called, manfully, and determinedly, is heroic. He may not be called upon to brave the dangers of the deep, or "Seek the bubble reputation e'en at the cannons mouth," but his duty in fighting the "battle of life" requires courage and effort, and he may have learned the glory of having helped to ameliorate the condition of his race without having engaged in mortal combat with any of his fellow men.

Such opportunities are within the grasp of the young men of Canada at the present time : while our neighbours across the line have engage in a war in which no doubt many valuable lives will be sacrificed, whatever the result may be, and in which the flower of their young men will participate from a variety of motives : we, happily, so far at least, have no inducements to leave our homes.

The arts of peace are open to us, above all, agriculture ; thousands of broad acres, many of them already fertile, and others which can be made so by intelligent and well directed cultivation, are beckoning to us, as it were, to come and gather the riches contained in their bosoms.

There are also thousands of men flocking to our cities, where they are earning a more or less precarious living, who could build up for themselves and their families comfortable homestcads in a few years. Others are rushing off to the Klondike, in the too frequently vain hope of becoming rich, when there is more real wealth, because accompanied by health and happiness, in a well tilled farm and a herd of good, and properly cared for cows, than there is in, what may be called, a rich gold mine.

And the country at large is helped more by steady, plodding, agricultural advancement than by spasmodic additions to its wealth in the finding of new deposits of the precious metal, or in any aggrandisement it may receive from the sword. Ah for the time when the swords shall be bent into plough-shares and the spears into pruning hooks; when men shall learn that there is glory and honor in fighting enemies that destroy our crops, in achieving victories over intricate problems of feeding cattle to the best advantage; in manuring our land and cultivating it so as to secure the best results at the least possible outlay.

## The Breeder and Grazier.

## THE COMPOSITION OF THE ANIMAL BODY.

The chemical elements, carbon hydrogen, oxygen, nitrogen, sulphur, and phosphorus, are those that enter into the composition of the animal body, together with iron, magnesium, potassium, and calcium. Again may be added chlorine and sodium, the elements composing common salt, and also a small percentage of fluorine found in the teeth. The above mentioned chemical elements are recognised as occurring in plants; and, as a stock feed on plants, this is not surprising.

There is, however, an important distinction in the details of nutrition of plants and of animals.

*Plants* are capable of building up the complex organic compounds out of the crude materials; such as carbonic acid, ammonia, and the simple saline matters, that compose them.

Animals are incapable of this work. On the other hand they feed up vegetable productions and ultimately reduce these to water, carbonic acid, and urea (waste products of the animal body) rejected by the blood at the lungs, the skin and the kidneys. There is, thus, a kind of balance between plants and animals. Plants build up bodies of complex composition ; animals reduce these to simple forms; plants consume carbonic acid, animals eject it.

In cutting up the body of an animal, bone, flesh, fut, and cartilage (or gristle) and connective tissue are the objects that obviously catch one's eye. If we enquire in the composition of these substances, it will become evident that the animal supplied itself with the chemical elements they are made up of in its food. Were this not so, the nutrition of the animal would be imperfect.