

points remote from ceiling shafts. Also any heavy gases that have settled to the floor are best got rid of by this means.

The *sub-earth duct* is to be recommended for winter stabling, but is less desirable in summer. In summer the outside air after passing through the underground duct rises in relative humidity, and becomes somewhat damp. Where summer stabling is practised, the sub-earth duct may be an undesirable feature.

IMPROVED VENTILATION OF FARM STABLES AT THE COLLEGE.

When the present barn and stables at the College were built, a system of ventilation was devised and put into operation. The plan included three large louvred ventilators on the roof, connected with 10 boxes 2 ft. by 1 ft. passing down through the barn to the ceiling of the stable below. These ten boxes, 20 square feet of space in all, were intended as outlets, no inlets for fresh air being provided. It was found, especially in the winter, as a consequence of lack of inlets, that the outlet pipes were frequently converted into inlets, and cold, disagreeable down drafts were felt coming from the ceiling openings. Also, when the pipes consented to act as outlets, they returned part of their cargo in the form of condensed moisture, and there was a constant dripping. The result was, the outlets were kept stuffed with straw in the winter, and there was no ventilation.

The improved plan was built in the summer of 1901, and combined the two schemes represented in Figs. 9 and 10 above. Where possible, the air was carried to the floor of the stable, and distributed as in Fig. 9. In certain parts of the stable, however, it was impracticable to lay boxes along the floor; in such cases the air was distributed as in Fig. 10.

Prof. Day's report on the working of the scheme is appended. The report was written on Feb. 14th, 1902:—"The system of ventilation put in last autumn has been in operation about three and one-half months, so that we are in a position to judge of its efficiency. Unfortunately, our carpenter had not time to finish the work, and there are several important details yet to attend to. Chief among these are the outlets for foul air, which we purpose locating at intervals along the walls of the stable. They were to consist of shafts running from near the floor of the stable to the ceiling, and out through the side of the barn just above the stone wall of the basement. Each shaft was to have an opening at the floor and also one at the ceiling, the one at the ceiling having a trap door so that it could be opened and closed at will. In mild weather the upper outlets would be opened, but in very cold weather these would be closed, and only the colder air from the floor would be removed. In this way the temperature of the stable would be well under control. At present we have simply the original straight ventilating shafts running from the ceiling up through the centre of the barn to the roof. In very cold weather these shafts carry off the warm air too rapidly and we are forced to almost close the inlets to prevent freezing.