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## The Rutherford System of Ventilation <br> F, E, Elis, Editor, Farm and Dairy

STABLE ventilation is no longer a fad. By real good dairy farmers it is considered a necessity. Recently I was browsing through an address once given by Dr . J. G. Rutherford before the Agricultural Committee before the House of Commons, and discovered an illustration used by the doctor that explains so thoroughly the necessity of ventilation in cold weather (for everyone recognizes the need of ventilation in hot weather) that I herewith reproduce one paragraph for consideration.
"A great many dairymen and a great many cattle breeders," said Dr. Rutherford, "think that unless they can keep the stable at 60 degrees or 20 degrees in any weather they are going to be heavy losers, the dairymen in the flow of milk obtained and tho cattle man in the fles') forming proclivities of the animal. Well, this room here is a very large and a very lofty room, and it is very much betlefty room, and than the ordinary. ter construcled than is to say there are fewerordinary That is to say there are feweroranary
apertures, unintentional apertures, than would be found in the average stable. I would like to ask any mem ber of this committee, Mr. Chairman, what sort of an atmosphere be would whe breathing if he formed one of a sufficient number of men put into this sufficient number of men put into this room on a winter day when the thermometer was in the neighborhood of zero without artificial heat of any kind to maintain the temperature of this room at 70 degrees. Now, that is exactly what is happening in the ordinary stable. It is nothing unusual when the thermometer is away below zero to find stables, without artificial heat whatever, at a temperature of 70 degrees."

CONDITIONB THAT TEND TO DABRASR $=$ Doesn't Dr. Rutherford's simile picture the situation nicely The animals in a stable maintained at 70 degrees in very cold weather are breathing and re-breathing an atmosphere that for foulness is absolutely indescribable. We may not notice it because many of us consid atr cold air as pure air, whereas cold air
may be fouler than warm air that in may be fouler than warm air that in
the same condition would be unbearable. The dairyman who insists in keeping his stable at the same temperature as the living rooms of his house is considering more carefully his own comfort than the comfort of
his cows. Carefut experiments have his cows. Carefut experiments have with a temperature of 55 degrees and pure air than with 70 degrees and foul air. The doctor went further than the enunciation of a principle. He invented a system of ventilation that now bears his name and which is meeting with more ready adoption in Canada than the old-time King system.

The most noticeable difference be-
tween the Rutherford and King systems of ventilation is the position of the foul air vent. Prof. Kiyg warked on the theory that as air becomes foul it becomes heavy and hence the vent must open at or near the floor. This deduction is correct where a roor is artificially heated. Then the wann air from the stove or register rises immediately to the top of the room and gradually filters down. In the case of a stable, however, the cow herself is the heater and the exhalations of warm air from her noshalations rise to the ceiling. Hence Dr. Rutherford has locaied the opening to the fout air vent overhead.
As the foul air leaves the stable a partial vacuum is created and provision must be made to draw in pure air from anoth:- source, or the ven-

## Farm and Dairy's Referendum <br> The results of the Farm and Dairy Referenduin on questions of national importance are published on pase 17 of this week's issme. ou pase 1 y of this week's tsene. Bight hundred and seventy of Our Bight hundred and seventy of our Foiks voted, and ail progressive Folks voted, and all progrestive measures were backed by substan: measures were backed by substary tial malorities. Farm and Dairy tial maloritict. regards the results of this, one of the first Referendums of its kind ever held in Canada, as still fur- ther groot of the fact that farmers ther proot of the fact that farmers are now thinking independents Look up the results on page 17 . <br> $8^{\text {Lon }}$

tilating flue will not perform its true function. In the Rutherford system these inlets are located at or near the floor. A box is built outside of the stable and chis connects in a U form going down below the foundation and up through the floor inside to the stable. A modified system of this often used is to have an opening through the wall of the stable nea the floor, with a box with the ends knocked out covering both the in side and the outside of the opening side and the outside of this box prevents direct draughts.
The beauty of the Rutherford sys em is its ease of operation. In col weather the same free circulation can not be permitted as in warm weather as the difference between the outsid and the inside temperatures woul and the insiace a draught and the induce too rapid a ctually more pur cattle would get actuang nore pur air than would pass through the same system on a warmer day. Conse system on essential part of the Ru therford system is the back draugh or damper in the foul air vent. Thi damper can be controlled by cord and the carculation of the stab and thus the circuat ine herdsmen. $\$$ under control of the herdsmen.
It is not necessary to cover the takes. Cold air cannot rush into stable unless the warm air has opportunity to rush out. Hence whe the damper in the warm ais vent closed the fresh air vents become in
(Ooncluded on page 6)
(Concluded on page 6)

FINE farm
featured such as Farm a the farm income to the farmers' built to satisfy which he and hi

A home, beau the shade of 8 with vines, a w the rend, wher trusions by the yard that is ca with flowers-st farm women thr inside of the made their drea model kitchen for doing the $m$ the sink are ta at a turn of the ped, also const In short, we fin past, have mad try girls that t heavily to rur thers.

The farmer $h$ some day build But he also has When finances are the models his wife is plan

