tion. The harvest by being commenced earlier affords the better chance of securing a crop; particularly in countries, where the season is late and the climate moist and variable; while a considerable saving is effected in the smaller number of workmen required in gathering the harvest. A great loss is frequently sustained by over-ripe grain being beaten out by cradling and high winds, which early cutting would entirely obviate. Besides the straw is of better quality either for feeding or manure. The value of straw as an article of food depends upon the quantity of nutritive matter it contains By early cutting, the sugar, starch, gluten, &c., which constitute the most nutritious portions of all the grasses, are secured in their largest quantity. Hence grass should be cut for hay when in bloom. If the operation be deferred till the flowers have faded and the seed formed, a large portion of the saccharine matter of the plant has become converted into woody fibre, a comparatively innutritious substance. Farmers sustain annually very great losses from inattention to these well established principles. The following passages from Professor Johnston's admirable treatise on "*The Elements of Agricultural Chemistry and Geology*," (p. 232) throw an interesting light on the subject to which we have been endeavouring to awaken up the attention of our readers.

1. *Hay.*—The period at which hay is cut, or corn reaped, materially affects the quantity (by weight) and the quality of the produce. It is commonly known that when radishes are left too long in the ground they become hard and woody—that the soft turnippy stem of the young cabbage undergoes a similar change as the plant grows old,—and that the artichoke becomes tough and uneatable if left too long uncut. The same natural change goes on in the grasses which are cut for hay.

In the blades and stems of the young grasses there is much sugar and starch, which, as they grow up, are gradually changed into woody fibre. The more completely the latter change is effected—that is, the riper the stem of the plant becomes—the less sugar and starch, both readily soluble substances, its various parts contain. And though it has been ascertained that woody fibre is not wholly indigestible, but that the cow, for example, can appropriate a portion of it for food as it passes through her stomach; yet the reader will readily imagine, that those parts of the food which dissolve most easily, are also likely—other things being equal—to be most nourishing to the animal.

It is ascertained, also, that the weight of the hay or of the straw we reap, is actually less when they are allowed to become fully ripe; and therefore, by cutting soon after the plant has attained its greatest height, a larger quantity, as well as a better quality of hay, will be obtained, while the land also will be less exhausted.

2. *Straw.*—The same remarks apply to crops of corn,—both to the straw and to the grain they yield. The *rawer* the crop is cut, the heavier and more nourishing the straw. Within three weeks of being fully ripe, the straw begins to diminish in weight, and the longer it remains uncut after that time, the lighter it becomes and the less nourishing.

3. *Grain.*—On the other hand, the ear, which is sweet and milky a month before it is ripe, gradually consolidates, the sugar changing into starch, and the milk thickening into the gluten and albumen of the flour. As soon as this change is nearly completed, or about a fortnight before it is ripe, the grain of wheat contains the largest proportion of starch and gluten. If reaped at this time, the bushel will weigh most, and will yield the largest quantity of fine flour and the least bran.

At this period the grain has a thin skin, and hence the small quantity of bran. But if the crop be still left uncut, the next natural step in the ripening process is, to cover the grain with a better protection, a thicker skin. A portion of the starch of the grain is changed into woody fibre,—precisely as in the ripening of hay, of the soft shoots of the dog-rose, and of the roots of the common radish. By this change, therefore, the quantity of starch is lessened and the weight of husk increased; hence the diminished yield of flour, and the increased produce of bran.

Theory and experience, therefore, indicate about a fortnight before it is fully ripe as the most proper time for cutting *wheat*. The skin is then thinner, the grain fuller, the bushel heavier, the yield of flour greater, the quantity of bran less: while, at the same time, the straw is heavier, and contains more soluble matter than when it is left uncut until it is considered to be fully ripe.

In regard to *oats*, it is said that the superiority of Ayrshire oat-meal is partly owing to the grain being cut rather *glazy* (with a shade of green upon them), and the straw is confessedly less nourishing for cattle when the crop is allowed to stand till it is dead ripe. A week before full ripeness, however, is the utmost that is recommended in the case of oats, the distance of the top and bottom grains upon the stalk preventing the whole from becoming so uniformly ripe as in the ear of wheat.

Barley cut in the *striped* state is also thinner in the skin, sprouts quicker and more vigorously, and is therefore preferred by the maltsters.

EDITOR'S NOTES.

Having recently completed a tour through the Districts, comprising the eastern section of Upper Canada, for the purpose of advocating the claims of the Provincial Association, and procuring subscriptions, a few short remarks in reference thereto may not be unacceptable to our readers.

June 1st: met a number of office-bearers of Agricultural Societies in Prince Edward District, at Picton, who evinced the deep interest they felt in the success of the approaching exhibition at Kingston, by a vote at a subsequent meeting, of