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The Past and the Future.

Every man should live to some purpose. He should have some object to accomplish, distinctly and continually in view. Life is a voyage, and every man must navigate his own bark across its waters. Although millions of our race, since time began, have circumnavigated life's troubled ocean, yet the voyage to every individual, is in a great measure one of discovery. No one generation has gone through the same events exactly of another, and no individual the same as those of another. The phases of men's lives are like their countenances, each has something in it to point out its self-identity, and though similar it may be, still it is different from every other. It is, therefore, evidence of a skilful and careful life mariner to watch "the signs of the times," to examine regularly his chart—take his bearings, calculate his progress and lee-way and keep his vessel trim for storm, calm, or pleasant gale. Although the scientific navigator can take other observations than that of the sun's meridian, nevertheless he does not neglect to take his sextant when the sun approaches his zenith, to discover his true latitude. There are periods in every man's life, when like observations should be made, and one of those periods is approaching—it will arrive next week. The present year will then close, and a new one begin. There is no individual whose voyage of life is without adverse winds and many mistakes of reckoning committed. The past should therefore be frequently surveyed and the most wise preparations made for the future. No time, we believe, is more appropriate to take an extended survey of this kind, than on the first day of January, 1850—the third day of next week.

One year is a seventieth part of man's life, and how soon that portion of it passes,—the swiftly fled, now dream-like 1849, speaks to us with its "still small voice," "Whatsoever thy hands findeth to do, do with all thy might." It is the duty of every man to endeavor to leave the world better than he found it; therefore whatsoever he doeth, he should do well. Every man has his choice of action, good or bad, and in many cases, though not always, the choice of circumstances. There is no excuse, therefore, for doing wrong, and there is as little for not doing right. Although all men have the same voyage to perform, it is surprising to see how different from others, some perform it. Some seem to begin life without an aim, and end it without a purpose. No person will do this who takes our advice and takes frequent surveys of his voyage. It is a common thing at this time of the year for newspapers to make long rhyming addresses to their readers. If we struck our lyre in such a key, our readers, we suppose, would be suspecting that there was something wrong with our attic chamber. We endeavor to write to some purpose and for some object. We have in this article, as we frequently do, dwelt on some principles of moral science; such subjects come within the scope of our labor, although in a minor degree, as well as questions of physical science. Our object is to make men, *men*—to think better, and then they will be sure to act better—*to live to some purpose.* Young men, let your aims be high and your faith strong. Men of middle life, press onwards to the mark for the prize. Old men do not be weary in well doing, for in due season you shall reap if ye faint not.

A New Year's Present.

It is customary for friends at the Holidays to make presents to their friends. Some make presents of one thing and some of another. It is very common to make presents of books. We know of no kind of present equal to a good literary one: it bespeaks an elevation of mind, and a good will to do good, as well as to cause pleasure. It is common for fathers to make presents to their sons, and employers to their apprentices. Those who wish to encourage a scientific taste in their sons, or impart to their apprentices or workmen, mechanical knowledge—we believe could not do so more effectually than by making presents of bound Volume 4 of the Scientific American, or by subscriptions to Volume 5. All the newest scientific discoveries are found recorded in our columns, and all American inventions are regularly noticed every week, and many of them finely illustrated. Every bound volume contains at least 264 good wood engravings. There is no book that can be obtained for three times the price which contains as much useful information.

Manufacture of Sugar.

It has long been a desideratum with scientific sugar manufacturers, to discover some substance that would precipitate the sugar from the watery parts of cane juice, to obviate the tedious and expensive processes of boiling and purifying by charcoal, &c., and also to take up the whole per centage of sugar crystaline in the juice. A recent discovery in Belgium is stated to have accomplished this object by employing a powder of the bi-sulphite of lime, but if this be a fact, some more information respecting its useful application, has yet to be made public, as recent experiments which have come to our knowledge, bring to light the fact that it is too injurious to the workmen ever to be employed on a large scale, and beside that, it is equally expensive with the lime and animal charcoal process. Above all the substances heretofore known, as a precipitant for impurities in natural sugar juices, are the subacetates of lead, which precipitates the general impurities from raw juices, rendering them comparatively colorless. This property of the acetate of lead has long been known to chemists, and successfully employed on a small scale, but every attempt to use them practically has been unsatisfactory, because of the difficulty in separating an excess of lead, which is poisonous. To separate the excess of lead, on a small scale, the bi-phosphate of lime has been successfully employed, but it is too expensive to use on a large scale.

To find out a cheap substitute for this purpose, was a grand object, and two years ago a patent was taken out in England by Mr. R. W. Seivier for removing all the metalllc salts that may be used in purifying by sulphurous acid. He therefore let in the gas from burning sulphur into the wooden vat, into which the coagulated juice was placed, and a force pump was used to force the gas into every part of the sugar solution. This process was not favorably received, because it was generally believed that the grain of the sugar, and its taste, were not so good as by the old processes. Strong hopes were at one time entertained, that voltaic electricity would afford a most simple means to deposit the metal, but at the last meeting of the British Association, Dr. Faraday expressed the opinion, that "it was impracticable,'.' Cane juice is a fluid of a very complex nature. In 1833 Mr. Avequin, of Louisiana, gave the first regular analysis of Java and Otahite cane grown in that State, and a Professor in the College of Havana, Cuba, published a chemical analysis in 1839. In the Report of Professors Bache and McCulloch, presented to Congress in 1847, we have perhaps the best treatise on the subject extant, but there is nothing in it to show that the purification of cane juice and the crystalization of sugar, is an easy or cheap process,—in short, the manufacture of sugar is a tedisome and expensive process.

With the exception of boiling in vacuo, we may say that the sugar manufacturer has not been benefitted in the least by the investigations of men named philosophers. The decolorising and purifying of sugar by charcoal was demonstrated by a practical workman, and the pneumatic cistern for carrying, and the filter of granulated charcoal were all the products of practical men.

We know of no vegetable product that has become so much an article of domestic consumption as sugar. In fact it has become part and parcel of every family's existence, and its consumption is always on the increase. Every improvement in its manufacture, therefore, is of great importance to the whole civilized world, but we hope that the civilized world will have sense enough to prefer the yellow grain, dark though it may be in color, to the whitest and most brilliant poisonous product of lead purification. A general article of food like sugar should be guarded with the utmost governmental care, from being contaminated with anything hurtful to the human constitution. Congress has passed laws to scrutinize the quality of foreign drugs—it was a good act, and so was the appointment of Prof. Bache to investigate the sugar manufacture of the United States, but there is something more to be done yet, and that is to watch and analyze our home products of sugar, to keep them purely healthy for use, and pursue the old plan of purification rather than to have sugars pure in color, by rendering them impure in quality by the use of lead in any shape. In some places, especially in South America, the manufacture of sugar is conducted upon a very barbarous system, and great improvements will, no doubt, yet be made both at home and abroad. These will be made by discoveries; some may be by accident—but it is by experiment that such things, generally, are found out. Every sugar planter should have a laboratory, and without being unwisely extravagant, should devote a portion of his time to investigation. It would soon become a pleasure, and a profitable one, in every sense of the word.

Iconographic Encyclopædia of Science, Literature and Art.

There are no works so expensive to publishers as encyclopedias, while none are so useful to the public. There are various encyclopedias in our country, and no public library of any consequence is void of the American or Edinburgh one, but taking all our people into consideration, there are but few families who have encyclopedias in their private libraries. It would be a good thing if every family was able to possess one,—we have often expressed this wish, and we are happy to say that it is about to be gratified. Mr. Rudolph Garrigue, of No. 2 Barelay street, this city, has commenced to publish the above work at $1 per monthly part, and to be completed in 25 parts—the whole cost, binding and all, will be about from $28 to $30. It is a translation from the German, the original of which we have seen. The plates in this one are from the original, the translation by Prof. Baird, of Carlisle College, Pa., makes the whole exceedingly clear. Three numbers of it has already been published, which treat on Mathematics in all its branches—trigonometry and geometry, &c. Mechanics in all its branches, with the description of many machines, new to thousands. Electricity, &c., is also embraced. Astronomy in all its branches, and Geography in all its branches, are also embraced in the parts published. There are twenty pages of plates and eighty pages of letter press in each part. The plates are all steel, and nothing equal to them has ever been published in any work in our country, nor could it be at four times the price. We have often admired many of the German works, they have a happy way of illustration which is at once entertaining and instructive, and this work is of such a character. The chapters are brief and clear, those on physics particularly, and the apparatus of Arago and Dulong, to test the law of Mariotte, is represented, and which is a curiosity to show the trouble and expense which those philosophers were at, to make correct investigations. The description of philosophical instruments is good and elaborate, and of itself is a masterly treatise. From time to time we will refer to *particulars*, as this is a work, which should be universal (because useful) property, subscribers are taken only for the whole work.

Notice.

Those who have apparatus for boring deep wells would find it to their advantage to advertise in the Scientific American. We make this statement for their benefit, because we have had many enquiries made about the price of such machinery.

Reviews.

We have a number of valuable works of a scientific character to notice, which we are compelled to leave over to another week.

By late advices there were £16,000,000 of bullion in the Bank of England.

The Woodworth Patent Planing Machine Case.

In notices heretofore published of the late case of Woodworth and Wilson against J. Brown at Baltimore, for the violation of the planing machine patent, it was stated that the practical operation of the verdict was "in favor of the defendant." We have received a communication which states that this "is not the case—that the suit is still to be held in chancery, when the effect of the verdicts, two for the plaintiff and one for defendant—will be the subject for further discussion, and from which hearing either party may appeal to the Supreme Court."

With regard to the decision in this case, we have not used a word of our own in comment. It is a case, as it now stands, of which we are not able to express any opinion—and as it is a principle of ours "nothing to extenuate, or aught to set down in malice," we forbear to say anything of our own upon the subject.

The President's Message.

After three week's inglorious struggling, the House of Representatives elected a Speaker, —Mr. Cobb, of Georgia, is the man, a Democrat. The Democrats have a majority in both Houses, and America sees the curious spectacle of a Whig President and Ministry, and a Democratic Congress. Mr. Cobb is a man of honor and ability—a good Speaker. The President's Message is a very good one. It was received in New York on Christmas Eve: it is not long. We perceive that our National Debt is only a little more than $64,000,000. Our foreign relations are rather singular, and want further developement. The country is yet safe —that's sure,

For the Scientific American.

Use of Lead in the Manufacture of Sugar.

GENTS.—I noticed in one of your late numbers that the United States had granted a patent for the use of Acetate of Lead in the refining of sugar. Can it be possible that the use of this virulent poison in a most important article of food is legalized by our Government? While on this subject will not you caution the sugar refiners against the use of white and red lead as a paint for their sugar moulds; when there are so many pigments that are perfectly harmless. They are inexcusable in placing carbonate and oxide of lead in a position to be dissolved by a hot solution of sugar, which, as a natural consequence of fermentation, has free acetic acid in it. I was told not long since by a sugar refiner, that he never knew any person to get the "Lead Cholic," from eating his sugar. I asked whether the men who painted his moulds were ever afflicted in that way; he replied "oh yes, frequently;" he acknowledged also that his moulds required re-painting after being a short time in use, but could not, or would not, understand that the paint which was missing, went down the throats of his customers. I have never used sugar of his make since. C.

Send me the Scientific American.

MESSRS. MUNN & CO.—GENTS.:—I was a subscriber to Volume 3, of the Scientific American, and had searched in vain to get one receipt which I particularly wanted. Not getting it, I dropped my subscription to Vol. 4. I lately purchased the receipt I wanted for $10. Last week I by accident came across a bound Volume 4, Scientific American, in the house of a friend, when, what should present itself on the very first page I looked, No. 52, but the very receipt (Marble Cement), for which I paid $10.

To be more wise in future, be pleased to to send me Vol. 4, bound, and accept my subscription for Vol. 5. Yours respectfully.

J. M.

Rochester, N Y., 19th Dec., 1849.

Niagara Falls a Mill Stream.

A flourishing mill has been erected at the suspension bridge over Niagara Falls, it is placed upon the bank of the river, at a perpendicular elevation of 250 feet above the water which propels it, and is connected therewith by a cast iron shaft 270 feet in length, running at an angle of 45 degrees.

It is said that branches of elder bushes scattered over grain heaps, will prevent rats from attacking the grain.