

- of not less than 1 in. to 2 chains, and must be prepared by or under the supervision of a surveyor possessing the prescribed qualifications; and the manager shall, whenever requested by any Inspector, accurately mark on such plan the progress of the workings of the mine, with the ventilation thereof clearly shown up to the time of such request, and shall allow such Inspector to examine and take a copy or tracing thereof.
- (2.) That power be given the Inspectors to require that all mechanical ventilation appliances be run constantly, or for such time as he thinks necessary, in all cases where he considers the condition of the mines require it, either for ventilation or reduction of temperature; and in all cases that such ventilation appliances be started and continuously run to their usual capacity for two hours before men start to work in the mine.
- (3.) The Inspector shall have power to order, if he considers it advisable, that, for the improvement of ventilation—
- (a.) All rises be put up on the three-compartment or box system :
- (b.) Two distinct air-passes, of dimensions specified by him, shall be carried up in all stopes, and maintained solely for ventilation :
- (c.) That the height of rises be limited to a height specified by him.

#### COAL-MINES.

Special attention has been devoted by us to the ventilation of coal-mines, and it is gratifying to state that we found that the majority of the collieries of the Dominion were well ventilated. To a certain extent this opinion is substantiated by the fact that during the past fifteen years only one life has been lost as the result of an explosion of firedamp.

The principal defect noticed by us was inadequate distribution of the air by splitting, the insufficient use of air-stoppings and brattice, and the installation of fans of insufficient power in case of extension of the workings or during emergency. At all collieries but those of insignificant proportions ventilation is produced by fans of modern type, thirty fans being at present installed, the type most favoured being the "Sirocco," "Waddle," "Sturtevant," and "Hayes."

#### *Existing Standard of Ventilation.*

The following is the statutory general rule for ventilation of coal-mines in New Zealand, as prescribed by subsection (1) of section 40 of the Coal-mines Act, 1908 :—

Ventilation shall be constantly maintained in every mine at the rate of not less than one hundred and fifty cubic feet of air per minute for every person, and six hundred cubic feet of air per minute for every horse or other animal while employed underground: Provided that where the Inspector is satisfied that such rate is insufficient to provide adequate ventilation he may from time to time require the rate to be increased to such extent as he thinks reasonable, either throughout the underground workings or in any specified part thereof.

As in the provision regarding the ventilation of metal-mines, it will be seen that a quantity standard for coal-mines only is provided for, and too much is left to the discretion of the Inspector to determine the adequacy or otherwise of the ventilation. Many of our remarks as to the quantity and quality standards of ventilation in metal-mines are equally applicable to collieries, so we shall not reiterate them. We believe it premature to recommend a temperature standard at the present stage of coal-mining in this Dominion. Owing to the shallow depth of the coal-seams high temperatures or extreme humidity do not occur.

We have the honour to recommend that the following standard of ventilation for coal-mines be substituted for the provision at present in the Coal-mines Act, 1908 :—