THE GLEANER:

AND NORTHUMBERLAND, KENT, GLOUCESTER AND RESTIGOUCHE

COMMERCIAL AND AGRICULTURAL JOURNAL.

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Agricultural Journal.

From the Canada Farmer and Mechanic.

VENTILATION—COMBUSTION—DECOMPOSITION.

Ventilation is the art of supplying by artificial means, the required quantity of oxygen for respiration, &c. This is to be accomplished by the air containing oxygen forced into the space requiring it, by means of blowing machines, worked by steam or other power; thus keeping up the supply of fresh air as fast as it becomes deprived of its oxygen. By this method we do not supply oxyen to that part of the air from which the oxygen has been withdrawn by respiration—that portion still remains deprived of its oxygen—it is, therefore necessary to remove it, in order to make room for the pure air. This is accomplished by making an outlet for the air at the opposite extremity of the space to be ventilated, to that at which the air enters. Another method depends upon the fact, that air when heated, is rendered lighter, and has a tendency to ascend. To ventilate a space upon this principle, all that is necessary is that the air should have a means of entering at one extremity and that at the other extremity it should be heated by means of a furnace, constructed in such a manner as to heat the air as much as possible with the smallest quantity of fuel. The more air is heated, the greater will be the quantity of air that will enter in a given time, into the space required to be ventilated. It is on this principle that some of the largest mines in England are ventilated. They have two shafts, down one of which the air enters, and is directed along the different galleries, by means of doors properly arranged until it arrives at the other shaft, up which it is caused to ascend by a large furnace placed at the top. In this manner galleries, seven miles in length, have been perfectly ventilated by means of a single furnace.

In the construction of furnaces, the object to be attained, is the perfect combustion of the fuel. Now, this can only be arrived at by such an arrangement as will admit of every part of the fuel receiving a sufficient quantity of oxygen, for converting it into carbonic acid and water. If the supply of oxygen is sufficient, no fuel escapes from the funnel or shaft unconsumed. When, therefore, we observed the dense black smoke emitted from some of our factories, &c., we may well express surprise that men, clever in all things, should allow such slur upon their ingenuity to exist. There are however, many circumstances in the way of improvement in this particular, which render this subject one of considerable difficulty, viz.—the want of knowledge, for it is obvious that a furnace requires more oxygen at one moment than at another; also that when fresh coals are thrown in, the supply of oxygen is required over or above the fuel, in order to unite with the volatile matters of the coal; at other times the supply of oxygen is required below, or through the fuel. It is impossible to make a furnace self acting in these particulars, and these are points seldom attended to. The remedy lies with the firemen; when they are properly instructed, the smoke nuisance will no longer exist.

It may be enquired,—if we, and all animals, constantly converting a portion of the atmosphere, into carbonic acid, and if all furnaces and fires, and even common candles or lamps, are also converting other portions of this oxygen into the same carbonic acid, how does it come to pass that the quantity of oxygen in the atmosphere is not so much diminished as to render it unfit for respiration?

Oxygen consumed by respiration and combustion, is converted into carbonic acid and water; now plants decompose both carbonic acid acid and water—converting the carbon of the one, and the hydrogen of the other, into their own substance, and give back to the atmosphere in a free state, oxygen previously combined with these. In this manner a constant and uniform supply of oxygen is maintained in the atmosphere.

Oxygen is the cause of the decay or putrefaction of vegetable and animal matter. The oxygen unites with the carbon contained in those substances, to form carbonic acid, and with the hydrogen to form water; the nitrogen contained in animal matter unites, in some cases with the oxygen, to form nitric acid; in other instances the nitrogen unites with a portion of the hydrogen contained in the decaying substance to form ammonia—this it is which gives to stale meat its peculiar disagreeable smell. In this way Nature converts the solid matter of dead plants and of animals into gases, which becoming diffused throughout the atmosphere, serve as food for living plants, which again decompose these substances, taking from them what they require for their own increase, and giving back to the atmosphere the oxygen employed in the decaying process.

From the same.

OVERFEEDING HORSES.

It is one thing to give the horse enough to eat and another to overfeed him. A Scotch Journal contains a report of a conversation at a meeting of an Agricultural Society, on this subject.

"Professor Dick said he had been induced to come forward to offer a few remarks on the consequencee arising from injudicious feeding of horses, which, if made known, might be prevented, and much disease avoided. The horse was, by nature, always feeding. His stomach was small, and able only to contain small quantities at a time, and if it was gorged, disease was at once induced. He observed a gentleman, now in the room, who had in one year lost about a dozen horses from these causes. The horses were allowed to be indulged by servants with an extra pailful—the stomach was not enabled to act—digestion was suspended—and death was frequently produced in a few hours; if not, some other disease, such as acute founder, ensued. Now, all this might be prevented by a very slight attention to the practice of feeding. If horses were allowed to stop and feed twice-a-day, instead of being worked six hours and then allowed only one or at most two, hours in the forenoon to feed—or were the day divided into three portions—the digestive process would go on more readily. Even if no more time were allowed, the division of his feeds would be more in accordance with his nature; but when he is fatigued by long continued fasting and hard work, the powers become exhausted, and the natural processes do not go on with the same readiness; and rest and time are required. When a person is on a journey, and pressed for time, he frequently gives his horse some oatmeal and water instead of corn—forgetful that digestion must have time to be re-established and set going, otherwise disease is likely to arise in another form, and the stomach is often burst by the generation of gas from suspended digestion. But the greatest harm is done by overfeeding immediately after the day's work is over. After working hard all day, and returning to the stable in the evening, hungry and fatigued, the horse is indulged with a full allowance, which is placed before him at once; he overloads his stomach and indigestion takes place. All this occurs soon after the men have left the stable, and unless the noise he makes is heard by chance, he is found dead in the morning. After the day's work is over, instead of a pailful (which is the ordinary allowance) being given on their returning from their work, he would recommend only a quantity sufficient to take off the edge of the appetite, and in an hour and a half afterwards the rest of the feed. He would strongly recommend this plan to be adopted at all times, but especially at this season. A gentleman in the room to whom he had recommended this plan, who had previously lost many horses from indigestion and its consequences, has for several years subsequently scarcely lost any, and these only when, from some accidental cause, the proper precaution had not been taken. There was another circumstance which he wished to bring before the meeting. He would call the attention to the practice of giving horses food of an improper description. In the neighborhood of mills, husks were sold at a small price, and were mixed and boiled up as food for horses; this was always dangerous, and was the common cause of an accumulation of dust balls in the stomach and intestines. He called the attention of the meeting to specimens which he laid on the table. These balls were often found in large quantities. He exhibited four balls of large size taken by him from the same horse, and had seen half a dozen as large as those on the table taken from one horse, which must have been formed in about six weeks, as the horse had never tasted the kind of food until that period. This disease was most common in Scotland. In England, especially in the chalk districts, another form of concretion was found; there, instead of the dust, or as some call them, dung balls, calcarious concretions are found, specimens of which were shown. The progress of the disease was sometimes slow, at others very rapid—fresh coatings grew with fresh applications of the same food, and ultimately the passage through the intestines was generally stopped, causing inflamation and death; in other cases the balls remain stationary in size and situation, if the kind of feeding is withheld—He suggested the propriety of doing away with such food—it might be used for years without bad effects; but some accidental cause might produce a nucleus for the formation of a dust ball from the particles of barley or oats. Another circumstance, which he found to be attended with much evil, was giving roots, such as turnips, carrots and potatoes, without being washed. Some thought that these roots should not be cleaned at all—they believed that earth promoted digestion. Horses, no doubt, were sometimes fond of it; instinct taught them to eat earth when acidity existed in the stomach. They might however take too much; and though a remedy for a disease to a certain extent, it was not to be given when the disease did not exist.—He would, therefore, recommend that all roots, when given to animals, should be washed."

From the Pensylvania Cultivator.

TO DESTROY THE STRIPED BUG, &c.

To destroy striped bugs and other insects, a brood of fifteen or twenty chickens, in a small garden, will keep it free from the above named ravigers. The brood should be hatched about a week before the vines and plants comes up. The hen should be secured in a coop near the centre of the garden, with spaces for the chickens to go in and out; it would do you good to be up as soon as light, and see the little busy body's drawing the worms from the cabbage roots, or the bugs from their hiding places among the vines. I have used the above remedy for several years with complete success.

I am wintering 160 or more fowls, and intend to raise 12 or 1500 chickens, and I reckon bugs and worms won't trouble my garden much. I find fowls the most profitable stock on a farm; my hens have laid between nineteen and twenty hundred eggs (and that too without any fresh meat too feed on) since the first of December up to this date. A gentleman from Fort Edward, that was wintering 5 to 600 fowls, called, in my absence, to buy eggs for his own family use; was it not laughable? I have kept an account with my fowls, and find myself in debt to them. The more I feed, and the more pains I take to pay them, the more I get in debt; and finally, after three or four years, I find myself so involved, that I kill off my creditors, and send them to the city to be dissected.

S. O. Chafis.

Chemistry is the key which unlocks the great laboratory of nature, and shows us how she performs her complicated processes, and produces all her wonderful phenomena.

From the Agricultural Gazette.

THE SHEEP IN ITS VARIOUS FORMS.

Wise men regard with suspicious eye the assertions of those who profess to accomplish a variety of dissimilar effects by a single cause. It is customary to be jealous of the pretensions of "Universal Restorative," "Heal All," or any other panacea warranted to cure diseases of all origins. And the proposal *to adopt one breed of sheep to all circumstances* of food, climate and situation, making it answer all the purposes for which sheep are usually employed seems justly to meet with similar distrust and suspicion.

From the varied habits of sheep, the widely different circumstances in which they are placed, and the opposite results which the several kinds are intended to produce, we are at once led to doubt the practicability and value of the scheme.—We are induced still further to view the proposition as contrary to the order of Nature, when we consider the fact that there is scarcely any animal which appears under so many forms as the sheep. In Persia and other parts of the east it is found with a tail of twenty pounds weight; at the Cape of Good Hope the tail is worth as much as the carcass; there and in other paris of Africa the sheep have clusters of horns to the number of five or six; in Madagascar the same horns and tails are to be seen, the ears hanging down like those of a hound; about Auregabad, between Agra and Bengal, they are found without any horns at all, but so strong that, being bridled and saddled, they will carry children of ten or twelve years of age; the so-called sheep of Chili somewhat resemble camels, being hair-mouthed and hunch-backed, and they are used for carriage and field labor; those of China are small with short tails, which, however, are a lump of fat. Tercen, in his voyage to Surat, mentions sheep with bent snouts and pendent ears, with wool more coarse and stiff than goat's hair; in Africa, to the north of the Cape of Good Hope, they never eat grass, only succulent plants and shrubs; in Thibet the sheep have large broad tails; in Natolia these tails are laid in carts on wheels; in Anspach, in Germany, a small sort exist that are shorn twice a year, and also lamb every spring and autumn; in Juliers and Cleves, also, they are said to lamb twice a year, and bring two or three at a time—five sheep have brought twenty five lambs in a year; on the slave coast of Africa, the sheep have no wool, "but," says the old Dutch traveller, Bosman, "the want is supplied with hair, so that here the world seems inverted, for the sheep are hairy and the men are woolly"—this hair forms a sort of mane, like that of the lion, on the neck, and the same on the rump, with a bunch at the end of the tail; the Javanese sheep have tails weighing occasionally forty or fifty pounds, having a coat of red and white hair; four-horned sheep are numerous in several parts of Tartary, and a few have six horns, with wattles under the throat.

From the Albany Cultivator.

THE GLANDERS.

While writing, I will mention a fact for your veterinary department. More than thirty years since, the glanders, of the most virulent kind, was amongst the horses of the neighborhood in which my father lived. Great numbers died off.—His horse was taken, and under the belief that he also would die, my father commenced an experiment on him with a strong decoction of tobacco juice given internally. In a short time, the horse broke out all over his body in sores.—These cured up in a month or so, and the horse was sound, soon fatted, and was, as long as I knew him afterwards, a sound and healthy animal. This was the only horse in all the neighborhood that recovered. Some farmers in this vicinity, noted for fine, sleek horses, give occasionally Scotch snuff to their horses.

J. B. Cook.