

Our Common Schools and Farmers.

Continued from page 240.

Let us look at this matter from the standpoint of evolution. Nature, when raising the anthropoid from the animal, in other words, in creating man—made changes at three points: she enlarged the frontal brain, modified the mouth and throat to make articulate speech possible, and transformed the forefeet into hands. At these three points education should be applied. That is, our schools should aim not simply at brain culture, but at speech culture and hand culture. With such a reckoning, we are brought to the need of music, and the use of tools as well as books. I would give one-half of each day to the books; the other half to music, and play, and work. But do not let this manual culture be confined to mechanical tools alone, but also to farm tools. I hope to live to see every schoolhouse in the country set in a plot of land for comparative horticultural. The Germans and English are beginning to feel the need of this change, and are considering the project of establishing school gardens or incipient farms. Mr. Sewell read recently, before the British Association, at Newcastle-on-Tyne, a paper in which he outlined a school botanical garden. This is, of course, not a new thing on some parts of the Continent. I see no reason why the garden and garden tools may not constitute a part of the furnishing for manual culture. Gardening and horticulture train the hand, and these industries need the trained hand. If you expect your children to love such work, let them learn to do it in connection with and as a part of study and play. No child should ever have a breach made between play and work. It seems very probable that, when manual training is conjoined with a study of the sciences, there will be no further need of compulsory educational laws.

While I would not have everything done for the brain, I would not have anything done with the simple end of utility, as applied to the back and stomach. Yet the highest art and the highest utility coincide. Drawing, or the free use of the pencil, is in reality not an ornamental part of education, but a most practical part. It enters into half of our commonest industries. The young person more often has need of the pencil than of the pen, in winning his way. Old things pass away. I do not object to teaching penmanship, but I aver that four-fifths of the culture in this direction is superfluous, while drawing, which is set aside as an accomplishment, is in most demand for material as well as intellectual progress. We must reverse matters, and teach drawing, at all events; penmanship afterwards. So I would teach geology at all hazards, and geography afterwards. It is more important that a boy know the land he lives on, and what he can do with it, than that he should know the chief cities of Burmah and Japan. That is, I would apply educative force to the brain, but not to the brain only; I would teach the hands to draw and to work, and the voice the sweet art of music and the fine art of conversation.

It is equally important that our readjustment of the common school shall enable us to make farming profitable. The study of horticulture and biology will also aid materially in this direction. But there is quite as much advantage in chemistry and in farm economics. Farming will pay when it is done understandingly, intelligently, lovingly, with a knowledge of the forces we deal with and the things we handle. At present the bugs understand us better than we do them. They have little to learn, but that they have learned well. I keep an ant colony on one of my lawns to show occasionally to my boys and to visitors. How much more intelligently, economically, neatly, and with how much more attention to sanitation, these creatures farm it than men do! They have no mortgages. They keep cows, but their stables are models of neatness. But my hired men are almost sure to be machines, and are far from models of thrift and economy and neatness. They do not love the farm; they do not, with a few exceptions, work intelligently; they abhor experimental farming.

Wilson Flagg says in his book about trees: "When I am journeying through the country, and behold the rocky hills, sometimes for miles in extent, entirely bare of trees, affording too little sustenance to support even whortleberries, I am informed by the older inhabitants that, in their childhood, these hills were covered with forests. The woods were cut down, and there was nothing left to prevent the soil from being washed down into the valleys. Now nothing remains to support a new growth of trees." I care not in which direction you turn, American farming has to account for its depression by its methods. You have never seen a case of failure, where there were no heavy doctor's bills, but you could put your finger on a removable cause. Our hop speculators are a sample. When they make money on hops, it is at the expense of every other crop in the way of manure and labor. When there is a large margin in their favor, they buy fast horses and pianos, smoke cigars and cultivate other wasteful habits. When the market drops from one dollar a pound to five cents, the auctioneer sells the pianos and horses for one-tenth value, and the farmer who sought only money, and had no love for, or knowledge of, the land, and the things of the land, joins the westward caravan, or hangs himself. I said to a friend, of good judgment: "Take your pencil, and make an estimate of the loss in one way and another of farm produce. We figured the absolute loss, first

and last, of bad culture, bad handling, and general lack of intelligent method and economy, at one-half. I truly believe one-half the production of American lands is lost through ill-directed education. Our apple crop is more than half lost, and this is pretty surely true of all other fruits, except, perhaps, small fruit, which cannot be grown at all except with special attention. The plum trees, over large areas of the Northern States, have been cut down, or ought to be, to get rid of black-knot. The cherry trees were also assailed fifty years ago, and gradually eliminated by the same disease. The curculio spoils yearly tens of thousands of bushels of both these fruits. Remedy, more knowledge of entomology and of tree life itself. Give that, and the snap and backbone will be found. The farmer is rarely a lazy man; his trouble is, he does not know his enemies, or how to fight them. He does not know his friends from his foes in the insect world, and is as likely to destroy the former as the latter. I hired a peripatetic Yankee for two months. He had a common school education, but he did not know granite from conglomerate, and undertook to spray tent caterpillars for codlin moths. Unfortunately, he, like many more farmers, despised any knowledge that did not come along as heredity. One-third of the apple trees of Central New York were ruined within the last five years by the tent caterpillar—not only the fruit, but the trees. The invasion was enormous; but the fight was an open one. The worms came out ahead; the fittest always survive. Last winter I negotiated for five tons of hay of a dairyman. It was so full of wild carrot and Canada thistles that I accepted but the first load. We cannot afford to pay for hoeing the weeds out that will be seeded in by such manure. Such hay decreases the owner's milk product one-half, and by and by the weeds will whip him off his land.

I have an acre of flowers for our own pleasure; although, as a rule, these might add largely to the income of small fruit-growers. But we may as well grow our luxuries, if we have cultivated tastes, as to buy them. There is more real pleasure in hollyhocks than in fast horses, if you are educated to understand them. A young lady full of common and high school wisdom visited my grounds and found immense pleasure for a couple of hours. Then, looking over the superb valley, through the rich and rare trees, she said: "But it must be terribly lonely here." "Ah," I said, "that is so, if you have no friends here, or acquaintances. You do not know these elms, and lindens, and magnolias—they are strangers; but to me they are companions. No, we are not lonely here." But, with all my gardens of berries and lawns of flowers, I let my neighbors' bees carry off my honey until last summer—which was poor policy. A man should know how to gather all his crops, from the honey in his raspberry flower to the berries themselves. Then, he should know how to grow each crop to the best advantage. Then, he should know how to handle them all economically. Then he should have so large a variety of crops that he will not seriously be embarrassed by the loss of one, or two, or even three each year. Farming in the West is mostly speculative; so is much in the East. It is a venture of all a man's prosperity on one or two crops. If the market go down, or the crops fail, the farmer is as badly off as a sheared lamb in Wall street. He has nothing to do but to growl at capitalists, who are doing precisely what he tried to do and failed. So when we come to estimate the farm trouble, we cannot leave out the lack of knowledge about insects and about manures.

There really is no reason why the tide that for a century has set toward cities should not be reversed. To some extent it is now being reversed. The literary and mercantile classes began some time since a hegira into suburban homes; and the mechanics are now following them. This, of course, is not to make farmers of them, but it is to give them a taste for land and land culture. Mr. Hubert, in a capital volume on "Liberty and a Living," pictures the possibilities before a city journalist. If a taste for the country can be cultivated, and with rural life can be joined a fair share of refining influences and the comforts of art and music, as well as pure air and exercise, we are on the road to a reconstructed agricultural sentiment. Mr. Hubert shows us admirably that we can get all the good there is in a city, and have our work tell at the hub while we live at the end of the spokes. He says: "People talk of the inspiration of the crowd—the electrical effect of numbers. I can see but little of this in our American cities." The suburban life of our larger cities has, for the past five years, enormously widened out. To hasten the further reaction, so that agriculture in the twentieth century shall be once more the leading division of American industry, is a matter of political and social importance. When this is accomplished we shall have filled the hopes of our founders, and made the Republic what Jefferson believed to be possible.

But how, you say, can this revolution be wrought? By what possible means can we secure for our common schools teachers equipped to teach geology, chemistry, biology, and physics? When the demand comes, we shall surely have the supply. But let us not make the mistake of supposing these to be more abstruse or difficult studies than geography, arithmetic, and grammar. Highly taught, these latter are far the most difficult and advanced. They belong only with older pupils. The former sciences are simpler and more fundamental. They deal with everyday questions and are near at

hand. The only trouble in science is with the nomenclature. Science as entomology, for instance, deals with butterflies and bugs—just what children naturally take to. Science as botany deals with flowers, fruits, roots, trees—just what all children like. Science as geology deals with the dirt and stones and brook beds—just what children love. Science as chemistry pulls things to pieces and reconstructs; as physics, it plays with sunbeams. This is not at all abstruse. *We want just as little as possible to do with books while educating a child.* But I am not enthusiastic enough to believe we can work a revolution of this nature in a day, or in a year. We must first see our need. The end will be that we shall not allow a school in the land to be under the care of any but Normal graduates. Drawing and music are a part of hand culture and voice culture, and you can just as easily equip teachers for such studies as for those which you now have. I have said there should be a school garden about each schoolhouse. Why not also telegraphic and telephonic connection with every simple country school? This also, and much more, will come, making the common schoolhouse the centre of the district, rather than a neglected, desolate hovel by the wayside.

This subject is of intense and growing importance, and cannot have the go-by. *As we educate, so we are.* If we are not educating farmers, farmers we shall not have. No social change ever took place, for better or for worse, that was not the result of preceding educative influences. It is possible for a system of education to become entirely foreign to the age in which it is in practice. Vambery, after one of his masterly descriptions of the learned institutions of Khiva and Bokhara, says: "The richly endowed colleges of these cities are visited by hundreds of students from India, Afghanistan, and Chinese Turkestan. Great diligence is displayed in study; but only in grammar, rhetoric, and history, while mechanics and sciences are considered superfluous. After fifty years of Russian occupation they regard with freezing indifference machinery, railways, and modern manufactures. Only a vast upheaval of the educational foundations could transform this people. As the schools are, so are the people. We have quite passed the point where we can rest contented with schools that simply inform their pupils. We must have a national aim, a national system, for a national end. Certainly the farmer must insist that the tendency of the school shall not be to take his children from the farm, unsettle the home instinct, unfit them to be happy agriculturists, and turn them over in a ceaseless tide into shopkeepers and traders."

Supplementary to the changes I have emphasized in common school education, is it not possible to make farm life recipient in a high degree of the advantages of University Extension? This, the latest stage in the evolution of educational methods, proposes in brief to carry the advantages of higher education to those who cannot go to the university to get it. It is an enlarged "Chautauqua," and while not yet a clearly defined system, it has in it an optimism concerning popular culture never before conceived. In this county of New York State, Oneida, we have a County Farmers' Club. During the winter the professors of Hamilton College have delivered a course of lectures before the club and its friends, on the following and kindred topics: "Political Economy and its Bearings on Farm Life," "Biology in its Relations to Farmers," "The Geology of Central New York"—considering soils and water courses; "Farmers' Libraries and Home Culture."

These eminently practical subjects bring the college and the farmer into close relation. It is projected to carry the plan forward much more thoroughly, and inaugurate courses with abundant laboratory and probably field work. For a very large part of the country, something of this sort is possible. In all ways we should aim to make the farm the brightest and most intellectual home; we should carry there what we have concentrated in cities and towns. We are at the dawn of a distributive age. Electricity will, as a power, be easily carried to a distance. It also carries knowledge everywhere at a trifling cost. I do not despair of even seeing our farm homes connected with university laboratories in such a manner that the whole work may be reported; in other words, so that the professor, if he have common sense, may address instructively an audience scattered over a whole township or county. But at present the one practical and all-important point is to have in our common schools a curriculum of study that will make our children acquainted with land and what is on the land; an education that unfolds the nature of soils, and the wonders of life in and on the soils; and while bewitching them with the everlasting unfoldings of such studies, makes it possible for them to master their foes, and receive the benefits of insect, bird and plant friends. This done, no occupation can compare with farming for its charms and advantages.

Although a great deal has been done in Cape Colony by way of lectures, and the introduction of the most modern English dairy implements, yet the dairy industry does not rapidly advance, as that country seems to be better adapted for sheep and goats than dairy cows. Australian butter is going into that country and supplying the markets at 15 old per pound retail. The Cape farmers' extremity is proving the Australian farmers' opportunity. It is well that Australia has found another market in Britain.