

exists in the state of gas. It is heavier than atmospheric air. If this gas be poured from a wide-mouthed jar upon a lighted candle it will be as effectually extinguished as by water.

54. *Effervescence*—is a sudden disengagement of gas taking place within a liquid, and separating from it with a hissing noise.

55. *Chemical Affinity*—is a term used to signify the attraction or tendency there is between the particles of certain substances, of different natures, to unite, thereby forming a third substance possessing properties altogether different from those of either of the two substances of which it is composed.

Thus, potash and oil have a tendency to unite, thereby forming soap, which is a third substance very different either from the oil or the potash, of which it is composed.

These substances which are capable of uniting in this manner, are said to have affinity for each other, as oil and potash; but oil will not unite with water, and therefore those substances which do not form a chemical union, are said to have no affinity.

59. *The Primitive Earths*—are four, viz: clay, sand, lime and magnesia.

These are the only earths which enter into the composition of soil; they enter also in very minute portions into the organizations of plants.

Sand and clay are by far the most abundant: lime is required but in small proportions; every soil, however, is defective without it. Magnesia is found but in few soils; its place is well supplied by lime: its entire absence, therefore, is not considered any defect.

From the Fredericton Farmer's Manual. DOES A FARMER REQUIRE EDUCATION?

A very ancient Historian mentions a custom of the Babylonians, which he highly commends for its wisdom. They were wont to carry their sick into the most public and frequented place, and it was binding on those who passed by to inquire the nature of the disease, that if they themselves had been afflicted in a similar manner, or knew of others who had suffered the same, they might inform the sick man of the remedies which had been successfully employed. This method of treating diseases would create astonishment if adopted in the present day, and the time may come when the present unscientific methods of cultivating the land will be regarded with somewhat similar feelings of wonder. In the profession of medicine, a knowledge of anatomy, botany and chemistry, more extensive than that which is ordinarily possessed, is essential for a practitioner; and this knowledge requires to be combined with some degree of experience, before the application of remedies in difficult cases becomes any thing more than a leap in the dark: and yet it is very generally imagined that the ground can be tilled without the possession of any knowledge directly bearing upon the subject. A greater error cannot exist: some knowledge of the properties of different soils; some acquaintance with the chemical changes which substances undergo in combination, and the effect which certain ingredients will have upon the growth of a plant: a familiarity with botany, as far as it relates to the culture of plants, trees and fruits; and a knowledge of the natural history of domestic animals, ought to be regarded as the lowest amount of intellectual capital which a good farmer should possess. It cannot be pleaded, that in farming there is no scope for the application of knowledge of the highest kind and consequently no inducement to the acquisition of it; are not mineralogy, chemistry, and botany intimately connected with almost every department of agricultural operations? While scientific knowledge was in its infancy, men might well be excused for following the practices of their ancestors, but now that the most rapid advance has been made in every department of science, no excuse can be admitted for negligence in making improvements, or adopting the method which others have discovered for increasing the productiveness of the soil. It must be obvious therefore that a sound, and by no means limited, education is requisite for every agriculturalist, who wishes to avail himself of all facilities which the advanced state of science affords, for carrying the art of farming to the highest degree of perfection of which it is capable. It can scarcely excite surprise that the advocacy of a farmer is held in slight estimation if its capabilities for exercising the intellect are under-rated, and it is regarded as a matter of mere physical strength, an occupation involving much drudgery, and demanding well developed muscles, but one that is ill adapted to

engage the attention or repay the toil of the studious and reflecting man.

This estimate of agriculture is, however, far from the truth; as the culture of the ground is one of the healthiest, noblest, most useful and independent of the various pursuits which engage the industry of the human family, so it opens a wide field for the exercise of the mental faculties, and the application of varied knowledge, and affords many opportunities for the display of skill; it only requires to be studied as an art in a manner similar to other professions, and like them it would soon summon every intellectual power into full operation; let the standard of excellence in agricultural pursuits be but raised, and those who engage in them will be compelled to employ their mental faculties as well as their bodily powers, if they hope to succeed in their vocation.

Before the art of tilling the soil can attain that perfection of which there is every reason to believe it susceptible, many experiments must be tried, and many failures experienced, but for this a well trained mind is absolutely necessary; clearness of judgment, patient discrimination, forethought and attention are required for the trial of experiments, whether they issue successfully or otherwise. If failure be the result, a mind accustomed to reflection might be able to detect the cause and suggest a remedy; if success follow, the discovery would be intelligibly communicated to others. But when ignorance attempts to make experiments, success is more the result of chance than skill, and is productive of no benefit to others; while failure creates a foolish prejudice against the introduction of any novelty.

The time will come when the land must be more highly cultivated than it has been, for as population increases the means of subsistence must also be augmented; and if obstructions through ignorance are thrown in the way of improvement, it is easy to foresee that the prosperity of the country must be retarded.

It may reasonably be apprehended that the slovenly modes of tillage in which ignorance takes delight, if persisted in, will eventually involve the farmers as a class in great embarrassment, and then the probable consequence will be an application to the Legislature for protection on behalf of the Agriculturalists—in other words, a tax upon the whole community, in order that a living may be made from a negligent unscientific and wasteful occupation of the soil, by the aid of a forced increase of price obtained for the article grown.

The necessity for improvement, and the evils to be apprehended from the neglect of it, alike call upon those who are possessors of the soil—that vast storehouse from which are drawn all the materials that contribute to the comfort of man—not to suffer any narrow prejudices to deter them from the culture of the mind—that magazine of spiritual treasures, that intellectual soil within, which will abundantly repay assiduous cultivation.

United States News.

From the New York Tribune.

THE GREAT FLOODS IN VENEZUELA.

San Fernando, July 30.

How unfortunate has been the year 1844 for Venezuela! what evils have we suffered, and how much more are we yet to suffer before this fatal year is sepulchred in the abyss of time! We have now to present a relation of a new, and a tremendous catastrophe to our fellow citizens; if indeed we may be able to attract for a moment, the consideration and commiseration of Venezuela to this unhappy Province, which the iron hand of destiny appears to wish to blot from the map of the Republic. But how difficult will it be for us to awaken to these disasters, the attention of our brethren who also have to weep their own calamities.

No one, my friend, is now heard to speak of crisis, of a want of hard money, (and this want is absolute) of the decay of our products, of complaints against the Congress, or the public authority. Of what importance are all these political topics to us now? all are absorbed in the last misfortune that has prostrated us, the new deluge that has submerged and devastated San Fernando.

San Fernando may now be said not to exist! The river began to rise in May last, and continued until it covered the entire surface of the land, and in spite of our most efficient, active, and constant efforts to save ourselves, by opposing barriers and dikes to the force of the waters, the Apure has at last reached the height of two yards above the general level of the land, and has inundated the entire

community. The houses have also been flooded in all parts, and notwithstanding we exerted our individual endeavors to oppose the advance of the waters by new encroachments, they have been filled to the height of two, four, and six feet; some have wasted away and fallen, while those that remain, although they still resist the dashing of the waters, must eventually submit to their power, and fall.

The streets are so many rivers, in which the rapid current is scouring and penetrating deeper and deeper; already deep wells and ditches are formed, which after the waters have retired to the bed of the river, will require much earth, much time, and many thousands of dollars to obliterate and level.

Some families had formed under their roofs large hammocks, in which they thought to remain in safety during the violent tempest; others gathered themselves in the highest places that remained above the water, judging that the deluge would last but a few days. The rise of the waters, however, continued, and every thing has been covered for some weeks excepting only a few houses which were defended by high dykes and parapets; at last, the population, *en masse*, resigned the city to its fate, and resolved to emigrate.

The Municipal Council met, in conjunction with the principal inhabitants, at 8 o'clock in the evening of the 16th July, and then determined to remove their families to San Juan de Payara; they put in requisition all the barges and small vessels, and the day following began the movement. San Juan and Caraguana, have been filled with the emigrants from our deserted city, and there now remains but very few families, and these are enduring a thousand sufferings and privations; some of them have taken refuge in anchored barges.

It is frightful to see the few that yet stop in their houses, surrounded as in a seige; they appear at their windows, contemplating the waves of the river as they roll impetuously more than a yard in height over the saturated land on which they had been accustomed to walk. But what do I see? there is now no such river as Apure; it embraces in its course the Potugueza, the Guarico, the Payara and the Aranca; it stretches 24 leagues in width, reaching from Banco Largo, in the Province of Caracas, to beyond the Cunaviche in the Apure. And in this ocean of fresh water there are only to be seen some small islands on which man and beast, cattle and dogs, wild beasts and reptiles closely press, flying from the fatal element which threatens to devour them. We caught two tigers in the very centre of the population, and have also killed many snakes; a caiman was encountered and killed in that which was once one of the principal streets of the city.

There are now no houses, no estates, no seed-time, all has been levelled and destroyed by the fury of the inundation. Nor have we even a place in which to bury the dead. Should the flood continue a month longer, we shall see the dead men, women and children, with those of the wild beasts of the mountains and domestic animals all floating together upon the devastating waters.

The inhabitants of this province have applied to the Executive power for aid to alleviate their necessities. We hope that the Government will come promptly and generously to the rescue. We have suffered more than Barinas and Maturin who were both succoured by Congress. Barinas and Maturin suffered by fire; they lost their houses, but we have lost our houses, our fields, a great number of animals, and that which is still worse, an entire year of labor, our crops and our hopes.

We have nothing to add; our losses are inexpressible; we have arrived at the climax of misfortune and calamity. We beg you to give place in your valuable journal to this pallid description of our conflicts and our miseries; may Providence look on us with eyes of mercy, and may the Government of our country not suffer to perish the last remains of a province that has afforded such important services in the disastrous war of independence!

From the New York Herald.

Trade in Guano.—Speculators are dipping extensively into this trade. It appears by recent intelligence from Ichaboe that nearly one half of that island had been carried to England, and that at the last accounts there were upwards of eighty sail of English vessels taking in cargoes for the same destination. Very little of this newly discovered manure has yet been brought to America. One or two cargoes have arrived at Salem and Boston and one at Baltimore, and these we believe are all.—Several ships, how-

ever, have gone for supplies, and if any of the island of Ichaboe is left our farmers will soon have a manure such as they never before used.

Boston Mail.

The Seizure of supposed Slave-Trading Vessels in Boston.—Yesterday, under orders of the collector of this port, the Baltimore built schooners Manchester and Devereaux, were seized at India wharf, on suspicion that they have been fitted out for the slave trade. It is admitted that their destination was the coast of Africa, but the captains declare that they only contemplated engaging in lawful commercial business. The cargoes had not been overhauled last night, and no process had issued from any of the United States judicial authorities. Should certain implements peculiar to the slave traffic be found on board, a commissioner's warrant, upon complaint of the U. S. district attorney, will be forthwith issued. It is tolerably well known that of late years, slave vessels have been fitted out in New York almost with impunity; but we most sincerely hope that any attempt to indentify Boston with this accursed traffic will be met at the outset, not merely by the law but by such an expression of public indignation as will make the guilty participants quail like their own slaves beneath the lash.

Colonial News.

New Brunswick.

St. John New Brunswicker, Sept. 17.

WESLEYAN MISSIONS.—The first meeting of this Anniversary was held in German street Chapel last Tuesday evening.—The congregation was good, respectable and very attentive. The respective speeches that were delivered on the occasion were characterized by good sound sense—by Missionary zeal—and interspersed with a little humour, which evidently delighted the audience, strengthened the Officebearers of the institution, and considerably tended to increase the funds of the Parent Society.—Collection £13.

On Wednesday night, the Meeting was held in the Chapel in Portland, and considering the busy season of the year was well attended. The Chair was occupied by Mr John Owens, and the congregation seemed delighted with the admirable addresses with which they were favoured. The interest of the Meeting was kept up until a late hour, and the sum of £10 collected at the close of the service.

On Thursday evening, the adjourned Meeting was held in St George's Chapel. The spacious building was comfortably filled with a respectable audience. The Chair was resumed by Dr. Samuel Bayard, who presided at the previous Meeting.

The Rev. Mr Wood closed the services of Anniversary with a number of suitable and animating observations, calculated to stimulate the friends of Missions in their ardent and important undertaking. The collection amounted to upwards of £17. From what we learn, the whole of the collections, including the previous Sabbath, will amount to nearly seventy pounds. This certainly proves that the spirit of Missionary enterprise in this City, in connection with the Wesleyan Methodists, is rapidly on the increase.

September 19.

THE REGATTA.—The Annual Regatta for this Harbour, came off on Tuesday last, and a finer day for 'aquatic sports' could not have been desired. The morning was bright and cloudless, and the air had that peculiar degree of warmth, purity and elasticity, which so peculiarly characterize the delightful days of September, in this our Province of New Brunswick. The wind was from the Northward in the morning, gradually hauling to the Eastward, and at high water nearly South—not too much, but just enough, with a pleasant ripple on the water, and moderate ground-swell. Our Citizens were all alive for the sports of the day, and seldom on any public occasion have we seen a more complete suspension of business. All classes seemed bent on a holiday, and truly they enjoyed it to the uttermost. Happy are we to say that no accident occurred to mar the general enjoyment, for all went well and smoothly, and we feel that we should be doing injustice to the Stewards of the Regatta, if we omitted to notice the excellence of their arrangements, and return our portion of thanks for the share of pleasure we enjoyed.