

## Stock Department.

### "Young Conqueror."

BEST DRAUGHT STALLION, OF ANY AGE, AT THE LAST PROVINCIAL EXHIBITION.

THE accompanying illustration is taken from a photograph of "Young Conqueror," the imported stallion owned by Mr. Simon Beattie, which obtained the diploma as the best draught stallion of any age, at the Provincial Exhibition of 1867, at Kingston. "Young Conqueror" was purchased from Alex. Gills, Croy, near Glasgow, and imported to Canada last fall by Mr. Simon Beattie, the present owner. He is a dark bay horse, five years old this spring. From his pedigree and performance, it will be seen he stands unrivalled or unsurpassed by any other draught horse in Canada, and was pronounced by good judges one of the best horses in either Scotland or England, last summer. Farmers should avail themselves of this valuable opportunity, and encourage such animals, and the enterprise of the proprietors in introducing them amongst us. This horse gained prizes—first at the show of the Royal Agricultural Society of England, at Plymouth, as a two year old in 1865; first prize at Peterboro'; first prize at Huntingdon; first prize at Ely, £30; prize from the Society of Strathendusk and Killearn, near Glasgow, last spring; the second prize at the show of the Highland and Agricultural Society, at Glasgow, last summer, where twenty first-prize horses showed in his class, the best in Scotland and England. Since his arrival in this country, he has gained, besides the diploma at Kingston, the first prize at the fall show at Markham, and the first prize this spring at Markham. "Young Conqueror" is no relation to any of the draught horses lately imported into Canada. This valuable horse is now standing, we are informed, in Markham. It is almost superfluous to add that we believe him to be a most important addition to our Canadian stock.

## Animal Life.

IN a series of articles just completed, the CANADIAN FARMER has briefly laid before its readers the leading facts and principles, so far as they are known, in regard to plant life, or vegetable physiology. It is now proposed to offer a similar sketch of the various vital processes exhibited in the animal kingdom. Nothing but the merest outline of these deeply interesting and important subjects can, of course, be given in a periodical of this description; and it may be objected that such an elementary form of instruction will only encumber these pages with commonplace truisms, and statements of facts with which every one now-a-days is acquainted. But although you, intelligent and well-informed Reader, these facts and principles may be as familiar as household words, are they so among the larger class of working men and farmers? If you think so, put

some elementary question in physiology to your neighbour, or ask the man who takes care of your horses what effect bleeding will be likely to produce on the system, or how the air becomes vitiated by breathing, and see what answer you will get. To those engaged in the care of stock, some little knowledge of the laws which regulate animal life can scarcely fail to be of service; and yet, with few exceptions, their ignorance on these points is as general as it is profound. A sort of "rule of Thumb" serves their purpose in ordinary cases, but it often leads them into grave error, and in any unusual emergency leaves them helpless. We hope that the proposed series of articles may, in some measure at least, rectify this blind, unreasoning practice.

Let us notice, in the outset, what are the elementary constituents of animal bodies. In plants we found that the essential elements were carbon, oxygen, and hydrogen. In addition to these a fourth element, nitrogen, enters into the composition of animal tissues. This element, it is true, occurs in many vegetable compounds, (necessarily so to render an

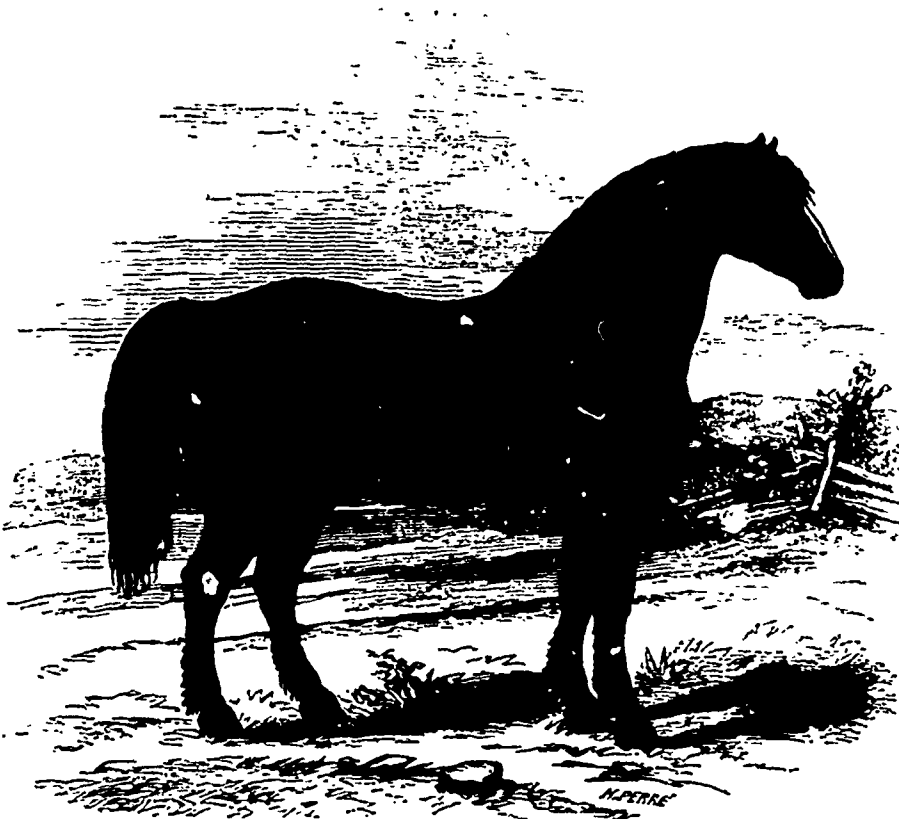
water, and about eight per cent. of albumen, a substance with which we are all familiar in the white of an egg. One of its most characteristic properties is that of being coagulated or rendered solid by heat, or by the action of an acid. It is this property which causes the "setting" of the white of an egg on boiling. It is this also which renders the serum of blood a useful clarifier in certain circumstances.

Fibrin cannot be distinguished chemically from albumen; but it possesses the property of spontaneous coagulation under certain conditions. Its coagulating or forming a clot when it escapes from its ordinary channels, and especially when exposed to the air, is one most important natural means of stopping the effusion of blood. It is readily organized, and exuding from inflamed or wounded surfaces, is the prime agent in the processes of growth and healing.

When fresh blood is allowed to stand in any vessel for about ten minutes, a yellowish liquid is observed to separate, and the red matter gradually loses its fluidity and shrinks in volume, forming a "clot."

The reason of this is, that the fibrin, on being taken from the body and exposed to the air, coagulates, and entangles, as it were, the blood corpuscles with it, and shrinking after becoming solid, diminishes the volume of the clot, and separates from the serum. If coagulation is delayed by cold or other causes, the red corpuscles, being heaviest, slowly sink; and when the fibrin begins to solidify a colourless layer is formed at the top. This, which is known as the buffy coat, is formed when the blood of persons suffering from inflammatory disease is allowed to coagulate, and is seen in the blood of horses even in a healthy condition.

The red corpuscles of the blood are flattened disks of a circular form in most mammalia, but in birds, reptiles, and fishes, oval. They are smallest in mammals, measuring in man  $\frac{3}{1000}$  of an inch in diameter, and in the ox  $\frac{1}{400}$  of an inch. They are largest in reptiles, being  $\frac{1}{100}$  by  $\frac{1}{150}$  of an inch in the frog,  $\frac{1}{30}$  of an inch in the



"YOUNG CONQUEROR," THE PROPERTY OF MR. SIMON BEATTIE.

exclusively vegetable diet fit nutriment for animals; but it is always in those which approach the most nearly to animal products. These are the principal constituents; but as in plants, so in different animal substances, other elements are also found in subordinate proportion, as, for instance, iron in the blood. These four, however, are present in nearly all, and constitute the largest part of all animal tissues.

The organized material from which all the rest of the animal fabric is derived, which perpetually builds it up and repairs its waste, is the blood, emphatically called "the life." It will be convenient, then, to begin with some account of this fluid.

If we examine a drop of fresh blood beneath the microscope, we shall find that it consists of a colourless fluid, in which are floating a number of bodies of a circular shape, known as "blood corpuscles." These are of two kinds, white and red, the latter being by far the most numerous. The colourless liquid is called the "liquor sanguinis," or fluid of the blood, and consists of a yellowish viscid liquid, named serum, holding in solution a substance known by the name of fibrin. It is composed principally of

Proteus. In the oval corpuscles of reptiles there is a central nucleus, but this does not appear to exist in the fully developed red corpuscles of mammalia, though their biconcave shape gives to them in certain lights the appearance of possessing such a central opaque body. They are composed of two substances, of which one, globulin, contains sulphur, and the other, hæmatin, contains iron. It is the hæmatin that gives to blood its peculiar red colour.

The white corpuscles, before mentioned, are much less numerous than the red, and are less regular in shape. They appear to be in an imperfect state, a state of transition, and indeed may be regarded as immature red corpuscles.

In vertebrata the colour of the blood which flows from an artery is bright red; of that which flows from a vein, dark red. But in invertebrate animals it is almost always colourless, and in those exceptions in which the blood is red, as in some worms, the colour is in the liquor sanguinis, and not in the corpuscles. We almost unavoidably use terms, as for example, artery and vein, which perhaps the beginner does not understand, but we shall come to the