

them. When he wanted Wilhelmina, it was Hejen he asked for and when he wanted to play with Conradine the youngest, he called out the window for Leopoldine, the oldest of all, a maiden of forty years of age. What could the baron do? He had recourse to all sorts of memonial arts which ended by filling his brain with confusion.

Tired of the struggle, he gave up trying to remember the names of his children, but it was not any more easy for him to recall their faces—in passing the village square, he would caress and embrace a young girl belonging to some neighbor, under the idea that she was one of his own; or else surprising one of his own in his orchard, he would pull her ears most vigorously, convinced that he was dealing with a little rogue from the village who had come to steal his apples. What pain to the heart of a father as tender as Baron Forbach!

“Yes, and to the ears of his family! For there is no reason to suppose that this cartilago belonging to the young ladies was any less tender than the father’s heart.”

“True, let us drink on that and I will resume. A proof that the Forbach damsals had tender ears is that they detested their father, the more so as they were badly dressed. The baron although worth a hundred thousand crowns, could not buy forty dresses in a season, from the fashionable merchants; this inspired him with an original idea. He converted one wing of his castle into a shop, where were spun and woven stuffs for the use of his children, hoping that thus their clothing would cost him less. But during this scheme he was subjected to many hoaxes. A manufacturer from the next city wrote to propose to him to advertise for materials for which he had need each year, under a system of sealed proposals submitted to adjunction. Another, who had the army clothing contract, wished to sell him, at a reduction, fifty soldier’s cloaks which the government had refused.

The baron did not reply, but put in operation his own manufactory. This was a first success, but mark what followed! When a dress was beyond farther service, it was given to some poor person in the villiage, so that at the end of the year nothing but the uniform was anywhere to be seen, and the baron instead of forty daughters appeared to have a hundred.”

“The deuce! But it must have been somewhat burdensome to feed all this flock.”

“Don’t speak of it, but let us take another glass. It was not exactly the wine that cost so much in the house, for they drank nothing but water. As to the rest he bought a flock of sheep every month and led them to pasture himself, so as to save the expense of a shepherd. He had wished to assume the patriarch, and he was now completely one, from a baron he had become a shepherd. At the end of each month not a sheep nor a lamb remained. “If they had but time to multiply,” he used to say.

The pastor of the place, I mean the Lutheran minister, a worthy man too, consoled the baron sometimes—

“Courage,” said he to him, “heaven has blessed your seven marriages, and it must cost something to receive the benedictions of heaven.”

“May the devil bless you!” responded the baron, “I see myself reduced to beggary, I have taken the scripture literally, that is my fate—I have been blessed until I am cursed.”

“But Monsieur,” the ladies would say, looking at him with much curiosity, “what an astonishing man you are, who would have believed you, judging from your appearance, capable of becoming, so often, the father of a family.”

The Baron, turning his back upon them, murmured, “Forty girls! If they were forty boys, I would have the recourse of making them shipboys.”

In the meantime the daughters grew mortally tired of the old castle. Every evening the baron passed them in review in the courtyard, before closing the gates; but as the village children sometimes assisted at the ceremony, and a number of strangers wearing the uniform slipped in, he usually had from forty to forty five. One evening he counted only thirty nine. “Some one has stolen a daughter,” cried he. “Let us proceed in order.” He commenced the roll, Leopoldine did not answer, two months before she had eloped with an herb merchant, whose red coat had captivated her.

The Baron, indignant at such a misalliance, went in pursuit of the merchant, but without being able to discover him. On his return, two others had disappeared. Again he began a search, but without any better success. When he came back five more were gone.

Then the Baron in despair inserted in the paper an advertisement that he had but thirty-two daughters left to run away with, and considering their inclination for travelling, no time should be lost by any one who wished to profit by the opportunity. At this, all Germany cried aloud with indignation. It was scandalized, and justly so. The thirty-two who remained, brought a suit against him to determine his incapacity to have charge of a property and a family.

“Except Ducantel,” said I, “never did a more unfortunate father exist. Nothing was wanting except that he should become rheumatic.”

“I confess it, but that would have been too much. Give me, if you please, a glass of Champagne that I may strengthen myself against the woes of this worthy man.”

“Here are two. But did he gain the law-suit?”

“No, Sir: Heaven tired of blessing him, decided upon cursing him. The Baron was defeated, and not content with this, succeeded, thanks to an able lawyer, in

passing for a madman, and caused himself to be shut up in an asylum at the expense of the State. This was certainly one way of obtaining a pension from government; he lived in the highest of happiness, ten years longer, enjoying the privilege of having no children, and who yielded his last sigh in the arms of a maniac who believed himself the Apollo Belvidere; on one side of him a man who imagined himself triple, and on the other, one who, taking himself for a burning house, was constantly crying Fire! After his fortunate sentence, the officers seized his mansion and his manufactory. His daughters were scattered throughout the universe.”

“And the conclusion of all this,” said I.

“How! you do not perceive the conclusion? Why, it is as plain as your nose—

“Firstly. Never seek to play the patriarch, nor to take literally the history of Priam and his fifty children, considering that it is doubtful whether Troy or Priam ever existed.

“Secondly. Never say to the bridal party, ‘may you be happy and have plenty of children.’

“Thirdly. Belong to your own age above all, and meditate seriously the words of the dying baron—‘Would to Heaven,’ said he, ‘that some witch had blighted me on my wedding night.’ Unfortunately the words were addressed to the one who believed himself a house on fire, and who responded by crying out—‘A fire engine, in the name of heaven bring an engine.’

Thus speaking, my neighbor seized hold of a fresh bottle of Champagne, which was the reason why I raised no objections to his conclusions? At midnight, at the close of a marriage feast, all conclusions are tipsy.—*Albany Atlas.*

AGRICULTURE.

GREATEST AMOUNT OF PRODUCE FROM A GIVEN SURFACE.

Having occupied several letters with the attempt to unravel, by means of chemistry, some of the most curious functions of the animal body, and, as I hope, made clear the distinctions between the two kinds of constituent elements in food, and the purposes they severally subserve in sustaining life, let me now direct attention to a scarcely less interesting and equally important subject—the means of obtaining from a given surface of the earth, the largest amount of produce adapted to the food of man and animals.

Agriculture is both a science and an art. The knowledge of all the conditions of the life of vegetables, the origin of their elements, and the sources of their nourishment, forms its scientific basis.

From this knowledge we derive certain rules for the exercises of the art, the principles upon which the mechanical operations of farming depend, the usefulness or necessity of these for preparing the soil to support the growth of plants, and for removing every obnoxious influence. No experience, drawn from the exercise of the art, can be opposed to true scientific principles, because the latter should include all the results of practical operations, and are in some instances solely derived therefrom. Theory must correspond with experience, because it is nothing more than the reduction of a series of phenomena to their last cause.

A field in which we cultivate the same plant for several successive years, becomes barren, for that plant in a period varying with the nature of the soil: in one field it will be in three, in another in seven, in a third in twenty, in a fourth in a hundred years. One field bears wheat, and no peas; another beans and turnips, but no tobacco; a third gives a plentiful crop of turnips but will not bear clover. What is the reason that a field loses its fertility for one plant, the same which at first flourished there? What is the reason one kind of plant succeeds in a field where another fails?

These questions belong to science.

What means are necessary to preserve to a field its fertility for one and the same plant?—what to render one field fertile for two, for three, for all plants?

These last questions are put by art, but they cannot be answered by art.

If a farmer, without the guidance of just scientific principles, is trying experiments to render a field fertile for a plant which it otherwise will not bear, his prospect of success is very small. Thousands of farmers try such experiments in various directions, the result of which is a mass of practical experience forming a method of cultivation which accomplishes the desired end for certain places; but the same method frequently does not succeed—it indeed ceases to be applicable to a second or third place in the immediate neighborhood. How large a capital, and how much power, are wasted in these experiments. Very different, and far more secure, is the path indicated by science: it exposes us to no danger of failing, but on the contrary, it furnishes us with every guarantee of success. If the cause of failure—of barrenness in the soil for one or two plants—has been discovered, means to remedy it may readily be found.

The most exact observations prove that the method of cultivation must vary with the geognostical condition of the subsoil. In basalt, greywacke, porphyry, sandstone, limestone, &c., are certain elements indispensable to the growth of plants, and the presence of which renders them fertile. This fully explains the difference in the necessary methods of culture for different places;

since it is obvious that the essential elements of the soil must vary with varieties of composition of the rocks, from the disintegration of which they originated.

Wheat, clover, turnips, for example, each require certain elements from the soil; they will not flourish where the appropriate elements are absent. Science teaches us what elements are essential to every species of plants by an analysis of their ashes. If, therefore, a soil is found wanting in any of those elements, we discover at once the cause of its barrenness, and its removal may now be readily accomplished.

The empiric attributes all his success to the mechanical operations of agriculture: he experiences and recognises their value, without inquiring what are the causes of their utility, their mode of action: and yet this scientific knowledge is of the highest importance for regulating the application of power and the expenditure of capital—for insuring its economical expenditure and the prevention of waste. Can it be imagined that the mere passing of the ploughshare or the harrow through the soil—the mere contact of the iron—can impart fertility miraculously? Nobody, perhaps, seriously entertains such an opinion. Nevertheless, the *modus operandi* of these mechanical operations is by no means generally understood. The fact is quite certain, that careful ploughing exerts the most favourable influence; the surface is thus mechanically divided, changed, increased and renovated; but the ploughing is only auxiliary to the end sought.

In the effects of time, in what in agriculture are technically called *fallows*—the repose of the fields—we recognise by science certain chemical actions, which are continually exercised by the elements of the atmosphere upon the whole surface of our globe. By the action of its oxygen and its carbonic acid, aided by water, rain, changes of temperature, &c., certain elementary constituents of rocks, or of their ruins, which form the soil capable of cultivation, are rendered soluble in water, and consequently become separable from all their insoluble parts.

These chemical actions, poetically denominated “the tooth of time,” destroy all the works of man, and gradually reduce the hardest rocks to the condition of dust. By their influence the necessary elements of the soil become fitted for assimilation by plants; and it is precisely the end which is obtained by the mechanical operations of farming. They accelerate the decomposition of the soil, in order to provide a new generation of plants with the necessary elements in a condition favourable to their assimilation. It is obvious that the rapidity of the decomposition of a solid body must increase with the extension of a given time to the external chemical agent, the more rapid will be its action.

The chemist, in order to prepare a mineral for analysis, to decompose it, or to increase the solubility of its elements, proceeds in the same way as the farmer deals with his fields—he spares no labor in order to reduce it to the finest powder; he separates the impalpable from the coarser parts by washing, and repeats his mechanical bruising and trituration, being assured his whole process will fail if he is inattentive to this essential and preliminary part of it.

The influence which the increase of surface exercises upon the disintegration of rocks, and upon the chemical action of air and moisture, is strikingly illustrated upon a large scale in the operation pursued in the gold mines of Yaquil, in Chili. These are described in a very interesting manner by Darwin. The rock containing the gold ore is pounded by mills into the finest powder; this is subjected to washing, which separates the lighter particles from the metallic: the gold sinks to the bottom, while a stream of water carries away the lighter earthy parts into ponds, where it subsides to the bottom as mud. When this deposit has gradually filled up the pond, this mud is taken out and piled in heaps, and left exposed to the action of the atmosphere and moisture. The washing completely removes all the soluble part of the disintegrated rock: the insoluble part, moreover, cannot undergo any further change while it is covered with water, so excluded from the influence of the atmosphere at the bottom of the pond. But being at once to the air and moisture, a powerful chemical action takes place in the whole mass, which becomes indicated by an efflorescence of salts covering the whole surface of the heaps in considerable quantity. After being exposed for two or three years, the mud is again subjected to the same process of washing, and a considerable quantity of gold is obtained, this having been separated by the chemical process of decomposition in the mass. The exposure and washing of the same mud is repeated six or seven times, and at every washing it furnishes a new quantity of gold, although its amount diminishes every time.

Precisely similar is the chemical action which takes place in the soil of our fields; and we accelerate and increase it by the mechanical operation of agriculture. By these we sever and extend the surface, and endeavour to make every atom of the soil accessible to the action of the carbonic acid and oxygen of the atmosphere.—We thus produce a stock of soluble mineral substances, which serve as nourishment to a new generation of plants, and which are indispensable to their growth and prosperity.—*Liebig’s Familiar Letters on Chemistry.*

A NICE AND WHOLESOME SWEETMEAT FOR FAMILY USE.—Pare or not, as you choose, a quantity of sweet apples to fill an earthen or stone jar; add a little sugar