

the ground only dries by evaporation. According to Professor Kedzie, "To evaporate one pound of water consumes enough heat to raise the temperature of five and one-half pounds of water from freezing to boiling point;" or, to vary the illustration, "Suppose that a tile drain discharges constantly for one day a stream of water whose cross section is one square inch, and velocity two and one-half miles an hour, *this one day's drainage would save the heat equivalent to nearly six tons of coal.*"

Further, we must remember that barns are usually warm; this warmth causes a current of air upwards, so that this damp, chilly air is drawn up into the barn above, where it does the most harm. In referring to this condition Professor Kedzie forcibly remarks: \* "The evaporation of so much water renders the air over such a soil damp and chilly. This result is a physical necessity. This damp and chilly atmosphere has a more serious result than the simple feeling of discomfort. It has a most depressing influence on the human system, lowering its tone, enfeebling the vital powers, and acting as the predisposing cause of a long list of diseases, some of them the most destructive and incurable known to the medical profession. The depressing influence of the dampness and chilliness of a water-soaked soil is not to be compared to the effect of an occasional wetting, as when we are caught in a shower; the chilly dampness of the undrained soil is persistent and unremitting, dragging us down with its cold fingers at all hours, at

'noon of day, and noon of night,' as if we toiled and rested, waked and slept in a perpetual drizzle of cold rain. It may seem a small force at first, but its persistent, untiring and relentless pull tells upon the strongest at last like the invisible fingers of gravity, which finally drag down all to a common level. This depressing influence is not developed suddenly and distinctly; but silently and secretly the sapping and mining go on till the explosion comes in sickness, suffering, and the sleep that is eternal."

If it is necessary to have cellars, then it is most essential that they should be well drained, well lighted and well ventilated; and the manure, instead of being dumped into the cellar, should be carried some distance from the buildings. Care should also be taken that the well is not situated so as to receive the surface drainage. Too often the well is situated in or near the barn-yard, and I have known cases where, through either ignorance or carelessness, the cows were watered from a puddle or hollow near the barn, into which the surface water from the barn-yard drained.

Light is another essential that is almost entirely neglected. Good light is just as essential to the health of the "higher animals as it is to plant life." We ordinarily get too much in the habit of viewing light in barns, as being simply for the purpose of enabling us to see what we are doing. Light, however, has a direct bearing on the health of the body, and an even more direct influence on the causation of this special disease under consideration. Light is especially

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\* New Hampshire Board of Health Report.