

at any given corner of the "forty," say the south-east, a flag is placed at the centre of the first small square, each edge of which will then be 55 yards from the flag, and can be easily located by eye measurement, or by pacing. The estimator then goes through the timber on the square, records his estimate, returns to his flag, and goes on to the remaining squares in the order indicated by the diagram, which you see on the wall here.

Having determined the amount of merchantable timber, it is a good plan to prepare on transparent tracing cloth a map showing its location and the character of the growth. Such a map can be laid over the one showing the topographical features of the tract, and thus show at a glance the relations between the two. Furthermore, we may represent on the tracing cloth the extent and location of each year's cutting, and thus have a complete record of the work done from the beginning.

THE DOMINION FOREST SURVEY, OR STRIP METHOD.

When it is necessary to get an accurate estimate of the amount of timber on a very large tract of land, and also to obtain a clear notion of its topography for mapping purposes, the most satisfactory method is to run parallel strips across it every quarter of a mile. Strips $\frac{1}{4}$ of a mile apart and 4 rods wide cover 5% of the tract. If only $2\frac{1}{2}\%$ is required they may be placed half a mile apart, or else made only 2 rods wide. The advantages of the strip method are (1) It gives data which enables us to show the topography of the region; (2) It enables us to map the distribution of the different forest types; (3) It gives a good average of all the timber on the tract, and (4), when combined with studies in volume, it enables us to predict the growth per acre per year in cubic feet, cords, board feet, or any other desired unit of measurement.

During the last three years this method has been used by the Dominion Forest Survey parties sent out to the Forest Reserves in Manitoba for the purpose of getting accurate information regarding the topography, distribution of forest types, kind, location, amount and condition of the standing timber, to make studies of the rate at which it is growing, to study the amount and character of the reproduction, note the effect of the forests upon stream flow, devise means for protecting them against fire and timber thieves, and other matters necessary to know if they are to be put under proper management and preserved from absolute destruction. During the past summer I had charge of a party of 12 men collecting information of this sort in some of the unsurveyed townships along the eastern side of the Riding Mountain Reserve, in north-western Manitoba. This reserve contains over a million acres, nearly half of which have been burned over in recent years. The timber remaining consists of aspen, "balm," or balsam