SAWA UNIVERSITY

HISTOPATHOLOGY - FIRST COURSE

LAB -13- FROZEN SECTION AND ITS STAINING

Sawa University — جامعـــــة ســـــــاوة الاهلية

College of health and medical techniques — كليـــــة التقنيـــات الصحيـة والطبيـة

Department of Medical Laboratories — قسم تقنيات المختبرات الطبية

Third Stage — المرحلـــــة الثالثـة

محاضرة رقم 13 — الجانب العملي

Lecture No. 1 — Practical

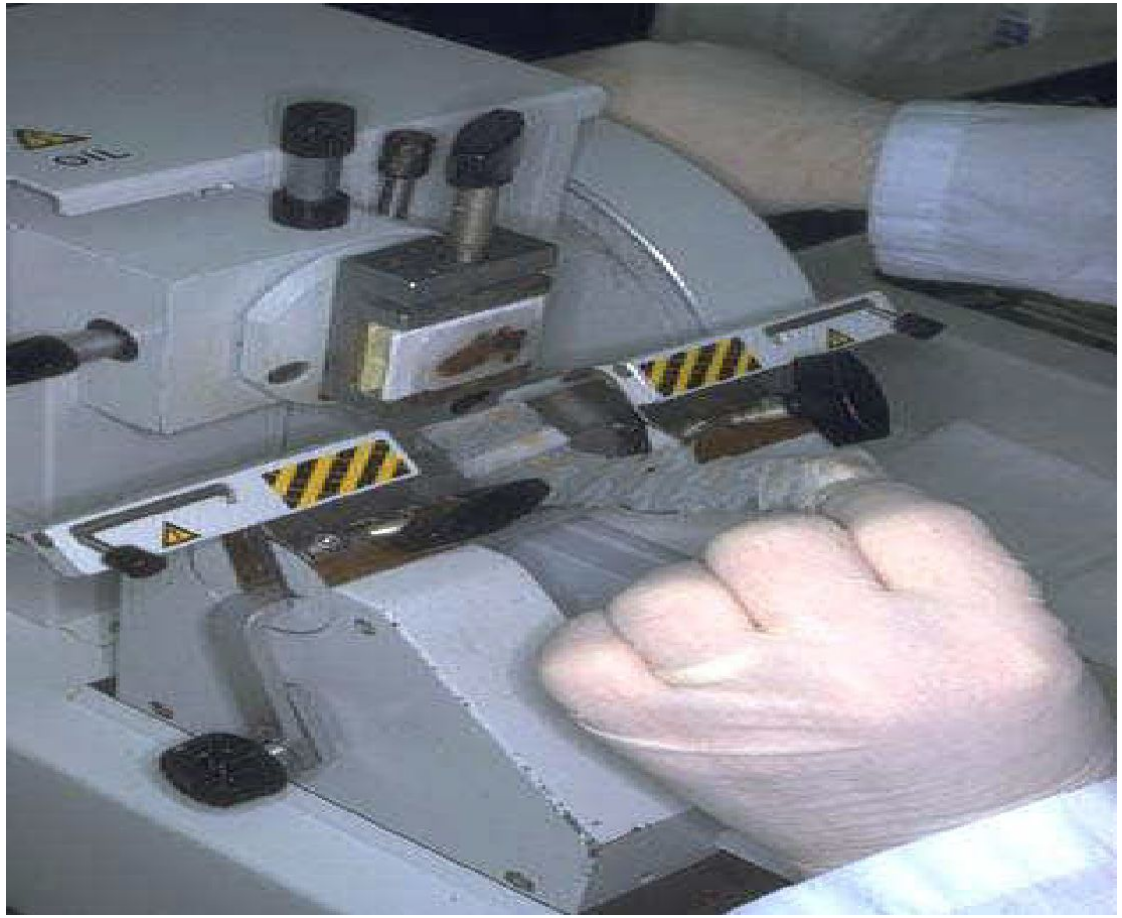
تدريسيين المادة : م.م هبــه صاحب صادق

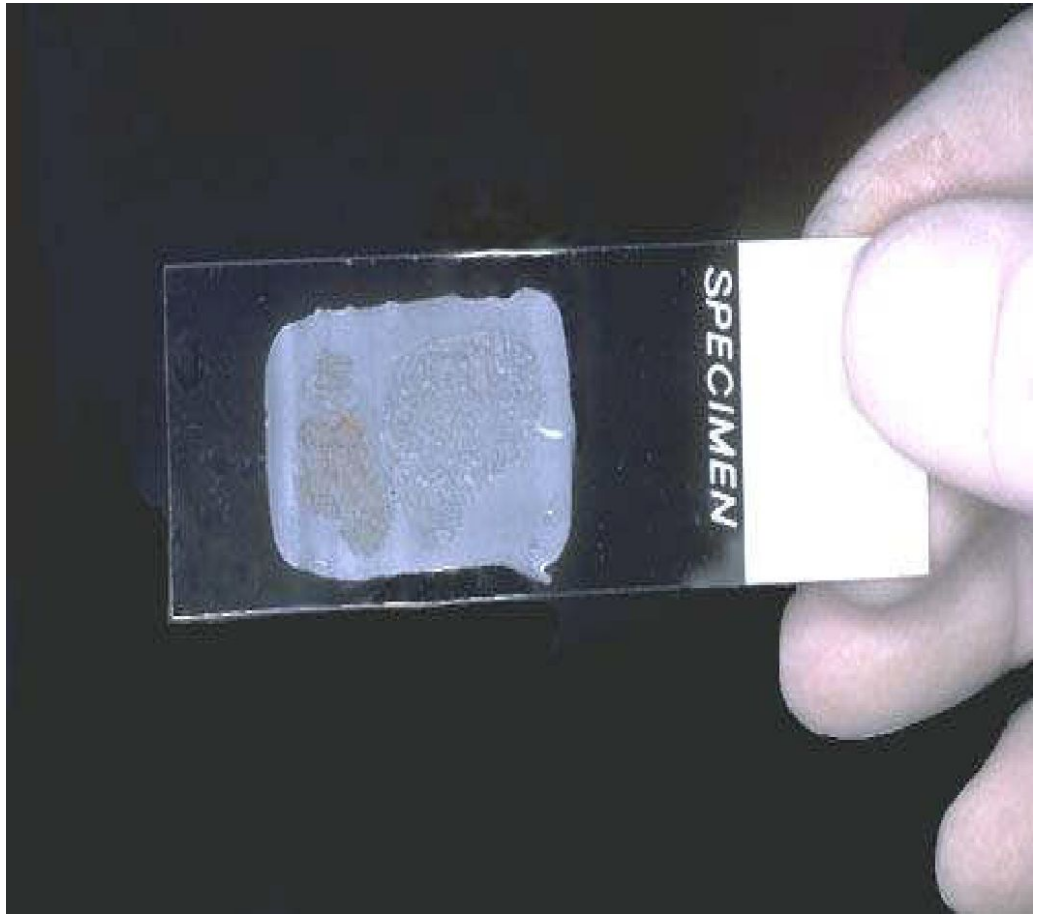
م.م خلــود عايد حسيـن

SECTIONING:

Once the tissues have been embedded, they must be cut into very thin sections (4 to 6 microns) that can be placed on a slide.

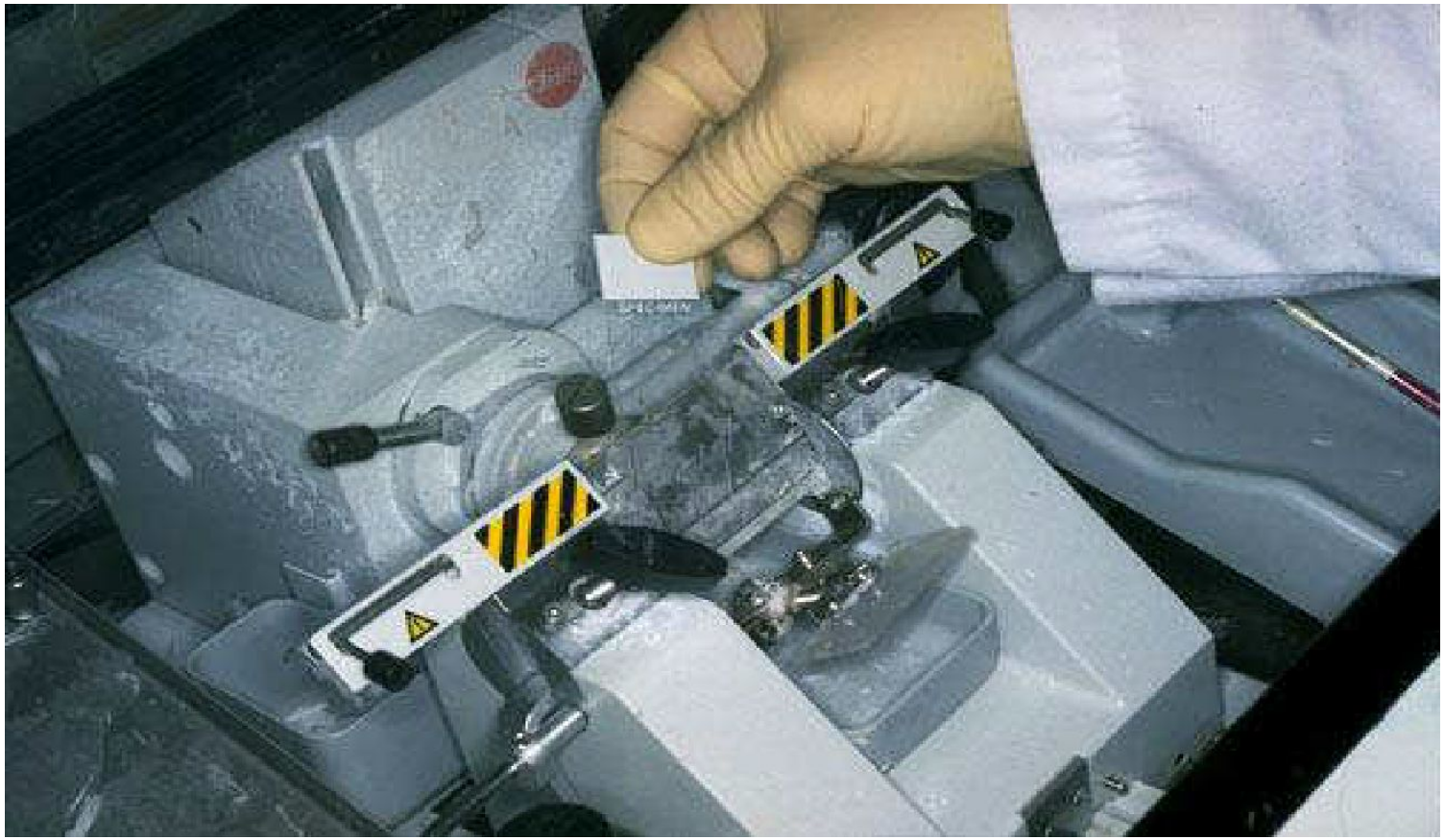
- This is done with a microtome. The important thing for proper sectioning is a very sharp knife.




SPECIMEN

Frozen Sections

- Frozen sections are performed with an instrument called a cryostat.
- The cryostat is just a refrigerated box containing a microtome.
- The temperature inside the cryostat is about -20 to -30 C.
- The tissue sections are cut and picked up on a glass slide.
- The sections are dried and then stained.

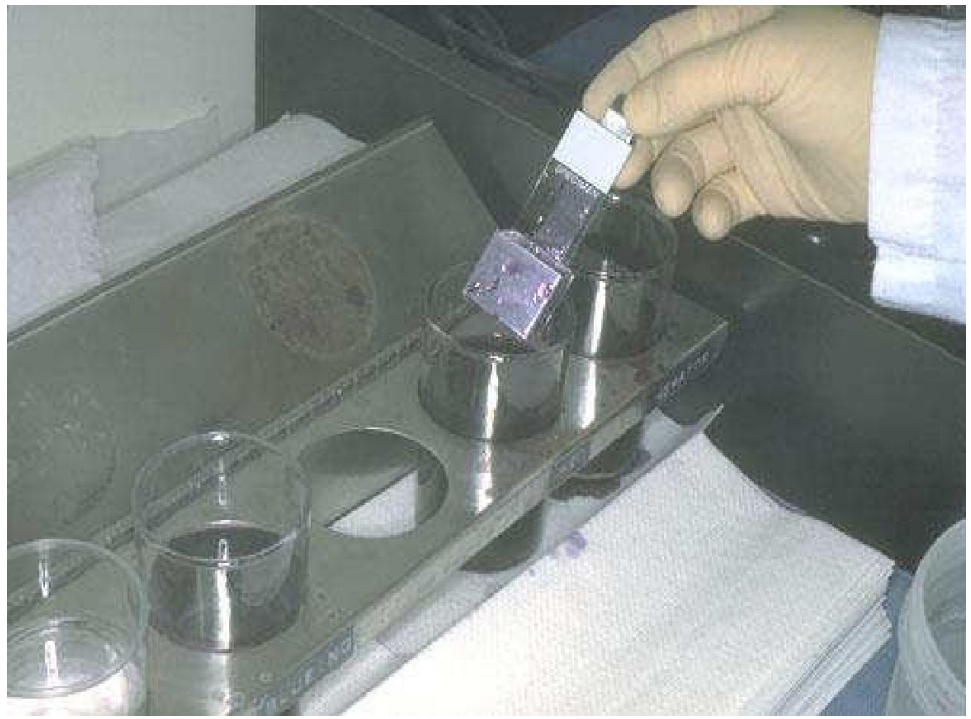


Staining

The embedding process must be reversed in order to get the paraffin wax out of the tissue and allow water soluble dyes to penetrate the sections.

- Therefore, before any staining can be done, the slides are "deparaffinized" by running them through xylene then, to alcohols and lastly to water.
- There are no stains that can be done on tissues containing paraffin.

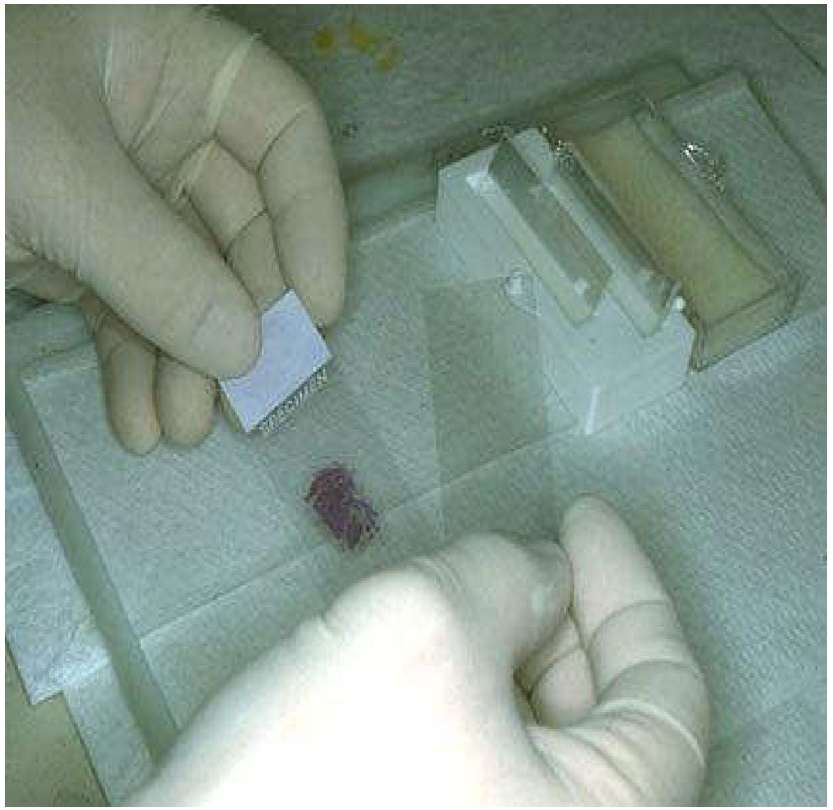
Automated stainer

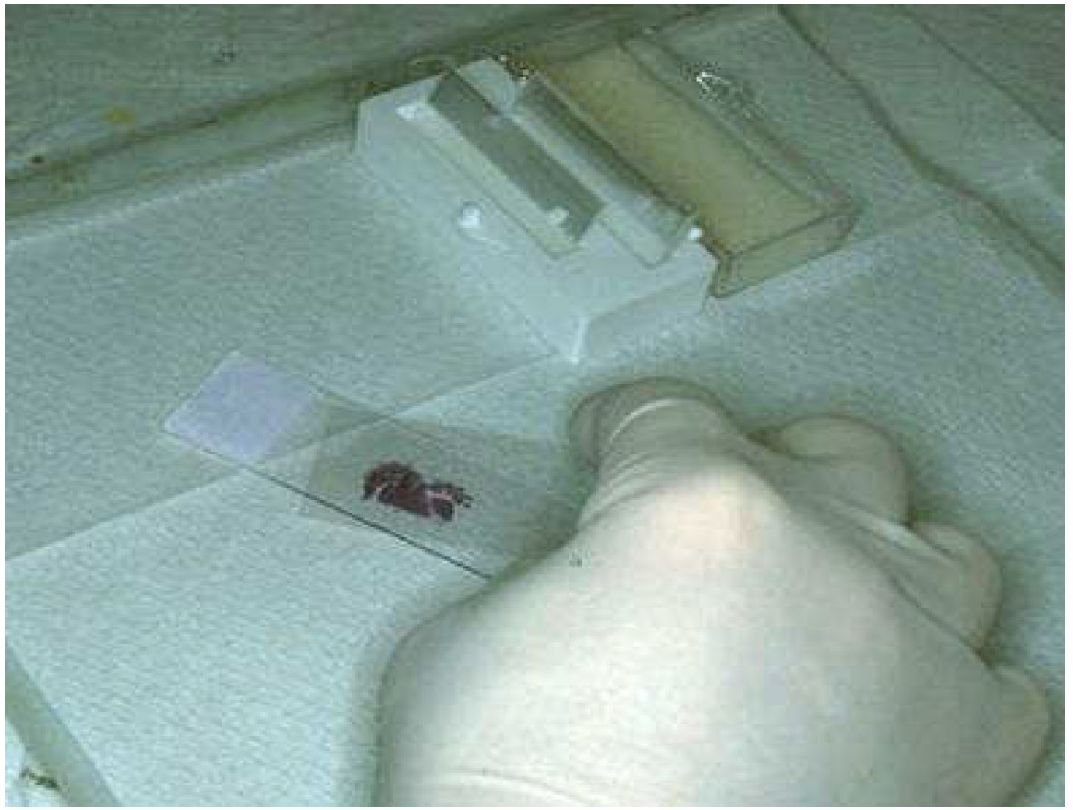


Frozen sections are stained by hand, because this is faster for one or a few individual sections.

Coverslipping

The stained section on the slide must be covered with a thin piece glass to protect the tissue from being scratched, and to preserve the tissue section for years to come.





Decalcification

Bone specimens as well as calcified tissues are the

- The calcium must be removed before embedding to allow sectioning.
- A variety of reagents have been used to decalcify tissue such as mineral acids, organic acids, EDTA, and electrolysis.

Strong mineral acids such as nitric and hydrochloric acids

- Strong acids will remove large quantities of calcium at a rapid rate, but they will cause damage of cellular morphology.

Organic acids such as acetic and formic acid.

- However, they act more slowly on dense cortical bone.
- EDTA can remove calcium safely, it works slowly, it penetrates tissue poorly, but it is expensive in large amounts.

*Questions

- What is the staining method for frozen sections?
- What is a frozen section?
- How to prepare frozen sections?

References

- [1] Bancroft JD, Gamble M. Theory and Practice of Histological Techniques. 7th ed. Churchill Livingstone; 2013.

- [2] Rosai J. Rosai and Ackerman's Surgical Pathology.

Any questons?