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Nec aranearum sane textus ideo melior, quia ex se fila gignunt, nec noster vilior quia ex alienis libamus ut apes.

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SCIENCE FACILITATES MONEY GETTING.

Science, in its most comprehensive signification, means knowledge. Knowledge is our cognition of material and spiritual things through the medium of our external senses, internal consciousness and reasoning faculties. To know, implies, a use of our mental faculties. To know a thing is to comprehend it fully, in its essence, its properties, its uses, and all its relations to other things. The field of science or knowledge is boundless as the universe. It is wide enough and broad enough to engage all our faculties forever, and continually elevate them in the scale of development. It need scarcely be mentioned here that the mind is progressive in strength and power,—that its operations are all at first exceedingly limited and simple, but gather force and comprehensive capacity until it becomes able to span the universe and unfold its mysteries. The child is weak in body and mind, but the truly developed man is strong physically and mentally. But if a person grows up in the exercise of his bodily powers only, he will remain a child in mental manifestations. His course through life, as marked out by himself, will exhibit a childlike vacillation, in decision, unsteadiness of purpose, and ignorance of the greatest advantage and profit. These truths are exhibited in daily experience, and acknowledged by all. Science gives strength, energy, activity and foresight to the mind, and hence its indispensable utility.

1. The first position I shall take, is, that education is as necessary to the farmer as to him of any other pursuit—the learned professions are not excepted. Farmers and all, have seemed, and still seem to acquiesce in the ruinous sentiment, that a thorough education is only necessary for those who intend to obtain a livelihood through the medium of a profession. Hence they have agreed to let them monopolize all the learning of the age. A farmer sends his son to an Academy or College, and this deemed sufficient evidence that he is designed for some elevated station where he can get a living by wit. Ask a farmer why he does not provide his sons with the means of a good education; that is, more than is obtained at a common school, he will generally reply, 'O, they are only going to be farmers, and it is useless to waste money in giving them knowledge.' Against this sentiment I protest, here, now, and forever. Nothing can be more suicidal.

But, says one, a farmer can chop, log, plow, sow, thresh and go to the mill and market without much 'larnin,' but how can the professional man get along without a good education? A professional man can succeed as well, yea even better without mental discipline than the farmer. It is not known, that, while the people are uncultivated, humbug is more available for the lawyer, physician and clergyman, than real science. They are well aware of it, and the world is running over with humbug. But does the farmer's business afford any chance for the successful investment of this species of capital? The ignorant Doctor can turn humbug to a profitable account, but the ignorant farmer cannot, and is a continual loser by his ignorance. Let, then, the sickly sentiment be banished. The farmer needs as much knowledge as any other business man. This point will be further elucidated by what follows:

2. But why is science necessary to the farmer in money getting? I answer, for the same reason that it is necessary for any other individual, whether in commercial or mercantile, or professional business. Taking mankind indiscriminately, the uneducated are rarely successful in any branch of business. There may be many examples to the contrary appearing, but all these it will be found are educated in branches most necessary to their pursuit, if not by the in-

struction of others, by their own industry, activity, and energy of thought. Some (but they are few) with strong natural powers early learn to think, and make life a continual scene of study, especially in all matters pertaining to their occupations. Small incident, or apparently trifling circumstances will sometimes give the mind such a direction as will prove of incalculable advantage. It takes but little in early life, to render many individuals favourites of fortune, or the scattered sons of adversity. Hence it is no argument in the favour of ignorance that some unschooled individuals are successful in money getting. In any capacity to which he may be called a man asks according to his power. There are two kinds of business power—knowledge and money. Money without knowledge is useless, and soon flies to the winds; but science without money is productive, and will soon command it if wanted. This is the infinite advantage of the former over the latter;—hence money cannot be so properly invested as in disciplining or educating the young. One thousand dollars are worth at least, one hundred per cent more expended on the education of a farmer's son, than in leaving it to him at last with common ignorance. The mind is capable of infinite expansion, and is able to reason, generalize and conclude in proportion to its strength and knowledge. The naturally strong mind is doubly strengthened by discipline, and thus its reasoning connected, while the weaker intellect of him who would be the dupe and victim of the cunning, would be rendered mighty enough to cope with the world, to succeed in business and maintain its rights. Hence, the weak need discipline, if anything more than the strong. But it is difficult to discriminate in youth, and the safe rule is, to educate all. In every business enterprise, there are many things to consider and foresee in order to insure success. The farmer has as many difficult problems to solve, and as many intricate calculations to make, as any other individual. The correctness of his solutions and the accuracy of his calculations, depend upon the strength of his faculties, and the extent of his knowledge.

3. But wherein does science directly aid the farmer in money getting? It enables him to seize upon every hint, every new occurrence, and every phenomenon that occurs in the range of his pursuit, and turn them to profitable account. Having a mind well disciplined and fruitful in resources, he is able to take such advantage even of familiar things and perpetually recurring incidents, as would escape the attention of the ignorant. The falling of an apple was nothing new or extraordinary in the course of nature, yet a Newton seized upon the trivial occurrence and developed the great law which governs the universe. Almost all great discoveries have been occasioned in such a manner as to excite our astonishment that they were not thought of before, after being explained to us by the discoverer. Yes, 'why were they not thought of before?' Simply because there has been no one who thought enough to think of them. The unintelligent farmer does little more than follow the footsteps of his father, and if the father laboured under disadvantages and met with frequent losses that might have been avoided, he also is toiling for nought, under this erroneous example, not knowing how to correct it. He does not dream that any improvement can be made, and frequently persists in following the old practice long after others have made thousands by adopting a new course. Many, too, likewise ridicule what they call 'book farming,' as though all the routine of their business were simple and known to every farmer's boy. To estimate the simplicity of agriculture, let us look at it in its reality. Besides embracing much of almost every branch of learning it draws extensively upon Chemistry, Mineralogy, Geology, Botany, and Meteorology. The first teaches the composition and properties of the different soils, the spe-

cies of vegetation, together with that of light and heat, air and moisture, and every material thing. The second teaches the description and classification of the extensive variety of minerals which make up the globe, and constitute the basis of the soil, which its handmaid, Geology, teaches the manner in which they enter into formation of the earth, the signs by which different soils may be known, &c. Botany describes to us everything that vegetates and blooms, and Meteorology directs our attention to the winds and the storms, and enables us to prognosticate the changes of the natural elements. To these may be added vegetable Physiology, which teaches the influence of light, heat, earth and water in producing vegetation. By these sciences we are enabled to know exactly the adaptedness of different soils to different grains, grapes and plants, before planting, and hence the farmer can give each kind of grain its most natural nurse without incurring the loss and delay of repeated failures. He is also thus enabled to guard his farm, and keep each field in its original vigor and constant productiveness. Had we time and space, we might give some idea of the simplicity of agriculture. With proper knowledge, the farmer might make more money with a pleasurable amount of toil than he now does by constant slavish labor. Ohio is not half as productive as she should be with the same physical effort. She has animal strength enough, all she needs is mental power.

Is not then, the business of the farmer as arduous, and does it not require as much varied learning as any other pursuit? And if discipline and science facilitate money getting in the professions, will they not much more facilitate it in agriculture? The lawyer, doctor, and clergyman deal with man, while the farmer deals with nature. The study of the human character may be intricate, but the study of nature in her greatness and grandeur is not so.

But let it not be understood that science and a cultivated mind are valuable only in facilitating money getting. No, no, they have a nobler, loftier end in view—the elevation of the character and the promotion of human happiness. They have in charge the mighty spirit of them, and their sublime mission is to exalt it above the dust of earth and the glittering darkness of gold and corrupting wealth. They facilitate money getting only that man may have time and means to ennoble himself, and grow up into all perfection. This mission of sciences will be considered in my text. Here I close for the present, most earnestly commending to the attention of the reader the only eternal interests of his being—the interest of the glorious mind.

From the Agricultural Gazette.

THE OPERATION OF LIME AS A FERTILIZER.

Is now for the most part satisfactorily understood. Its influence in certain cases and not in others—the equality of its effect, though applied abundantly here and scarcely there—the opinion founded upon experience which prevails in some districts, that a large dose effect a permanent improvement and needs not to be repeated; and the idea equally well founded, which obtains elsewhere, that the annual application of a small quantity is necessary to the maintenance of fertility—have all been satisfactorily explained by the theory, as it now stands of the mode in which it should act.

We wish more particularly to make a remark or two on the application of lime to newly broken up land. Whatever theory may assert on the subject, there is no doubt of its almost universal fertilizing influence in such a case. Every body is aware of this fact, but that they are ignorant of its explanation is evident, by the great abuse which is generally made of the practice. There can be no doubt of the money value to the farmer of a knowledge of agricultural theory. From the use and abuse of lime as a manure we could bring many illustrations of this. Whether the necessity for its application arise from a faulty texture

of soil, which it would correct, or from the presence of noxious and compounds, which it would neutralize; whether it would act by inducing the formation of useful organic or inorganic compounds in the soil, or simply and directly by supplying an absent element of food for plants, the merely practical man, who is ignorant of its theory, necessarily makes in every case the same acreable application, and in thus very probably, at the very time that he may be boasting of the superiority of practice over theory, guilty of that which to his more intelligent neighbour appears in the one case as the most obvious parsimony, and in the other as the grossest extravagance. A fact noticed last year on the farm from which we write, throws some light on correct practice in this particular, especially as regards the application of lime to newly broken up Grass lands.

All the fields on this farm, except those of shallow soil on the limestone rock, have been limed at the rate of upwards of 200 bushels per acre: this was done generally in the second and third years after they were broken out of Grass and for the most part because the soil was naturally destitute of or deficient in calcareous matter. In one of these fields a ridge was left unlimed, and that ridge last year (the field was in Wheat) remained definitely marked out from the others by its blank and sterile appearance in the midst of the heavy crop both of straw and grain which surrounded it. What made the appearance more remarkable was the circumstance that, since the application of lime, now three years ago, the plowing in that field had been altered—the direction of the furrows had been altered—so that the unlimed ridge stretched across the others and embraced a considerable variety of the soil—all of them, from its appearance agreeing in this that not having been limed, either they were positively barren, or their fertility remained latent. Now this was the first year that this appearance had been noticed. And we may draw from that fact two things.

1. That newly broken up land, though it be not manured with lime, contains sufficient store of nutriment for some years' crop; and,

2. That it is better for newly broken up land to remain unlimed for two or three years *except under special circumstances*, for its ready sufficiently fertile, and the expenses for some years is unnecessary; and the application would probably cause an excessive fertility, if one may use that expression, such as would injure grain crops by an excessive growth of straw. Now the special circumstance to which we allude, occur in cases 1) where light land on a ferruginous subsoil has remained long under stagnant water the soil is then found to contain compounds of iron injurious to vegetation on which are decomposed by an application of caustic lime, and the elements of which under the influence of that application are induced to re-arrange themselves no longer injurious. And (2) in cases where, as an effect of stagnant water, peat has been formed which, when drained, leaves a soil destitute of the mineral elements necessary to fertility; lime and clay are then necessary applications.

The farmer independently of all theory on this subject, will be perfectly safe in remembering that where lime has not been hitherto applied, and where the land contains an excess of vegetable matter, or has long been injured by stagnant water, or is destitute naturally of calcareous matter, lime, whatever the mode in which it was, is sure to have a fertilizing influence. Apply lime therefore, a year or two after breaking up your Grass lands, and then maintain the fertility thus produced by growing each year on half the land crops for consumption on the land, by selling only grain and butcher-meat off your farm, and by bringing unto it oil-cake and other food for cattle, sheep, and pigs, you will thus enrich your manure and increase its quantity.

When we are alone, we have our thoughts to watch; in our families, our temper; and in society our tongues.