

Scientific American

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Let Knowledge Increase.

On not a few occasions we have heard persons vainly boast of the quantity of books they had read; we place a higher estimate upon that intellect which makes quality the touch-stone of excellence. There are persons who can chatter a string of nonsense twenty-four hours long—speak against time—but twenty words spoken by a sensible man is of more value than all they say in a whole day. There are books, "of the making of which," as Solomon said, "there is no end;" but of the prodigious quantity which have been published, those of sterling merit form a very small proportion to the number of useless ones. Of the readers of books and periodicals what shall we say? Do the majority read to derive pleasure by increasing their knowledge? Do they seek the teaching of Truth with gladness, or prefer to recline on the lap of Fiction? To the latter question an affirmative, and to the former a negative answer must be returned. It is a sad truth that twenty works of fiction are read for one of fact; this is not very flattering to human dignity. For all this, however, we believe that knowledge is spreading, and that there is a growing desire for it. Some appear to have an exceedingly vague idea of what knowledge is—to such we say, it is simple truth—nothing more and nothing less; there is no knowledge apart from truth.

In our experience, since the Scientific American commenced its career, we have had opportunities of knowing something of an improving taste, and a spreading desire for useful information by many and in many places, where such desires and tastes were not before displayed. We know that myriads derive much pleasure from reading works of fiction—and the majority perhaps always will—and some of these works answer a very good purpose; but we know that the pleasure derived from reading useful works is more solid and lasting, and produces substantial benefits. A taste for useful reading, even if dry, can be acquired and it would be well if every person would cultivate this taste, for the judgment pays it reverence. We sincerely desire, independent of business considerations, to see knowledge increasing; and in endeavoring to extend the circulation of the Scientific American, our feelings are enlisted for the spread of useful information, because we know it does benefit, and in no case can do injury to the people.

"Knowledge is power," and he who is without it at the present day, is like a sheep among wolves, an idiot among sages. Those, especially men in business, unless they read reliable and useful works connected with the progress of science, art, and invention, are continually liable to be imposed upon by plotting Dousterswivels and speculating pretenders.

To Our Readers

Those of our constant readers who have so often and so kindly assisted to extend the circulation of the Scientific American by recommending it to their friends, we know, at this time, will once again put their hands to the plow and break a new furrow, for the reception of the good seed, which has always raised good fruit to both old and young.—Those of our later subscribers, indiscriminately, also to friends to the cause of science, art, invention, and truth, we have no doubt will do much for the spread of useful information, and the benefit of their fellow men.

Will our friends read the chapter of suggestions, and also the new Prospectus, in other parts of our paper, and endeavor to get as many of their acquaintances as they can who are not subscribers to become so at as early a date as possible. We have offered some very excellent prizes, respecting which we will only say at this time, that those who solicit subscribers need not blush, but take pride in recommending a paper which is devoted to truth in art and science, and which is entirely different from any other in our country.

Table Moving, Spirit Rappings, and Science.

We have received a letter from one of our constant readers—J. A. Taft, of Irvine, Pa.—in which he takes exceptions to the conclusions of Prof. Faraday, an abstract of whose experiments we published on page 355. It will be recollected by our readers that Faraday established two things by his experiments, 1st. That the turning of a table by persons sitting around it, with their hands joined and resting on the top, was not due to a current of electricity developed by the bodies of the experimenters. 2nd. That it was caused by the hand pressure of the operators, the mind directing the pressure, and consequently the table's direction." Mr. Taft says he has seen a table moved with himself upon it, and raised nearly six feet high. He has seen it moved when no one was moving it, and has known of a bell (in the dark though) lifted from a table, rung, and thrown across the room. He has also seen many other tricks performed, all done by the spirit of a person named Dunn, well known in that community, who was a very tricky chap while alive, but who, it seems, has become more devilishly tricky and expert since he died.—He has also known of correct messages being received by the spirit rappings, and he can produce good vouchers for the truth of all he writes about. We certainly do not doubt but Mr. Taft believes all that he asserts to be true, and do not require any vouchers, but he asks the following question: "I would like to have some one give a scientific explanation of the thing," and to this we will give an answer, and also make some remarks to the following extract on the same subject, taken from a recent letter of Judge Edmonds, of this city, published in the Courier and Enquirer. Judge Edmonds in his letter says:—

"We are taught that none of these extraordinary things which are witnessed by so many are miraculous, or flow from any suspension of nature's laws, but are, on the other hand, in conformity with and in execution of those laws; that, like the steam engine and the magnetic telegraph, they are marvellous only to those who do not understand them, or are not familiar with them, and those laws, and the means by which they produce such results are as capable of being found out by human research, that the knowledge is not confined to a few, but is open to all, rich or poor, high or low, wise or ignorant, who will wisely and patiently search for it."

To Mr. Taft we will merely say that he asks a very unreasonable question. If he believes that the spirit of Dunn performed the cantraps, why does he ask a scientific explanation of them. If he is convinced that a spirit performed them, he has his explanation. Scientific men have dealings with the material universe only, and they should not be asked spiritual questions. The Judge is a distinguished lawyer, and although he should, it is very evident that he does not know what a "law of nature is, nor does he seem to have a knowledge of the laws which govern the motion of inorganic bodies. A law of nature is a mere operation of matter. Thus an apple thrown upwards will always return to the earth, and this we say is according to the law of gravity, by which larger bodies attract or draw smaller ones to them. We know nothing of a law of nature independent of the operations—the action—of matter, and the results must always be uniform. If these spirit rappings and table movings are in conformity with the laws of nature, like the steam engine as Judge Edmonds asserts, then the results will always be uniform and he can tell us, and everybody, how such operations can be seen, heard, or felt—displayed—by every person and in any place. If these extraordinary things are according to nature's law, Judge Edmonds can give the rules for convincing the public. Neither the telegraph nor steam engine require either reasoning or sophistry to prove their identity—they convince without argument.

The "New York Tribune" has given expression to some very unreasonable ideas respecting scientific men investigating and giving an explanation of such phenomena. The first law of science in respect to inorganic bodies, is that "no body at rest has power to move of itself; nor of itself, when in motion, to change its direction." This is the

law of inertia; we therefore say, a table at rest cannot move of itself, consequently those who say they believe such extraordinary things as table moving, &c., are produced by spirits, present evidence of their own doubts, when they ask for a scientific explanation of them. We do not believe that a disembodied spirit has the least power to operate matter; if it has, then the responsibility of living men must be greatly circumscribed, especially if a spirit gets into a steam boiler; it might explode the boiler, and wrongfully we might blame the engineer for carrying too much steam. The ridiculous stuff published in many papers as the doings of disembodied spirits, such as the nonsense in the Hon. Mr. Talmadge's letter, about our Cato Calhoun's spirit playing on an accordeon, is enough to make fools blush for human credulity. We have never seen a table move without some known power moving it, neither do we know anything about the rappings, because we have considered them beneath our attention. If these extraordinary things, however, are in conformity with nature's laws, as Judge Edmonds asserts—like the telegraph and steam engine, about which we know something—we can easily be convinced of error, and proven to be mistaken; at present we are blue and buff skeptics.

Mechanics' Institutes, and Mechanics Calumniated.

"It is pleasing to listen to the conversation, not merely the attempt to show off, by some conceited, half-instructed disciple of a Mechanics' Institute, with his smattering of everything and knowledge of nothing, volubly and eagerly explaining what he does not understand—one whose accent and language bespeak him "North o' the Tweed."

[The above is an extract from the "New York Daily Times" of the 17th inst. It is taken from the Dublin correspondent's letter on that paper, who makes the above slurring remark in his description of the "Dublin Exhibition." It is very evident that he looks upon a mechanic as an ignorant egotist, and this egotism he attributes to the teachings of Mechanics' Institutes. Education has no doubt a refining influence, but neither an education at Oxford, in England, Trinity in Dublin, or Yale in America, can make a man of sound judgment, and extensive information. There are many men who leave college complete ignoramuses respecting knowledge,—which is facts well-arranged. This is no doubt owing to the kind of professors, under whom they were educated. Every man ought to be estimated by his real worth, and not by the cut of his coat, or the tone of his voice. The men who have been taught in Mechanics Institutes have done more for Ireland than those who have been taught in her Universities; the very Crystal Palace in Dublin exists only because a working man of limited education—a self-made one—willed it. The great men of the world have neither been made by colleges nor mechanics' institutes. These institutions are mere aids to form the man. Shakespeare nor Burns were college bred, but Milton and Pope were.—The best artists of America and England were not raised in college halls. It is a positive fact that nearly every one of our American painters and sculptors, dead and living, cannot be called educated men, but well informed men, which many college-educated men are not. The greatest engineering works in Ireland were carried out by your Mechanics' Institutes' men, such as Thos. Telford, and instead of sneering at the graduate of a mechanics institute, the person who wrote the above would greatly benefit his head and heart if he would place himself for some time under such instruction as he might find in some Mechanics' Institutes that we could name.

Scientific Men Misrepresented.

"There was a scientific man who published a book to demonstrate that steam power could never drive a vessel across the Atlantic Ocean, and just as the book got out of the press, a steamer came steaming along at the rate of three hundred miles per day, and others have been at it at the same rate ever since, and the scientific book has gone to the oblivious stream."—[Extract of Col. Benton's letter to C. Street, on the Pacific rail-

road, published in the "National Intelligencer"

"It is asserted that Dr. Dionysius Lardner, whose fame has extended over the civilized world, demonstrated to a nicety the impossibility of crossing the ocean in a steamer.—His redoubtable arguments and his inevitable conclusions did not, however, prevent the appearance of the English steamer 'Syrius' at the docks of New York. Practical men with a thousandth part of Dr. Lardner's scientific acquirements were satisfied—the Dr. to the contrary notwithstanding—that there existed no insurmountable impediment; and the consequences we see in the splendid 'lines' that now cross the ocean with the regularity of ferry-boats."—[Journal of Agriculture, (Boston) for August.

[If Col. Benton and the editor of the "Journal of Agriculture" had been careful readers of the "Scientific American," they would not have made the above mistakes, for the Colonel doubtless refers to Dr. Lardner.—He never published a book to demonstrate the impracticability of a steamer crossing the Atlantic Ocean, nor did he ever make an assertion to that effect, it has been attributed to him, and has floated along down time, and through a thousand careless newspapers, but it is not true. On such subjects we regret to say, that we often find many of our leading men very defective in historical knowledge; they speak and write in such a manner as would lead us to conclude that they derived the most of their information from unreliable papers. Dr. Lardner distinctly affirmed the very contrary of what has been attributed to him in the two foregoing paragraphs, as any person can find out for himself by consulting pages 295, 6 and 7, of Lardner's work on the "Steam Engine, Navigation, and Railways."

Events of the Week.

GOLD MACHINERY.—We have just received a letter from J. W. Cochrane, of this city, the inventor of the gold quartz crusher which was illustrated on page 364, Vol. 7, Scientific American, who is now in London with one of his machines grinding gold quartz shipped from California. He is convincing the most skeptical that he can take gold quartz in lumps of 30 cubic inches, and with the aid of two men he can pulverize and amalgamate no less than forty tons of it per day. The whole expenses for labor and steam power does not cost over one shilling sterling per ton. He challenges any other machine for \$25,000 to equal it. He is receiving orders for Australia, California, England, and Spain. He believes that Buffum's Amalgamator, which was also illustrated in our last volume, to be without a superior. He asserts that the quartz and mercury should never be ground together; and the reason he gives for entertaining this opinion is, that in grinding the mercury is finely subdivided, mixed with the sand, washed away in the water and lost. The grinding and amalgamating, he asserts, should be performed by separate machines, entirely different in their nature and action.

WATER TANKS OF LOCOMOTIVES.—On page 348, this Volume of the "Scientific American," we noticed an improvement in the construction of locomotive water tanks, invented by A. W. L. Rivers, of Charleston, S. C. The "New York Railroad Journal" noticed the improvement, and said it was not new—that it had been tried on the New York and Erie Railroad, and it was found to possess no advantage. We have received a letter from Mr. Rivers on the subject, and in it he says, "his tank has been successfully tried, and is now used on the South Carolina Railroad, and the Superintendent, N. Darrell, Esq., a man of experience and ability, wishes that all the tenders on the road were built on the same plan." He is positive that the water tanks of the tenders on the Erie Railroad, were differently constructed from his.

Sewing Machines.

The American Sewing Machines noticed in the "Glasgow Chronicle," and other papers in Scotland, as attracting considerable attention, extracts of which were inserted in the Scientific American two weeks since; are understood to be the machines made by Grover, Baker & Co., of this city.