

NOTES ON MILITARY AND NAVAL AFFAIRS.

MESSAGE AND REPORTS.

At the time of going to press we had carefully read the President's Message and the Reports of the Secretaries of the War and Navy Departments. The message is a plain, straight forward document. The President attempts no hyperbolic flights of fancy, and indulges in no severe language against those who are at war against the government, thus showing a splendid contrast to the recent Message of Jeff Davis. He treats all matters relating to the condition of the country in a calm and dignified manner, perfectly conscious of his sworn duty, and evidently determined to perform it at all hazards. Mr. Holt, in his famous speech to the people of Kentucky, declared that the President took no counsel of his fears, and was not afraid to look traitors square in the face. We presume all our readers either have or will read the Message, therefore we will make no extracts from it. We cannot forbear, however, to quote the closing passage, as characteristic of the calm determination of the President to push on the war against the rebellion. He says, "With a firm reliance on Providence, all the more firm and earnest, let us proceed in the great task which events have devolved upon us."

The report of the Secretary of War is an able State paper, and affords us a clear insight into the operations of the army. It appears that since the outbreak of the rebellion, 718,512 men have been in the service of the country. This large number includes the regular army of 16,000 men; also the three months' enlistments, which amounted to 77,875. The several arms of the service are estimated to comprise 660,971 men, a force, it would seem, equal to the great emergencies of the country. "We have here," says the Secretary, "an evidence of the wonderful strength of our institutions. Without conscriptions, levies, drafts, or other extraordinary expedients, we have raised a greater force than that which, gathered by Napoleon with the aid of all these appliances, was considered an evidence of his wonderful genius and energy, and of the military spirit of the French nation. Here every man has an interest in the government, and rushes to its defence when dangers beset it."

The report of the Secretary of the Navy is a creditable document. He details the great and varied labors which devolved upon him at the outset in preparing for all the emergencies that pressed upon this department. Our navy, on the 4th of March last, consisted of 42 vessels, of all classes, carrying 555 guns, and about 7,600 men. We have now a navy of 264 vessels, manned by about 22,000 seamen. All this increase has been accomplished during the past eight months.

The Secretary speaks in terms of commendation of the gallantry of the navy in the taking of Hatteras and Port Royal.

On the whole the message and reports are excellent State papers, and will inspire a renewed confidence in the government and a determination to sustain it. We present elsewhere some short extracts from these reports which embody useful information.

MISCELLANEOUS.

The Hon. Mr. Wickliffe, of Kentucky (a glorious man, we would like to shake his honest, loyal hand), declared in the House of Representatives on the 3rd inst. that, "with the blessing of God and the stout hearts of the people, not a hostile foot of a rebel will be found treading the soil of Kentucky after the 20th of December."

In the instructions which Mr. Toombs, as Secretary of State, gave the privateers, we find the following passage: "Neutral vessels conveying enemies' despatches or military persons in the service of the enemy forfeit their neutral character, and are liable to capture and condemnation." If we had applied this general rule to the *Zent* she would have been lying in one of our harbors as a prize. Thus are the Confederates condemned out of their own mouths.

The Confederate steamer *Nashville*, while on passage to England, fell in with the American ship *Harvey Birch*, Capt. Nelson, bound from Havre to New York, in ballast. Commander Pegram, of the *Nashville*, took Capt. Nelson, had his crew put in irons, then set fire to the ship, and burned her to the water's edge. It is also reported that a large steamer had left London with munitions of war for the Southern States.

One of the most serious obstacles in the way of our government making a successful demonstration at the outset against the rebellion was a want of arms; this was a serious and alarming difficulty, and those who complained because a half million men were not at once called into the field knew little of what they were talking about. Floyd, while Secretary of War, had so thoroughly cleaned out the northern arsenals that scarce anything was left in the shape of a decent gun to put into the hands of loyal troops. The destruction, also, of the Harper's Ferry arsenal was another disaster at the wrong time, whereby the power of the government to make its own arms was greatly diminished. We are now out of the woods on this important point, and hereafter no trouble will be felt for want of good arms. It is stated that the efficiency of the Springfield armory has been so largely increased that it is now capable of turning out 10,000 stand of arms each month. While the Secretary of War was on a visit to the Chicopee works, not long since, he found that a large quantity of machinery for the manufacture of muskets had been completed for private parties. Believing that in the exercise of the war power he had the right to bring to the aid of the country every facility which it might require, he at once directed the manufacturer to hand the machinery over to the superintendent of the Springfield arsenal, and to draw upon the government for compensation at the price at which he had contracted to furnish it to the private establishments. By the purchase of this large quantity of machinery already finished, which, when put in operation, will enable this establishment to produce during the next year 200,000 stand of the justly celebrated Springfield rifles.

Letters recently received from London state that the British government refuses to grant clearances from English ports to vessels having on board arms for the United States. This is only carrying out more strictly than heretofore the Queen's proclamation of neutrality, which forbade the shipment of all articles contraband of war to "either of the belligerents."

The steamship *Fulton*, which arrived in this port Nov. 27, brought 30,000 stand of arms to the government. Thirteen rifled cannon arrived the same day from the Cold Spring Foundry, opposite West Point, including a 100 pounder, which will carry five miles. The latter will be sent to Fortress Monroe.

It is not at all probable that the main army will go into winter quarters as some suppose. If it was the intention of Gen. McClellan to take such a step he would not continue to reinforce the army of the Potomac. He has men enough there now, and can sustain regiments much cheaper in other parts of the country. The reader of history will call to mind many great battles fought in winter. The capitulation of Mantua took place in the month of February, 1797. The terrible battle of Austerlitz was fought December 2, 1805. Eylau was fought on the 8th of February, 1807, on a snow-covered field. Rivoli was fought in January; Breslau stormed in that month; Ciudad Roderigo besieged in the same month; and numerous less important actions fill the history of European campaigns in winter. In our own history, Trenton, New Orleans, Frenchtown and Ogdensburg were winter battles.

The Ohio troops at Cheat Mountain, Virginia, have gone into winter quarters of their own construction. A letter from the camp describes the difficulties encountered by the soldiers in constructing one hundred log cabins: "The only tools, with the exception of axes, employed in the building of this mountain city, were one 'secesh' auger, one ditto adze, one ditto drawknife, and with this meager supply four thousand men have to work. The greater part of our lumber had to be brought from a distance of half a mile, and that upon the backs of the men. It is a novel as well as a pitiable sight to see from twenty to twenty-five men staggering along beneath a huge pine, and fairly dropping, when they arrive, from pure exhaustion. The chimneys are all substantial stone structures, while the buildings are neatly roofed, and 'chunked and daubed' thoroughly."

General Sumner, who has recently returned from California, is placed in command of a new division, to be located between those of Heintzleman and Blenker and is a great acquisition to the force southwest of Alexandria. General Sumner is a very capable officer and of undoubted loyalty.

Floyd (we won't dignify him with the title of general) in his recent retreat from the vicinity of Gauley, destroyed everything portable about Fairfax Court House. He burned over three hundred tents, and picks, spades and axes by the hundred were found charred and destroyed. At another place ten wagon loads of ammunition were captured, and along the road for many miles blankets, broken down wagons, tents and other articles of camp equipage, including arms, were found cast aside in his hurry to get out of the way of Benham's men. The victory was complete, and although Floyd was not bagged, he was driven ingloriously from Western Virginia. Floyd's force consisted of six Virginia regiments, two Mississippi regiments and one Georgia regiment, in all about five thousand five hundred men. Gen. Benham had the Tenth, Twelfth, Thirteenth, and five hundred men from each of the Thirty-seventh and Forty-fourth Ohio regiments, in all three thousand two hundred men. The boys returned to camp in high glee, and now demand to be sent to Kentucky or the Potomac, where they can find something to fight. It is somewhat singular that with but two exceptions, in every success we have had in Western Virginia our men have been led by Gen. Benham.

It is thought that the present Congress will make a large requisition for additional troops—two hundred thousand at least. The right theory is, no doubt, to call out an immense force at the earliest moment possible, and thus make the war sharp, short and decisive. General McClellan says this cannot be a long war.

The following named officers have been appointed to regulate and fix the number and caliber of the cannon to be mounted in the casemates and *en barbette* at each of the permanent fortifications of the United States, and also the number and description of guns to compose field pieces:—Brigadier General Totten, Corps of Engineers; Brigadier Gen. Ripley, Ordnance Department; Brigadier Gen. Barry, U. S. V.; Brigadier Gen. Barnard, U. S. V.; Col. Hunt, U. S. A.; and Capt. Rodman, Ordnance Department.

The Navy Department has received official information from Commodore Dupont of the occupation of Tybee island, at the mouth of the Savannah river, by Union troops. The occupation of this point places that river entirely under Federal authority. Fort Pulaski is only five hundred yards from the mouth of Tybee island, now occupied by our troops. The Federal flag now floats on the soil of every seceded State except Arkansas and Alabama. It waves in Texas, opposite El Paso; on Ship island, in Mississippi; at Pensacola, and Key West, in Florida; at the mouth of the Mississippi river, below New Orleans, in Louisiana; on the island of Tybee, in Georgia; at Port Royal and St. Helena, in South Carolina; at Elizabethtown and Bristol, in Tennessee; over half of Virginia; over two-thirds of Missouri and Kentucky, and over all of Maryland and Delaware.

There was considerable discussion at the outset of the war as to the propriety of employing cavalry. Gen. Scott was opposed to it as an expensive and inefficient arm of the service. Gen. McClellan, an experienced cavalry officer, when he took command of the army of the Potomac, ordered a large increase of artillery, declaring that this would be an artillery war. Somebody is responsible for having saddled upon the government a large army of raw mounted troops, and it is said that the War Department is now satisfied that Gen. Scott was right in his objection to their introduction.

At the siege of Sebastopol there were 252,000 rounds of cannon ammunition expended. There were 100 mortars and 266 guns of various sizes used in that siege, and of the whole number only 41 remained serviceable after the fall of Sebastopol.

Mr. Whitworth has addressed a letter to the *Times*, in which he contradicts the statement that in recent experiments his guns had failed to answer his expectations. He has been perfectly satisfied with the result of every experiment hitherto made, and he promises, should his health be restored, to prove "beyond all question," the soundness of the principle upon which he proceeds in the construction of rifled small arms and rifled ordnance.

Senator Sherman of Ohio, it is said, will bring in a bill to reduce the civil expenses of government, and Senator Wilson has in contemplation a bill to abolish regimental sutlers.

Com. Stringham, Professor Joseph Henry, of the Smithsonian Institute, and other eminent gentlemen, have been appointed by the government to examine and report upon the Stevens floating battery. They are now daily engaged in the inspection and practical testing of the invention. The future course of the government with reference to it will be determined by their report. A large number of workmen continue to be employed upon the battery.

The following are the current prices of merchandise at wholesale in Richmond (the *Examiner* remarking that for small quantities higher prices are charged), viz., bacon, hog round, 23 to 26 cents; butter, 45 to 50 cents, very scarce, Cornmeal, 80 to 85 cents; candles, tallow, 20 cents; adamantine, 45 to 49 cents. Coffee, none in the market. Hay, timothy, or clover, \$2.35 per hundred. Halifax herrings, \$8 to \$10, but none to be had. Pig iron, \$40 to \$45, stock small. Nails, 7 to 7½ cents. Refined English iron, \$115 to \$220. Leather, 60 to 65 cents, demand immense, stock very light. Lead, 7½ to 7¾ cents. New Orleans molasses, 52 to 65 cents. Pepper, 70 to 75 cents, very scarce. Salt, fine Liverpool, \$9.50 to \$10. Wool, washed Virginia (common), 50 to 60 cents; fine merino (common), 55 to 60 cents.

Jeff. Davis, in his late message, says that the blockade is totally inefficient, and proposes to invoke the aid of European nations in breaking it up. On the other hand, Mr. Yancey, in his speech to the fishmongers at London, says that the Confederate States, "though cut off by blockade from all foreign trade, have been able—from their internal resources alone—to equip and maintain in the field an army of over 250,000 troops.

Among the subjects to be brought to the early attention of Congress is the business carried on by sutlers. The various privileges allowed to many of these men, is abused in various ways, and the soldiers are shamefully swindled. A man who will take advantage of his privileges as sutler, to cheat a soldier in times like these would betray his government, and ought to be shut up in Fort Warren.

Between the 1st of July and the 1st of November—four months—ten million of cartridges for muskets and small arms were issued by the Ordnance Department to the army of the Potomac. This enormous expenditure of cartridges is due to target practice among our troops.

Spencer's new repeating breech-loading rifle was recently tried by a board of army officers, by order of General McClellan. They made a satisfactory report, and recommend its introduction into the service. An order for a supply had previously been issued by the Navy Department. This rifle is self-charging from a magazine of cartridges within the stock, though it may be loaded at the breech by hand, and used as an ordinary breech loading gun. Its novelty consists in the construction and mode of locking the breech which renders it very tight, secure and safe, also in the means employed to withdraw the discharged cartridge cases from the barrel, and to conduct new cartridges into it from the magazine.

Privateering under Jeff Davis's letters of marque, seems not to flourish very extensively. We have intelligence of the recent capture of the *Beauregard* and the *Royal Yacht*, by Federal vessels.

INTERNATIONAL EXHIBITION AGENCY.—In our journal of the 23d ult., we published the card of Messrs. Morgan Brothers, Bow-lane, London, setting forth the advantages offered by their international agency, to all who proposed to exhibit in the London exhibition. We intended to have stated at that time that this firm is a reliable one and will energetically carry out its promises.

The latest invention of which we have heard is a chewing machine—in other words, a little mill intended for toothless people and those who cannot properly masticate their food. Such an article is advertised in the London *Lancet*. It is fastened to the dinner table, goes with a crank, and is said to mince the food very nicely.

PATENT OFFICE RECEIPTS.—The President in his message, says:—The receipts of the Patent Office have declined in nine months about \$100,000, rendering a large reduction of the employed necessary to make it self-sustaining.

Extracts from the Secretaries' Reports.

The Secretary of the Navy in speaking of the blockade, remarks that one method of blockading the ports of the insurgent States, and interdicting communication as well as to prevent the egress of privateers which sought to deplete our commerce, has been that of sinking in the channels, vessels laden with stone. The first movement in this direction was on the North Carolina coast, where there are numerous inlets to Albemarle and Pamlico Sounds, and other interior waters, which afforded facilities for eluding the blockade, and also to the privateers. For this purpose a class of small vessels were purchased in Baltimore, some of which have been placed in Ocracoke inlet.

Another and larger description of vessels were bought in the eastern market, most of them such as were formerly employed in the whale fisheries. These were sent to obstruct the channels of Charleston harbor and the Savannah River, and this, if effectually done, will prove the most economical and satisfactory method of interdicting commerce at those points.

Since the institution of the blockade one hundred and fifty-three vessels have been captured sailing under various flags most of which were attempting to violate the blockade. With few exceptions, these vessels were in such condition when seized, as to authorize their being sent at once to the courts for adjudication and condemnation.

CONSTRUCTION OF NEW VESSELS.

Most of the public armed vessels being of such size and draught of water that they could render only important blockading service, immediate measures were taken to carry into effect the policy of the government in advance of the special session of Congress by contracting for the construction of twenty-three steamers which should be of light draught, but heavy armament. Congress at the regular session, had authorized the building of seven screw steamers, and as there were four yards, in each of which two might be built, the Department in the existing emergency, and in anticipation of the action of Congress when it should convene, directed the construction of eight, dividing them into two classes of about one thousand and fourteen hundred tons respectively. At the special session, Congress not only sanctioned the action of the Department in the construction of these thirty-one steamers, but it authorized the further construction of twelve side-wheel steamers of light draught, and of six of larger capacity to be modeled and built specially for speed. Many of those first ordered are already in commission, and the others are in rapid progress toward completion. If, with those above enumerated, we include three iron-clad, or armor steamers which are being built from the money appropriated for that purpose at the special session, there will be under these several arrangements, an addition when they are completed, of fifty-two new steamers, peculiarly adapted to the required blockade or coast-guard duty, added to the navy. No sailing vessels have been ordered to be built, for steam, as well as heavy ordnance, has become an indispensable element of the most efficient naval power.

ARMORED SHIPS.

To carry into effect the provisions of the Act approved Aug. 3, 1861, providing for the construction of one or more armored ships and floating batteries, I appointed Commodore Joseph Smith, and Hiram Paulding, and Captain Charles H. Davis, skillful and experienced naval officers, to investigate the plans and specifications that might be submitted. The subject of iron armature for ships is one of great general interest, not only to the navy and country, but is engaging the attention of the maritime powers of the world. Under the appropriation made by Congress, the Department, on the favorable report of the Board has contracted for the construction of three iron clad ships of different models, the aggregate cost of which will be within the limits of the appropriation. The difficulty of combining the two qualities of light draught and iron armor, both of which are wanted for service on our coast could not be entirely overcome; but the Board in this new branch of naval architecture has, I think, displayed great practical wisdom, and I refer to their very full and able report which is appended, for a more explicit and detailed exhibit of their inquiries and conclusions.

ESTIMATES AND APPROPRIATIONS.

The amount appropriated at the last session of

Congress for the naval service for the current year, was \$13,168,675 86. To this was added at the special session in July last, \$30,446,875 91—making for the fiscal year ending June 30, 1862, an aggregate of \$43,615,551 77. This sum will not be sufficient, however, for the purpose, and therefore additional appropriations will be necessary. There will be required to pay for vessels purchased, and for necessary alterations incurred in fitting them for naval purposes, the sum of \$2,530,000; for the purchase of additional vessels, \$2,000,000; and for the construction and completion of twenty iron-clad vessels, \$12,000,000—making a total of \$16,530,000.

STRENGTH OF THE ARMY.

The Secretary of War furnishes the following statement, which shows the strength of the army:—

States.	VOLUNTEERS.		
	3 months.	For the war.	Aggregate.
California.....	4,688	4,688	4,688
Connecticut.....	2,236	12,400	14,636
Delaware.....	775	2,000	2,775
Illinois.....	4,941	80,000	84,941
Indiana.....	4,686	57,332	62,018
Iowa.....	968	19,800	20,768
Kentucky.....	.....	15,000	15,000
Maine.....	768	14,239	15,007
Maryland.....	.....	7,000	7,000
Massachusetts.....	3,435	26,760	30,195
Michigan.....	781	28,550	29,331
Minnesota.....	.....	4,160	4,160
Missouri.....	9,356	22,150	31,486
New Hampshire.....	779	9,600	10,379
New Jersey.....	3,068	9,342	12,410
New York.....	10,183	100,200	110,388
Ohio.....	10,236	81,205	91,441
Pennsylvania.....	19,199	94,760	113,959
Rhode Island.....	1,285	5,898	7,183
Vermont.....	780	8,000	8,780
Virginia.....	779	12,000	12,779
Wisconsin.....	792	14,153	14,945
Kansas.....	.....	5,000	5,000
Colorado.....	.....	1,000	1,000
Nebraska.....	.....	2,500	2,500
Nevada.....	.....	1,000	1,000
New Mexico.....	.....	1,000	1,000
District of Columbia.....	2,823	1,000	3,823
Total.....	77,875	640,637	718,512
Estimated strength of the regular army, including new enlistments under act of Congress of July 29, 1861.....	.....	20,334	.....
Total.....	.....	660,971	.....

The several arms of the service are estimated as follows:—

	Volunteers.	Regulars.	Agg'te.
Infantry.....	557,208	11,175	568,383
Cavalry.....	54,654	4,744	59,398
Artillery.....	20,380	4,308	24,688
Rifles and sharpshooters.....	8,395	.....	8,395
Engineers.....	.....	107	107
Total.....	640,637	20,334	660,971

TELEGRAPH.

Under an appropriation granted for that purpose at the last session of Congress, a Telegraphic Bureau was established, and has been found of the greatest service in our military operations. Eight hundred and fifty-seven miles of telegraphic line have been already built and put in operation, with an efficient corps of operators, and a large extension is now in process of construction.

FRONTIER DEFENCES.

It is of great importance that immediate attention should be given to the condition of our fortifications upon the seaboard and the Lakes, and upon our exposed frontiers. They should at once be placed in perfect condition for successful defence. Aggressions are seldom made upon a nation ever ready to defend its honor and to repel insults; and we should show to the world, that while engaged in quelling disturbances at home, we are able to protect ourselves against attacks from abroad.

MILITARY ACADEMY.

I earnestly recommend that immediate provision be made for increasing the corps of cadets to the greatest capacity of the Military Academy. There are now only 192 cadets at that important institution. I am assured by the Superintendent that 400 can at present be accommodated, and that, with very trifling additional expense, this number may be increased to five hundred. It is not necessary, at this late day, to speak of the value of educated soldiers. While, in the time of war or rebellion, we must ever depend mainly upon our militia and volunteers, we shall always need thoroughly trained officers. Two classes having been graduated during the present year, in order that the service might have the benefit of their military education, I had hoped that Congress, at its extra session, would authorize an increase of the number. Having failed to do so, I trust that at the ap-

proaching session, an increase will be authorized, and that the selection of cadets will be limited exclusively to those States which, cooperating cordially with the government, have brought their forces into the field to aid in the maintenance of its authority.

French Purple.

[Translated from Dingler's Polytechnic Journal.]

Pourpre française, or French purple, is the name given by Messrs. Quinon, Marras & Bonnet, the well-known silk dyers in Lyons, France, to a violet pigment produced by them from lichens, such as *Lecanora tartarea*, *Rocella tinctoria*, &c. This pigment, in accordance with its origin and nature, closely resembles the dye known as litmus or orchil. It differs materially from it, however, in two particulars; first, by its much greater ability to be fixed on fabrics, particularly silk and wool, without the use of mordants, and to produce a genuine and durable color; and second, from the fact that its violet hue is changed to red only by pretty strong acids, whereas orchil turns red by the action of weak acids.

The process of manufacturing this dye comprises, first, the preparation of the material from which the dye is obtained and which is composed principally of lecanoric, erythric and orsellesic acid, &c.; second, the conversion of this material into dye by the action of ammonia, air and heat; and, third, the preparation of the dye in a solid state.

The several acids of the lichens can be extracted by means of alcohol, hot acetic acid, a mixture of alcohol and ammonia, or any other alkali. If ammonia is used, it is diluted with four or five times its volume of water, and a systematic extraction is effected by exposing parcels of the lichens which have already been extracted, to a greater or smaller extent, and finally, fresh lichens to the action of the same quantity of liquid ammonia, whereby the liquid is completely saturated with acid. The extract is afterward mixed with a surplus of sulphuric or muriatic acid, whereby the acids of the lichens are precipitated, and then collected on a filter and carefully washed and dried. The acids of the lichens can also be extracted by heating the plants with milk of lime and precipitating them with muriatic acid; or the lichens may be boiled in dilute sulphuric acid and afterward washed with water. In this case the acids remain in combination with the woody parts of the lichens.

The precipitate obtained by either one of the above methods is now mixed with sufficient ammonia to dissolve it, and this mixture is boiled, whereby a liquid is obtained the color of which soon turns to an orange, and which, if exposed to the atmospheric air at a temperature of from 60° to 70°, soon changes in the desired manner by assuming different colors, one after the other, until at last it becomes a bright red. While in this condition the liquid is put into flat vessels and gradually heated to from 120° to 140°. After a few days the liquid assumes a purple violet color, and is not affected by weak acids, and it will dye silk and wool without the aid of other substances; it can also be easily fixed on cotton by suitable mordants. If, instead of the acids, the lichens themselves, purified by being treated with diluted acid, are employed, the proceeding is substantially the same until the red color is formed, and after this the liquid is separated from the fibrous parts by the aid of a press.

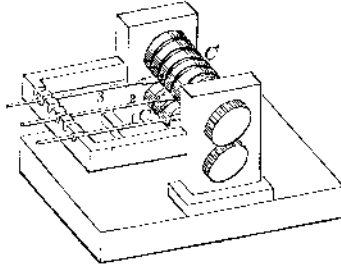
As soon as the acids of the lichens have been converted into the dye, the liquids from which the acids have been obtained are mixed together and saturated with sulphuric or some other acid. By this operation a copious precipitate is obtained which is collected on a filter and carefully washed and dried.

Instead of precipitating the red ammoniac liquid with sulphuric acid, as stated above, chloride of calcium may be used, whereby a precipitate is obtained having the appearance of indigo with a violet color. In this condition it is brought to the market.

[We have had a small sample of this substance in our possession for about two years. It was brought over here by a French chemist who endeavored to introduce it among our dyers. The color is a deep rich purple, somewhat resembling the section of a cube of Bengal indigo, when rubbed with the finger-nail. Its use, we understand, has lately been almost superseded in France by new aniline colors.—Eds.]

ROLLING GUN BARRELS.

The accompanying figure illustrates an improved method of rolling gun barrels and drawing them with a taper over graduated mandrels. C C represent two grooved rollers placed one above the other, and 1 2 3 are graduated mandrels passing between the rollers in the grooves. Three short cylinders of heated iron to be rolled into gun barrels are placed upon the mandrels, and the rollers draw down these cylinders by several passes between them into barrels of the requisite size and form. By this operation the barrels are not only reduced in diameter and in the size of



the bore, but they are tapered externally at the same time, and rolled into the perfect shape of the army service musket without receiving the stroke of a hammer.

The inventor of this improvement is James Henry Burton, formerly of Harper's Ferry Armory, also Superintendent at the Enfield Armory, England, and who is now said to be in the service of the secessionists, at Richmond, Va. Patented March 20, 1860.

How to Select Mushrooms.

In consequence of the death of five officers, caused by eating poisonous fungi, the French Army Board have had the following instructions published:—

Fungi afford man an agreeable and nourishing food and therefore in some provinces of France, they are consumed to a great extent. The soldiers seek them, but unfortunately they often confound the poisonous with edible ones, and thus expose themselves to the gravest accidents. It is important, therefore, that they should be taught, as far as science is able, to distinguish the wholesome from the injurious species, and at the same time be made acquainted with the proper means to combat the poison. It is with this view that the Board of Health have drawn out the present instruction. Edible fungi grow usually in elevated and airy places in waste ground; whilst the dangerous species are found in woods, and in dark damp places. The edible species have a compact, brittle flesh; while those with a soft and watery flesh should always be rejected.

Wholesome fungi have an agreeable odor, although this character is also found in some injurious species. A powerful and disagreeable odor is the certain indication of noxious qualities.

We ought at once to reject fungi which secrete a milky juice, and those which present an acrid, astringent, bitter acid or salt taste.

We should suspect fungi which have a bright tint, red, green, or blue, of which the gills are colored brown or blue. The flesh of the edible species is in general white; nevertheless, a beautiful red fungus, the *orange agaric*, is considered as the finest and most delicate species. Wholesome fungi do not change color by contact with the air after being cut; those of which the flesh then acquires a brown, green, or blue tint, are poisonous. We ought to regard as dangerous those which insects will not touch.

It is proper to abstain from fungi, whatever may be their apparent qualities, when they exhibit any signs of change; when even they have been collected more than twenty four hours—the poisonous properties being capable of development when the fungus dries up.

CURE FOR TOOTHACHE.—A patent has just been taken out in England, by M. A. Prenslan for curing toothache by what he terms "oil paper liquid." This is obtained by submitting paper to destructive distillation in a retort. The liquid comes over, and is condensed in the worm of the still, and then applied to the tooth with a pellet of cotton. The liquid thus obtained is nothing more than *creosote*, which is now used by many persons for allaying the pain of ulcerated teeth. Crude coal oil possesses the same properties, and may be used for the same purpose.

Action of Poison on Wild Animals.

The following is from B. R. Ross, in the *Canadian Naturalist*:—For the purpose of poisoning them strychnia is used. I have tried aconitine, atropine, and corrosive sublimate without success. The two former may not have been pure enough, though I obtained them from the first chemical works in England and at a very high price. The only poison that I have found strong is strychnia. One or two grains of this are mixed with a little tallow, forming a small ball, and covered with a coating of grease outside to prevent the animal from tasting it. A quantity of pounded dried meat and morsels are strewn about so that the animal after swallowing the poison may be detained a sufficient time for it to operate. The distances which animals go before they die vary greatly; in some instances they fall directly in others they run several miles with the same dose, and arranged in like manner. This I attribute to several causes; to their fatness, and to the quantity of food in their stomachs, as lean and hungry foxes die much more quickly than others. The medium in which the poison is given also causes a great difference. When put up in fresh meat a very long time elapses before it operates. Wishing to preserve a specimen of the Hare-Indian dog for the Smithsonian Institution, I resolved to kill the animal by poisoning. Two grains of strychnia of the first strength were administered in a piece of fresh meat; at the end of two hours the animal was as well as ever. I then administered one grain more mixed with grease, in two minutes the spasms began, and in five the animal was dead. The first symptoms were a restlessness and contraction of the pupil of the eye, and a flow of saliva from the mouth, violent cramps then ensued, the head shook violently, like a paralytic person, the legs were drawn up and the spine took a circular shape, a lull of a few seconds then ensued, when after an attack of great violence the animal died. On dissection the blood vessels of the head and neck were found very full of black and clotted blood, such as I have seen in the jugular vein of a person who had died of apoplexy. There was no inflammation of the stomach, and the fatal bait was found in the throat entire. Once seen, the symptoms of poisoning by strychnia are easily recognized, and I would be certain now of passing a correct opinion on a case of the kind. Dogs take a longer time to expire than either wolves or foxes; the latter dying most quickly; in fact according to the ratio of the wild nature of the animal who eats it will be the quickness and violence of its death.

Counterfeiting Rare Coins and Medals.

The Philadelphia Press states that "it has recently been discovered that numerous persons are engaged in the business of counterfeiting old and rare coins and medals, which are highly prized and sell at enormous prices. The coins are so accurately executed that it requires the best of judges to distinguish them from the genuine. A case has come to our notice, where a manufacturer of these relics realized over \$15,000 at an expense of about \$200. The subject has lately been brought before the Numismatic Society, of this city—a society for the collection and preservation of old coins and medals—and they have determined to denounce all persons who make, issue, or deal in such counterfeit pieces, and to use all legally proper efforts to expose them, and prevent the continuance of this fraudulent usage."

Counterfeiters either alter known coins, or strike new ones, or split the old specimens, and rejoin the halves which do not belong to each other. American colonial coins, and rare pieces, are manufactured very skillfully in New York, and nothing is more common than to find rare dates on coins carefully altered from common years. The electrotype process, of course, is a great aid in this species of fraud. The prices of coins and medals have varied, as the taste of collectors has been directed more toward one or another series or class. Very rare ancient gold and silver pieces have been sold by auction for prices as high as \$1,500, when the intrinsic value of the metal was about \$100. The Washington half dollars of 1792 have been sold for \$57, and the same piece in copper for \$64. Cents of 1793 and 1799 have been sold for \$10 and \$15, and half dollars of 1796 and 1797 for \$25. Collectors generally prize fine and uncirculated pieces, even of common dates, at higher rates than poor pieces of rare dates.