

PREPARATION OF MICROSCOPICAL MOUNTS OF VEGETABLE TEXTILE FIBERS.

BY ROMYN HITCHCOCK.

The method of mounting vegetable textile fibers here described has been adopted in the National Museum with perfect success. The permanent preparations leave nothing to be desired, for they clearly reveal the minute structure of the fibers, and their appearance does not change with time. Possibly the coarser fibers, after a few months, become rather more transparent than at first, but this change is so slight that it is of no consequence. Moreover, the process is simple, rapid and sure, even in the hands of a novice. In evidence of this statement it may be said, that Mr. H. English, a young man who had never made a microscopical mount before, in the summer of 1884 made one hundred and seventeen preparations of fibres in fluid mounts, from printed instructions, precisely as described below, having seen the operations performed two or three times by an experienced mounter, yet not one of his preparations has shown an imperfection up to the present time.*

The method is as follows: The fibers are cleaned, disintegrated, and prepared precisely as for microscopical investigation, the object being to make the mounted specimens resemble in every respect the freshly prepared fibers. The specimens for mounting are selected to show the variations in the size of the fibers, and the form of their ends. They are then placed in the mounting medium. This may be water without any addition, which is the medium most generally appropriate, or a mixture of water and glycerine in equal parts, which is to be recommended for the coarser and more opaque varieties.

The glass slips are prepared in advance by running upon them a thin ring of clear shellac in alcohol just large enough to receive the cover-glass. This is done on a turn-table, in the usual way. When this ring is thoroughly dry the mounting may be proceeded with. First put the slide again on the turn-table and run a fresh coat of shellac over the ring. Then, immediately or after a couple of minutes, put a large drop of the mounting fluid into the cell, transfer to it the specimen selected

*All of Mr. English's preparations are still perfect in 1889; five years after they were made.

for mounting, which must be already permeated with the fluid, apply the cover-glass and press out the superfluous fluid. Press down the cover until the edge comes in contact all around with the fresh shellac, absorbing the liquid that is forced out with blotting-paper. The slide may then be set aside for a few moments, when the cover will be well fixed and the moisture outside will be dried off, or, in case the mounting medium contained glycerine, the slide should be well washed with a stream of water from a wash-bottle. A fresh ring of shellac is then applied to secure the cover-glass and prevent any possible defect in the sealing. The preparation will now keep indefinitely if it is set aside and not handled roughly.

To insure permanent preservation a mixture of equal parts of gold-size and asphalt varnish or Brunswick black is applied over the shellac. One or more coats of this very durable and elastic varnish will protect the more brittle shellac and give a good finish to the mounts.

A more elegant finish is finally applied, consisting of a single coat of Brunswick black alone.

Finally, the slide is labeled, and the number on the label is the number of the original specimen in the Museum register.