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Congress and the Patent Office Reports.

For the past fifteen years, Congress has been in the habit of publishing annual reports of the proceedings and business transacted at the Patent Office. As this department has increased in usefulness, the reports have increased in size and interest; and from a meager little volume, they have gradually swelled to three volumes of what are called the "mechanical reports," which contain the claims of every patent issued and a short description of the machine, accompanied with suitable engravings to illustrate it, together with another volume, devoted entirely to agriculture. Of the many reports and collaborations published by our government, the mechanical reports of the Patent Office are the most valuable and interesting, for they contain a fund of information that cannot be obtained elsewhere. The "agricultural report" is, we think, an almost unnecessary book; it contains little original matter, and every subject there mentioned, generally speaking, has been quite as well treated in the numerous agricultural journals of the country.

It has been the habit of Congress to annually print several thousand extra copies of these useful reports, and give them to the Senators for distribution among their constituents; but this year, the Chairman of the Committee on Printing, (Mr. Johnson,) with a false idea of economy, proposes to save thirty thousand dollars by printing only a greatly reduced number of copies, and giving them principally to Senators for distribution, and thus cutting off the hitherto generous supply furnished to the Commissioner of Patents, who knows better how to dispose of them than any other functionary. Mr. Johnson gives what at first seem to be many excellent reasons for this retrograde step, but really all resolve themselves into a fact long established and well-known, namely, that the copies are not distributed among the right persons; and Senators do not take that amount of interest which they should in the distribution of the books given to them for that purpose.

We think that if Congress will leave the mechanical division alone, and retrench on the agricultural, the country will be better served. On the motion of Mr. Wilson, it was decided to restrict the Commissioner to a report of one volume of eight hundred pages—engravings and all. This is indeed a wholesale slaughter! The report for 1856 consisted of seventeen hundred and fifty pages; yet the Senators, in their wisdom, expect the report for 1857, of which there is as much, or more, to be compressed into one thousand pages less. Notwithstanding that the honorable gentlemen who form the committee cannot appreciate much that is in a Patent Office Report, yet all inventors know the value of them. The Commissioner's report is already written—part of it has appeared in our columns—and to cut it down would be an act of barbarism.

This matter had better be reconsidered; and when the subject comes before the House, we hope that some member will be found to lay the matter calmly and firmly before that body. Inventors at the present time sadly want a champion in Congress, and the advent of such a hero we should gladly hail; perhaps the present occasion may call one out—we hope so. At any rate, we would ask the Senators and Representatives to be well posted in the pro's and con's of the case, and coolly weigh its merits and demerits before they decide on so important a subject.

If we consulted only our own personal interest in this matter, we should be glad to have the most narrow views upon this subject prevail. It would aid the circulation of the SCIENTIFIC AMERICAN very materially if inventors and patentees were obliged to look

into its columns as the only source of information about patent claims; but we take no such narrow, selfish view of the matter; and while we condemn everything which appears like needless expense in the affairs of the nation, we cannot advocate this particular mode of retrenchment.

The Patent Office Reports have become exceedingly valuable; they constitute a history of invention from year to year, and supply a want which no weekly journal could meet.

Cochineal Cultivation in Teneriffe.

The brilliant carmine of the painter, and the rich scarlet and crimson colors of the silk and woolen dyer, are produced from a small bug which feeds on the cactus plant. This insect, called "cochineal," was unknown in Europe before the discovery of this continent. It was first exported by the Spaniards from Mexico, where it was employed by the natives in producing those beautiful red colors on feathers, which were made into divers curious Indian fabrics. Cochineal is sold at from one dollar and a half to two dollars per pound. At one period, its cultivation was mostly limited to Mexico proper, but it has lately been extended to other countries, with very profitable returns to those who have engaged in it. Its introduction and present extensive cultivation in the island of Teneriffe forms a remarkable episode in the history of the plants and people of that wonderful island, whose volcanic peak is seen from afar on the ocean, towering up, like a huge sugar-loaf, twelve thousand feet into the blue vault above. For three hundred years this island had been a vine-producing country, and wine was the principal article of its commerce—as much as 25,000 pipes being exported annually; and who would have thought that it ever would be otherwise? But sometimes revolutions take place in the natural, as well as the social world, and about fifteen years ago, "the handwriting of doom" went forth against the wines of Teneriffe. The "vine disease" fell upon the vineyards, the fruit withered, the plants died, and starvation stared the people in the face. The American vessels which used to frequent the island to exchange flour and provisions for wine, deserted the harbors. What were the people to do?

Some years previous (in 1835) a native gentleman, knowing that the cochineal was cultivated profitably in Honduras, thought it might be equally so in Teneriffe. He therefore introduced the cactus plant and its attendant insect, and set out a cochineal plantation. The people around him, blinded by a strange fanaticism, thought that the cultivation of the cactus was something insulting to the vine, and they destroyed his plantation at night. But being a man of some determination, and supported, happily, in his views by government, he was so encouraged as to adhere in his efforts to cultivate it as secretly as possible, in some lonely spots, and he was at last rewarded for all his trials and labors. When the grapes died, and despair seemed to settle down upon the people, as the vine was their principal dependence, the question was sent forth, "Why not try to convert the abandoned and withered vineyards into cochineal plantations?" A *furor* seemed to seize the people in its favor, as it had already been demonstrated that the cochineal insect propagated rapidly, and the cactus flourished luxuriantly. The deserted vineyards were converted into fields of the cactus plant, and such a profitable investment was never made before in the culture of the soil, even in the palmiest days of wine-growing. An acre of ground set out with the cactus plant, yields about 300 pounds of cochineal, and under the most favorable circumstances 500 pounds, for which the owner receives about \$340. The peasant women nurture patches of the cactus around their cottages, and thereby acquire considerable convenient little sums for domestic purposes, as the cochineal is always marketable, and in demand.

The cochineal insect resembles a plump rose-bug when dried. The female parents pro-

duce young in very great numbers; the males resemble gnats, are very short-lived, and are few in number in comparison with the females. The latter, when young, are white, but gradually become purple in color, by secreting the fluid derived from the plant—that for which it is so valuable. When filled with this secretion, these insects are shaken off the plants, placed on clean boards, and dried in ovens, which process prepares them for market.

It ought to humble personal human pride when it is considered that its gratification is oftentimes due to very despised sources. Thus the cochineal insect—or bug of the cactus plant—is employed to put the artificial rose on the pale cheek, and the bloom on the new scarlet uniform in which the young soldier takes such pride. At some future day, cochineal may become an object of culture in Florida and Texas, where the cactus and its purple insect abound.

Purifying and Filtering Water.

As the period is now approaching when greater necessity exists for the filtration of water than during the winter season, anything new on the subject deserves attention. We learn by a late number of the London *Engineer* that A. P. Malard, of Paris, has recently secured a patent for the employment of prepared wool-shearings as a superior material for the water to pass through to be filtered. He employs any common filter, such as the portable kind so well known in our cities, which have a perforated false bottom, or a supporting shelf of wire gauze on which the filtering material is laid. The wool-shearings employed by M. Malard are prepared in such a manner as to render them very durable, and not so liable to rot as the fibrous filtering diaphragms commonly employed. He first boils his wool-shearings for one hour in a solution of alum and cream of tartar, then takes them out, and exposes them to the air until they are quite cold. After this he boils them for an hour in a solution of nut-galls and acetate of iron, then in a weak solution of the carbonate of soda, after which they are taken out, washed perfectly clean, dried, and are ready for use by placing them in a stratum on the false bottom of the filter, and allowing the water to percolate through them into the recess below, when it is drawn off clear and limpid for domestic use.

As hard water cannot be employed for washing without wasting considerable soap, a simple method of rendering it soft will be useful to many of our readers. Take about a pint of fresh slacked lime, stir it in a gallon of water, and allow the sediment to settle; pour off the clear water, and bottle it tight for use, because if the air is not excluded, it will absorb carbonic acid from the atmosphere. Half a pint of this lime water is added to a gallon of hard water, stirred, and the whole allowed to settle, after which the clear is filtered through a diaphragm of Canton flannel, and is ready for use, being rendered quite soft. Those who reside in limestone districts, where the wells contain hard water, will find this method of treating it (the water) very useful for washing purposes. If they wish to use this softened water for drinking purposes, a little lemon juice or cider added to it will greatly improve its taste. In the magnesian limestone regions of Ohio, and other places, where the water of the wells, in warm dry weather, is liable to cause cramps and chills when drunk, especially to strangers; the method described for treating it will prevent such results. The fresh slacked lime water unites with the carbonic acid of the lime in the hard water, and the whole lime held in solution falls down in the state of fine chalk, leaving the water clear and soft.

The oxalate of ammonia also softens hard water, but it is not so easily managed as the caustic lime. It is made by saturating oxalic acid (a poison) in liquid ammonia, and for this purpose the oxalic acid should be ground fine, and stirred among the ammonia with a glass rod. A quart of the oxalate of ammonia will soften thirty gallons of hard water. It is

stirred among the water, the sediment allowed to settle, and the clear filtered. For drinking purposes, this water also requires a little lemon juice or cider to render it pleasant to the taste.

Impure water is oftentimes the cause of disease. The impurities consist either of organic or inorganic substances. It is believed that the foregoing processes are capable of removing both kinds of such impurities.

Inspection of Gas.

We have received a copy of the bill which has been introduced into the New York Assembly by Mr. Dayton, to regulate the manufacture and sale of gas. It provides for two important requisites, viz., the quality of the gas manufactured, and the accurate measurement of the quantity passing through the meter. It also provides for unjust charges for use of meters, connections, &c., commonly made. This is to be accomplished by a Board of Gas Inspection in every city of over 50,000 inhabitants, which is authorized to test the quality of gas manufactured, by a standard of merchantable quality, to be fixed by a Central Board, composed of delegates from each local board; and to examine and affix to each meter its percentage of loss of action, or the amount it fails to deliver of its dial register. If the gas tested comes below the standard adopted, the companies are to make a certain reduction in their bills, as prescribed by the Central Board, for different grades of manufacture; and they are also required to deduct from each meter register whatever percentage of loss of action it may have. These are important provisions for the interests of gas consumers, and, we think, ought to receive the consent of every honorable gas company.

The Submarine Railway.

It is said by European journals that the project of M. Thome de Gamond for connecting England and France by a submarine tunnel is to be thrown aside for a plan much more novel. A vast iron tube is to be constructed which will float in mid ocean, not touching the bottom or yet rising to the surface, through which the railroad is to be laid. It has been calculated it would cost six million pounds sterling, and would have a buoyant power of one hundred and eighty-two thousand tons.

The Onward March.

So much permanent universal good having resulted from the London, New York, and Paris Exhibitions, it is proposed to hold another at London—a gathering of the nations, each coming laden with the fruits of its industry—in 1861. The first idea was to have an exclusively fine art exposition; but the popular voice, combined with appeals from the press, will throw it open to every article which is the product of human labor, from a wooden nutmeg to Ruben's Crucifixion.

Country Lectures.

In the town of Woodstock, Canada West, the Rev. Mr. Bell gave a lecture on geology, and treated it with special reference to that locality. We notice this fact as being valuable, and were all lecturers in science to follow Mr. Bell's example, and choose their illustrations from spots and doings familiar to their audiences, much more knowledge would be disseminated in a lecture season than is usually the case.

APPRENTICES.—Messrs. W. R. Dunlap & Co., of Cincinnati, Ohio, order fifteen copies of the SCIENTIFIC AMERICAN, which they intend for the use of their apprentices. They inform us that it is their intention in future to pursue this course. This company is engaged in the manufacture of steam engines and boilers, also flouring mills, complete in every department. We venture to express the opinion that they will find the investment which they have made one of the very best, and that their apprentices will be rendered more useful to them accordingly.