we will instance the experience of Mr. Shirreff, an eminent Scotch agriculturist. "In the spring of 1823 a vigorous wheat-plant, near the centre of a field, was marked out, which produced 63 ears, that yielded 2473 grains. These were dibbled in the autumn of the same year; the produce of the second and third seasons sown broad-cast in the ordinary way, and the fourth harvest put me in possession of nearly forty quarters (320 bushels) of sound grain!—In the spring of this year I planted a fine purple-top Swedish turnip, that yielded (exclusively of the seeds picked by birds, and those lost in thrashing and cleaning the produce,) 100,296 grains, a number capable of furnishing plants for five imperial acres. One-tenth of an acre was sown with the produce, in the end of July, for a seed crop, part of which it is in contemplation to sow for the same purpose in July, 1829. In short, if the produce of the turnip in question had been carefully cultivated to the utmost extent, the third year's produce of seed would have more than supplied the demand of Great Britain for a season!"

The importance of attending to the purity of seed, and the cultivation of suitable varieties, can scarcely be overrated. Farmers should habituate themselves to careful observation on the progress and appearance of their growing crops, and mark whatever peculiarity may arrest their attention. If, in a field of wheat, a single plant only should be found, having a larger ear, more compactly filled with grain of a superior description to the rest, this circumstance, trifling as it may appear, ought by no means to be neglected, since, by a little attention and pains taking, a new and valuable variety might be obtained. Cultivation and selection have completely changed the original character of many of our cereals, roots and fruits. Who would have supposed that the wild cabbage growing on the sea-coast could have been converted into a cauliflower,—the small wiry roots of the wild carrot into the large, succulent ones of the garden; or that the many sweet and delicious varieties of apples could have been originated from the sour crab of the woods?

There are several plants but little, if at all, cultivated in this country, that might probably be introduced to great advantage. It is the first duty of every civilized community to turn the natural advantages, with which Providence has blessed them, to some practical account; or, in other words, to raise from their own soil whatever that soil, by the aid of man's art and industry, is capable of producing. Among these desiderata might be enumerated hemp, flax, rape, mustard, lucerne—all of which the soil and climate of Canada would produce in abundance, by properly attending to their culture. As it is, we import largely most of these and other productions, which we ought to raise for ourselves. To purchase from abroad what we can as cheaply produce at home, is an infallible way of keeping the country stationary and poor. We were told the other day, that in Toronto alone, there are upwards of a hundred bushels of canary seed sold annually. Now what should hinder this production from being raised on our own soil? This seed is worth from three to four dollars a bushel, and its culture is deserving of a fair trial on a small scale.

These considerations open up a wider field than we have now either time or space to occupy. Suffice it to say, that if proper attention were generally paid to the breeding and management of live stock, the cultivation of the best kinds of grain and root crops, and other productions adapted to our soil and climate, with the saving and economical application of manure, the real wealth of the country would be incredibly increased. These considerations are worthy the grave attention of the Legislature and Agricultural Societies.

In our next we propose giving some practical information on the cultivation of root crops, and upon plants but little known in this country. In the meantime, if any of our readers in this district should be desirous of selecting their seeds, we can confidently recommend them to Mr. Fleming, of the Yonge Street Nursery, in this city, whose diversified stock of imported and native seeds we have had an opportunity of inspecting.

ON THE APPLICATION OF SCIENCE TO AGRICULTURE.

NO. III.

Before we enter directly on the subject of Agricultural Chemistry, it may be desirable just to glance at a few of the principal facts and doctrines of chemical science. This will enable those of our readers, who have paid no particular attention to the subject—and it is for such these articles are chiefly designed—to form some general idea of the nature and objects of this extensive and interesting science.

All material objects with which we are acquainted, whether they exist as solids, liquids, or gases, may be separated into two grand divisions; that is, they are either *compound* or *elementary* substances. By an elementary substance is meant a body containing only one kind of matter, or consisting of only one kind of particles, admitting of no decomposition, whatever force or test may be applied. Thus sulphur, iron, copper, the pure metals, and several of the gases, are elements; that is, do what we may with them, either by mechanical or chemical means, nothing different from sulphur, iron, &c.. can be obtained from them. In the present state of knowledge there are nearly sixty substances existing in nature that are considered elementary: although there are not more than a