

from this symptom an ultimate failure of the supply began to be apprehended.

The manner in which the laboratories of nature supply this article, is the most interesting part of our subject. It appears to be one of the choice ingredients which nature has reserved with peculiar care; for it is evolved only in a very few volcanic regions, and from its limited accumulation even there, would seem to be the product of comparatively recent and local volcanic action.

The Tuscan boracic region covers some thirty square miles of wild mountain land, where the heated and undermined crust trembles to the boiling and rumbling of the waters beneath, and breaks open in numerous fissures, giving vent to jets of steam impregnated with the vapors of sulphur, boracic acid and other minerals.

Borax Lake, in California, occupies apparently the crater of an extinct volcano, elliptical in form, and about three quarters of a mile in mean diameter. It is situated on a peninsula embraced within the waters of Clear Lake; a sheet of water about twenty miles long, situated in the Napa valley, about one hundred miles north of San Francisco.

REPORT OF THE REVENUE COMMISSION.

The report of the Special Commissioner of the Revenue, DAVID A. WELLS, is a document which every intelligent citizen of the United States owes it to himself and his country to procure and study. It is not a newspaper article, to run the eye over among other things. It is a work of science, research, and philosophy; condensed into a pamphlet, it is true, but containing more matter, more meaning, and more instruction, than almost any book, so-called, that we can think of among the publications of years.

We would gladly give the report to our readers entire, did space permit. We can only glance at the main features, in the hope of inducing some of "the plain people" who govern the country at last, to make it their business to get and digest the whole.

It appears that the \$50,000,000 lost to the revenue by the whiskey frauds and cognate operations which have pervaded the whole liquor business of the country, have not been saved to the drinkers, but have mostly gone into the pockets of manufacturers and knavish revenue officers. The average consumption being 40,000,000 gallons per annum, would yield at two dollars a gallon, a revenue of \$80,000,000. Less than \$30,000,000 were actually paid on only three-eighths of the amount made and sold; and yet the average ruling price, notwithstanding exceptional cases of which much has been said, has been nearly equal to the cost of manufacturing plus the tax, showing that in general the people have paid the tax, although their Government has not got it.

The tax on carriages, watches and plate, is condemned as too inquisitorial, annoying, and expensive to collect, in proportion to the revenue derived therefrom. The tax of three

cents per pound on raw cotton, is recommended to be retained. The general tax of five per cent on products and sales of manufacturing industry, should be reduced to three per cent, with a proportional reduction of the specific taxes. The taxes on the manufacture of salt, emery, sulphuric acid, bar, plate and sheet iron, and on the elements of the manufacture of steel, to be entirely removed, and that on refined sugar to be reduced from two and a half per cent to one per cent. The decided opinion of the Commissioner is that a rapid reduction of taxation, rather than a rapid reduction of the principal of the public debt, is at present the true policy of the Government, and that the adoption of this course, so far from protracting the period in which the national debt can be discharged, will, on the contrary, greatly shorten it.

The taxes bear an excessive proportion both to the population and the public debt. The amounts for the late fiscal year were: Internal Revenue, \$310,906,984, currency, and customs, \$179,046,630, gold; a total of \$561,572,260 in currency. Our domestic manufactures are taxed \$178,000,000; business (licences) \$18,000,000 (gross receipts) \$11,000,000; incomes, \$68,000,000; banking, \$12,000,000; stamps, \$15,000,000. We pay an average of \$16 04 currency, or \$11 46 in gold, for every man, woman, and child in the country, while our public debt averages per capita \$74 38. The worst-taxed country (ours excepted) in the world, Great Britain, pays \$10 92, with a public debt of \$125 per capita. France pays \$7 97, and Austria but \$5 27. The ratio of taxes to property with us is almost 4 per cent. In Great Britain it is nine-tenths of one per cent.

Furthermore, it should be remembered that taxes in Great Britain are levied in such a manner as in the least possible degree to enhance prices—all of the ordinary forms and products of industry being exempt from taxation; while in the United States the exemption of any form of capital or process or result of industry is the exception rather than the rule. Thus, in Great Britain, in 1865, 27 6 per cent of the revenue was derived from liquors and tobacco, while in the United States, with at least a double consumption, the percentage of receipts from the same articles was only 5 56 per cent.

In respect to the tariff, it is shown that the average of duties is now 48 58 per cent, and 43 19 per cent on everything imported, not excepting gold: a very high average of rates, but so distributed in many cases as to tax our industry oppressively for its raw materials, while admitting the products of competing foreign industry on terms favorable to the foreigner and ruinous to ourselves. The increase of imports for 1866 above all previous years, is frightful: \$437,638,966, against an average of about \$300,000,000 for the seven preceding years, and an increase of over \$300,000,000 from 1865. At the same time a table of exports is presented, showing the falling off in most of the leading branches specified, to be from fifty to seventy five and even eighty five per cent. In the shipping business, the same disastrous picture presents itself.

The foreign commerce of the United States is being, as it were, swept from the ocean. No voyage with an American vessel can be planned at the present time from the United States to any foreign port with a reasonable expectation of profit. The amount of American registered tonnage engaged in foreign trade in 1865-66, was but one million and a half tons (1,492,324), as compared with two and a half millions of tons (2,546,237) in 1859-60, which, allowing for the difference between the two years, shows a decrease of nearly 40 per cent in five years of over fifty per cent. In 1853 the tonnage of the United States was about fifteen per cent in excess of that of Great Britain, while, at the present time, it is estimated at thirty-three per cent less.

Contraction of the currency is forcibly advocated. The circulating medium does not advance in the same ratio with the exchanges which it serves to carry on. In the State of New York, in the ten years from 1850 to 1860, the capital of banks increased 101 per cent, loans and discounts 75 per cent, deposits 113 per cent, and specie 141 per cent; while the circulation increased only 15 per cent. Before the war, the creation of currency in most of the States was free from any serious restraint. Speaking generally, therefore, the people of the United States had all the circulating medium which they required or would receive. And how much was it? Under this free system the utmost ever called for (and that in the fevered summer solstice of 1857) was less than two hundred and fifteen millions. Now the existing circulation exceeds seven hundred millions. The retaining of the present amount of currency in circulation tends to increase no business except what is speculative, and to check the very development which is expected to prove remedial of the excess. But we must refer the reader to the report itself for the full argument and the answers to all objections.

We reluctantly forego republishing Mr. Wells' masterly argument with the producers of crude commodities, that their interest, with that of all classes, demands the encouragement of manufacturing industries around them. The report must be left to speak for itself. It is unanswerable and exhaustive. We close with a few items of home interest, which every one of either sex will read.

ADVANCE IN PRICES.

A somewhat extended investigation respecting the advance in the prices of the leading articles of consumption and of rents, indicates an increase of nearly ninety per cent, in the year 1866, as compared with the mean of prices during the four years from 1859 to 1862. The breadstuffs is estimated at about 70 per cent; coal (anthracite), from 60 to 70 per cent; salt fish, from 70 to 75; provisions (pork and beef), from 110 to 120; butter, over 100 per cent; rice, 100; salt, from 110 to 120; soap, from 80 to 90; brown sugars, from 70 to 80; coffee, from 30 to 40; and teas, from 140 to 150 per cent. As regards textile fabrics, the currency prices of Domestic Cottons in October, 1866, show a nominal advance over the gold prices of such fabrics in July, 1860, of one hundred and seventy-two (172) per cent. The cost of manufacturing cotton goods in the year 1866, over the average of the years from 1857 to 1861, was 125 per cent. On manufactures of woollens suited for ordinary domestic use, the advance is estimated at 53 per cent. The advance in the price of ready-made clothing has been 50 per cent. On silk goods in general, the advance is estimated at an average of a little over one hundred per cent. As a general thing, the price of labor has not advanced in an equal ratio

with the price of commodities, although numerous exceptional cases might be quoted which seem to indicate the contrary.

ADVANCE IN WAGES FROM 1860 TO 1866.

Table with 2 columns: BRANCHES OF MANUFACTURE and PER CENT. Lists various industries and their wage increases, such as Agricultural implements (55 to 60), Bookbinding (37 1/2 to 50), etc.

[From our Foreign Correspondent.]

AMERICAN BREECH-LOADERS IN EUROPE.

BERNE, Switzerland, Dec. 3, 1866.

Permit me to tell you some things officially about gun matters in Europe, feeling that you will be interested in anything which concerns the introduction or adoption of American breech-loaders in European countries. I was present at a trial of arms in the month of October last before the Commission appointed by this Government to select guns for adoption, and found there Remington's, Spencer's, a variety of American systems for the transformation of muzzle-loaders, also a number of Swiss models for the same purpose, and some English (including the Snider), German and Prussian patterns, also the French Chassepot gun; in all some forty different arms: I presented the Winchester repeating rifle, formerly the "Henry." The final result of the trial and examination is, that the Federal Assembly, which meets to-day, is recommended by the Commission and the Military Department, to order for this Government the Winchester rifle for the entire army, 101,722, which with transformed muzzle-loaders will give the country some 200,000 breech-loaders, and in the hands of such riflemen as abound in this country, the Swiss army will be a terrible foe to meet. By the term "entire army" is meant all except the militia, who are furnished with the old transformed guns: the Winchester is adopted as a principle for the army, as a new arm. The report of the Commission on the trial to which I have alluded, gives the Winchester rifle the first place as regards accuracy of fire, rapidity, convenience in handling and freedom from liability to derangement of mechanism under the severest tests; and states broadly that it excelled all other rifles; and in accuracy, the results it gave were fifty per cent better than they had ever obtained with their best muzzle-loaders. The following figures give you some idea of the firing, which, it should be borne in mind, was done by firing from the shoulder, but resting the barrel on a stand, and with ordinary open military sights. At 300 paces, 30 successive shots, majority in a circle of 8 inches; at 400 paces, 30 successive shots, majority in a circle of 12 inches; at 600 paces, 31 successive shots, majority in a circle of 20 inches; at 800 paces, 40 successive shots, majority in a circle of 23 inches; at 1000 paces, 40 successive shots, majority in a circle of 48 inches.

The rifle was loaded and fired from the magazine 15 times in 41 seconds, including time of loading; and used as a single-loader, they found it could be handled with more facility than any other arm; in fact, taking the Prussian position for firing from the hip, the soldier need not look at his gun to load and fire it, but can constantly keep his eyes upon his enemy.

As an instance of the expertness of some of the Swiss riflemen, I would say that I have seen one of them with the Winchester military rifle, fire off-hand ten successive shots 583 yards, and the average variation of the shots on the target was only twelve inches from the center. The Chassepot gun, of which so much has been said, is no more nor less than another needle-gun, and the inventor whose name it bears, and who is a member of the French Artillery Examining Board, claims only the idea of inserting on the breech-pin behind the cartridge, a disk of india-rubber, which expands by force of the explosion of the charge, so as to prevent the gas from escaping behind. Notwithstanding the reported adoption of this gun by the French, I know that they are even more interested to see new arms now than ever before, and to my personal knowledge have not yet settled upon any model of that arm, as satisfactory.

The papers contain various rumors of the adoption of various arms by different governments; but, as far as I can learn from official sources, they are entitled to very little credit. HENRY A. CHAPIN.

[Our Foreign Correspondent.]

UNDERGROUND RAILWAYS.

ENSWORTH, ENGLAND, Dec. 7, 1866.

MESSRS. EDITORS:—I have no practical engineering knowledge, therefore I must claim your indulgence if my note is somewhat confused. I had prepared a letter for your perusal on the subject of underground railways, but postponed sending it, and since then I have been repeatedly in the underground railway, and all the disagreeables which had been raised against this mode of conveyance I soon found to be entirely

groundless. Nothing could possibly be more comfortable, agreeable, or perfect in its *modus operandi*, and I am certain every one in New York will enjoy this mode of transportation as much as we do here.

When the smoke and steam and breath of passengers were talked about, the idea occurred to me that the first two were readily removable by running the trains on two parallel lines on an incline, and by so weighting the descending one as to make it bring up the ascending carriages. Through telegraphic communication the required weight could be easily determined at both termini and at the intermediate stations.

There is nothing new in this mode of movement. In Brazil the system is followed, and an ascent of some 5,000 feet is surmounted by a series of zigzag inclines, and as the distances underground are short, the two sets of trains, united by a wire rope of one inch diameter, running round a drum or some such contrivance, with cramps to stop or check the trains, would operate satisfactorily, and if so, an enormous saving in engines and coal would be effected.

I venture to forward this suggestion to you, but whether it can be turned to any account I must leave others to determine. I cannot refrain from expressing the gratification I continue to derive from the perusal of your excellent hebdomad.

THOMAS INGLE, M. D.

Editorial Summary.

**SOCIETE D'ACCLIMATION.**—This is a French association devoted to the arts of rearing and naturalizing foreign species. The encouragement of birds is one of their useful and amiable hobbies. Artificial nests are made a study, with such success, that the feathered tribes are said to accept the aid of man and willingly domesticate themselves in the habitations he has provided them rent free. Societies in Switzerland, for the protection of insectivorous birds, carry on this reverse sort of "bird-nesting" extensively. Certain species of birds settle from preference, as every child knows, in habitations provided by man; and there is reason to suppose that if all received the inviolable hospitality accorded to the red-breast and martin, it would be as gratefully accepted and repaid with music and beauty and bug-catching. There is, in fact, a remarkable affinity between the better nature of birds and of man. It has been observed that birds develop the gift of song only under the influence of human society. The calls of the wild birds of those vast solitudes which man has never civilized, are not, so far as we have ever learned, melodious, but consist in general of single notes, mostly sharp and shrill. Many insectivorous birds prefer for their dwellings the hollows of decayed trees. A gentleman of Vevay has united the picturesque with the useful, by interspersing such trees among those of his orchards. He has done this for twenty-five years, and has his tenements always filled, and his grounds swept clear of caterpillars.

**ANTIQUARIAN DISCOVERY.**—A Cornish journal tells a marvelous tale of a discovery by some workmen engaged in sinking a shaft at the Garden Tin Mine in Morvah, of a perfect pillar about eight inches in diameter, standing in the solid rock, and very different in its composition from the surrounding granite; and, stranger still, at the base of this pillar they have come upon what they describe as a wheel of the same material. The true composition of the supposed fossils is not referred to, but they seem probably to consist of some kind of columnar rock. If they were remains of art they would of necessity have belonged to a pre-Adamite race. Perhaps the fanciful resemblances observed may serve, as others have before them, to encourage in some credulous speculators the notion of a fossil antiquity of man.

**OIL IN BOILERS.**—The interesting investigation given in a late number of the SCIENTIFIC AMERICAN, of the foaming of boilers, is illustrated by an item in the French papers. A phenomenon analogous to foaming has become very troublesome on certain railroads in Belgium, where water is obtained for the locomotives from the discharge of collieries. At the pressure of six or seven atmospheres, the water is said to mix with the steam and escape through the valves in the form of mist, with such rapidity that the feed pumps are unable to maintain the supply, and the fires have to be drawn. It is attributed to coal dust in the water, containing oil. The correspondence between this theory and that of our contributor above referred to, will be noticed.

**EDUCATION IN NEW YORK.**—The amount of money appropriated in this State to public schools, during the year past, was \$7,378,880. Four and a half millions of dollars were paid to 15,664 teachers. Of 931,000 children in the State, between 6 and 17 years, 919,000, or nearly 99 per cent, attended the schools—some portion, however, being outside these ages. The average attendance daily was over 43 per cent—the largest ever reported. It is proposed and expected to create in the legislature this winter a Metropolitan Board of Instruction for the city of New York, to replace the ignorant, corrupt and disgraceful body into which our elective commission has degenerated.

**THE "GREAT EASTERN."**—The French company who have chartered the *Great Eastern* as a tender to the Great Exhibition, are to pay, it is said, about \$57,000 for the year, beside a share of the fitting up amounting to about \$133,000, making \$190,000 in all. Six hundred men are now employed on this work, and the ship is to be ready to proceed to New York on the 5th of March, and to return on her first trip early in April. The price of passage for the round trip will be \$190; so that the first thousand passengers—one third of a full load—will settle the "rent." She will run from Brest or Cherbourg.

**TINCTURES** are solutions of vegetable and animal drugs, and sometimes of mineral substances, in spirituous liquids. The spirit most commonly employed is proof-spirit; sometimes rectified spirit is used, and occasionally ether. Ammonia is sometimes conjoined with the spirit, in which case the solution is termed an ammoniated tincture. Rectified spirit is alcohol, with 16 per cent of water, and its specific gravity is 835. Proof-spirit is composed of 5 parts of rectified spirit mixed with 3 parts of water, the resulting compound containing 47.5 per cent of water, specific gravity 920. The choice between proof and rectified spirit depends on their respective solvent powers over the active principles of the drugs employed.

In 1866 the expenses of the city of Paris amounted to \$46,000,000. In return for this seemingly large expenditure, the Parisians had the cleanest and best governed city in the world, together with an astonishing development of great improvements, in the opening of broad spacious streets, and in the erection of splendid public buildings. New York city expends about \$18,000,000, and gets in return dirty streets, a brutalized swindling political ring, and no improvements that are worth mentioning. During the past ten years enough money has been stolen from our burdened tax-payers, to have furnished this city with museums, art galleries, monuments, etc., that would have attracted the attention of the whole world.

**PEAT AND PETROLEUM.**—A method of applying petroleum as fuel for locomotives, has been patented by a Mr. Gartshore, of Dundas, C. W. It is rumored that the Great Western Railway propose to try it.—The new arrangement for burning peat in locomotives has been adopted by that company, which has entered into a contract for considerable quantities of the fuel.—The oil mining is not all bubble, as shown by the receipts at Pittsburg in the first eleven months of 1866, and reported at nearly a million and a half of barrels, or more than double the receipts of the corresponding months of 1865.

A SIMPLE device has been patented in England for disinfecting and deodorizing the effluvia from sewers, drains and sinks. It consists of a wire screen filled with charcoal or other disinfectants, and placed so as to occupy the only outlet for the noxious gases, and compel them to pass through it. The same contrivance may also be placed in the rain pipes, so as to pass all the rainfall from the roofs through the disinfectant into the sewers. The London Board of Works adopted this plan during the late visitation of cholera; with what effect has not been reported.

**DIRECT EXPORT OF PETROLEUM.**—It is manifestly cheaper to export petroleum by itself, in vessels where it can neither endanger nor injure less hazardous and more delicate merchandise. So the Erie exporters believe, and have formed a company for direct transportation of the oil from that port to Europe. A fleet of vessels of 400 tons is to be employed, carrying 2,500 barrels each, and making three trips a year. The saving in freight is estimated at two dollars per barrel.

**ILLINOIS AT PARIS.**—The Illinois Central Railroad Company has exerted itself with praiseworthy liberality to place an exhaustive representation of the State in the great Exhibition; and will make a good thing of it. Being proprietor of vast grants of land on its line, the company will "coin money" from Europe by showing up the rich soil in bottles, with the tall corn, the matchless grain, the spontaneous pork, and the sweet sorghum in all stages of its growth and manufacture.

**THE TALLOW TREE.**—The product of this tree, which is a great article of commerce in the northern part of China, gives an excellent light, free from smoke and smell. It is prepared from the seeds. The tree is very prolific and rapid in growth, and yields a valuable wood, as well as a dye from the leaves. In the government plantations on which it has been introduced lately in India, trees eight years old from the seed are now six feet in circumference.

**PROFESSOR H. DUSSAUCE,** Chemist, U. S. Commissioner to the Paris Exposition, wishes to communicate with exhibitors, as he desires, in connection with his position, to obtain authentic information concerning the Exposition any one may contemplate making at Paris. This information is to be used in the report he will make upon the subject of American industry. He can be addressed at New Lebanon, N. Y.

Rows of strong-growing evergreens, such as pine, cedar, and spruce, especially the beautiful tree last named, are equally useful and ornamental during the cold winters of our climate. Their rich and thick green, mantled with ermine, at once charms the eye and protects the home of man from the severity of the winds. Judiciously disposed, they will save a large proportion of the fuel and doctor's bill.

**COFFEE GAS.**—If ground coffee be mixed with cold water, a gas is evolved about equal in volume to the coffee; and if mixed in a closed bottle, filling it, the gas will burst the receptacle. M. Babinet, who observed the fact, does not mention the composition or properties of the gas. Will some of our chemists examine it?

We have received some samples of cassimeres manufactured by the Willamette Woolen Manufacturing Company, Salem, Oregon. The prices range from \$1 30 to \$1 75 per yard, and are pronounced by those familiar with the trade, excellent.

The Dunn Edge-tool Company of West Waterville have recently occupied a large new factory, in which their production will be increased next year to 12,000 dozen scythes and 2,000 dozen axes.

**WARM CURRENTS OF AIR.**—The Colorado Transcript notices the phenomenon of remarkably warm currents of air from the southwest, which cross the valleys of the Vasquez Fork and other streams, during cold weather, affording a striking contrast to the cold atmosphere of the surrounding prairies, extending as far north as 44° in Montana Territory, and sensibly affecting the climate and productions on the Tongue, Wind, Big Horn and Rosebud Rivers. The natural supposition that they come from a warmer climate, to the southwest, is rejected on the ground that snow-covered ranges of mountains intervene, over the tops of which the warm air of the south would be lifted by its rarefying temperature. Can any of our philosophers explain it?

**TURPENTINE FROM PETROLEUM.**—Since the pine product of North Carolina was suppressed by the civil war, we have missed our old convenience for paint and light, and come into possession of one still more disagreeable in its odor and effects. But recent scientific experiments in England, it is said, have proved that turpentine can be extracted from petroleum by a safe and cheap process, at one third of the old price of the Carolina article. Perhaps the manufacture of turpentine from the pine may prove to be one of the things permanently abolished, though indirectly, by the war.

**ARTIFICIAL SILK.**—In noting the process of resolving the silk fiber into the original gum from which the insect spins it (see SCIENTIFIC AMERICAN, vol. XVI, page 4), the conjecture occurred to us that the same substance might yet be obtained direct from vegetable nature and spun without the aid of the silkworm. We thought it too visionary an idea to mention, at the time, but we have since seen the statement that another Frenchman, one Lucien Tracol, has found means to realize it. His process is not disclosed. Still another, M. Brunet, is said to have succeeded in spinning silk from the fiber of the mulberry bark.

**MAKING STEEL RAILS CHEAPER.**—A method has been adopted of uniting iron and steel in the construction of rails, so as to obtain the advantages of steel on the faces, while making the stem mainly of the cheaper metal. It has been found impracticable to weld the two satisfactorily, and this difficulty is now obviated by connecting the two steel faces by a thin steel plate, like the letter H; thus making a complete rail of steel, except that the stem is slight—a sort of skeleton stem—reinforced with a sufficient thickness of iron rolled on each side to give the necessary strength and stiffness.

**A LONG SPEECH.**—Messrs. Little, Brown & Co., of Boston, are now publishing the works of Edmund Burke—ten volumes having been issued. Two of these volumes are filled with the charges and speech against Warren Hastings, Governor of India. The charges embrace 325 pages, and the speech covers 615 pages, and appears not to have been concluded in the volume before us. The orator must have tired out the patience of his hearers. The trial, however, lasted some seven years.

The new textile lately discovered in Nevada, is closely similar to hemp, but has a stronger and finer fiber, and a much longer staple. In proportion to the wood, the fiber also is more abundant, and can be more readily separated than flax or hemp. The plant grows in large quantities in the Humboldt Valley, but is capable of being cultivated in our Northern and Eastern States.

**GLYCONINE.**—A mixture of four ounces of the yolk of eggs, with five ounces of pure glycerin, forms a preparation for soothing the irritation resulting from burns. The compound forms a sort of varnish, protecting the surface of the skin from the action of the air, and can be easily washed off when desired.

An English inventor proposes to use potash as an auxiliary in the reduction of limestone, producing a caustic alkali of special virtue as a disinfectant wash and a preservative of stone and metals. He also claims the use of the carbonic oxide thus liberated, for the conversion of iron into steel, near Bessemer's patent, and also for adding to the value of substances intended for manures.

**PINS AND PENCILS.**—Thirteen millions of black lead pencils are made annually in Keswick, England, alone. Nuremberg exports, annually, twenty millions of Faber's lead pencils. Fifteen million pins go daily, nobody knows where, from English hands.

**PARAFFINE PRESERVING.**—Immerse fresh meat in paraffine, at a temperature of 240 degrees, long enough to effect a concentration of the juices and expel the air to the extent of its expansion. Then cover the meat with a coating of paraffine, to exclude the air.

The bakers of London have made arrangements to issue a paper called "The Staff of Life." An organ of sound morals, science and art, in bread making, is a desideratum among American bakers, and might be useful in many other ways.

**THE PARROTT GUN CASE.**—The suit of Mr. Treadwell, against the Parrott gun patent of which we noticed the points, has been dismissed by Judge Nelson, confirming Mr. Parrott's title as the original inventor.

**CHEAP ROUGH PAINT.**—Hydraulic cement, six parts; fine beach sand, two parts; salt, one part; mixed with water to the consistency of cream, and applied to a rough surface.

The sugar crop of Liberia—a settlement almost left for dead, not many years ago—is estimated at 4,211,200 lbs. for 1866, of which 2,000,000 will be exported.