



NEW YORK, AUGUST 21, 1847.

The Utility and Pleasures of Science.

The utility and pleasures of science are not fully appreciated by the mass of human society. The progress of human knowledge has accomplished within a century revolutions in the character and condition of the human race so beautiful and sublime as to excite in every observing mind feelings mingled with the deepest admiration and astonishment. No age has illustrated so strongly as the present the empire of mind over matter—and the ability of man to rise with the resources of his own intellect above the obstacles with which nature has surrounded him. By the aid of his own inventive genius and the ten thousand discoveries already made, he is rising rapidly to his proper sphere of intelligence, virtue and morality. In evidence of the improved condition of the present age over ages that have passed from the face of the globe to an endless eternity. We will look at the great discoveries and improvements in the arts and sciences and the different branches of industry. It is a happy privilege we enjoy of living in an age, which for its inventions and discoveries, its improvement in intelligence and virtue, stands without a rival in the history of the world. View the rapid movements going on as if impelled by some living instinct, in the social, political, intellectual and moral world—towns and villages spring up almost in a day, railroads and canals cross the land in every direction, upon which, at a trifling expense is transported the products of one portion of the nation to, and exchanging them for the productions of any other portion, and conveying men of business over a space in a few hours that a few years since required as many days. Look at our splendid steamboats plying up and down our majestic rivers and skimming over our beautiful lakes with the rapidity of lightning, transporting merchandise as well as men of business to different parts of the world—look at our majestic steamships, ploughing the living ocean and bringing the old world within a few days' journey of the new—view all these and then inquire whence these wonderful changes? and the answer to your enquiry will be—these are the results of science, science reduced to practice. Look again at our manufactures of every description—cotton, woolen, silk, paper, stone, earthen, glass and iron, everywhere scattered like the leaves of the forest—go into their spacious apartments and examine the beautiful, simple and complex machinery performing with the greatest exactness every imaginable operation—and you view with astonishment the rapidity with which the crude products of nature are converted into all the various articles of merchandise which contribute so vastly to our convenience and happiness. We are tempted again to enquire, whence all this combination of machinery, those fabrics so beautiful, those articles of merchandise, this variety of household furniture and implements of husbandry, all so beautifully constructed? and your answer will be—these too, are the result of Science developed by her ingenious sons, the Arts. Science like an accomplished teacher, has the oversight of every mechanic's shop, every manufacturing establishment, every steam engine, every ship at sea—collects, classifies and arranges every production of nature in systematic order—she takes the farmer into his fields, analyzes his soils, describes its properties and the products it is best adapted to grow—shows him how to mix his soils with nutritious substances so as to insure a rich return for the faithful sweat of his brow. Physical science has a direct moralising influence upon society. Who can go into the open atmosphere in a clear, cloudless night and view the blue vault of heaven, and contemplate the innumerable shining orbs that roll through infinite space, without feeling a moral influence move over his whole nature like the gentle breeze which moves over

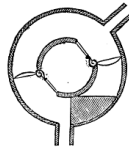
the rose that blushes by the way side. Science has an elevating, refining and purifying influence upon man, it develops, enlarges and strengthens the power of the mind, it sets free the springs of the intellect and puts the whole machine in active motion. But we must now pass on and notice some of the many pleasures of science, having thus shown some of its practical uses. Man is a physical and intellectual being—he has physical and intellectual cravings, an appetite which must be satisfied, and science is adapted to meet the desires, the cravings of an intellectual and immortal mind. The works of nature which embrace the whole foundation of scientific knowledge, affords the most ample, the most most sublime field for the mind to explore.—Go where you will—turn to the blue vault above or to the earth upon which we tread, new and interesting objects crowd in on the mind, the universe from the infinity of shining worlds down to the smallest insect that floats upon the air we breathe or inhabits the water we drink, by the aid of science is laid open to the mind in all its forms and tints of color, and is enough to fill to overflowing the broadest, deepest, noblest mind that ever existed.—Of all the discoveries yet made by man which has any tendency to ameliorate the condition of the human race, none are as noble in their character or happier in their results than those which have facilitated the dissemination of scientific knowledge. The time has been when Book knowledge was a luxury in which the rich alone could indulge, while the other parts of society labored in the deepest depths of ignorance, superstition and suffering. Happily the present age has witnessed a complete revolution in literature—the improvements which have been made in every branch of book manufacture have very greatly diminished their price, while it has extended their demand. The reading community was then the learned and refined; now it is the whole race, the light of knowledge which so long concentrated upon rank and wealth now shines upon the whole community, arousing the dormant energies of numberless minds diffusing light and life, health and happiness throughout the whole universe. Under this new spirit of intelligence thrones have tottered to the ground, superstition has fled and oppression has shrunk beneath its own influence. There is no principle of human nature more powerful than the desire for knowledge: universal experience fully attests this fact. Pleasures of an exalted and refined character are the invariable accompaniment of intellectual pursuits—in the original constitution of the mind we find a capacity for high intellectual attainments. If, then, its great Author intended that it should be susceptible of indefinite expansion and improvement, we cannot doubt that the same beneficent Being has supplied a fountain pure and inexhaustible from which to satisfy the desire of knowledge which is implanted in us. And where must we look for this fountain but to the great store-house of nature—the innumerable and diversified objects there presented to our view give evidence of infinite skill and intelligent design in their adaptation to each other and to the nature of man.

Grand Scheme.

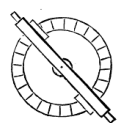
Mr. Wheaton, late minister to Berlin, in a despatch sent to Mr. Buchanan forcibly treats of grand enterprises having for the object the union of the Mediterranean and Red Seas, through the Isthmus of Suez, and that of the Atlantic and Pacific Oceans by the way of Panama, Nicaragua, or Tehuantepec. At the first view it would seem that the Canal of Suez, and that of the American Isthmus, were subjects widely apart and wholly disconnected; but in the grand and comprehensive view taken by Mr. Wheaton, they are treated as parts only of one entire system, as links in an unbroken chain of commercial intercourse, that is to concentrate within the Northern Hemisphere the trade of the globe.

New Beacon Light at St. Joseph.

The new Beacon Light authorized to be built at St. Joseph Michigan, by a law of the late Congress, has been erected, and is now lighted for the benefit of the shipping on the lakes. It is situated on the South Pier, within forty feet of the end.

MECHANICAL MOVEMENTS.**Rotary Steam Engine.**

Perhaps there is no kind of machine that has occupied such a prominent place in the universal mind of invention as the Rotary Engine. The first rotary engine we believe was built by James Watt, but he early laid it aside and wisely, for his own pecuniary benefit at least. No machine that has met so much attention has been so unsuccessful for purposes of utility. Circular motion is the most desirable and it is self-evident that for a great number of purposes there are other motions far superior to the circular, yet because the parallel engine has to drive a crank, too many, without thinking of the great beauty and ease of driving it by reciprocating motion have unwisely spent much time to supersede it, but as yet without establishing a general substitute. The above cut is a section of a rotary steam engine, as simple, if not more so, than many for which patents have been secured.—The lower aperture shows the entrance, and the upper the exit of the steam either to a condenser, or not. On the right of the steam pipe, (entrance) is a stop which fits accurately to the revolving central part by which the two valves on which the steam acts to turn the center are closed when passing; these valves must fit accurately when open to the exterior surface of the cylinder which forms the exterior of the machine. A rotary engine was applied last year to propel one of the steam ships in the British Navy, but it was a complete failure. A gentleman has called on us this week and stated that he had a neat rotary engine in successful operation in Philadelphia. It has no valves and is very simple. We hope to be able to give a full description with an engraving, in a few weeks.

Clock Work.

This is a plan of the old crown wheel escapement, in which the perpendicular sides of the ratchet teeth precede in the revolution of the wheel and alternately act on the two pallets which are carried on the verge which passes across the crown wheel. These pallets are set at an angle of 90°, so that when one pallet is impelled by one tooth of the wheel and has escaped, the other pallet comes in contact with a tooth of the wheel on the opposite; thus the motion of the wheel vibrates the pallets and the vibration of the pallets regulates the velocity of the wheel.

Coal for Steam Engines.

By the experience of many years, it appears that the Cumberland bituminous coal is by far the best for the use of steam vessels. The Cunard steamers, it is well known, have relied, as far as they have been able, to obtain it, on the Cumberland coal for their return voyages to England, and they have found it equal in every respect to the best English or Scotch coals.

The exact adaptation of this coal to use in steam engines, on account of its easy combustion, and its freedom from clinker, and from sulphur, will recommend it to universal use, as soon as it can be obtained, in all outward bound steamers, while the English coal will be used in the return voyages. The same construction of furnaces and of furnace bells, will of course be adapted to both.

Never saw a Railroad.

Hon. Edward Bates, of Missouri, the President of the late Convention at Chicago, said he had never seen a railroad!

Longitude and the Electric Telegraph.

Experiments have lately been made between Jersey City, Philadelphia and Washington to determine the exact longitude of these different places. The plan of operation we learn to be the following: At 10 o'clock in the evening, when the usual business of the Telegraph Co. is concluded, the three Observatories above named are put in communication with each other. They then correspond in the ordinary mode of telegraphing, to ascertain whether the arrangements are perfect, and the observers are all ready. The observer at Jersey City then gives warning to prepare for the transmission of clock signals. At the commencement of a minute by his clock, he strikes a key, (like the key of a piano,) and a click is heard simultaneously at Jersey City, Philadelphia and Washington. The observers at the three places record the time, each by his own clock.—In ten seconds, Jersey City again strikes the key; a click is heard, and all record the time. At the expiration of another ten seconds, a third signal is given in the same manner, and so on, to the number of twenty signals. After a pause of one minute, Philadelphia repeats the same series of signals, and all three observers record the time. After a similar pause, Washington begins, and gives another series of twenty signals. Thus the three observers obtain sixty comparisons of their clocks, which ought to give their difference of time with almost perfect accuracy. This method is beautiful in theory, and apparently very simple, but a great many disappointments have been experienced in reducing it to practice.

Cast Iron Houses.

The Cincinnati Chronicle says: "We are informed by good authority that a block of three story buildings are to be erected in this city, the entire front to be of cast iron! The plates for the same being already cast."

We hope that due warning will be taken by the falling of Gray's Mill in Manchester, which was almost entirely constructed of iron. Great prudence and skill is necessary in the right placing of iron posts and all iron uprights.—There is a tendency in all crystallized substances to expand and crash suddenly. Iron houses are undoubtedly an improvement, but let caution and skill be exercised in their erection, more especially in regard to top weight and expansion.

Steamer North America.

On Monday of last week, while the North America was on her trip from Albany to this city, the walking beam of the engine near the journal, broke off when at its highest elevation, falling with tremendous force, crushing everything in its descent and endangering the lives of the pilot and a number of passengers, several of whom had a narrow escape.

This is another instance of the dreadful effects of the axes of the journals getting out of line. It appears to us that if Mr. Smith's invention was adopted, these accidents would not occur so often. There is just as much culpability in not adopting means for the prevention of such accidents by breakage, as there is in subjecting boilers to the test of every inch of pressure continually.

An omnibus has been started in St. Louis, two stories high. It carries sixty passengers.

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