Waste of Ingenuity.

Americans have deservedly won celebrity by their practical applications of science. As inventors they take already the highest rank. Combining the quick perceptions of the French with the steady practical habits of the English, they merit the double praise which is divided between those rival nations. The French, it has often been said, originate inventions, the English render them available. Americans accomplish both.

Yet Americans labor under one disadvantage to which neither Frenchmen nor Englishmen are equally exposed. In both France and England the journals of scientific societies not only furnish a record of contemporaneous inventions, but also, so far as they extend back, a sort of Retrospective Review of Science. Thus the inventor, learning what has already been attempted in vain or successfully, is saved a great waste of the ingenuity which he might otherwise expend worse than in vain.

It would be well if a suggestion we once heard Dr. C. T. Jackson make, should lead some competent persons to undertake a Retrospective Review of science and scientific inventions, that might serve to prevent the waste of ingenuity of which we have spoken. The suggestion was to that purport, and was thrown out, as the distinguished chemist and geologist has thrown out so many invaluable suggestions, in the course of a casual conversation. Genius often scatters its bounties with the carelessness of the ostrich, that drops its eggs on the sands of the desert, without being anxious as to its claims of paternity over its own offspring. A Review of this kind mentioned, would infallibly lessen the number of occasions for the statement (if we remember rightly) of Mr, Verplanck, that in visiting our National Patent Office and in conversing with the officers of the establishment, it becomes a common subject of remark, how prodigious a waste of ingenuity, in various ways, and particularly in mechanical contrivance, takes place annually in this country, from the want of a more general knowledge of the actual state of improvement in the several departments of invention.

The paper which most nearly meets the wants of our inventors, is the "Scientific American," of New York. This most excellent scientific and mechanical paper, gives an accurate list of all new inventions, furnishing not only faithful descriptions, but often expensive and accurate drawings. Would it not be desirable for the American to seek to meet the necessity referred to in this article?

[The above is from our excellent contemporary, the Boston Olive Branch. The object to which it directs our attention, has been, we know, suggested by the best of motives, but as we have, perhaps, the best opportunity of any other periodical in America of judging between the waste of invention in America and Europe, and between the popular modes of spreading correct information about inventions among the people of both countries, we will endeavor briefly to show that there is no more waste of ingenuity, and better means at less expense, of obtaining the information spoken of by our contemporary, in this than any other country.

The first question to be asked is, "how do we know that there is a greater waste of ingenuity in this country than in Europe—what evidence have we that this is so? The only evidence mentioned above is "*the number of models in the Patent Office, and the number of applications made to get patents for things which are old.*" This is not a true guide to leads us to truth in this investigation. In the British Patent Office there are no models, so that comparison fails to enlighten us; and the nicest point of comparison, "the number of patent," is surely no criterion. An English patent costs $500, an American only $30. Before a British inventor applies for a patent, he expends more money to get information on the subject of his invention, by examining the rolls, than is paid by an American inventor, for patent fee and patent agent's fee all put together. These are some of the reasons why there are more evidences of a waste of ingenuity in our Patent Office than in the London one, but no evidence at all that there is more waste among the whole people. If the patent fees of Britain were reduced to the level of ours, we firmly believe that more than 50 per cent of waste ingenuity would be displayed there as compared with our Patent Office. A mere review of the progress of invention, that is, such kind of reviews as appears in the foreign magazines, is of no earthly use to inventors. There is not a single foreign journal in existence that can compare with the Scientific American for elaborate and minute information, regarding inventions in every department of Science. We speak this not to boast, but because we cannot say anything else, unless we denied the truth. For example, in Volumes 2 and 3, Sci. Am., we illustrated and described the whole of the mechanical movements, with about 300 wood cuts, and the whole art and practice of Electrotyping and gilding, with about 50 wood cuts; and in Volume 4 we illustrated the history of the rotary engine, with 67 wood cuts. No foreign magazine contains such minute information upon those subjects, and to our knowledge we have saved thousands of dollars to our country, and saved a great waste of ingenuity. We are now illustrating the history of propellers. No foreign magazine has yet done this, and we know that no subject requires it so much. The labor and expense to us is very great, for we have to search through many very rare works for information; but we have the consolation of knowing that already we have saved some individuals hundreds of dollars. We endeavor to keep up with the progress of science on all points, but for all this we know that many men will waste both time, genius and money on things already described in our columns. There is not a week passes over our heads that we have not to refer to at least ten correspondents for a description of *new* inventions of theirs, described in our former numbers.

From our knowledge of men and things, we are positive that a review, such as Dr. Jackson spoke of, could only be embraced in an Encyclopedia, and it would require to be as large as that of Rees'.

It is our intention to go on illustrating one art, historically, after another, as we have done the rotary engine, and are now doing with propellers, and in the course of five years more, those who own the whole series of the Scientific American, will possess an Encyclopedia on the Arts and Sciences unequalled by any other work.

New Ideas on the Sugar Manufacture.
By J. Scoffern.

[Concluded from page 155.]

This want of clearness, however, does not impede the perfect action of the test proposed to be applied; this testing is conducted as follows:—Pour into a part-filtered liquid about ten or a dozen drops of hydro-sulphate of ammonia, or about a fourth part of filtered liquids, one volume of hydro-sulphuric acid solution, and observe the appearance that it assumes; should any tinge of blackness occur from the addition of either test, it will be a proof that the liquid still contains lead in solution, and that it must be still farther gassed; on the contrary, should the result produce no visible change, it may be presumed that the gasing process has been continued long enough; but independent of that it is desirable to proceed a step farther in the testing, and for this purpose employ a solution of sugar-of-lead as a counter-test. Supposing the filtered liquor has been tested without any visible effect, or, perhaps, only the producing of a partial whiteness, he now drops, by means of a straw, a small quantity of sugar-of-lead solution, when, if the presumption were correct with regard to the previous tests, a patch of blackness will be observed to ensue; this will, perhaps, remain, or it may change to a greyish colour. But the indication of such counter-test, if so accompanied, will be perfectly satisfactory to the operator that all trace of lead has been effectually removed. The next part of the process is to heat the liquor which has been treated as before explained, for which purpose the heat of steam (and other means may be resorted to); but it must be conducted with considerable rapidity until it attains a temperature of 180° Fahrenheit; a quantity of chalk, powder marble, or other convenient form of carbonate of lime, equal to about one fifth of the lead material used in the previous process, is to be added to the heated liquor, and in order to facilitate the admixture of the chalk or other carbonate therewith, they should be reduced to the form of a paste by mixing them with sufficient water for the purpose; the heat is then to be maintained at 80 degrees for about a quarter of an hour. When the density of the liquor is two of sugar and one of water, animal charcoal is yet to be employed as a filtering agent or otherwise it would be better to use solutions of a lesser density. Having progressed thus the liquor may now be considered in a proper state to be filtered, previous to its being emptied on the charcoal beds. In the application of this invention to the refining of cane-juice, it is preferable to nutralize or render it slightly alkaline before subjecting it to the action of the lead material; test it, therefore, with litmus paper, and should the colour be changed by acid or salts it should be nuetralized by lime or chalk; if lime is to be used, that which is known as cream of lime is the proper article; and if chalk be employed, it is to be with water. When the juice is at a heat of about 180 degrees, and chalk is is applied, it must be mixed with it by stirring in small quantities till the juice discontinues to indicate the presence of acid, or at least in a trifling degree. In the case of lime being employed, the process is carried on till slight but distinct alkaline solution is indicated to the test. The manner of applying the lead material is as above described: the proportions being that of 150 grains to the imperial gallon of juice, but such proportion being subject to variation according to the character or density of the juice, together with the degree of purity thereof; the liquor is then to be filtered, and subjected to the gasing process as before described, and also to the action of carbonate of lime, so as to neutralize all acid properties. In the case of the application of these improvements to the juice extracted from beet-root or other material, the opperation or process is conducted in the same manner as previously described, with respect to cane-juice. After the juice has been treated with lime, as ordinarily practised in operating upon this juice, larger quantities of the lead material will be required, and which is manufactured in the following manner:—Take say 12 gallons or any proportion of vinegar of 5 per cent strength; this is placed in a copper vessel, and heated to 160 degrees; he then mixes with the heated vinegar 40 lbs. of litharge, previously reduced to a fine powder; this is performed gradually, taking care to keep the liquor in agitation by stirring while the litharge is added. The temperature must now be raised until the mixture boils, during which a thick crust will be formed on the bottom and sides of the pan, which must be frequently broken, so as to dislodge it therefrom. The ebullition may be continued until it becomes so thick that portions will frequently be blown out of the vessel by the boiling, on arriving at which stage the heat should be gradually decreased, and the moisture remaining dissipated by gentle heat, when the mass will be fit for use. Should vinegar of a greater strength be used than that before mentioned, a proportionably greater amount of litharge must, of course, be employed. The proceed thus obtained is a mixture of two or more of the basic acetates of lead, of which there are several, as recognised by chemists, and may be prepared by various means; but from cheapness and simplicity, the foregoing is more applicable for the purpose intended.

Wine-Vinegar.

The following is the plan of making vinegar at present practised in Paris The wine destined for vinegar is mixed in a large ton With a quantity of wine lees, and the whole being put into sacks, placed within a large iron bound the liquid matter is pressed out.

What passes through is put into large casks, set upright, having a small aperture in their top. In these it is exposed to the heat of the sun in summer, or to the heat of a stove in winter.

Fermentation comes on in a few days. If the heat should then rise too high, it is lowered by cool air, and the addition of fresh wine. In summer the process is generally completed in a fortnight; in winter double the time is requisite. The vinegar is then run off into barrels, which contains several chips of beech wood to clarify it: in about a fortnight it is fit for sale.

Almost all the vinegar of the north of France being prepared at Orleans, the manufactory of that place has acquired such celebrity as to render their process worthy of a separate consideration.

The Orleans casks formerly contained nearly 200 gallons of wine, but at present only about half that quantity. Those which have been already used are preferred. They are placed in three rows one over another, and in the top have an opening of two inches diameter, which has a bung fitting close; there is another spill hole on the side to admit the air.—Wine a year old is preferred for making vinegar, and is kept in adjoining casks, containing beech shavings, to which the lees adhere.

The wine thus clarified is drawn off to make vinegar. At the first setting up of a manufactory, so much good vinegar, boilling hot, is first poured into each cask, as to fill it up one-third of its height, and left there for eight days, till the vessels are two-thirds filled. Eight days afterwards, ten gallons of vinegar are drawn off for sale, and the cask is again gradually filled. Thus each cask or mother yields twice its own admeasurement of vinegar in a year.

It is necessary that a third part of the cask should always be left empty.

In order to judge if the mothers work well, the vinegar makers plunge a spatula into the liquid, and if it brings up a white froth, the making of the vinegar is judged to succeed well; if red, they add more or less wine, or increase the temperature.

In summer the atmospheric heat is sufficient. In winter stoves heated to about 75° Fahrenheit maintain the requisite temperature in the manufactory.

The casks get filled with lees in about ten years, and require to be cleansed; and fresh casks must be mounted every twenty-five years.

If the vinegar is not clear, it is clarified by being put for some time in a cask filled with shavings of beech wood.

In some parts of France private persons keep, in a place where the temperature is mild and equable, a venegar cask, into which they pour such wine as they wish to change into vinegar, and it is always kept full, by replacing the vinegar, as fast as it is drawn off, by new wine.

To establish this household manufacture, it is only necessary to buy at first a small cask of good vinegar.

A slight motion is found to favor the fermentation of vinegar, and its decomposition after it is made.

Chaptal thus ascribes to agitation the operation of thunder; though it is well known that when the atmosphere is highly electrified, beer is apt to become suddenly sour, without the concussion of a thunder storm.

In cellar, exposed to the vibration occasioned by the rattling of carriages, vinegar does not keep well. The lees which had been deposited by means of isinglass and repose, are thus jumbled into the liquor, and make the fermentation re-commence.

New Language.

One of the Sierre Leone Agents of the Church Mission Society of London, the Rev. Mr. Koelle, has discovered a written language existing in the interior of West Africa, in the Vy language. Mr. Koelle says that the alphabet consists of about one hundred letters, each representing a syllable. The new character is said to have no analogy with any other known.—Mr. Koelle has taken a passage on board a vessel going to the nearest point from which the Vy nation can be reached, with the resolution to investigate fully this interesting discovery.

[The above we copy from an exchange, and we have noticed it in quite a number. This Vy language must be a curious one, we think, but it is no doubt of Yankee origin, for it looks exactly like some of the characters used by Prof. Morse in his early experiments on telegraphing.

At a dinner of the newspaper venders in London, Dickens stated that one hundred and fifty years ago there was not a single daily paper in London and ten years later only one.