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Influence of Great Men.

There is no subject, apparently, upon which we differ so much from the opinions expressed by authors and editors in general, as to what constitutes "a great man." When mighty statesmen and triumphant warriors belonging to any nation fall before the scythe of death, the whole land puts on sackcloth, and goes into mourning. We have seen two recent instances of this kind in different parts of the world; we allude to the death of Webster among ourselves, and that of Wellington in England. Intellectuals cannot be measured by rule and square, nor can greatness be measured by public requiems and monuments. We can only form an opinion as to the greatness of men by what they have done, "by their works ye shall know them." We hear men frequently boast of the genius of Hannibal, Cæsar, Napoleon, and Wellington; of the intellect of Burke, Pitt, Hamilton and Webster; but neither warriors nor orators stand in the front rank of intellect, they must take a lower place than many men of science, whose greatness we seldom hear a word about. What intellect among warriors and statesmen can take rank with that of Galileo, Kepler, Leibnitz, Bacon, Newton, Euler, Wollaston, La Place, Black, Lavoisier, Davy, Watt, Boyle, Franklin, &c. We might mention others, but these are enough for our purpose. The works which these men have accomplished, affect all men; they meet us on the right hand and on the left every day and every night, and they will do so to others through all coming ages. The victories of Hannibal were all shattered and blasted by the single defeat of Zama, and the whole of Napoleon's conquests sunk for ever on the single field of Waterloo. It is true that the speeches and writings of statesmen and orators do not perish so suddenly; they go down and are read by succeeding generations, but at the same time new circumstances arise, which lead men who were considered wise in one generation to be looked upon by another as doubtful preceptors, or as false lights for a new age. It is different with those profound thinkers and discoverers in the scientific world; they are the intellectual Titans.—When we hear people speak of a great man, we ask what he has done, and we try his works to see if they are the genuine coin. The rolling stars by night continually remind us of Galileo, Kepler, Herschel, and La Place. There is not an apple falls to the ground but reminds us of the great Newton. The lightning fleeting from cloud to cloud, reminds us of our own Franklin, who brought it down from the skies as the hunter brings down the eagle in his flight. The lives of hundreds are saved every year by Davy's Safety Lamp. The invention of Watt has multiplied the power of man over inanimate matter more than a million fold; and the genius of Fulton has made a turnpike of the Atlantic. We would not perhaps have written upon this subject at present, but recently we have seen so much in our daily papers about great men and great intellects, and so much has been said about them by orators and others; and comparisons between this one and that one having been made, and seeing nothing at all said about men of science and inventors, whose reasonings often took sublimer flights than the imagination of Shakespeare, we have said this much and could say a great deal more to justify our position, that warriors and statesmen must take a lower rank for genius and intellect than those men whose names we have mentioned. There are also others, of whom we have not room to speak, but assuredly our men of science, discoverers, and inventors, are the great ones (speaking of intellect,) of the earth. Time would fail us to tell how Kepler discovered the laws which govern the planets in their orbits; how Newton arranged the whole universe before his mind, and discovered the force which guides a planet in its course, a sparrow in its flight, and the great tides of the sea which refresh and fructify our shores; of Wollaston making metal threads finer than those of the spider; of Davy resolving metals

out of stones by galvanism; of Stephenson driving his iron horse over mountain and moor; of Daguerre using the sun-beam for a pencil; and of Morse the lightning for his pen. Ignorant and circumscribed in intellect, must that man be, who, in speaking of great men, fails to perceive and mention the claims of philosophers and men of science.

Coating Iron with Copper.

On the 21st of last September, a patent was granted to Theodore G. Bucklin, of Troy, N. Y., for a new and improved mode of coating iron with copper, which promises to be an invention of no small importance to the arts. It has long been a desideratum to coat iron with some other and less oxidizable metal, in order to render it more enduring in exposed situations. It is more essential to have sheet and plate-iron than any other kind, covered with copper. For example, sheet-iron covered with copper, would be cheaper than tinned iron for roofs of buildings, &c., and plate-iron, if covered with copper, would be excellent for making steam boilers so as to prevent incrustations, &c. Cheapness is an important item in the process. If the process is expensive, then it can be of no general benefit, for pure copper would be preferable. It cheap it is a most important discovery. A method of covering iron with brass, copper, &c., has long been known, but to cover it and make the copper unite with the iron, like tinned iron, has hitherto been considered problematical. The invention of Mr. Bucklin promises to fulfill every condition desired in making coppered iron—cast, malleable, and wrought iron can be coated with copper by the new invention.

The process consists in first removing the oxide from the iron to be coated, then covering it with a medium metal which has a great affinity for the iron, and afterwards dipping the iron so prepared into molten copper, which, by the galvanic action of the medium metal, makes the copper intimately combine with the iron, and form a complete coating. The oxide is removed from iron by means of diluted sulphuric acid, in which the castings or sheets are rubbed with sand; after this they are washed, and dipped into a solution of the muriate of ammonia dissolved in a suitable vessel, when they are ready for the next process. This consists in dipping the sheets or plates into molten zinc, immediately after they are lifted out of the salammonic solution. The surface of the molten zinc should be covered with dry salammonic, to prevent the evaporation of the metal. The iron is soon covered with a coating of zinc, and forms what is termed galvanized iron. At hand, the operator has a crucible or pot containing melted copper covered with some incombustible substance as a wiper, and he at once dips the zinced iron, into this, in which it is kept until it ceases to hiss, when it is taken out and found to be covered with a complete and durable coating of copper. By dipping the iron thus coppered, into the solution of salammonic, then into the zinc, and the copper—repeating the process—coat upon coat of the copper will be obtained, until it acquires any degree of thickness. The black oxide is prevented from forming on the copper by dipping it afterwards in the salammonic solution, and then washing it in pure water. This process is entirely different from that of Mr. Pomeroy, for which a patent was granted a few years ago, and which was published on page 69, Vol. 6, Scientific American. We have seen samples of iron coated by Mr. Bucklin's process, which were very beautiful and well covered. Unless the melted copper was covered with a non-combustible substance, the plates would come out in a very rough state, but the covering acts as a wiper, and the coppered plates come out smooth, and well coated. Brass, or any of the copper alloys, can be made to coat the iron, in the same manner as the copper. We hope this new process will be the means of extending the use of sheet-iron, so as to save considerable to the country, that is now paid out for tinned sheets.

Models! Models! Models!

We require in all cases, when models are sent to this office, that the freight charges should be pre-paid or otherwise provided for. The name and residence of the inventor should also be attached to the model, as many

times we are unable to determine the proper person to address. These regulations must be strictly complied with, otherwise we cannot be responsible for any errors that are otherwise liable to occur.

False Philosophy.

MACROCOSM OR THE UNIVERSE WITHOUT.—This is the title of a new book by William Fishbough, a candidate for philosophic fame. As it is a work which treats of subjects connected with our legitimate pursuits, and teaches a philosophy at variance with ours, it is just and proper that we should at least point out some of its errors. The author is not a metaphysician, nor is he skilled in scientific lore; the brilliant passages in the book bear the impress of Prof. Nichol's genius, and there is not a single new scientific fact recorded in its pages. There is, however, a cool thread of egotism running through the whole of it, such a self-complacent, "I know it all" spirit exhibited that is really very amusing. Subjects that would appall Newton to approach, and about which Herschel and Humboldt would confess themselves ignorant, he rushes at with an audacity that is really exhilarating. Knotty points that baffle the most eminent men of science, he unravels as easily as flying a kite, and with a few flourishes like political cheers, he sets down his doctrine as established.

The author teaches the development hypothesis of animal life, and plainly states that "in the lowest of the fossiliferous rocks the principal animal remains are *Radiata*, which form the connecting link with the vegetable kingdom," and he presumes "that more minute and simple species preceded these."—The development hypothesis—for it is not a theory—assumes that animal life commenced at a point, and gradually in a multitude of ages went on developing itself until man arose out of a *mite*. We believe that some of the developists hold to it that the dolphin was a very near predecessor of man. The reasoning of some advocates of this hypothesis, is indeed no better than what might be expected of a dolphin or such like fish, and they are therefore welcome to a system which intimately relates to themselves, but it is one which Hugh Miller has smashed to pieces, and which Prof. Agassiz, the eminent philosopher in a recent lecture delivered in this city gave his testimony against. Here is what he said:—

"The extinct animals found in the lowest strata, it has been imagined by philosophers, were the first created, but this supposition has been overturned by modern science, which discloses the fact that the *lowest strata* contain *radiata*, *mollusca*, *articulata*, and *vertebrata*. The plan which pervades the animal kingdom at the present day, is the same which was displayed at the first introduction of animals upon this earth. The same thought which planned the arrangement of animals now living and which has assigned to their different races their respective stations, is the same which has laid them from the *beginning*. Everywhere we see *one* active mind in nature from the beginning as now, from all time and all being, and have evidence of the Creator in space, in time, and in every individual, as well as the whole animal creation."

Thus speaks a real practical man of science; how lofty and profound in comparison with the superficial development hypothesis. Our macrocosm author assumes the professorship of Doctor of the Nebular Hypothesis, which is quite in harmony with his materialist views, and development ideas.

The nebular hypothesis embraces the doctrine that the whole visible universe was once a mass of subtle gaseous matter, and that out of this, by rotation and cooling, the worlds *made themselves*. The author of this hypothesis is La Place, and his views have been embraced by many eminent philosophers, and were inculcated by Prof. Guyot, in his lectures in this city last winter, and although some portions of the heavens have lately been resolved into stars by superior telescopes, which stars were once held to be *nebulae*, still many men are so hard or thick headed, that they cannot yet renounce their gaseous or nebulous notions.

The nebular hypothesis supposes that at one time the whole mass of matter of

the sun and all the planets and satellites in our system was in a state of attenuated gas (fiery vapor,) and all rotated around the centre—a huge mass of rolling gas—the sun being the axis, and that in a multitude of ages, by certain parts cooling and shrinking, the planets were first formed into rings, then broke up into spheres, and finally assumed their present forms and positions. There are eight objections to this hypothesis, which, if removed, would leave us little to say against it.

1st. There is no evidence that the matter of this world was originally in a state of gas.

2nd. By the *known* laws of chemistry, all matter cannot be reduced to a state of gas.

3rd. By the known laws of chemistry, an isolated fiery mass of gas cannot have but a momentary existence, and by analogy never had.

4th. [Mr. Fishbough says that the mass of gas received rotation by virtue of gravitation.] Gravitation cannot produce rotary motion.—By the laws of mechanical philosophy, a body must be acted upon by two forces to give it a rotary motion.

5th. The nebular hypothesis does not account for our planets having two motions, one on their axes and another around the sun.

6th. If the whole mass of matter now forming the solar system, once rotated along with the sun as its axis, then the outermost planet should revolve round the sun in 25 days 7 hours, 48 minutes—this being the time the sun revolves on its axis (not in 27 days as Mr. Fishbough has it.) Instead of doing this, Saturn takes 29½ years to revolve round the sun.

7th. If all the matter composing our system rotated together around the sun as an axis, then all of it would still rotate in the same direction, but instead of this being the case, the satellites of the planet Uranus revolve in a contrary direction to the other planets, and not in the same plane. Well might Prof. Nichol say in reference to this fact, "a comet would be very acceptable here."

8th. The present positions, the forms, and motions of the planets cannot be accounted for by gravity nor gas. By none of the known laws of chemistry could the matter of which this earth is composed, ever have been in a state of gas. If it ever was, different chemical laws must have been in force which now have no existence, and to prove a hypothesis by a hypothesis as Mr. Fishbough does, is like exterminating problems by the following rule—0=0=1 an exceedingly convenient system of mathematics for dreamers.

Prof. Nichol asserted while in this city, that "no calculation or deduction can ever enable the human race to trace back our system to its origin," yet in face of this Mr. Fishbough does so with the greatest ease, and lays down his deductions with the utmost *sans froid* as established facts.

To show how he understands mechanical philosophy, let us just quote another paragraph from his work:—

"The kingdom of motion and forms, therefore, have ever been and still are (and we may confidently believe ever will be) making farther and farther encroachments upon the realms of *chaos* and *inertia*, and whatever is conquered by the former can never be fully reconquered by the latter, and this because the former power is positive and the latter negative."

Not to speak of the grammatical richness of this sentence, here we have *motion* and forms called a kingdom, and a conquering power, and *inertia* and *chaos* called realms having no motion; the man takes states and condition of matter for its properties, as all men who are ignorant of mechanical philosophy do. *Inertia* is simply the passive mechanical property of matter, whereby it has no inherent power to change its condition; it belongs to a body in motion as well as a body at rest, it is as much positive as negative. Men talk about *chaos* with great freedom; who knows anything about it? *Inertia* belongs to all bodies in motion, and which have form; matter in every state, in every place, and at all times, has been, and is endowed with the property of inertia.

We might easily fill a page in pointing out erroneous views put forth in this book, but perhaps we have said enough.