and 1512, and/or the Lipshaw Model 45. Automated sharpeners to be discussed will be the Shandon-Elliott (glass and copper plate), the Tissue Tek and/or the Hacker Perma-sharp.
At the completion of this workshop the participant will have knowledge of the most basic mechanics and will be able to troubleshoot and repair these instruments.

***Half Day Workshops**

Scientific Sessions

Wednesday, September 27, 1978

A.M. Session:

A Rapid LFB Stain for Spironolactone Bodies (Aldoctone) in the Adrenal Gland	*Sheron Lear*
Practical Methodologies in Neuropathology	*Faye Meyers, M.D.*
Photomicrographs of Special Stains	*Joyce Moore*
Comparative Cytology	*Jeffie Roszel, D.V.M.*
Methods of Cell and Tissue Observation	*Merylin Key*

P.M. Session:

Histotechnology and the Forensic Pathologist	*Fred Jordan, M.D.*
Variables in Decalcification	*Sue Judge*
Bone Marrow — How, Why and the Results	*Dale Van Wormer, M.D.*

Thursday, September 28, 1978

A.M. Session:

A Plastic Embedding Technique for the Routine Processing of Bone Marrow Core Biopsies	*Kerry Beebe, A.R.T.*
Special Tissue Techniques	*Frances Miller*
Computers in the Histopathology Laboratory	*Jaye Sanford*
Proper Histologic Preparation of Lymph Nodes	*Tommy Hewett, M.D.*
Demonstration of 3 Fiber Types by Myosin ATPase from a Single Preparation	*Gary Tunell, M.D.*

P.M. Session:

A Modified Processing and Sectioning Technique for Hard Tissue	*Lyn Richardson*
Vacuum Processing for Small Biopsies	*Joyce Moore*
An Improved Method to Distinguish O-Acylated Sialic Acid Mucins from Normal Mucins	*Robert Durning, R.T.*
Ten Easy?? Steps to an Accredited School of Histology	*Mary Tarvin*

Friday, September 29, 1978

A.M. Session:

Egg Yolk Embedding for Whole Brain Frozen Sections or "Brains and Eggs"	*Donna Simmons*
Utility of Tissue Enzyme Methods for Research	*Celester Carter*
A Rapid Method for Esterase	*Beverly McGowan*
Multiple Mounting and Staining on 2 x 2" Glass Slides	*Sheron Lear*
Reconstitution of Dried-up Tissues for Histological Examination	*Robert Durning, R.T.*
Radio Nucleotides in Histopathology or "Hot Histology"	*Bob Woods*
The Histotechnologist — Slave or Scientist?	*C. F. A. Culling, MRC Path.*

C. If the cold soak does not work, try a luke-warm water soak and cool knife with skin refrigerant or ice cube.

6. Use an extremely sharp knife when cutting brain tissue. Generally, a knife used for sectioning brain must be sharpened more often than when sectioning other types of tissue.
7. Allow sections to drain well after lifting from floatation bath, but *do not* allow them to DRY UNTIL THEY TURN WHITE. Sections which are not drained properly will develop bubbles when placed on the warming table. These bubbles may cause thick sections to fall off the slide or become partially detached as they are transferred through the alcohols and xylenes.

Preferred Thickness: The following section thicknesses are recommended for the indicated special stains:

1. Bodian	8 microns
2. Chen-Bodian	8 microns
3. Bielschowsky	8 microns
4. Kluver-Barrera	20 microns for CNS tissue, 15 microns for nerve tissue
5. Woelcke	20 microns for CNS tissue, 15 microns for nerve tissue.
6. Stains for Nissl substance	25 microns
7. Congo Red	6 and 20 microns
8. Stains for fat	12 microns
9. Hirsch-Pfeiffer	20 microns

An extra slide should be cut for each of the special stains being performed. These are "backup" slides in the event a section falls off the slide or the special stain does not work to your satisfaction.

Seminar and Workshop - Histopathology Techniques

This five day course will consist of two days of lectures and three days of "wet" workshops. Registrants must select the one workshop they wish to attend and should write for a special application form in order that the course may be properly organized to provide optimal training. Selective training will be offered on Wednesday afternoon to include Cryostat, Kidney Biopsy Histotechnology, Warthin-Starry, Lymph Node Histotechnology, and Knife Sharpening. Registration for these special topics must be done by using the special application form.

Applicants should be members of the Armed Forces or other Federal Services. Individuals must have at least one year's experience in a histology laboratory and the training request must be made by the sponsoring pathologist. Use of the special application form is essential. This form can be obtained by writing the Armed Forces Institute of Pathology, Washington, D.C. 20306, ATTN: AFIP/EDZ. Civilian applications will be considered on a space available basis.

NOTE: Course offered February and August of each year.

A Rapid Polychrome Stain for Frozen Sections

William Barlow, HT (ASCP)
Riverside Hospital
Wilmington, Delaware 19899

The following rapid stain modification has been used in our laboratory for some time with good results. It is being presented here in the hope it will be useful to other readers of Histo-Logic.

Fixation: Not necessary.

Microtomy: Cut frozen sections at 8 microns.

Solutions:

Tertiary Butyl-Ethanol

Tertiary butyl	150.0 ml
Absolute ethanol	50.0 ml

This is enough solution to completely fill 3 coplin jars.

Polychrome Stain*

Toluidine blue O	700.0 mg
New fuchsin	350.0 mg
Ethanol, 35% aqueous	100.0 ml

Ethanol-Xylene

100% Ethanol	50.0 ml
Xylene	50.0 ml

*A similar stain may be purchased from Paragon Inc., Bronx, New York 10454.

Staining Procedure:

1. Mount sections on clean glass slides.
2. Flood slide with polychrome stain using an eye dropper.
3. Stain section for a few seconds.
4. Remove excess stain in several changes of distilled water.
5. Dehydrate in 3 changes of Tertiary butyl-ethanol solution, 10 dips in each change.
6. Dip slides 3 times in ethanol-xylene solution.
7. Dip slides 5 times in 3 changes of xylene.
8. Mount coverslip with resinous media.

Results:

Nuclei: Dark blue

Background: Various shades of purple and red (mast cells, cartilage and certain acid mucins stain metachromatically).

NOTE: It may take some time before a pathologist feels comfortable interpreting this stain. Therefore, this procedure should be viewed along with the conventional rapid H&E performed in your laboratory until familiarity is achieved.

The Director of our laboratory, Dr. Ruth Waddel Cathie, has used this stain successfully for a number of years.

Special Training Film Now Available

"The Theory and Application of Embedding Techniques in the Histopathology Laboratory"

A 17-minute color film on techniques developed and used in the Histopathology Laboratory at the University of Texas M. D. Anderson Hospital and Tumor Institute is available for showing without charge in your hospital. It demonstrates the key stages in the production of good quality diagnostic slides with emphasis on proper tissue embedding. The entire sequence of steps in well-organized tissue preparation is covered from processing, embedding, ribbon sectioning, and mounting sections on slides, through storage of tissue blocks. Six basic types of specimens are discussed — single pieces of tissue, multiple pieces of tissue, skin specimens, decalcified bone, lymph nodes, and cylindrical tissue specimens — and proper orientation of each type in paraffin is shown.

To have this film shown without charge in your hospital, write to Lab-Tek, the publisher of Histo-Logic. Because of the limited number of films available, we would appreciate your selection of three alternate dates a few weeks apart. The film is available for purchase for $100.00 from the Audio Visual Department, M. D. Anderson Hospital and Tumor Institute, University of Texas, Houston, Texas.

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Technically Speaking

Robert A. Clark, Technical Services
Lab-Tek Products, Naperville, IL 60540

Have you ever gone down to the deepest, darkest recesses of the hospital storage area to retrieve a wet tissue specimen for the pathologist and found that the very specimen you need had dehydrated due to a poor or loose fitting cover? Sometimes the label has fallen off due to age. Now which is the right specimen?

For short-term storage makeshift glass jars, cardboard containers, etc., are often used, but consider drawbacks like breakage. Also, you may perform death-defying balancing acts to maximize storage shelf space. Then there are the times you open and close containers to view contents. Non-rigid Multi-Purpose Bags and Containers can help eliminate many of these problem areas.

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Leakage and evaporation are also eliminated when proper closure procedures are followed. No more leakage due to loose fitting covers or improperly heat-sealed bags. When specimen bags are properly sealed, storage space is increased since there is no need to store today's air.

Specimen storage need not be a headache to the histology technician. By initially selecting the proper container for tissue storage, specimens may be conveniently preserved for years to come.

To receive your own personal copy of HISTO-LOGIC, or to have an associate added to the mailing list, submit home address to: Lab-Tek Products, Division Miles Laboratories, Inc., 30W475 North Aurora Rd., Naperville, Illinois 60540.

The editor wishes to solicit information, questions, and articles relating to histotechnology. Submit these to: Lee G. Luna, Editor, Histo-Logic, P.O. Box 36, Lanham, Maryland 20801. Articles, photographs, etc., will not be returned unless requested in writing when they are submitted.