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THE INSTRUCTOR,

FOR

NOVA SCOTIA, NEW BRUNSWICK,
AND PRINCE EDWARD ISLAND.

EDITED BY ALEXANDER MUNRO.

Bay Verte, New Brunswick.

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The Instructor.

The Number for DECEMBER, 1860, closes the Third Volume of THE INSTRUCTOR.

When we consider, during this short period, several ably conducted Monthlies and Weeklies have appeared upon the stage of Provincial Literature, and in the same brief period disappeared, for the want of sufficient support, we wonder how we have lived. But we have lived and advanced, and see brighter prospects ahead.

We owe a debt of gratitude to a large portion of the Provincial Papers, for the flattering notices of THE INSTRUCTOR, that have appeared in their columns from time to time.

The principal difficulties we have to contend with, is, the scarcity of money, and the laxity that exists in society towards supporting an indigenious literature, in preference to a foreign.

However, these obstacles are disappearing; there is a greater thirst for useful knowledge, and the public begin to see the necessity of encouraging home productions, whether literary or artistic, in preference to those from other countries.

Our object is, to give information, useful to the educationist, agriculturist, and general reader.

With this object then in view, we ask the public to extend to us the hand of encouragement, by extending the circulation of the

THE INSTRUCTOR ;

it is cheap ; only 3s. 9d., to single subscribers ; and as a farther inducement, two copies will be sent to one address, for ONE DOLLAR ; EIGHT copies, with one extra copy, will be sent to one address for FOUR DOLLARS. Thus, reducing a work of eighteen pages per month, of useful reading matter, to HALF A DOLLAR per annum.

Could not each of our one thousand subscribers, get us an additional subscriber or two ? No doubt they could ; many of them could get a dozen ; it only requires an effort,—please try.

Let the young men take it in hand ; let them go among their youthful companions, and ask them to subscribe HALF A DOLLAR for the INSTRUCTOR, and when they get it, read it carefully, and their parents will give them credit for it, and so will we.

Come, young men, don't spend your winter evenings foolishly, —be useful to yourselves and society at large.

Mechanics' Institutes.

During the palmy days of the Grecian and Roman dynasties, the *platform* was no mean school. Some of the greatest orators of those times ascended the platform, and there taught the people. And although the mass of the people were ignorant of alphabetical writing, it is remarkable what control the orators of those times had of the mass of mankind. The mind of a whole multitude was often led captive by the eloquence of the speaker—so much so, that even laws and customs were changed almost in a day.

In modern times these schools, so to speak, are prominent institutions for the culture of the mind. They are not so much intended for the demonstration of truth, as the display of it—not so much for the demonstration of obstruse problems in metaphysical science, as a display of scientific research and artistic skill ; in them the wonders of creation, the developments of philosophy, and the achievements of the human mind are brought prominently before the mind of the mass of society. During the most enlightened periods of the ancient dynasties, the number of subjects taught were very few, the extent of knowledge possessed by the greatest sages of the times was very limited, and the number of subjects brought before society were equally limited, and the principal part of the knowledge possessed was confined to the *wise men*,

who were but few in number. Everything useful was sealed and hidden from the mass. But how changed—every intricate subject is now made plain to the humblest capacity—it only requires an evening or two of a skilled hand to make potent to thousands, a subject, the knowledge of which, a few years ago, was confined to those who had spent years within the walls of some eminent University. And every year is adding scores of master spirits to the already extensive catalogue. It is to Mechanics' Institutes, that society, especially in towns, is so much indebted for the general knowledge possessed of many of the occult sciences. Each lecturer leaves his footprints on the sands of time—each unfolds some valuable theme to the enquiring mind; and so the resources and vastness of the Divine Empire are being better understood. Light, heat, attraction, gravitation, electricity, galvanism, with scores of other subjects equally important, are now made plain by a course of lectures. To understand these subjects, and apply them to the wants of man, is the common right of all.

Every village, town, and city, that aims at even the lowest marks of intellectual distinction, has now got its Mechanics' Institute, library, museum, and philosophical apparatus. It is no uncommon thing to see the teacher of elementary knowledge, or the humble plough-boy, in common with the most profound scholar, ascend the platform, and from thence display a knowledge that would astonish our forefathers of even a century ago. If our ancestors, of the beginning of the last century could but arise and witness the representations, panoramas and displays of the works of nature and art, so common in our Mechanics' Institutes, in these times, they would no doubt be utterly astounded—the collections of natural and artificial curiosities—the works of the sculptor's chisel, and painter's brush, surpass all description. The storm, the calm, the landscape, the burning mount, the foliage, the rocks and minerals, the astral heavens, and the hundreds of other objects in the world of nature, are all beautifully portrayed; and when explained by a skilful mind, of which there are a thousand in our times, to one in the days of Greece and Rome's splendor, he who runs may read, and he who reads may understand.

Second only to our Schools, Colleges and Printing Presses, stands Mechanics' Institutes. Wherever a few families are gathered together, there should be a Mechanics' Institute, Museum and Library, to which the people may collect for the acquisition of knowledge and the display of truth.

Let every community provide these means, and it will not be long ere young men will arise in their midst, who will be an honor to society. Most every community has the means and the talent, and all that is wanting is the will. The old adage, 'where there is a will there is a way,' is generally true. It is remarkable to what extent the mind may be led in the walks of research, when the will becomes properly bent

to the task. We have not unfrequently seen those who occupied the place of the tyro last year, ascend the platform this year, and deal out instruction with a master's power and eloquence. Mechanics' Institutes are schools of a high order, so let them be fostered by all.

Botsford and Westmorland Agricultural Society.

This society, one of four in the County of Westmorland, has been in existence for upwards of ten years. When first instituted, and for several years after, premiums were awarded on cloth of various kinds, and on garden vegetables, turnips, butter, &c.

Experience soon taught the society, that awarding premiums for such objects did not advance the general interests of the community; which was confirmed by the results that flowed from a similar course being pursued in other Agricultural Societies. Feeding a few animals at the expense of the rest, does not improve the condition of the stock of the country. It was acting something like the principle, upon which the farmer's wife was said to act, who wanted to make all the butter she could, 'knocked the calves in the head with the churn dash.' It is no uncommon practice for some amateur farmers, to 'hunt the length and breadth of the land for the largest and most thrifty looking animals—feed them high,—take the highest premium on them this year, next year, and perhaps the third year; pick one bushel of wheat, berry by berry, take a premium for it, of say ten shillings—hand it to Dick who gets a premium for it next year, and then to Harry who gets a premium for it the third year, &c.

Believing that such a system of awarding premiums;—feeding extraordinary animals in an extraordinary manner, fails even to show the capabilities of the country, and effects but little in the general improvement of the stock; the Botsford and Westmorland Agricultural Society has for the last 4 or 5 years awarded premiums on the improvement of land, and in the making of compost manures.

At the annual meeting for 1860, held a few weeks ago, it was the unanimous opinion of a numerous meeting, that the best way of improving the country, was to award premiums for the improvement of land and the making of compost.

In proof of this resolution, it was shown that in a society composed of seventy members, not less than two hundred and fifty acres of land had been prepared during the Summer, for a crop in 1861; and that nearly one thousand loads, fifty feet each, of compost manures had also been prepared during the summer season, and made ready to be drawn upon the land in the autumn.

Thus, the wilderness is encroached upon, and made to yield to man's wants; and the swamps and other alluvial spots, are made to

yield up a portion of their substance, which is mixed with other fertilizing substances, and spread upon fields partially exhausted.

Thus, we think that this society is annually adding to the material interests of the community; and if other similar organizations, similarly situated, would follow a similar course in awarding of premiums, it would be like casting bread upon the waters, the good results would be found after a few days.

Bay Verte School-house.

The inhabitants of this community have set the other sections of the county a good example. The new School-house, with the exception of the porch, which is too small, is an excellent structure; the size of the house, and the space between the upper and lower floors, &c., is in accordance with modern school-house architecture.

The old school-house, now abandoned, is as good, with half a dozen exceptions, as any of the two hundred and thirty school-houses in the county of Westmorland,—still, a better is erected.

We invite those who have any regard for the comfort of their children, and who are ashamed of the little hovels every where dotting the country, when they return home, after visiting Bay Verte, to call upon their neighbors to assist them to do likewise, *i. e.*, build a new School-house.

We should like to see our school-houses bear some resemblance to the better kind of barns and other out-houses, at least.

Shediac, a few weeks ago, agreed to tax themselves to the amount of £250, for the purpose of building a new school-house:—success to them.

Importation of Farm Stock.

The recent importation of farm stock into New Brunswick has turned out to be a failure. Being connected with one of the Agricultural Societies of New Brunswick, we attended the sale of the stock, which consisted of 21 sheep, 17 pigs, '50 bushels of the' (so called) 'celebrated Italian grass seed'; 13 of the animals shipped, were killed on the passage from England to America.

The pigs are not superior to many of the pigs of this Province; and the sheep are not equal either in size, or for wool, to the sheep of the British Provinces. We do not believe that the stock recently imported, is a fair sample of the stock of the Mother country. There were a large number of the farmers of New Brunswick present at the sale, who appeared disappointed,—indeed dissatisfaction appeared written upon every countenance.

If the stock just imported is a fair sample of the superior stock of England, especially the sheep, we have no doubt, the stock of Great Britain might be much improved by being crossed by the stock of this country; and we suggest, in all future importations, that we merely exchange animal for animal. It would not be difficult to select twenty-one sheep, from any of the flocks of Westmorland, equal, if not superior, to those recently imported.

These animals have cost the Province twenty pounds each; while superior sheep could be purchased on Prince Edward Island for three pounds apiece.

There can be no doubt, that frequent changes of both stock and seed, has a beneficial influence upon the agricultural interests of the country. But it should be remembered, that the stock imported, should be superior to the stock of the country, for which the importation is made, or else the latter will not be much improved.

We have long been of the opinion that the stock of this country, if properly kept, is equal, if not superior, to the stock of many other countries. Our stock is now acclimated, and all that is wanted is,—let the superior animals be selected for breeders,—animals capable of transmitting their properties to their offspring; and let them be well cared for—good feeding and good housing, and we have no fear for the results; besides, five or six hundred pounds will not be wasted every four or five years, in the importation of stock. Mr. Barbarie's trip to Britain, in October, 1860, will not cost the Province of New Brunswick less than one thousand pounds, while the proceeds of sale, including the insurance money on the stock lost, will not amount to more than three hundred and fifty pounds.

THE ITALIAN GRASS SEED, is an annual—requires to be sown every spring. In England it is very productive; frequently four crops are taken in one season. It requires rich land. In these Provinces where vegetation comes forward with great rapidity, we have no doubt but what it may be cultivated with profit.

The Agricultural Societies of New Brunswick were generally represented at the sale of stock and seed.

Of the Societies for the County of Westmorland, the Dorchester Society purchased a pig; the Sackville and Shediac Societies, each a sheep; and the Botsford and Westmorland Society, a bag, called eight bushels, of the Italian Grass Seed.

SUBSCRIBERS

who are in arrears in payment for the INSTRUCTOR, would greatly oblige us by remitting the amounts due.

There are over two hundred names on our list, who have been re-

ceiving the work from the beginning, and have not paid a fraction for it yet.

It should be remembered that printing is expensive, say nothing of the time devoted to the preparation of the work, and cannot be carried on without means.

Our object, and we hope we have not failed in carrying it out, is to supply a useful and instructive periodical, such as any family requires, and should have. The INSTRUCTOR was the first Monthly of the kind published in the Lower Provinces; others, it is true, of a similar nature, ably conducted, have come to life and disappeared, for want of support—WE STILL LIVE.

Therefore, friends, please favor us with your former support; assist us in extending our circulation, not forgetting to send us a little of the needful, and for so doing, we promise to give you good things in future—better, if possible, than heretofore, and at a lower price; is not that encouraging? As to terms, see another page.

Impoverishing Lands,

Much of the lands of the lower provinces are becoming exhausted. The other day when travelling between Judge Avaré's estate in Botsford, (Westmorland County) to Shediac, twenty miles, we came to the conclusion that at least one-third of this distance of country is thrown out to common, the lands completely exhausted, and not containing sufficient strength to produce weeds itself. This exhibits a bad state of agricultural operations in one of the best agricultural districts in the county—a district that for the last forty years has been famed for its wheat and oat producing qualities, now not able to produce weeds. The people must in very many cases be reduced to want. We are informed that the rotation of crops along the coast line runs thus:—A crop of potatoes,—manured principally with sea weed, then a crop of wheat or oats, then laid out to weeds (no grass seed sown) for three or four years; at the expiration of this term, again planted with potatoes when the same system of rotation is again pursued. Is it any wonder that the French people, who inhabit this district are so far in the back ground, in all that pertains to social and material progress?

Gleanings.

A cheese weighing 1500 lbs., was recently made by a farmer in Wisconsin. . . . A tusk recently found in the State of New York, measures ten feet in length. . . . A thirty-two mile race was recently run in one of the States, when one of the horses gave up at 23 miles, the other ran the whole distance. What madness. . . . The ball given to

the Prince of Wales at Montreal, cost ten thousand pounds. . . . The furniture used by the Prince at St. John, N. B., has been sold by auction, the bedstead, £31 10s; reception chair, £3 6s.; dressing table with glass, and marble top, £16. The Duke of Newcastle's bedstead brought £13 5s. . . . To raise good cabbage seed, plant the best and most thrifty stalks, with the heads on. . . . A war steamer, to be called the *Warrior*, is in course of construction in England, the tonnage of which is estimated at 7000 tons, and her cost, £380,000. . . . The *Belfast News Letter* says that there are seventy towns in Ireland without a bookseller's shop, and there are six whole counties without a publisher or a circulating library. Scotland, with only one third of Ireland's population, numbers three booksellers to every one in Ireland. . . . It costs a million of dollars per day to maintain the Government of France. The interest on the national debt is one hundred and twelve millions of dollars. The army and navy come in for ninety-eight millions of dollars. Such a government ought to be very good. . . . A tree on Vancouver's Island, is thirteen feet in diameter, about forty-two feet in circumference, and 256 feet high. . . . The population of Paris is 1,569,800 souls. . . . The total value of gold extracted from the mines of Australia, since the first discovery in 1851, is £70,358,916. . . . Copper mines have been discovered in British Columbia, containing large blocks of the pure metal, superior in size to anything of the kind on record. Silver has also been discovered in considerable quantities. . . . Dr. Bradley, of the States, has so improved the telegraphic apparatus, that 10,000 words per hour may be transmitted. . . . The Jews are erecting in New York, and out of Nova Scotia stone, one of the most imposing synagogues of modern times. . . . The *Ottawa Citizen* says that a farmer in that vicinity has raised 235 bushels of excellent oats on two and a half acres of land. . . . Profane swearing is suppressed by penal law in Pennsylvania; the law makes all persons who speak loosely of God, Christ, the Holy Ghost, or Bible, liable to an indictment for blasphemy, the penalty of which is a fine, not exceeding one hundred dollars, or imprisonment not exceeding three months, or both, at the discretion of the court. . . . Another planet has recently been discovered. . . . The census of Boston, just complete, gives the population at 177,902. . . . During the last quarter 43,625 persons left ports of the United Kingdom for different parts of the world; three-quarters of whom entered the United States. The principal part of the remainder to Australia. . . . Great Britain has already expended fifty millions of pounds in the suppression of the slave trade. . . . The vital statistics of England and France, recently taken, show that twice as many persons are born in a year, as are married. . . . The Red Sea Telegraph, which cost the English Government a million pounds has proved a failure. . . . The Queen of Great Britain has conferred the honor of knighthood upon Edmund Jordan, Esq., Member of the Executive Govern-

ment of Jamaica. . . . Garibaldi was born at Nice, Italy, and is fifty-four years of age. . . . Silk culture is becoming a very important part of the industrial pursuits of California. The climate, it is said, is well adapted to the culture of the silk worm. . . . The *Pittsburg Chronicle* says that many of the oil wells of the States, which have, for the last year, afforded such large supplies of excellent oil, have recently stopped. The famous Crosby well has dwindled down from seventy barrels a day, to six or seven. This state of things has thrown the oil shares into a state of suspense. . . . In the sixteen years previous to 1815, there were 150 vessels in the British navy struck by lightning, upwards of 70 men killed, and 133 wounded; the amount of property destroyed was over half a million pounds worth. . . . A law has recently passed, says the *Albany Argus*, forbidding any person who has a wife, husband, child or parent, to bequeath more than half their property to any benevolent or other institution. Any gift of more than one half is void as to the excess above one half. . . . The Jeddo and Macao libraries in Japan, contain 150,000 volumes. . . . Mrs. Gell, the only child of Sir John Franklin, died last month in England. . . . An ærolite fell a short time ago near Delhi, in India, which buried itself four feet in the ground, and required ten men to lift it. The explosion was as loud as if all the magazines in India had been collected and blown up. Smaller bodies fell in other places. . . . The Prince of Wales has given two hundred pounds to each of the six Canadian colleges, making £1200 in the whole, besides numerous gifts to other institutions.

Profligacy among Youth.

We feel sorry to have to devote a portion of our space to the subject which stands at the head of this article; but, as a public journalist, we deem it a duty to call attention to any abuses or violations of the moral law, that may exist.

Idleness, profanity, sabbath desecration, drunkenness, and abuse of parents and old age generally, yelling and brawling about our villages and public places at night, characterise a large portion of our youth.

A short time ago, in one of our villages, we, in company with others, entered a school-house, to hear a lecture on astronomy. The lecturer had a large number of excellent maps placed on the wall, by which he illustrated, in a graphic manner, the details of his subject. During the lecture there were a few boys inside of the room, some of whom behaved badly; However, the inside annoyances were but trifling compared to those without: it was not enough to make all kinds of noise, but they threw stones and blocks of wood into the house, through the windows.

The Lecturer stopped, some of the audience remonstrated with them, but all in vain.

Parents, who are principally responsible for such misconduct, would not allow their children to congregate in such places, without being present, and especially at night.

If the case above cited was a mere isolated one, we would be pleased; but on the contrary, frequent complaints are made by ministers and others of a like nature.

The disturbance of public worship is very common; petty thefts, and other criminal acts are getting more frequent throughout the country; and many of our young men get in debt wherever they can get credit, and in the end refuse to pay—so that litigation is on the increase.

And all, in communities claiming to be within the pale of civilization; where there are schools, churches, and social organizations; books, papers, and magazines in great abundance,—which are all calculated to enhance our responsibility.

There is a marked difference between the great majority of the old men and women—of three score years—and those of half that age; industry, observation, and reflection, characterise the former, while the latter, in the midst of infinitely greater opportunities, do not, generally speaking, possess the same stamina. The old had but little education, and some none, still, they were a thinking people, and made a practical use of what they had. One of the great objects of the rising generation appears to be, how to spend the hard earnings of their parents, and squander their precious time.

Property in these Provinces, seldom is handed down past the second generation; the cases in which the third generation inherit the estate of the grandfather, are few and far between. And not a little of the property of the country goes to enrich lawyers, and support a batch of officials who never contributed a shilling towards its improvement.

Such misappropriation of the hard earnings of the yeomanry of this country, we have no doubt, arises out of the improper education given to their successors. And if such be true of those who now figure in society as the second generation, descendants of an active and industrious race; what must follow from the education given to a large portion of the youth that may be seen congregated almost every evening in large numbers at our public corners and villages—who disturb public meetings, desecrate the sabbath day, and otherwise annoy the public.

If the youth that thus act, are to be the rulers and the ruled, the teachers and the taught, the ministers and the members of churches, and the parents, of the next generation, we fear, without a change passes over the face of a large part of the rising generation, that society will not advance to a very high standard of morality.

While we have thus strongly denounced the conduct of many of the

youth of our villages and other public places; still, we are proud to be able to state, that we can name several communities and families, where such misconduct is unknown—where order prevails; and where industry, and moral and intellectual culture characterises the people, both young and old.

COPPER ORE.—Copper ore has been discovered in some dozen of places in the Lower Provinces. In some places it is found to contain a large percentage of the metal. A short time ago, another copper deposit was discovered at the Joggings, Westmorland County, N. B. It is reported to be both rich in metal, and extensive.

A thorough scientific geological survey of New Brunswick would be of vast importance to the Province, we have no doubt. Almost all the discoveries of minerals made in these Provinces are the results of mere casual observation, and not, generally speaking, by means of explorations made with a view to discovery.

Murder.

The inhabitants of Texas seem to be brutes of the worst stamp. A Methodist clergyman, whose views respecting slavery were very moderate, was hung on suspicion of being opposed to slavery. Speaking of another person, the *Galveston News* says:—‘He was escorted out of Wood county under orders to leave the State, it is reported, has been prevented by a material impediment, from obeying instructions. We presume he climbed a tree, and hurt himself in coming down.’ In another county, six persons, one of whom was a clergyman, were hung. In another case—‘We learn,’ says the *Ledger*, ‘from the best authority, that a wandering map-seller has been translated to another sphere of action. A negro boy accompanied him in his permanent suspension from earthly duties.’

The city of Richmond, Virginia, has recently enacted, among laws, the following:—

‘That hereafter no negro, whether bond or free, shall, without the consent of the mayor, master or employer, ever ride in hack or carriage, and that any owner, keeper, or driver of such carriage, who shall permit an infringement of the law, shall be punished by fine, if he be a white man, and if a negro, be punished also with stripes.’

‘No negro shall stand on a sidewalk so as to inconvenience persons passing along such sidewalk, and if a negro meet, or overtake, or be overtaken by a white person on a side-walk, he shall pass or go on the outside, and if it be necessary to enable such white persons to pass, shall immediately get off such sidewalk or crossing. Any negro guilty of a violation of any of the provisions of this section shall be punished with stripes.’

Such is the wretched state of things existing under the boasted liberty banners of this model Republic:—liberty indeed—liberty to take

the lives of innocent persons, without even allowing them a mock trial. A government not able to keep one part of her subjects from destroying the life and property of the others, is, of all governments, the worst. We pray that God may keep us from being ruled by an ignorant, and brutal Democracy, or rather mobocracy.

CORRESPONDENCE.

To the Editor of the Instructor.

SIR,—

No farmer will question the truth of the axiom with which Mr. Peters begins the little work alluded to in my last letter—‘no soil will continue to produce good crops without manure.’ I shall not, therefore, trouble you with his quotation from an eminent French author, as to the importance of a due arrangement of the dung-hill, which, he says, is often so placed as if it were a matter of moment that it should be exposed to the water collected from every roof in the vicinity. The Canadian French are said by one traveller to bring out their dung in the winter to the St. Lawrence, leaving it on the ice to be washed away on the first thaw, and I have seen, not in British America, a dung-heap conveniently placed in the bed of a mountain torrent, whose periodical freshets saved the owner the trouble of removing it. There is, however, on most of the farms in these provinces, a great waste of manure, and farmers will do well to remember what is laid down by the learned Judge as an indisputable fact—that the most enriching parts of the manure may be wasted from it by rain, or escape from it in the shape of an invisible gas, during the heating of the dung-heap.

To prevent barn-yard manure from losing its most fertilizing parts by the wash of the water, the place where it is thrown should be dug out, so as to form a pit three or four feet deep, and puddled with clay, if the bottom will not hold water. During the summer or in the fall, one or two feet of bog mud, if it can be got, or earth from the road-side should be thrown into the pit, the manure, when thrown out, will then rest upon this mud or earth, which will absorb the juices as they escape and become as good manure as the dung itself. This alone, in the opinion of the learned Judge,—and I am sure any of your readers making the experiment will concur,—is a great improvement on the present system, but the erection of a shed against the side of the stable or byre over the pit, so as to cover the manure when thrown out, will prevent its being mixed with snow in winter, or being washed by rain in spring. ‘It is of great importance to the management of barn-yard manure, that a *gentle* fermentation or heating should be constantly going on in the heap, first because a certain extent of decomposition is necessary to render the litter it contains, fit food for plants; secondly,

because by this heating, seeds of noxious weeds are destroyed. If the dung is mixed with snow, and frozen, no decomposition goes on in winter, and the seeds of every weed which grow on the farm are preserved and carried out with the manure, and are thus resown in the spring. By having the manure covered with a shed, this evil will be avoided, as though ten or twelve inches of the top of the heap thus covered may be frozen, yet, even in mid-winter, the interior of the heap will contain sufficient heat to destroy the vitality of the seeds, and gradually to decompose the litter.' Manure which is not thus covered, if left till late in the spring, will become too hot; a strong smell caused by the escape and waste of the gas called ammonia, will be found to issue from it, and it must be remembered that this ammonia is the best part of the manure, altho' it is invisible. 'On opening a heap which has undergone this excessive fermentation, a great part of it will often be found 'fire fanged,' that is having a dry mouldy appearance. Manure reduced to this state is of little value, but where dung, by being under a shed has undergone a gradual decomposition during the winter, this excessive heating, and consequent loss will be avoided.'

The author before quoted gives us some excellent observations on *regulated* fermentation, which occasions but very little loss of ammonia. As an example of the difference he cites that which frequently takes place in piles of horse-dung. Some of such dung-hills, acquire an intense heat in a few days, and instances are known of their taking fire. If a slow and equal fermentation has taken place, altho' the upper layer will be nearly in the same state as when piled, the next will be changed in a greater degree, and in the lower part of the heap the modification will be yet greater; the straw will have lost its consistency, is fibrous, and easily breaks in pieces; the mass is also proportionately darker in color as we go deeper, and on the ground is black. The proper management of the dung-heap determines its utility as a manure, and its constituent elements would have gone through a totally different course had they been exposed to the open air.

These recommendations come from the pen of a practical farmer, and, I trust may not be without their use to many of the readers of your excellent miscellany. With best wishes for its extensive circulation,

I remain, Sir,

Your obedient servant,

NEMO.

Railroads in Germany.

Nothing could be better illustrative of the prominent traits of the German character, caution, solidity and method, than the German railroads and the manner in which they are conducted. Built at great expense, and with great care, they seem destined to outlast time itself. Taunus Railroad, between Frankfort-on-

the Main and Wiesbaden, cost \$260,907 per German mile (the German mile equals $4\frac{1}{2}$ miles English;) the Baden road cost \$309,177; the Dusseldorf and Elberfeld, \$432,352; the Cologne and Minden, \$150,000; and the Rhine road, \$569,250 per German mile. As might be expected, the work is done with thoroughness; the bridges are built throughout with stone, and even the smallest viaducts are handsomely arched over; everything is smoothed off; there are no rough, ragged-looking places to offend the eye.

The depots at the stations are universally built of sandstone, and are excellently arranged. With them are connected restaurants where one can procure refreshments similar to that of a first class hotel.

The caution with which the roads are conducted affords an example which American roads would do well to imitate. A 'railroad accident' seldom, if ever, occurs. At distances of about an eighth of a mile, throughout the length of the road, are stationed watchmen, whose duty it is to see that the track is clear, and to prevent people from walking on the premises. It is a punishable offence to walk along the track. Wherever the railroad crosses a highway a gate-keeper is placed, who inexorably closes the barriers the moment he sees the smoke of the advancing train, and will not permit even foot passengers to cross until it is past. The precautions taken to prevent accidents seem excessive to one who is inured to the American system.—*Scientific American*.

Up and Downs.

Life may be said to be a succession of vicissitudes. But in none more so, than in those who have began in the ranks of poverty, and ultimately arrived at wealth and affluence, when the descending course again follows, as is too often the case.

The following article from *Life Illustrated*, is true to the letter, as to the causes of many of the vicissitudes of life:—

The processions of human life from generation to generation and from ancestors to distant posterity, are not in direct lines, but in waves, sometimes ascending to giddy heights, and then sinking to corresponding depressions. In a country like our own, where castes and hereditary privileges are unknown, almost every distinguished family may trace its origin to ancestors who moved in the humbler walks of life, and who, from the foundation of a vigorous physical constitution and well-developed moral and intellectual powers, launched forth upon the sea of adventure or of energetic industry, and by steady and persevering efforts, became the authors of their own fortunes or fame.

But perhaps with the next generation this floodtide of prosperity begins to ebb. Pride of family distinction won by the parents is apt to poison the minds of the children, who, scorning those exertions which are now no longer necessary to subsistence, grow indolent, effeminate, and perhaps vicious. Their health is thus impaired;

their moral and intellectual energies are enfeebled; their wealth is diminished; and the *downward* movement thus commenced with them is continued in their posterity until the lower gradations of human life are again reached. The more tender branches of the family will then, perhaps, become entirely extinct, while those who retain sufficient vigor to secure perpetuity, after being mauled and worried by adversity, and compelled to dig and scabble for a living during two or three generations, may again develop their energies, and a second time gradually attain to wealth and eminence, to follow again the same process of deterioration and decline.

But though this is descriptive of the *usual* vicissitudes of family lineage, it by no means indicates a *law* that is necessarily operative in all cases of family descent; and one of the most effectual means of preventing the *downward* fluctuation of families that have attained to wealth and distinction, is the pointing out of the existing causes which render such a decline imminent, and having them distinctly understood so that they may be guarded against. Every wealthy, intelligent, and upright parent who has the least desire that the blessings he enjoys should be perpetuated through a long line of future posterity should take the most scrupulous care to have his children well instructed in all the laws of physiology, hygiene, and phrenology, and practically trained to their observance; and above all, he should teach them, so far as possible, the exercise of a quiet, cheerful and humble spirit that looks to God for the fructification of all their personal aspirations and endeavors. No wealthy parent who is wise, and understands the dangers to which his affluent circumstances are liable to expose his children, will bring them up in luxury and indulgence, or hesitate to subject them to that useful physical toil, and that denial of their appetites and passions, which are absolutely necessary to develop properly, the bodily organization, and to give them a positive vigor and manliness of character to grapple with the difficulties and temptations of life. The parent should early teach his children that his wealth is the price of toil, perseverance and economy, and that not a dollar of it shall ever be entailed upon them if they do not, by their own personal exertions, prudence, economy, and practical self-denial, first show themselves worthy of it.

Let wealthy parents teach their sons Latin, Greek, and the modern languages, and their daughters music, drawing, French, and all other branches of an ornamental education, if they will; but let them never, in any instance, neglect to teach them the structure and laws of their own physical and mental system, and that a sound mind can never exist in a diseased and enfeebled body; and let every necessary appliance of exercise, dietic habit, and abstinence from hurtful practices, be brought into requisition to secure the health and harmonious operations of both body and soul. Then fell consumption will be com-

pelled to seek elsewhere for his victims, and gout, rheumatism, dyspepsia, and the kindred evils to which flesh is heir, will be kept at bay; and with God's blessing the family will continue in unbroken vigor from generation to generation.

The voice is to you, wealthy parents; pursue this course with your children, or run the risk of twenty chances to one, of having your wealth dissipated by them, and of having your family in one, two, or, at most, three more generations, run down to the lowest depth of poverty, and perhaps of moral degradation and mental imbecility.

Agriculture in the United States.

We glean the following statistical data concerning the United States, its agriculture and manufactures, from a very able article by M. E. Dormoy, in the *Revue Contemporaine*. In 1783, at the period of the peace, the United States only comprised 802,230 square miles; at the present time they extend over a territory of 2,962,060 square miles, or nearly double the extent of Europe, exclusive of Russia. Out of a population of 3,400,000 males of the age of fifteen and upwards, 45 per cent are agriculturists; while those engaged in commerce, manufactures, trades and mines do not together form more than 30 per cent; 2 per cent are devoted to a seafaring life; while the army scarcely claims one per thousand. These proportions differ widely from those of Europe, since in England not more than 15 per cent are agriculturists; in France, 23 per cent; and in Belgium, 25 per cent. The capital engaged in agriculture amounts in the United States to 5,200 millions of dollars; while that employed in other branches of industry does not exceed 1,000 millions of dollars. Every year agriculture adds 16,600,000 dollars to the wealth of the country, and in the State of New York, alone agriculturists pay four-fifths of the taxes. In 1857, the total exports from the United States amounted to 360,000,000 dollars, of which sum agricultural produce formed two-thirds, including cotton, which alone stood for one-third. In the course of ten years the value of these exports had increased 70 per cent. In the United States the average extent of a farm or estate is from 150 to 200 acres; in France it is not more than 12½ acres; while four millions of small farmers do not own more than from 6½ to 7½ acres. Maize constitutes the chief staple of the United States, since it occupies nearly one-third of the land under cultivation, or 30 million of acres; 20 millions of acres more consist of uncultivated pasture land, incapable of producing hay; 12½ millions are meadow-land; oats are grown on 7½ millions of acres, and five millions of acres produce cotton. The vine covers 250,000 acres. The four chief sources of revenue to the Union in the way of annual produce are—maize, producing 300 millions of dollars; hay, 140 millions; wheat, 100 millions; and cotton 80 millions. The number of horses, asses and mules is estimated at five millions, or one of those animals for every five inhabitants; there are 18 millions of oxen, 30 millions of pigs and 20 millions of sheep. The total value of all these domestic animals is about 600 millions of dollars.—*Sci. American*.