

THE INTELLECTUAL ENJOYMENTS OF SCIENCE.

Those who, for several years past, have been advocating the more general introduction of scientific training into our schools and colleges, at the expense, if necessary, of giving less attention to philological studies, have, as a main argument, insisted on the greater utility of the knowledge of scientific truths as compared with the knowledge of the ancient Greek and Roman authors, so liberally imparted to our college-going youth. They have pointed out the glorious results with which science has enriched human society in the nineteenth century, and the comparative sterility of the so-called classical studies; they have pointed out the success in practical life of those men who have received a scientific education, while those whose whole training was mere philological have, in many cases, been starving for want of capacity to earn an honest living by useful practical labor, either mental or mechanical. In short, they have confined themselves to the task of praising science, from a mere utilitarian point of view, forgetting that it may have higher claims, not only equal to those on which the friends of the old and time-honored custom of studying the classics base their defense, but even surpassing anything which may be asserted in favor of the effect of studies of the dead languages and literature on the development of the human mind.

The higher classes of society, especially in England, consider labor, if not directly degrading, at least below their special domain. They are apt to regard that kind of knowledge which is merely useful, and such as men in practical business are in need of, as without interest; and in place of attempting to acquire, for instance, so much knowledge of light and electricity as to be able to understand some optical apparatus or the electric telegraph, they prefer to concentrate their attention upon the writings of Virgil or the poems of Homer. A knowledge of Latin and Greek is supposed to be about the highest enjoyment reserved to a man of high culture, for the reason that these studies are pursued, not for a secondary, base, utilitarian purpose, but out of pure love for what is beautiful and true.

Those lovers of science who feel and know that in the study of God's handiwork, Nature, there is much more enjoyment, beauty and truth than in the study of literature, which is a mere human production, have therefore recently been raising their voices so as to persuade the most cultivated classes, if possible, that the pursuit of scientific is at least as much worth their notice as the pursuit of philology; that they should not abhor a chemical laboratory, or philosophical cabinet, as dull and dry; that there are fascinations hidden in these sacred precincts of science, which have only to be tested, with the purpose of impartial investigation, in order to be appreciated. This order of defenders of science have found a powerful advocate in Professor Tyndall, who, in his recent lectures, so often insisted that the classes of people for whom he spoke "should take science to their bosoms, not as the servant of Mammon, but as the supporter and the enlightener of the mind of man." And the effect of his often repeated appeals has been something marvelous; people of high standing in society, and of corresponding cultivation of mind, who have been accustomed to occupy themselves in their spare hours with reading poetry and works of fiction, or, at the very best, the so-called classics, have furnished their libraries with works on science, and are studying optics, the polarization of light, etc.; and some have gone so far as to buy, in place of useless ornaments, prisms, microscopes, and polariscopes, and are delighting themselves and their friends with the revelations made by those instruments, which seem to give us additional organs of sense.

We make no objection to Professor Raymond's remarks made lately before the Institute of Mining Engineers at Boston, and again taking up the defence of scientific pursuit from the utilitarian point of view; we wish only to defend the position of Professor Tyndall, who in aristocratic England has, by his social status, during his whole life been compelled to appeal to the feelings of the higher classes in regard to that which is worthy of their attention, and who by his untiring efforts has elevated the standing of science and of the men of science, in the eyes of the rulers of society and of the whole world, to a light never before reached.

A FLOATING CANNON BALL.

In the pavillion of the Minister of Agriculture, at Vienna, a floating cannon ball may be seen. Although weighing 50 lbs., it lies like a down feather on a silvery mass, consisting of pure quicksilver from the celebrated mines of Idria; 150 cwt. of this metal is exhibited in a large iron cauldron, offering a sight seldom to be met with, and on it rests the solid iron ball. It was interesting to observe the emptying of the quicksilver into its receptacle. The metal is very cleverly stowed away in bags of white sheep leather, specially prepared for the purpose, each containing 50 lbs. of the mass, the bags being tightly bound round the top, and then put into small wooden barrels, carefully bunged up. Formerly, this liquid metal, which penetrates easily all porous substances, was transmitted in wrought iron bottles of very expensive make.

We should give as we would receive, cheerfully, quickly, and without hesitation; for there is no grace in a benefit that sticks to the fingers.—SENeca.

THE MODES OF STEEL MAKING.

A priori, the making of steel by removing carbon from cast iron is the most rational way, says the *Engineering and Mining Journal*, because it is the most direct; but a trial shows us at once that directness is not the only premise which must be regarded. There are two other things which go to the making of steel. One is purity of product and the other is equality of "temper." A pure product is only to be had by using a pure pig; and, as this article is not always obtainable, that process is, generally speaking, more rational which introduces some purifying operation—like the conversion of cast iron into wrought. As to the equality of temper, that depends upon the amount of carbon left in the steel (neglecting other elements). Here again repeated trials have shown that it is very difficult to hit the exact amount of carbon in every operation when oxidizing agents are used, and a large proportion of past failures have been due to this difficulty. So that, after all, the direct conversion of cast iron into steel is not the most rational mode, because it leaves two important requirements unregarded. On the other hand, wrought iron, being a purified product of tolerably definite composition, satisfies these requirements; and may, therefore rationally be used for steel making. In practice we find both the kinds of iron used together. In such cases, the wrought iron must be considered as the leading raw material, while the cast iron is a carbonizer.

The old idea that the direct conversion of pig metal into steel is the only rational process has cost inventors untold agonies of mental activity, and capitalists have suffered quite as much in pocket on account of it. The proof that the idea was wrong is to be found in the constant abandonment of the process in steel making of every kind. Crucible steel, furnace steel, and Bessemer steel making processes are now, in most cases, founded on the principle of using wrought iron as a basis, and either carbon or pig metal as a carbonizer.

TO EUROPE BY BALLOON.

The illustrated daily *Graphic* of New York has struck out a new course in journalistic enterprise by fitting out a balloon, by which Professors Wise and Donaldson propose to start from New York and cross the Atlantic on the 20th of August next. The *Scientific American* remarks:—

The only chance for a successful issue of this hazardous voyage, almost the only chance, indeed, for life which the daring aeronauts will possess, depends upon the floatant endurance of the aerial ship. To fortify the apparatus in this respect will be the paramount consideration of the navigators. Doubtless they would be glad to elongate the balloon, provide propellers and steam power, and so continue the experiments in aerial navigation ably begun by De Lome and others. But the necessities of the present occasion forbid.

The ordinary rotund form of balloon, although unsuited for mechanical propulsion, is best adapted for strength as a gas holder, and this is the form that has wisely chosen.

Professor Henry, writing to the *Graphic*, also to Professor Wise, fully endorses the view of the latter in respect to the existence of constantly easterly currents above the earth, and expresses the belief that, if the balloon can be kept aloft long enough, she may be wafted over the ocean to Europe. But he does not recommend the attempt, and, if it must be undertaken, wishes that some other person, for whom he had less personal regard than Professor Wise, were about to make the trial. He thinks that, as a preliminary to this ocean voyage, Professor Wise ought to make an overland flight from the Pacific to the Atlantic, a distance nearly equal to the width of the Atlantic ocean.

To this Professor Wise replies that the easterly currents will be found steadier and safer over the ocean than above the land; and he prefers to take the risks of dropping into the sea rather than the chances of bumping against the cliffs of the Rocky Mountains.

In view of the Professor's experiences on his great voyage from Missouri to New York, in 1859, we think his conclusion is correct. He expects to be able to keep aloft in the air for at least ten days, while only three days will be actually required for the great "waft." To us, the probabilities of his success appear to be little better than those of an individual who, in an open boat, without sail or oars, shall attempt to float across the Atlantic upon the surface of the Gulf Stream.

ADVICE.

Young man, don't get too foxy. If you happen to get possession of a few dollars, act just as you did before you got them. Don't swell up and burst. If you have a good share of brains you won't do this; you will remember that neither money, clothes, nor good looks make the man, and that true worth is as often garbed in a ragged coat as it is in broadcloth. Don't stand on hotel steps, dangling your watch chain and talking "hoss." Those who load themselves with airs are the smallest kind of potatoes and the fewest in the hill. A fat job often spoils young men of weak minds. They immediately commence to dress fine, and take great pride in cultivating an aldermanic corporation and a sporting air. Suitable persons are always disgusted with such actions when they deign to notice them, which is very seldom.

ONE WAY LIFE IS BLIGHTED.

A great part of the misery in the world arises from persons not understanding one another, sometimes from selfish indifference on the subject, sometimes from thinking to do so is puerile. Two people, for instance, are thrown into intimate daily intercourse. One understands no suffering that is purely physical. If he is not hungry, if he is not thirsty, if he is not cold, if he has a roof over his head, if he is not bothered, whether necessarily or otherwise, his life is rounded out. To shed a tear for lack of sympathy or appreciation, or love, after that, is to him lunacy, and to be treated as such, with a hard Gradgrind non-recognition worthy of such a creed.

Now, imagine a sensitive nature, delicately susceptible to the "little things," so miscalled, which make our lives, grieving over rough or indifferent words where tender recognition should have come at the right moment like a medicine—a tenderness which costs nothing, perhaps only a simple word or caress, or look even—hungering day after day for something beside the hard practicalities of life; imagine such a person keeping back as far as possible the unshed tears, conscientiously, nevertheless, doing duty—labor; day after day, week after week, month after month, with a heavy heart, and the other eating, sleeping, drinking, as indifferent to the suffering caused, as if life and loyalty were fulfilled by these latter conditions.

It is very poor comfort to answer, that differing natures have differing limitations; just as one vessel may hold a gallon and another a pint, and each be useful in its way. Would it not be well for this stolid nature voluntarily choosing such relationship to ask the question, whether there may not be real suffering in these cases, though himself "never felt so, and therefore can't understand it?" It is not duty, as well as wisdom, in such juxtaposition to make an effort to "understand it," and not coolly deny its existence, or pronounce it bogus, because he has only one nerve sensitive to pain and pleasure where the other has a hundred?

It is pitiful to think how, for the want of this, some natures, like prisoned birds, beat themselves against the bars of a relentless fate, till bruised and maimed they drop, at least for the time being, in a hopeless despair, their songs stifled, their wings clipped, and darkness and silence reigning where brightness and music might so easily have come.

Ah, it is blessed that in another world there will be no such limitations. Else how could heaven be, with natures one half paralyzed, as here, for want of space to expand, chilled, stunted, frowned up-on, denounced, for lack of that charity without which all else is comparatively valueless?

"I never felt so; it is all nonsense," I never yet saw those cruel words inscribed on the tombstone as the cause of death; and yet in scores of cases, they might have truthfully been.—*Fanny Fern*.

OUR PARENTS.

Respect to aged persons is one of the virtues. There is no period in life when our parents do not claim our attention, love, and warmest affection. From youth to manhood, from middle to riper years, if our honored parents survive, it should be our constant study how we can best promote their welfare and happiness, and smooth the pillow of their declining years. Nothing better recommends an individual than his attention to his parents. There are such dutiful children; men whose highest ambition seems to be the promotion of their comfort and ease. They watch over them with unwearied care—supply all their wants, and by their devotion and kindness remove all care and sorrow from their hearts. On the contrary, there are others, who seem never to bestow a thought upon their parents, and to care but little whether they are situated comfortably or not. By their conduct they increase their cares, embitter their lives and bring their gray hairs with sorrow to the grave. Selfishness has steeled their hearts to the whisps of affection, and avarice denies to their parents those favors which would materially assist them in the downhill of life. Others, too, by a course of profligacy and vice, have drained to the very dregs their parents' cup of happiness, and made them anxious for death to release them from their sufferings. Oh! how fearful must be the doom of those children who have thus embittered the lives of their best earthly friends. If there is a "world of woe beyond the precincts of the tombs," surely they cannot escape it: horrors. There can be no happier reflection than that derived from the thought of having contributed all in our power to the comfort and happiness of our parents. When called away from our presence (which sooner or later may be), the thought will be sweet, that our effort and our care smoothed their declining days, so that they departed in comfort and peace. If we were otherwise, if we denied them what their circumstances and necessities required, and our hearts did not become like the nether millstone, our remorse must prove a thorn in our flesh, piercing us sharply, and filling our days with sorrow and regret.

Despair is a sin exceedingly vile and contemptible; it is a word of eternal reproach, dishonor and confusion; it declares the devil a conqueror, and what greater dishonor can be done to Christ than for a soul to proclaim, before all the world, the devil a crowned conqueror.

THE DUKE OF MONTAGUE.

The last duke of the noble house of Montague, as age advanced upon him, had a quaint habit of making himself merry and happy in contributing to the happiness of others. Those who clamored at his doors for charity generally went away empty handed. He chose to select his own objects, and to bestow his favors after his own fashion. On a certain occasion the duke observed a middle-aged gentleman, in a semi-military garb the worse for wear, but exceedingly neat and precise withal, walking in a secluded avenue of the Park; he observed the gentleman not only once, but several times, walking at the same hour of the day, in the same spot, and always with solemn step and grave aspect. Becoming interested, the duke made inquiries, and learned that the stranger was an unfortunate man who had, in other years, parted with his estate for a commission; had served with distinction through years of war; and was now, at the conclusion of peace, thrown out upon pitiful half-pay. He learned further that the poor officer had a wife and three children in Yorkshire, to whom he regularly sent a moiety of his pay, supporting himself on the remainder in the metropolis in hopes that he might gain some office that would afford him better income.

The duke, having assured himself that the veteran was worthy, determined to make him happy, and to that end he sent one of his servants with a polite invitation for him to come and dine. The unfortunate officer was glad enough to accept an invitation from such a source, though he wondered much how his grace had discovered him, and, more still, why he had thus honored him.

At the appointed time the officer appeared at the ducal residence, where his lordship received him in person with every mark of esteem and honor; and when he expressed his surprise at this mark of favor, the duke took him aside and told him, with an air of great secrecy, that he had a particular reason for his conduct.

"To tell you the truth," said Montague, "there is a lady in my house who has often seen you, and who has become so interested in you that she desires a personal meeting. Upon my soul, she is a most worthy lady, and I think she regards you with favor."

The poor soldier was really alarmed and distressed.

"There must some mistake," he replied. "Some one would either impose upon your grace, or upon myself. I have a wife in Yorkshire, and her favor alone of all women do I desire."

"Never mind," said the duke, smiling. "No harm can come. Follow me."

And the officer was led to the sumptuous banquet-room, where, seated at the table, he beheld his own wife and three children, whom the duke had sent and brought up from Yorkshire to meet him there. Consternation was the first emotion, but joy quickly followed, and before the dinner was concluded the guests were happy as happy could be.

Before the officer departed the duke presented him with the deed of an ample annuity, remarking, as he did so,—

"Hesitate not to take it, my friend. I am trying to do the best I can with my money, and I assure you I should not have done this if I had thought I could have purchased with satisfaction elsewhere."

LANGUAGE OF THE CLOUDS.

The colors of the sky at particular times afford wonderfully good evidence. Not only does a rosy sunset presage fair weather and a ruddy sunshine, but there are other tints which speak with equal clearness and accuracy. A bright yellowish sky in the evening indicates wind, a pale yellow wet, a neutral gray color constitutes a favorable sign in the evening and an unfavorable one in the morning. The clouds are full of meaning in themselves. If their forms are soft, underlined and feathery, the weather will be fine. If the edges are hard, sharp and definite, it will be foul. Generally speaking, any deep, unusual lines betoken wind and rain, while the more quiet and delicate tints bespeak fair weather.

TALE-BEARERS.

Look into large families, and you will find some one false, paltry tale-bearer, who, by carrying stories from one to another, shall inflame the minds and discompose the quiet of the whole family. And from families pass to towns or cities; and two or three meddling fellows (men of business, some call them), by the venom of their false tongues, shall set the whole neighborhood together by the ears. Where men practice falsehood, there will be perpetual suspicions, evil surmises, doubts, and jealousies, which, by souring the minds of men, are the bane and pest of society; for society is built upon trust, and trust upon the confidence that men have in one another.

A FACT TOO OFTEN FORGOTTEN.—As in the external world, nature has the good and the ornamental so marvellously mixed—the fragrant flower with the teeming wheat—beautiful colors and nutritious food, so in the work of man this great model must not be lost sight of; and we are bound, not only to labor, that the pressing wants and severe sufferings of our brother man may be relieved, but we must hail all that extends to the poorest and lowest those innocent joys and pleasures which we ourselves receive and feel, as the loving gifts of our Father in Heaven.

Grains of Gold.

THINK OF THIS.—A coat out at the elbow may be buttoned over a generous breast.

We like to see a young man wear his old coat until he can afford to buy a new one.

When thou speakest to another, look at the eyes; when another speaketh to thee, upon the mouth.

We feel the neglect of others towards ourselves; but we do not even suspect our neglect of them.

"Few things," says Dr. Johnson, "are so liberally bestowed, or squandered with so little effect, as good advice."

He that wants a heart, wants everything. A wrong head may be convinced, but who can give a heart where it is wanting?

The despised of some people are the looked-up-to of others. Were it not so, the little ones of the earth would not be able to hold up their heads under the contumely of the great ones.

Tell-tales are contemptible beings. To retail in one house what is seen or spoken of in any other, is a treason against society which cannot too thoroughly be despised.

When you have lost money in the streets, every one is ready to help you to look for it; but when you have lost your character, every one leaves you to recover it as you can.

Existence is only really valuable while it is necessary to some one dear to us. The moment we become aware that our death would leave no aching void in a human heart, the charm of life is gone.

Habits influence a character pretty much as under currents influence a vessel, and whether they speed us on the way of our wishes or retard our progress, their power is not the less important because imperceptible.

That man who attempts to bring down and depreciate those above him, does not thereby elevate himself. He rather sinks himself, while those whom he traduces are rather benefited than injured by the slanders of one so base as he.

If you cannot be a great river, bearing great vessels of blessings to the world, you can be a little spring by the dusty wayside of life, singing merrily all day and all night, and giving a cup of cold water to every weary, thirsty one who passes by.

Economy is the parent of integrity, of liberty, and of ease, and the beautiful sister of temperance, of cheerfulness, and health; and profuseness is a cruel and crafty demon, that gradually involves her followers in dependence and debt.

Our world has been called a "vale of tears," and human life a bubble, raised from those tears and inflated with sighs, which after floating a little while, decked with a few gaudy colors, is touched by the hand of Death, and then dissolves.

There are cases in which a man would have been ashamed not to have been imposed upon. There is a confidence necessary to human intercourse, and without which men are often more injured by their own suspicions than they could be by the perfidy of others.

God's word is like God's world—varied, very rich, very beautiful. You never know when you have exhausted all its secrets. The Bible, like nature, has something for every class of mind. Look at the Bible in a new light, and straightway you see some new charms.

Speak kindly in the morning; it lightens the cares of the day, and makes the household and all its affairs move along smoothly. Speak kindly at night, for it may be that, before dawn, some loved one may finish his or her space of life for this world, and it will be too late to ask forgiveness.

Let your recreations be manly, moderate, seasonable, and lawful; the use of recreation is to lighten your labor and sweeten your rest. But there are some so rigid, or so timorous, that they avoid all diversions, and dare not indulge lawful delights for fear of offending. These are hard tutors, if not tyrants to themselves. Whilst they pretend to a mortified strictness, they are injurious to their own liberty, and the liberty of their Maker.—**STEELE**.

Happiness between husband and wife can only be secured by that constant tenderness and care of the parties for each other which are based upon warm and demonstrative love. The heart demands that the man shall not sit reticent, self-absorbed, and silent, in the midst of his family. The woman who forgets to provide for her husband's tastes and wishes, renders her home undesirable for him. In a word, ever-present and ever-demonstrative gentleness must reign, or else the heart starves.

A TRUE MAN.—Who is he? One who will not swerve from the path of duty to gain a mine of wealth or a world of honors. He respects the feelings of all, the rich and the poor, the titled and the humble. He is as careful not to speak an unkind or a harsh word to his servant as to his lord. He is as attentive to the wants of a slave as to a prince. Wherever you meet him he is the same kind, accommodating, unobtrusive, humble individual. In him are embodied the elements of pure religion. No step is taken which the law of God condemns—no word is spoken that pains the ear of man. Be you like him; then you will be prepared to live or die, to glory in God in earth or in heaven.