

Lake Erie, of the Lake and River St. Clair, and of Gratiot's Bay, in the southern part of Lake Huron the Helderberg formation extends. It will be recollected that I have above described this rock, as it occurs in Western New York, to be in some places covered with thin soils productive of wheat; but that over it lie certain calcareous shales (Marcellus shales) which when not entirely removed from the surface by the action of ancient waters, form a soil equal to almost any other in productive capability. The large portion of this Western Canadian peninsula, over which this Helderberg formation extends, must therefore, like that occupied by the Onondaga group, contain many tracts of fertile land, and this, as well as its neighbourhood to the Lake, is no doubt a cause of the rapidity with which it is in the process of settlement. Indeed, when we consider that nearly the whole of this peninsular region consists either of the Helderberg rocks or those of the Onondaga group; we cannot help predicting both a rapid filling up and a great future, in many respects, to this most interesting portion of Canada.

"Thus from the humbler task of explaining why certain regions have exhibited and still manifest a singular natural fertility, geology advances to the higher gift of prediction. United theory and observation enable it to point out where rich and desirable lands are sure to be found,—to inform the statesman of the true value of regions still wild and neglected, to direct the Agricultural emigrant in the choice of new homes, and, looking far into the future, to specify the kind of population and the processes of industry which will hereafter prevail upon it, the comparative comfort, wealth, numbers, and even morality, of its future people."

#### BUTTER MAKING.

This is one of the most important matters at this season of the year. We will all readily admit the pleasantness of good butter on our tables, and the farmer knows the advantage of having a good, fresh, sweet article, and plenty of it, for sale, instead of the wretched stuff under the name of butter which we so often see in our markets. We insert in another place, an excellent essay by Mrs. Trail, on Butter Making, to which the first prize was awarded by the Township of Hamilton Farmers' Club, and which is worthy of a careful perusal. We regret being compelled to condense this essay considerably: for this, the press of matter and our limited space must serve as an apology. We are happy to find that Mrs. Trail, who is so favourably known as a writer of a very pleasing description of light literature, can on occasion apply her talents to the elucidation of such useful subjects as this Essay treats of. We trust we shall hear from her again on similar topics.

#### FARMERS AND FARMING IN CANADA.

We are not disposed to dispute the truth of the following remark from the *Genesee Farmer*. We believe the statement that Canadian Farming is superior to that in the United States, to be perfectly correct. But our farmers must not therefore rest satisfied with their progress and conclude that there is no occasion for further improvement. There is still abundant room for that.

"It is with considerable reluctance that we admit the superiority of Canada farmers and farming as compared with those of our own much cherished Western New York; and we still hope that, taken as a body, our cultivators are in advance. But the more we learn of our neighbors across the lake, the higher is our respect for their general intelligence and skill as husbandmen."

#### Literary and Miscellaneous.

WILLIAM McDUGALL, Esq., Editor.

#### FAMILIAR CHEMISTRY.

BY MRS. M. F. H. THOMAS.

##### CHAPTER II.

The fifty-five elements of which I have spoken, are called "ponderable agents," because they can be weighed. They constitute all sensible objects—all that is tangible in our world. Their properties are, extension, form, divisibility, impenetrability, and inertia. Attraction is not an inherent property, but depends upon a power whose proportions increase and diminish it. These substances are all incapable of spontaneous change, and were there no extraneous force to effect them would remain eternally in the same condition.

There is another principle, which is imponderable, which cannot be weighed, or handled, or studied, except in its manifestations. Bodies imbued with it, gain no appreciable weight. Of its nature we know little, very little; yet its manifestations are a part of every-day life. Unlike the other elements of which we have spoken, its existence is action, in some form. All changes which cheer and beautify our earth—all the wonderful phenomena of nature, are produced by it. It is, under God, the *Architect of the Universe*. That principle has been variously called, light, heat or caloric, electricity, galvanism, and, in the animal organism, nervous influence, but these are, undoubtedly, but manifestation, mutuality and correlations of one power acting under dif-