

from the meat, that a sufficient quantity is not left to enable it to enter into putrefaction. In respect to this physical property of animal tissues, alcohol resembles the inorganic salts—it is capable of moistening, that is of penetrating animal tissues, and possesses such an affinity for water as to extract it from moist substances. Thus salt substances introduced into the stomach, extracts water from the organ, and a violent thirst ensues; alcohol, taken into the stomach, produces the same effect, violent thirst, and acts upon it in the same manner as salt.”

From these circumstances, it is obvious that water should not be used in curing beef or any other meat, as the use of salt appears to be, to extract moisture from meat in order to preserve it. The use of saltpetre is also condemned as injurious, and having a tendency to make the beef hard. A portion of sugar, mixed with the salt, when finally packing the beef into the casks or barrels, is better than the use of saltpetre. This is a subject of vast importance to Canadian Agriculture. We believe that a most profitable trade might be established between this country and England, in the articles of salted beef and pork. Canada is perfectly well adapted for producing the means of such a trade, if our lands and stock are properly managed. There is nothing in the climate or soil to prevent the raising and fattening of cattle and hogs for exportation, under judicious management; to a great extent, indeed, almost unlimited. It should be our object to instruct and encourage our farmers to produce the means for the trade. This sort of speculation would afford more certain benefit to the province generally, than any we are acquainted with. Let us augment the amount and value of our own productions, and we are sure to prosper.

#### LOUGHBOROUGH AGRICULTURAL ASSOCIATION.

The quarterly meeting of this Association was held in the Wellington room, at the Plough Inn, on Thursday, the 25th September. S. B. Wilde, Esq., presided; and Mr. J. N. H. Burrows occupied the vice-chair. After the cloth had been drawn, and the usual loyal toasts were given, as also the health of the President, C. Wm. Packe, Esq., M. P. —

The Chairman read the circular calling the meeting, in which it was announced that the subject for discussion was, “the fattening of cattle.”

Mr. Rawson, surgeon, of Kegworth, introduced the subject. He said, there were known to chemists about fifty-six elements, of which there were only eight or nine in animals; the principal of those were oxygen, hydrogen, nitrogen, and carbon. Oxygen enters into all animal and vegetable substances, and is an essential ingredient in atmospheric air. Nitrogen has no positive pro-

erties, its object is to dilute oxygen. No animal could live on nitrogen alone. Hydrogen is sixteen times lighter than common air, and is an essential ingredient in water, and very inflammable. After an elaborate description of the various elements which enter into the animal frame, the speaker proceeded to inform the meeting what were the various uses of each. Nitrogen, he said, was the principal ingredient in flesh and muscle. Fat is composed of carbon and hydrogen. If they wished to make an animal fat for sale, or for show, they must feed it on carbonaceous food. Unripe straw is very carbonaceous. As the seed ripens it becomes less so, and not so suitable for fattening. Cows generally feed well on aftermath. Half-a-pound of Swede turnips contains 110 grains of nutriment, while the same weight of white turnips only contains 85 grains. The outer temperature is very important; it should be brought as nearly as possible to the temperature of the blood. The same regard to temperature is necessary with respect to a milking cow. Fat is a mere deposit, a secretion; it does not impart strength, rather the contrary. Hence we do not make a horse fat for racing, but make him display muscular power. In fattening horses for sale, carbonaceous food, young grass, oil-cake, swede turnips, &c., should be given. In feeding for use, the carbonaceous should be mixed with an equal quantity of other kind of food.

The Chairman after eulogizing the able exposition of the subject they had just heard propounded, with thanks for it, proposed Mr. Rawson's health, which was drunk with applause, and Mr. R. acknowledged the compliment, and had great pleasure in proposing “the best interests of the Agriculturists of the Midland Counties.”

The Chairman next proposed “The health of Mr. Bernays,” which was received with applause.

Mr. A. J. Bernays (analytical chemist, from Derby), then rose and said: Agriculture is a subject of such vital importance to the community at large, that I consider myself bound to attend all such meetings, where I may increase my knowledge of it; and I shall always be glad to be present at your quarterly meetings as long as I am in the neighbourhood of Loughborough. We have just now heard that although 56 elements are at present known, yet only a small portion of them enter into the composition of animal and vegetable life. Of this portion, consisting of from 10 to 12, only four enter extensively into the formation of the organized portion of the vegetable and the animal. These elements arrange themselves into two distinct classes; the one class, formed by the combination of carbon, hydrogen, and oxygen, in different proportions, includes what Liebig calls the elements of respiration. Hereto belong starch, fat, butter, sugar, gum, and alcoholic fluids. These may likewise be termed non-nitrogenised substances. The other class, formed by the combination of all the four elements, includes the elements of nutrition, or the nitrogenised constituents of food. Hereto belong vegetable and animal fibrine, caseine, albumen, and gluten. The non-nitrogenised constituents were provided for sustaining the animal heat of the body; and protecting its parts; and in so doing a provision is laid by, upon which nature draws when the body is diseased. From their very nature they are easily destroyed, by the influence of the oxygen of the air. You all know it to be a common practice to milk cows in the field, if they be at any distance from the homestead: the reason is obvious: when a cow walks a great distance without food, the oxygen of the air almost immediately begins to act upon those substances with which it can most easily combine. Such a substance is the butter in the milk; when a cow is driven home, the butter is found, in great part, to have disappeared. Again, after parturition, the milk of the cow contains only traces of butter; because, by the increased action of the muscles, a larger proportion of oxygen is taken into the system. This well known fact brings us to the subject of stall-feeding. When a cow is intended for milking, and with a view of yielding as much butter as possible, we naturally confine her. In this unnatural state, there being no call for exercise, the food taken by the animal is only in small part