

Aim:- To embed and prepare a paraffin block of the tissue section.

Material required:-

1. paraffin wax
2. Wax heater
3. moulds
4. forceps.

Embedding is the orientation of tissue in melted paraffin wax which when solidified provides a firm medium which integrates all parts together.

procedure:-

1. Leuckhardt's L pieces are arranged on a glass surface in the form to produce a tissue block of appropriate size.

2. Molten paraffin wax is dispensed into the mould to depth more than adequate to cover the thickest tissue block.

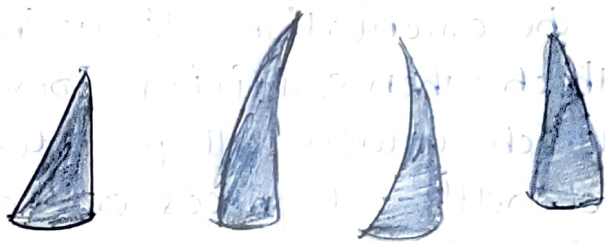
3. When a thin film of solid wax has formed on the base of the mould, the tissue is introduced with warmed forceps gently pressing the tissue.

4. As soon as a film of semisolid wax has formed on the surface, the whole block may be submerged beneath cold water to hasten solidification of the wax. This reduces the tendency of large crystal formation in wax.

5. Once solidification is complete the block may be removed from the mould.

Result:-

The block is ready for trimming.



Wedge

plano
concave

Biconcave

Tooled edge:

Aim:- To sharpen microtome knives.

Requirements :-

1. Microtome knife
2. Stone/Glass plate
3. Abrasive powder
4. Lubricant
5. Strop.

Knives can be divided into four basic profiles.

- a. Wedge
- b. Planoconcave
- c. Biconcave
- d. Tool edge.

The wedge profile type is the most common

knife used in microtomy. Sharpening of Knives may be carried by manual means or on automated machines. Knife sharpening is carried out in two.

1. Honing
2. Stropping.

Honing:-

1. Good quality of stones such as the yellow Belgian and Belgian black vein are the finest available.

2. Synthetic slabs like Corundum are also used.

3. A liquid medium for sharpening with hone is necessary.

4. Lubricants act as coolants; allow fine metal particles to flow away from the knife and fresh abrasive particles to contact the knife edge.

5. Lubricants commonly used are household oil, mineral oil, Vegetable oil, Soap solution.

procedure 1. Before commencing sharpening the edge should be examined under a microscope. Any gross irregularities in the edge should be visible in the horizontal position, while in the vertical position.

2. The stone or glass plate to be used as the manual sharpening surface must be positioned on a non-slippery surface on a firm bench.
3. The surface may then be charged lightly with the chosen abrasive powder.
4. The action of the sharpening is given in Fig. While honing the knife should be kept flat held to the hone.
5. The change over to the return stroke is done by rocking and sliding the knife on its back, never on its edge. Any drying of the hone must be prevented by the addition of fresh lubricant.

Stropping:- The edge should be finished on a leather or linen strip to remove the microscopic knife serrations caused by sharpening method.

1. The hanging strip
2. Saddle back strip, a strip stretched across a heavy frame and made taut.
3. Block strip a strip mounted on felt padded wood block.

procedure:-

1. Traces of lubricant and debris must be removed with a cloth moistened with xylene.
2. Stropping should be performed so that areas of the knife-edge are exposed to the strop surface equally, if possible.
3. The movement of the knife from toe to heel for 8-12 times.
4. Excess stropping will round the edge dull the knife.

Care of the Knife

1. The knife should be cleaned after each use by removing the accumulated paraffin and sediment with a piece of gauze soaked in xylene.
2. The knife should be stored in a cool place in its own case.

Result

A sharpened knife is ready for cutting section.

