A METHOD OF OBTAINING UNIPLANAR SECTIONS WITH THE ORDINARY ROCKING MICROTOME.

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The greatest disadvantage of the ordinary Cambridge Rocking Microtome has always been that its sections, instead of being uniplanar, are segments of a cylinder.

If the piece of tissue to be cut is a large thin slice, having an area, for instance, of a square inch, and embedded on the flat, its peripheral part may be entirely sliced away before the knife begins to cut the central portion of the tissue, and it may thus be quite impossible to obtain a section of the whole area of the piece embedded.

Where the piece of tissue is thick enough to be 'turned' by the knife to a smooth convexity before its edges are entirely shaved through, a complete section of the whole area of the piece is obtainable. But the section is so far from being uniplanar if the piece is a large one that a serious distortion is introduced which may obscure the relations and introduce fallacies in the interpretation of the microscopic appearances.

These disadvantages have been remedied in the recently introduced rocking microtome, in which the axis of rotation of the rocking arm is at right angles to the edge of the razor, instead of lying parallel to it as in the ordinary 'Cambridge Rocker.'

Since, however, for many workers the latter may be the only microtome available, it seems worthwhile to describe a way of obtaining with this type of microtome uniplanar sections of large area. I have not seen the method described, though doubtless such a simple device may have occurred to many.

It essentially consists in embedding the slice of tissue to be cut on a cylindrical surface, corresponding to the curve described by the rocking arm of the microtome.

A squared block of paraffin, sufficiently large to contain the
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due to the tissue to be cut, is fixed on the rocking arm, with its
centre truly in the axis of the arm, with its upper edge
horizontal, and with its free surface forming a plane at right
angles to the axis of the arm. These points can be judged
with sufficient accuracy by the eye.

This pattern-block is now cut in the ordinary way until its
cut surface has acquired the convex cylindrical form, and
complete sections of it are being cut by the razor. It is now
dismounted, covered with thin tinfoil, and surrounded by a pro-
jecting rim of stamp-paper. A mould with a convex cylindrical
floor is thus produced, and into this plaster of Paris is poured
as it stands on a level surface.

When the plaster has set, it forms a square or oblong block
with one concave cylindrical surface. Tinfoil is swagged down
upon this surface, and the edges of the block surrounded
by a rim of stamp-paper. The embedding mould is now
ready.

The slice of tissue used is very thin, say not more than
$\frac{1}{8}$-inch thick, for two reasons. First, since the sections are
uniplanar, very much thinner pieces may be used, which is one
great advantage of this method. Secondly, unless the piece of
tissue is thin, it does not adapt itself properly to the concave
floor of the embedding mould.

During the process of embedding it is necessary to hold down
the slice of tissue with hot needles until the paraffin has set
sufficiently to hold it in its curved position on the floor of the
mould. While the paraffin is cooling, the mould must of
course stand on a horizontal surface.

The paraffin block thus obtained must be detached from the
mould and fixed truly on the rocking-arm, in a position exactly
corresponding to that of the pattern-block from which the
mould was made. The razor will at once commence to cut
complete sections of the curved surface of the block.

The method is much simpler than it sounds in description,
and when once the plaster mould is made, takes no more time
than $\frac{1}{4}$ embedding on a flat surface. In this way I have
obtained uniplanar sections from blocks $1\frac{1}{4}$-inch in diameter
without difficulty.

I cannot conclude without expressing my belief that the
habitual use of sections of large area, in which the naked-eye relations of the parts could be easily traced, would be of great advantage in pathology. With the small sections at present generally used, the view of the pathological condition obtained may be compared to that of the interior of the bladder given by a single endoscopic field. The same thing is probably true in normal histology.