

## Manual Training Department.

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### Raffia Work at the N. B. Normal School.

This winter the Manual Training Teachers of the Normal School have watched with interest the raffia work done in Miss Harvey's room (Grades III and IV) of the Model School. More work than in previous years has also been given to the normal students. Perhaps what was learned from the work of these classes may be of interest to the readers of the REVIEW.

First of all, as to the experiences with the material. Raffia strands vary exceedingly, and it was found that if the wide strands were used in winding, as in such exercises as a napkin ring or a circular frame, the work was very apt to be uneven, and gave the idea that too much raffia had been used. To overcome this difficulty the wide strands were split into two or sometimes three pieces. If a strand about half an inch in width is used, it is much easier to obtain good work. The disadvantage of a narrow strand is that it dries quickly in using. But this can be remedied by the occasional use of a wet sponge.

Raffia, when drying, shrinks in width, and often splits and shows the foundation. To avoid this, after the cardboard is once covered, it is best to go over it again, being careful to have each turn smooth and flat, and each overlapping the other a little.

The direction of the windings is also important. In the napkin ring they should not be in the smallest degree spiral, but perfectly vertical when the napkin ring cylinder stands on end. In joining the strands the knots must be kept inside the ring and well away from the edges. In winding a circular frame each strand must lie on the cardboard foundation in a radial direction.

The winding in a circular frame gives a splendid opportunity to impress the terms radius and diameter.

In the lower grades all geometrical terms should be learned through the medium of hand work. They are then applied to something concrete, and can be more easily remembered by the child.

In the making of braid for the decoration of simple exercises, the teacher who is beginning raffia with her class will find several points where attention is required. In order to have an even braid, two pieces of raffia should be used in each

strand, the large end of one being placed by the small end of the other. The six are then tied together and fastened firmly to the desk by a pin; or one child may hold the strands for another until the braid is long enough to tie around the iron work of the desk. For those pupils who do not know how to braid, directions must be given, as "Put the right hand strand over the centre one." Sometimes it is advisable to let one child show another.

It is a mistake to give little children long strands to braid. If the pieces of raffia are long, it is much better to double them. It is also important to start with strands of different lengths, so as to avoid having all the splicing together. In splicing or joining a strand, the new piece of raffia should be laid alongside of the old, and both old and new laid in together for several turns, when the short, protruding ends may be cut off.

Stitches used in sewing may be learned in connection with raffia work. The "over and over" stitch or the button-hole stitch is often used as a decoration for an edge, or for joining two edges, as in the making of a box. Instead of the ordinary needle and thread, a coarse rug or tapestry needle is threaded with a strand of raffia.

Work with raffia is fascinating; it develops considerable skill in the use of the fingers; it teaches patience and perseverance, and gives to the worker the joy that comes from work well done. B.

### Common Methods of Sawing Lumber

All trees are formed of layers in concentric circles. These circles or rings, the growth of wood for one year, are made up of the wood formed during the growing season. In many trees the difference between the formation of these parts of an annual ring is very marked,—the one consisting of a layer of dense, solid wood, while the other is more open or porous; and it is this difference between the spring and later season's growth which produces some of the different forms of grain which renders many of our woods so beautiful when finished. This is especially noticeable in our black ash, oak, etc.

Fig. 1 shows the transverse section of a log with vertical lines representing saw-cuts, by which the log is reduced to boards. The two outside cuts, B B, are known as slabs, while the boards marked C, C show a very noticeable figure of grain, and are therefore very readily chosen when the wood