

Fresh Water.—By this we do not mean *cold* water, for probably it would be better in summer, and certainly it would be better in winter, that the water should not be cold enough to produce a chill. It is most important to provide water that is free from organic impurities, and untainted by the drainings of barn-yard and dung heaps. It would be better, if it can be so arranged, that suitable water should be always within reach of the cattle. There need be no fear of their abusing their privilege and drinking immoderately, and we should guard against the possibility of their wants being occasionally forgotten.

Pure Air in Stables.—Hardly second in importance even to nutritious food is an abundant supply of pure air, at all times and seasons. Animals kept in ill-ventilated stables, in which the air is impregnated with the carbonic acid from the breath, and ammonia from the droppings, can neither make the best use of the food that is given them, nor preserve their bodies in rugged health.

It is impossible that there should not be always, even in the best-regulated stables, more or less ammonia and more or less offensive odor. All that we can do is to overcome the ill-effect of these, by providing an abundant supply of pure air from out of doors to dilute and dissipate them.

While this supply of fresh air is a matter of absolute necessity, it is hardly less important to guard against strong currents blowing directly across the animals, especially in cold weather. There are many ways in which stables may be ventilated without subjecting their inmates to draughts. Those plans are the best which cause the vitiated air to escape from near the floor and admit fresh air from above, but at such distance from the animals that its current will be diffused before it reaches them.

It is a well-established principle in cross-breeding, not only with cows, but with all domestic animals, from horses to poultry, that the purity of blood should be on the side of the sire; and by a proper observance of this principle we may, within two or three generations, bring the general characteristics of our herds to a tolerably close conformity with the thoroughbred standard. The physiological reason for this influence is supposed to be, that, by a long course of careful breeding, certain desirable qualities have become so established in the race,—such a “fixity of type” has been created,—that the pure blood, crossed with animals of less marked peculiarities, has, so to speak, a greater impetus, and exercises a more powerful influence over the progeny. A dozen native cows of varying form, color, and quality, crossed with a pure Devon bull, would produce calves possessing very generally the characteristics of the Devon race; and after the second or third generation reversals to the common type would be comparatively rare.

POULTRY MANURE.—The droppings of poultry deserve especial consideration, as the richest, most concentrated, and most active of all manures produced on the farm.

This superiority arises from two causes. Fowls live on the most concentrated, the richest food—mainly seeds and insects, and they void their solid and liquid excrement together, or rather, the urine is solid, combined with the evacuations of the bowels, or Jung, and the whole is of uniform quality and of great richness. Under the best circumstances (when dry) it is often nearly equal to Peruvian guano, which is worth \$85 per ton.

It has been stated that on land that is naturally good, but exhausted by cultivation, the excrement of a given number of fowls will produce enough *extra* corn to feed them for a whole year.

As a very large part of the manure of birds is already soluble, it is very much reduced in value by exposure to the rain; while, if it accumulates in too large quantities,—remaining damp,—its decomposition is very rapid, and very exhausting, inasmuch as it does not, like coarse stable manure, contain a large amount of carbonaceous matter, capable of assuming an absorbent form on its decay. When ammonia is formed by the decomposition of this manure, it is much more free to escape than when formed in a heap of the droppings of the stable.

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