One of our illustrations represents the proper form in which to construct a round stack; while the other shows two of an oblong form one perfectly completed, and the other in process of construction. The site selected should be perfectly dry; or, if it must be in some spot liable to become damp, a trench, of ten or twelve inches in depth, ought to be dug round it. In such circumstances, however, a hay stand constructed of wood, and raised on pillars, a little above the ground, ought to be provided. Presuming that a dry situation is procurable, the bottom of the stack may be formed, of the required shape and extent, with an outline of stones or wood, as convenient. Its whole surface should then be covered to the depth of twelve inches with branches and straw, rails, or some other material which will prevent all contact with the ground, and thus provide against the tendency of the hay to gather moisture. The width, or diameter, as the case may be, should not exceed fifteen feet, in order that the air may the better penetrate, and thereby obviate the liability of the stack to heat, from the effect of the saccharine fermentation which is always generated, and continued for a short time, in a newly built hay-stack. In oblong stacks it is better to construct the site of considerable length, for no harm accrues although the stack in any year does not occupy its entire length. The building process, when neatness of finish and regular form are aspired to, requires to be conducted with care and steadiness. In large English farms, the post of stacker invariably belongs to the most skilful workman, and the results are generally models of finish and symmetry.

The stacker should have, at least, one assistant to receive the hay from the team and hand it to the position required. The building should be commenced at the middle of the site and gradually extended to the ends, taking care to spread each successive layer regularly and uniformly over its entire surface. The waggon should be drawn as close as possible, not to interfere with the construction of the side adjacent, and the person forking the hay from it should be instructed to throw each forkful as nearly to the middle of the stack, where the assistant stands, as practicable. Unless this precaution is observed, the spot where each forkful falls will be more compressed than in other places, and when the stack subsides the shape will be irregular and contorted. The assistant should stand steadily and firmly when receiving the load from the waggon, and hand each forkful to the most convenient place to be reached by the stacker, who makes each deposition with a shaking action, in order to tear all lumps asunder, and render the whole texture uniform and open. The middle of the stack should be kept well filled and somewhat higher than the sides, and, after each load has been received, the stacker and his assistant should walk slowly and regularly over its entire surface, without approaching too closely to the outside edge. This precaution insures the hay being of uniform density, and prevents it from slipping. The outside stalk should also be carefully pulled, till its surface presents the appearance of a clothes-brush. After the body has attained fourteen feet in height, the heading is commenced by gradually narrowing the breadth on each side of the eaves or ridging. The stack is then topped out, and a few ropes are thrown over the ridging and fastened, to prevent the wind blowing it off. The stack is then allowed about two weeks to subside, which it will do to the extent of some two feet. It ought then to receive a few additional layers on the top, from the pullings or dressings of the sides, till it shall have been completely shaped, when it should be well thatched and thoroughly secured by ropes. The process just described will apply to either oblong or round stacks; and our illustrations exhibit the perfect appearance of a stack of each kind. A height of twelve feet is sufficient for the body after subsidence; and a rectangular stack of this height, forty feet in length and fifteen feet in width, will contain about fourteen tons of hay.

If the season is unfavourable, and the hay at all damp, a little salt sprinkled between each successive layer in building is an excellent remedy against mouldiness. The quantity used, must, of course, depend on the state of the hay; but as this is somewhat a difficult point to determine, perhaps a quarter of a bushel to the ton is a sufficient allowance.

A description of the process of thatching would transcend the limits of this article. We will, therefore, merely remark that the entire top of the stack, down to the eaves, should be well covered by drawn or straightened straw, and the ropes arranged in the manner shown in our illustrations.

Thoughts on Ploughs and Ploughing.

There are some subjects on which people agree to disagree, and we strongly suspect that ploughing is one of them. Ploughs are furnished to the farmer in endless variety, both of price and pattern. One firm alone, in England, Messrs. Ransome & Sims, of Ipswich, specify in their printed and illustrated catalogue of agricultural implements, no less than twenty-five different varieties—long and short mould-boards, wide and narrow, heavy and light—but all made of iron and steel; and seemingly intended to last for generations. So great is the demand on this firm, and so confident are the public of being able to obtain from them what they require, that they supply orders to all parts of the world. Any person purchasing one of their articles may have any broken portion replaced, by merely sending a communication containing certain specified numbers and letters to the firm; and the result is, a shipment of the required portion, which is so arranged, that it can be applied to the original implement by any artisan or person of ordinary mechanical knowledge, using the tools which are supplied with the original implement. The firm in question employ in their works about 2,000 workmen, and turn out every implement required on a farm, from a simple iron harrow, costing £3 or £4, to the complicated steam plough and engines, with all their extensive furnishings, costing about £800 sterling. Now, it must be clear to any one, that varied as are soils and circumstances, there must be an immense deal of fancy and fashion in these different kinds of ploughs. If the object were merely to disintegrate the soil to a certain depth, and reduce it from a close mass to a soft and spongy agglomeration of particles, any one of these many kinds of ploughs, if followed by proper drags, harrows, or cultivators, would answer the purpose. But this is certainly not the case. One farmer finds, or thinks he finds, the best result, from merely turning over the soil in long slender strips, like ribbons, lying edgeways, one against, and partly overlapping, the other. Another turns the soil completely over in one solid furrow, nearly reversing the upper six inches of ground, and then reducing the surface, so newly turned up, to a comparatively fine powder, by the action of the harrow. Again, in fallowing, where ploughing is repeated as often as time or opportunity allows, until the whole of the surface is reduced to a light friable tilth, the end is attained by a different implement. And the most extraordinary fact is, that each farmer generally thinks that the plough *he* uses is better than that of any other person engaged in the same occupation, and toiling for the same end.

In the face of these various means of manipulating the ground, we have one solid, undeniable fact staring us in the face, which will not, and cannot, be denied,—namely, that the gardener, who expects and obtains, a greater return for his labour and from his ground, than the farmer does from his, uses only one implement—the spade, and works his ground uniformly in the same manner, by dividing the soil into small pieces, which he turns bottom upwards, burying what was previously the surface, and reducing the soil, at one operation, into the best possible seed bed for the future crop. It is true that gardeners sometimes use the plough, but it is as a substitute for the spade—the latter is universally preferred where time and opportunity will afford it. There is no doubt the fertility of the soil, in a great measure, depends on a constant addition of manurial elements. We yearly subtract from it large yields of some or other kind of produce. If the elements of this produce are not returned to the soil, a gradual deterioration is very soon perceptible; but those manurial elements are comparatively useless unless well mixed with the soil; and it is for this purpose that we find it so necessary to pulverize and disintegrate its substance by the plough and other implements. All soils consist, more or less, of clay. Now clay has a strong affinity for ammonia and nitrogen; and the chief value of manures consists in these substances. We add large quantities in the actual manure applied, but the soil, also, when well stirred and exposed to the influence of the atmosphere, helps itself to these substances, and it is to this fact, quite as much as to the help of manure, that ploughing deeply, and often, assists so materially in the attainment of fertility.

The roots of plants extend only to certain distances, and they abstract so much from the soil whilst they are nourishing the plants. Roots naturally tend downward. It is therefore of the greatest importance to mix and pulverize the soil, so that every portion of it, which was aerated and ameliorated by last year's exposure to the air, be placed just so far beneath the surface, as to be within convenient reach of the roots of the plant, with which the ground is to be occupied. It is for this reason that the benefits arise from spreading manure on the surface, and then turning it under by the plough. But here another question arises. Moisture, as well as roots, naturally descends. Some of the most valuable portions of manure are soluble, and these, by the natural descent of the water are washed, not into the loose friable ploughed tilth, where the roots can readily find it, but into the cold unkindly till or subsoil, at the bottom of the ordinary furrow, which is so hard that the roots cannot readily penetrate and search for it. To meet this difficulty the subsoil plough is used, which following the ordinary plough in the same furrow, breaks up, and, in a measure, disintegrates the lower bed, into which the best part of the manure (i.e. the soluble parts of it) are washed. Here again, however, another question presents itself. At the time we sow the seed, we sow it on the top of the ground, and bury it with the harrow. It must not be buried too deep, or its growth is delayed. And it is all important that so soon as the plant begins to grow, it should be able to reach its food. In the first stage of its growth it requires ammonia or the soluble portion of the manure, but the greatest quantity of that element is at the depth of six or seven inches amongst the soil, at the bottom of the furrow, and it will be some weeks before the plant can reach it with its root. In Canada, where time and quick growth are of prime importance, a week lost in the early attainment of vigour by the plant may be fatal. Especially is this the case with fall wheat, for a week lost in the fall may cause sufficient delay at harvest to throw it into the rusting season, and the whole crop may be lost. We therefore require (in order to give the greatest possible benefit to the early plant) to mix the manure with the body of the soil, so that the seed may at once find it out when sown, and receive its benefit at the time when it is most essential to its growth. This end is, in a measure, attained by soaking the seed grain in some artificial, or chemical, mixture, in a concentrated shape, which not only assists its rapid germination, but promotes the speedy growth of the root, and affords an immediate magazine of nourishment when it is most wanted. The same end is attained by mixing the manure thoroughly throughout the soil, but this requires at least three ploughings,—since the first turns it under, the second lays it up again, and the third mixes it throughout the tilth. The following plan is equally good or better, since it not only does with two ploughings, but as the surface exposed to the action of the atmos-