

THE WAR.

ABANDONMENT OF THE FORTS AT OCRACOCKE INLET.

After the capture of Fort Hatteras, as narrated in our last, a portion of the fleet proceeded to Ocracoke Inlet, where the works were found to be abandoned by the secessionists.

UNIONISM IN NORTH CAROLINA.

The people from the main land, as soon as they learned of the capture of Fort Hatteras, began to come across the sound in large numbers to take the oath of allegiance to the government, and to implore protection from the intolerable despotism of Jefferson Davis. It is very positively asserted that a majority of the voters of North Carolina are in favor of the Union, but are overborne by the amazing audacity and energy of the secessionists.

A HORRIBLE DEED IN MISSOURI.

Some miscreants connected with the secessionists of Missouri, committed a most fiendish crime on the 3d of September, which resulted in the killing and wounding of 80 or 90 men, women and children. The Hannibal and St. Joseph Railroad crosses the Little Platte river ten miles east of St. Joseph by a wooden bridge, and the assassins burned the timbers of the bridge nearly through and then extinguished the fire. The express passenger train bringing from eighty-five to one hundred passengers, including women and children, reached the river at 11 o'clock at night, and the bridge looking secure, passed on; but no sooner had the locomotive measured its length upon the bridge than some forty or fifty yards of the structure gave way, precipitating the entire train into the abyss below. All the seats in the passenger coaches were torn and stove in front, carrying men women and children in a promiscuous heap down the declivity and burying them beneath the crushed timber, or throwing them out of the cars through the broken sides. Some were mangled by the machinery tearing through the timbers; several were caught between planks pressing together like a vice; others were struck by parts of the roof as it came down with mighty force; still others were cut with pieces of glass, while wounds and blood and agony prevailed all over the scene, and shrieks of pain were mingled with cries of terror. Into this groaning mass the last two cars of the train went down, pitching the passengers into the wreck, or throwing them into the water which, at this point, is about a foot and a half in depth. Only three persons, J. W. Parker, superintendent of the United States Express, Mr. Mars, mail agent, and Mr. Hager, were able to afford assistance to the sufferers—the remainder of those who were not killed outright being so disabled as to be helpless. After doing all that was possible for those requiring immediate attention, Mr. Hager at midnight left the wreck to go to St. Joseph for medical and other assistance. He walked five miles of the way when he found a hand car, upon which he proceeded the remainder of the journey. Two hundred yards west of the bridge he discovered a heavy oak railroad tie stongly strapped across the track, and two miles further on he found the trestle work over a small stream on fire, which, however, had not as yet been so badly burned that trains could not pass over; the fire was easily extinguished.

Arriving at St. Joseph, the alarm was soon spread throughout the city, and although it was one o'clock at night, seventy five men, including all the physicians in the neighborhood, volunteered their services; and at half-past three o'clock, a train fully equipped, supplied with medical chest and other necessaries, was at the scene of the disaster.

The wounded had emerged from the wreck, and were lying on the banks and upon a sand bar in the river. Seventeen dead bodies were recovered, and it is believed that this number embraced all who were killed up to that time. Two are so badly mangled that it was not expected they would survive till morning, while many others were dangerously wounded, and would have to be well taken care of to recover. Many who will escape with their lives will be maimed and crippled.

QUARTER-MASTER GEN. MEIGS is providing for the comfort of our troops during the coming winter campaign. Among other matters, he is procuring portable stoves, to be used in tents. Napoleon had over three thousand stoves sent to the army, while engaged in the siege of Sebastopol, besides a number of wooden huts.

A Scientific Secessionist Killed.

In the graduating class of the Philadelphia College of Pharmacy of 1850, was a young man named Joseph Laidley. The class was a fine one and Laidley among the most brilliant of its members. He secured a situation with the firm of Adie & Gray, of Richmond, at a large salary. He remained with them several years and last year entered into business on his own account.

Some weeks ago he advertised to prepare detonating powder, and made himself over to the Secessionists for the profits of the business. He was appointed superintendent of a cartridge factory, when an untimely fate overtook him. The manner of his death is thus told in a Richmond paper:—

Mr. Joseph Laidley, the well known chemist, came to an untimely, sudden and horrible death about 20 minutes to one o'clock yesterday, by the explosion of a quantity of detonating powder, which he and an assistant named Robert Clayton, of Manchester, were preparing for the use of the Confederate army, in a building erected especially for their use, rear of the State armory. At the hour above named an explosion was heard resembling the distant charge of a 6-pounder. On repairing to the place a scene of rare horror met the gaze. The wooden outbuilding, and the interior one in which the powder was manufactured, were found blown down, and many of the timbers wrenched, twisted and broken in a manner to show the almost inconceivable power of the powder. Mr. Laidley was found lying on his back, one of the most horrible objects of mutilated humanity which it is possible to conceive. Within a few yards of the body was found a portion of the poor man's brains, looking as if they had been torn by a superhuman agency from the skull and splashed upon the floor. The entire head, except the lower jaw, had been blown off, and nothing remained to mark the features of a man except a pair of whiskers and a portion of the neck. The right arm was torn off below the elbow, and from the bloody stump hung the fragments of nerves, veins, and sinews which were left behind. The hand was afterwards found about two hundred yards from the place of explosion, in the yard of the State armory, a portion of the face was likewise found (it is said) three hundred yards distant, near the banks of the river. The search for the remainder proved unavailing. His assistant, Mr. Clayton, was found in a reclining posture against a post, doubled up as if he had suffered a fearful contortion. He was perfectly insensible and so remained up to a late hour last night, but it was not ascertained to what extent he was internally injured. Among the rumors connected with this melancholy affair, was one to the effect that deceased had been seen going toward the laboratory smoking a cigar. Several persons declared that they saw him going thither smoking a short time before the explosion was heard. It is said that he was not in the habit of smoking. That the man possessed rare talent cannot be denied. Some of the most valuable contributions to the *Journal of Pharmacy* are from his pen. He was at one time an active member, and a Vice President of the Association.

An American Regiment of Cuirassiers.

An American residing in Paris writes as follows to the *New York Spirit of the Times*:—

The Chasseurs de Vincennes is one of the most formidable regiments of cavalry in France. In fact, its valor has made it as notorious as are our gallant Fire Zouaves, and called upon its members the title of *Les Enfants Perdus* (lost children) for they were always seen diving into the thickest of the battle and appeared entirely reckless of life, and after accomplishing miracles, very few were lost in their rencontres. This was owing to their being clad in a cuirasse and helmet of steel, Minie ball proof. Members of this regiment can do picket or skirmishing duties with impunity; for the horse is also protected in front of the head, breast, and shoulders.

The prices of these coats of mail (bullet-proof) are from fifteen to twenty-five dollars each and the helmet from four to five dollars; while the comparisons for protecting the horse are comparatively cheap. Thinking that our government might desire to raise and mount a regiment of Cuirassiers induced me to send to a commissionaire in Paris for a list of prices, which I find much more moderate than I had anticipated.

HOW A MAN FEELS WHEN HE IS SHOT.—We take the following from a letter written by one of the gallant Iowa volunteers who fought in the battle near Springfield, Mo.:—"I was standing, or rather kneeling, behind a little bush reloading my musket, just before the rebels engaged in this close work retreated. Suddenly I felt a sharp pain in the shoulder, and fell to the ground. Jumping up, one of our boys asked me if I was hurt. I replied I thought not, and drew up my musket to fire, when he said: 'Yes; you are shot right through the shoulder.' I think it was this remark, more than the wound, which caused the field, all at once, to commence whirling around me in a very strange manner. I started to leave it with a half ounce musket ball in my shoulder, and once or twice fell down with dizziness, but in a short time recovered sufficiently to be able to walk back to Springfield, nine miles, where the ball was taken out."

THE best stimulant in the world is oxygen. The way to take it is by introducing it into the blood. This can be readily done by taking large quantities of pure air into the lungs. Exercise promotes breathing; and breathing oxygenates the blood, and stimulates the brain to the highest activity.

Substitute for Lint in Military Surgery.

The *Medical and Surgical Reporter* says:—"An excellent, cheap and convenient substitute for patent lint for dressing gunshot and other wounds is a material which we propose to call 'perforated muslin.' It is prepared by simply folding several yards of muslin many times, and with a small punch and mallet perforating it with numerous holes a short distance apart. Much of the substance of the muslin is removed by the punch, and it is rendered sieve-like or reticulated in appearance. It makes an admirable, light and airy dressing for wounds, and several thicknesses may, if necessary, be used to absorb purulent discharges. It has the great advantage for military surgery of cheapness and ready preparation from materials which can always be conveniently at hand. We are indebted for the suggestion to a correspondent of the *London Lancet*, and have thoroughly tested its efficiency in the surgical wards of the Philadelphia hospital. For some purposes, we prefer it to any other material for dressing wounds, particularly in our favorite dry dressing."

THE Taunton (Mass.) Locomotive Manufacturing Company, says the *New Bedford Mercury*, is engaged in rifling breech-loading carbines for cavalry use. An order to rifle 1,000 has been nearly completed, and the same concern will, if the work already undertaken proves to have been well done, have further orders. The company are also finishing up one or two large shafts for the sloops of war now building. One weighing 4½ tons, 24 feet 8½ inches long, and 21 inches in diameter, to be covered with a shell of brass ½ inch thick, is designed for the sloop of war now building at Portsmouth.

NUMEROUS cases of "incipient typhoid fever" are noticed among the three months' volunteers who returned in such fine health a few weeks ago, occasioned by their sudden change of habits, coupled, in many instances, with indolence and too free use of money. Sickness was to have been expected to some extent. The old folks tell us that after the war of 1812, "camp fever" proved as destructive to life as ever did the casualties of an active campaign. The best way to arrest this sickness may be to re-enlist.

GENERAL McCLELLAN made an ascension with Mr. La Mountain in his balloon, at Washington, on Saturday, August 7, to reconnoiter the position of the enemy.

AN IMMENSE TRAIN.—A train of cars recently passed over the New York Central Railroad, bound westward, one mile and a quarter and thirty rods in length, and was drawn by five locomotives. The passenger traffic on this road has recently much improved, and the indications of a heavy fall trade are everywhere apparent.

WHY IS IT SO?—An exchange says:—"Fasten a nail or key to a string, and suspend it from your thumb and finger, and the nail will oscillate like a pendulum. Let some one place his open hand under the nail, and it will change to a circular motion. Then let a third person put his hand upon your shoulder, and the nail becomes in a moment stationary."

RAILWAY TYRES.—Mr. A. P. Stocker, of Wolverhampton, England, proposes to combine layers of steel, iron or puddled steel with layers of ordinary wrought iron, and to roll and weld them together, so as to combine increased durability and power to resist wear and tear with sufficient toughness to resist breakage.

THE California Agricultural Society requires that a first premium work horse shall be between fifteen and sixteen hands; quick, lively ears; broad between the eyes; round barrel; short loins; well up in the shoulder; deep chested; square quarters; flat legs; short between the knee and pastern and hock and pastern; hind legs well under him; speed equal to eight miles an hour on the road, and at least three miles at the plow; with sufficient blood to insure spirit and endurance.

THE consumption of claret wine in London, under the French treaty, is not so great as was anticipated. It is not strong enough for John Bull, who condemns it as "a weak invention of the enemy."

The Mode of Engraving Bank Notes.

[From the New York Evening Post.]

Of the thousands of persons who daily pass the Merchants' Exchange in Wall street, not one in a hundred is aware that in this building is located the most extensive bank-note engraving establishment in the world. The American Bank Note Company, incorporated in 1858, brought together the valuable accumulations of dies, machinery and other resources, together with the talent and experience, of all the largest engraving establishments in this country, thus giving the company a position superior to any other engraving establishment at home or abroad, and furnishing to governments, banks and the community the most trustworthy securities for the safe issue of a bank-note currency. The company is appreciated abroad as well as in the United States. Two years ago it furnished a set of plates for the National Bank of Greece; it has done work for South American states, for Canada, for the government of Russia, and its designs, facilities and securities have been preferred to those presented by the best establishments of France and England. The company is now engaged in preparing the United States Treasury notes authorized by the act of July 17.

A general description of the different departments connected with this establishment will give an idea of the various processes required to produce a perfect bank note.

DEPARTMENT OF DESIGNS AND MODELS.

Immediately above the business offices, which are on the first floor of the Exchange, are the rooms devoted to designs and models. All of the vignettes originate in this department; and the engraving, when finished, is brought here to the superintendent for his revision and approval. The designs are furnished by Darley, Casleair, Herrick and Edmonds (who has been a bank cashier); and abroad, the well-known artists Gilbert, Thomas, Birket Foster and Faed are employed by the company. In some cases the artists send original sketches, but generally embody the ideas suggested to them. Darley's designs are frequent in our bank-note circulation, and are at once recognized by those who are familiar with his style. The vignettes are combined with portraits of individuals and the letters and lathe work which make up a bank note.

In the model room, which is connected with the design department, the style or model of the plate to be engraved is made up. A new bank may want a set of plates embellished with agricultural, commercial or mechanical designs, or the three combined. From the thousands of models in the office there is an almost unlimited opportunity for selection and new combinations, or new designs may be suggested. The rest of the note is adapted to the vignettes chosen, and the usual filling in, with all the securities against alteration and counterfeit, are added to make a perfect note and present an artistic appearance.

If a selection is made from models already engraved, a plate can be prepared for the printer in a week. Four notes are always engraved on a plate, and a small bank will begin with one plate with four denominations on it, while a larger bank will have a plate for each denomination issued. The plates cost from \$500 to \$900 each, according to the amount of labor expended on them.

THE PICTORIAL ENGRAVING DEPARTMENT.

The drawings are sent from the design room to the pictorial engraving department. The best artists are employed in this department, and there are fifteen men, each at his own desk, who work eight hours per day, and earn from \$2,000 to \$4,000 per year. Some of them work exclusively upon "heads"; other upon human figures. In some cases a vignette which comprises landscape, sky, architecture and figures will pass through as many different hands, and the separate parts of the work, finished by artists who have made that style a specialty, make the whole as perfect as possible; indeed, a first-class vignette, unless a portrait, is hardly ever by one hand, and a portion of it is "bit in" with acids and afterwards finished with a graver. The portrait engravers become so skillful that they produce a perfect likeness from a photograph, painting or engraving, and whatever work is in hand is given to the artist who is best qualified to make a finished picture of the kind required.

THE LETTERING DEPARTMENT.

Eighteen men are employed in the lettering department; and here, as in the pictorial engraving room, the work is subdivided, so that each engraver works in the style he has made his special study. Some engrave script letters, others Old English and German, and others still the square or Roman letters; and the shading of the letters is done by machinery, making the fine and regular parallel lines, which no counterfeiter can imitate by hand. Both engraving rooms are favored with a fine northern light. The tools of the engraver are very simple, and cost but little; but his capital—his hand and taste—are matters which to him have more than a money value.

All of the vignettes, and much of the larger letter work, are engraved on separate pieces of steel, from which proofs only are printed. These pieces are taken to the hardening room, where two men who are experienced in handling steel harden them by heating and plunging them into water or oil. From thence they go to

THE TRANSFERRING DEPARTMENT.

The hardened plates are placed under presses of enormous power, and are "taken up" upon decarbonized dies of a cylindrical form, which are afterwards hardened and are used to transfer the impression to the plate from which the notes are printed. Thus the work is doubly transferred before it is printed. In this department is stored the immense stock of dies—an accumulation of more than forty years—embracing almost every design ever seen on an American bank note. They are carefully guarded and protected, and so arranged that any one of them can be found in a moment. The dies are used not only in producing new plates, but in restoring the plates already printed from, and bringing them up to their original sharpness and finish.

There are fifteen men employed in transferring. The machines, which are worked by hand, are ingenious, and are subjects of constant improvement. This department, like all the others, is under the charge of a superintendent, who is a master of this branch of the bank note engraving business.

When the "model" of the plate to be engraved is brought to the lettering and transferring departments, careful measurements are taken for the respective portions to be executed. The more important of these have been described, and from the pictorial and lettering rooms the model goes to the most interesting part of the establishment—the geometrical lathe room—which is not open generally to visitors.

Here is executed that curious, complicated and beautiful ground work for the figures, and from which the tints on the face and back of a note are printed. Such is the accuracy and uniformity of the geometrical lathe work and cycloidal ruling that it is impossible to imitate them by hand. The production of these lace-like figures is the result of a mathematical problem worked out beforehand; so many turns of certain wheels will produce a certain figure which can be multiplied by the transferring process indefinitely. The machines are very complicated and expensive, (though to one unacquainted with them they seem cheap and simple), and require great skill and experience in their management and operation. We were shown in this department a geometrical lathe, not twice as large as an ordinary sewing-machine, and less than half as noisy, which was three years in building, and cost about \$10,000. These machines are never patented, as the secret of their construction is worth more than a patent, and improvements and alterations are made from time to time, while their great cost prohibits their coming into general or improper use.

In making a bank-note plate the heavier portions of the work are finished first. In transferring the vignettes and larger lettering the plate is swelled more or less at the edges, and requires to be straightened; when this part of the process is complete, the script and lighter ornamental work is added, and the plate carefully finished and made ready for the printer.

ARMY OBSERVATIONS.—George Raphael, of New York, recommends the use of the camera obscura at Washington for making observations as to the position of the enemy. He says that by elevating the camera seventy-five feet, objects no larger than a dog can be seen at fifteen miles distance. This process, Mr. Raphael says, is much easier, cheaper and certain than the balloon.

Elderberry or Sambuci Wine.

Mr. Alfred Speer, of Passaic, New Jersey, produces wine from cultivated Portugal sambuci, which is a pleasant beverage, and said to be a valuable tonic for invalids.

The history of this wine, and its manufacture by Mr. Speer, may not be uninteresting to our readers.

It is made from the juice of cultivated sambucus, a species of elder, native of Portugal. The fruit is rich in saccharine matter, and very different from our native elder. This fruit is being cultivated from imported seed, by Mr. Speer, in New Jersey, from which he produces a wine that is no doubt pure, without the use of alcohol, spirits or sugar.

Mr. Speer employs a new and improved process of fermentation, which requires four years to complete, being two years in wood and two years in glass.

First year it is kept in large casks with valve bungs, to allow the gas to escape and at the same time prevent the oxygen of the atmosphere from coming in contact with the wine.

Second year racked to small casks, and moved to another building of a different temperature.

Third year, drawn off in bottles which are piled away in stacks; then completely covered with sand, which is kept at a certain temperature, from 95° to 100° Fah., all the year round, by which the vegetable extractive matter the wine held in solution, and the ferment or nitrogenous matter, become precipitated and form a deposit, which, when taken out leaves the wine pure and free from the exciter of acid, with no disposition to go into the acid fermentation; consequently no occasion for adding liquor or spirits to preserve the wine. In other words, the exciter of the acid fermentation is all extracted from the wine, instead of liquor being needed to counteract its effects and neutralize it, as is the general old practice in wine making.

Fourth year the bottles are dug out, the wine decanted in fresh bottles and laid away, being kept in another temperature until the end of this year, when they are sealed, labeled and packed ready for shipping.

The principal part of the whole operation is the management of the temperature in the rooms and cellars. After four years, it becomes unchangeable and ready for market in any climate.

Renovated Old Flint Muskets.

The Cincinnati Gazette says:—"It being generally supposed among our volunteers that the old flint-lock muskets are unfit for use, even when altered to percussion locks and rifled—that the barrels are worn out, and that it is exceedingly dangerous to attempt to discharge a load from one of them—Captain Neereamer, who is now in this city inspecting the alteration of these muskets, determined to give the matter a thorough test. Accordingly he selected one from those which he had rejected as unfit for firing, and yesterday morning attempted to burst it in a yard attached to Greenwood's foundry. Ten shots were fired from it without accomplishing the desired result, although the last round contained 218½ grains of powder and five Minié rifle balls. Mr. Greenwood has just finished rifling the fourth thousand of these old muskets. With the alteration and repairing they get at the foundry, they are said by competent judges to be equal to the Enfield rifle for all military purposes. The saving to the government by this process is not less than \$20 on each musket."

New Paste from Wood.

A new paste, designed to take the place of glue and starch for many purposes, has been lately manufactured in London by C. Stevens. It is made as follows: The wood is first reduced to fine shavings, then these are boiled in a strong lye of caustic soda or potash until all the fibers are separated. The best woods used for making the paste are poplar, pine, beech, spruce pine, and most woods termed "soft." When boiled a sufficient length of time for the softening of the fibers of the shavings, the fibrous matter is withdrawn into open vats, and exposed to the air for several days, when it ferments, and the whole mass becomes soft and glutinous. It is now cut up in machines like those employed in paper mills for cutting and grinding rags to make paper stock, when it become fit to be boiled in water, and is converted into a vegetable cement. Such a paste can be manufactured in great quantities and at less cost in America, than in any other part of the world.

Work Resumed on the Mont Cenis Tunnel.

A French paper, the *Ville de Paris*, has an account of the present condition of this work, which we translate as follows :—

We have received a letter on the subject of the difficult piercing of Mont Cenis which we believe it a duty to reproduce in order to make our readers acquainted with the situation of the works, and to enable them to appreciate the enormous difficulties which it has been necessary to overcome in the prosecution of this prodigious enterprise.

The whole system of perforation has been in activity for a month, and there is no ground to fear any disappointment. The compressed air will make its way through the seven miles of rock before which the works are established.

The following are the principal results demonstrated, and their importance is decisive :

The five compressors which are mounted have worked for two months with all desirable regularity. They yield a useful result in compressed air of 70 per cent at least ; but there is reason to believe that it is greater, and the engineers will soon measure it by a direct gage.

They have succeeded in rendering the reservoirs, the valves, the domes, the tubes and the compressors so tight as to reduce the loss of air by leakage to one two-thousandth part of the production. The pipe conducting the air from the compressors to the drills is more than a mile in length, and it has been impossible to detect the least leak in it from the beginning. This is the more remarkable as the pipe is exposed to a temperature ranging from zero to 100° Fah.

It has been impossible, with the metallic manometers employed, to detect the least difference in the pressure at the two ends of the pipe. At the reservoirs, and at the perforators, the pressure was constant at five atmospheres (75 lbs. to the inch.)

The perforators operate in the most satisfactory manner, of which the most certain proof is that at a distance of a mile from the generators, when the rock is homogeneous, they make holes to the depth of 3½ and 4 inches per minute. The operations of advancing and withdrawing the perforators, injecting water, &c., are made more quickly even than the inventors expected. Finally, none of their anticipations have been disappointed, and the apparatus leaves nothing to be desired.

Government Railroad Transportation.

The government pays for railroad transportation according to the following rates :—Per passenger, per mile, 2 cents for distance moved. Equipments, munitions, and supplies accompanying regiments, 30 miles or less, 10 cents per 100 pounds ; 50 miles, 15 cents per 100 pounds ; 100 miles, 25 cents per 100 pounds ; 150 miles, 40 cents per 100 pounds ; 200 miles, 50 cents per 100 pounds ; 300 miles, 75 cents per 100 pounds ; 350 to 400 miles, not exceeding 90 cents per 100 pounds ; special express trains, \$1 per mile.

One animal counts as 3,000 pounds ; 2 animals count as 4,000 pounds ; 3 animals count as 6,000 pounds ; 4 animals count as 6,500 pounds ; 5 animals count as 8,000 ; 6 animals count as 9,000 pounds ; 7 animals count as 10,000 pounds ; 8 animals count as 11,000 pounds ; 9 animals count as 12,000 pounds ; 14 animals, 18,000 pounds, count as a full car load.

Provisions and heavy freights, 2 to 3 cents per tun of 2,000 pounds per mile. Dry goods, clothing, and light goods, 3 to 5 cents per tun of 2,000 pounds per mile. One large car load is reckoned as 9 tuns.

THERMOMETER AS A STEAM PRESSURE GAGE

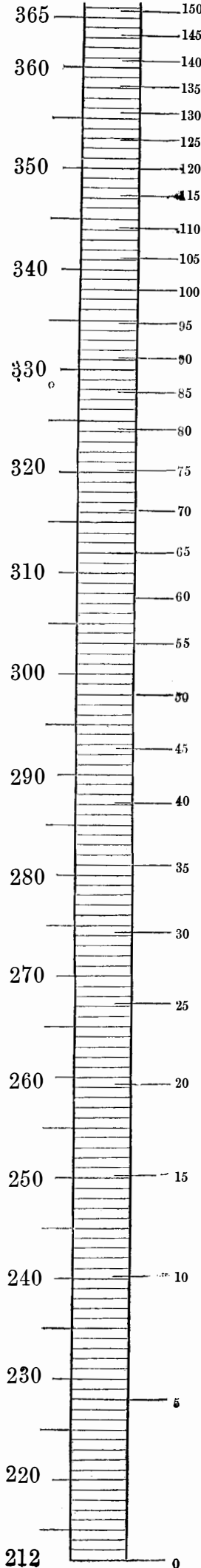
As the temperature of steam varies constantly with the pressure, the latter may be measured by the former ; and hence a thermometer, inserted in the steam space of a boiler, becomes an accurate gage of the pressure. To enable engineers to see at a glance the pressure corresponding to any degree of temperature, we have had engraved the following scale, which has been drawn from Regnault's table, by Dr. Warren Rowell, of this city. Any engineer desiring to use it will of course cut it out and paste it up by the side of his engine. One great recommendation of a thermometer gage is, that it is never out of order.

Mr. G. Tagliabue, 298 Pearl street, manufactures thermometers with the figures indicating the pressure

engraved upon the plate opposite the figures of the corresponding temperature.

Regnault's Table of Steam Pressure and Corresponding Temperature, Drawn to Fahrenheit's Scale, by Dr. Warren Rowell.

Temperature in degrees, Fahrenheit's Scale. Pressure in pounds per square inch.



Products of the Asphodel.

Sir W. J. Hooker, F.R.S., gives the following interesting account of the asphodel and its properties, in the *Technologist*, published in England :—

Every one is familiar with the pretty, lovely-looking, white-flowered asphodel of our gardens. In the south of Europe, and apparently on both sides of the basin of the Mediterranean, the plant (*Asphodelus ramosus*) is extremely abundant ; though it has never, so far as I know, been turned to any account, except that in times of scarcity its acrid fasciculated roots, after much boiling, have been eaten by the poor. In the Paris Exhibition of 1855 there were shown bottles of alcohol extracted from the asphodel ; specimens of the residuum of the roots after being twice distilled ; paper stuff from the stalks and leaves of asphodel—card-paper, cards, paper and writing-papers of various qualities, manufactured from the same, and mixed in various proportions with rags and common paper stuff. M. de la Bertoche, in a pamphlet, asserts that asphodel roots contain upward of 27 per cent of alcoholic principle, or more than double the quantity which resides in the roots of beet. The stalks and leaves contain a remarkably tenacious fiber, fine, strong and flexible. The distillation of asphodel root has been already pursued, and with considerable success, in Algeria ; but the immense abundance of the plant in Tuscany, where it has hitherto been considered only a pernicious and most ineradicable weed, points to the advantage of endeavoring to turn it to account. The fasciculated roots, after cleansing and crushing, are mixed with water, and the fluid is exposed to heat so as to facilitate fermentation. The alcohol which it yields is pure and colorless, perfectly transparent, and has the color of alcohol itself. It contains neither acid salt, nor oily matter ; it burns without leaving any residue, and the flame is remarkably bright. But at the present time, when material for paper seems likely to fail, a most important succedaneum is afforded by the remains of asphodel. It is undeniable that the residuum of the roots after distillation, together with the other parts of the plant are eminently adapted to this object. Three processes are necessary : the separation of the useful portions—the bleaching—and the reducing the substances into a homogeneous and tenacious pulp. The first is better effected by crushing than by grinding, as the latter mode is apt to destroy the fiber. The second operation involves most difficulty, as the root is covered with a skin which contains a tanning principle ; and it is necessary, unless the expensive mode of hand-picking the root be adopted, to expose the substance to air and light, aided by immersion in diluted chlorine, which brings the substance to a very pale brown tint which is not objectionable for many sorts of paper. For the third process, that of reducing the whole mass to a smooth and tenacious paste, the paper manufacturers must supply the details.

Manufacturing and Business in Philadelphia.

The *United States Gazette* says :—"The manufacturing establishments of Philadelphia are active. At the Kensington Iron Works two hundred men are now working full time, and wages to the amount of eighteen hundred dollars are paid weekly. The force at the Pennsylvania works is also fully employed. At the shipyards where the new gunboats are building, there is great activity. The *Itasca* will be ready for launching in about two weeks, and the *Scioto* will be ready in about three weeks. The engines for these two vessels will be placed on board at the time named in the contract with the government. Several hundred men are employed in different parts of the city, making tents, guns, and clothing for the army ; the number employed in the last-named branch being four thousand. At the Navy Yard there are now about seventeen hundred men employed, and there is not likely to be a decrease for some time. The ship carpenters are in force there, the number being greater than all the other mechanics combined. Mr. Cattell has a large number of looms at work manufacturing cloth for winter clothing, and we understand that several other mills will soon be in operation. A large number of stock-weaving frames have recently been put into operation also."

GROWING MUSHROOMS.—At a recent sitting of the French Academy of Sciences M. Labourdette sent in a paper on a method of his for developing the size of the esculent mushroom, *Agaricus Campestris*. He prepares a bed exclusively formed of sulphate of lime (common building-plaster) beaten down to perfect hardness, without any manure but nitrate of potash (saltpeter). The nitrate is buried in the sulphate together with the spores of the mushroom, at a depth of from three to four millimeters (one sixth of an inch). This done, the bed will indefinitely produce a variety of the agaricus, which our author proposes to distinguish by the epithet of gigantic ; and not without reason, since the agaricus, cultivated in the usual manner, rarely exceeds 100 grammes in weight (3 ounces), while by M. Labourdette's method it attains to an average weight of 19 ounces.

THE MEANINGS OF CORN.—In Scotland when the word corn is used it is universally understood to signify oats ; in England it means wheat ; and in the United States, maize.