commanders, or, where treason could not be brought to consummate the defection, have been overpowered by rebel troops at the command of disloyal Governors. The government arsenals at Little Rock, Baton Rouge, Mount Vernon, Apalachicola, Augusta, Charleston and Fayetteville; the ordnance depot at San Antonio, and all the other government works in Texas, which served as the depots of immense stores of arms and ammunition, have been surrendered by the commander or seized by disloyal hands. Forts Macon, Caswell, Johnson, Clinch, Pulaski, Jackson, Marion, Barrancas, McKee, Morgan, Gaines, Pike, Macomb, St. Phillip, Livingston, Smith, and three at Charleston; Oglethorpe barracks, Barrancas barracks, New Orleans barracks, Fort Jackson, on the Mississippi; the battery at Bienvenue, Dupre, and the works at Ship Island, have been successively stolen from the government or betrayed by their commaneing officers. The Custom Houses at New Orleans, Mobile, Savannah, Charleston, and other important points, containing vast amounts of government funds, were treacherously appropriated to sustain the cause of rebellion. In like manner the Branch Mint at New Orleans, at Charlotte and at Dahlonega, have been illegally seized, in defiance of every principle of common honesty and honor. The violent seizure of the United States Marine Hospital at New Orleans was only wanting to complete the catalogue of crime. The inmates, who had been disabled by devotion to their country's service, and who there had been secured a grateful asylum, were cruelly ordered to be removed, without the slightest provision being made for their support or comfort. In Texas, the large force detailed for protection of the inhabitants against the attack of marauding Indians, were ignominiously deserted by their commander, Brig.-General Twiggs. To the infamy of treason to his flag was added the crowning crime of deliberately handing over to the armed enemies of his government all the public property entrusted to his charge, thus even depriving the loyal men under his command of all means of transportation out of the State.

The total force now in the field may be computed as follows:—

Regulars and volunteers for three months and for the war.....	225,000
Add to this fifty-five regiments of volunteers for for the war, accepted, and not yet in service.....	50,000
Add new regiments of regular army.....	25,000—75,000
Total force now at command of government.....	310,000
Deduct three months' volunteers.....	80,000
Force for service after the withdrawal of the three months' men.....	230,000

It will be perceived that after the discharge of the three months' troops, there will be still an available force of volunteers amounting to 188,000, which, added to the regular army, will constitute a force of 230,000 officers and men. It will be for Congress to determine whether this army shall, at this time, be increased by the addition of a still larger volunteer force.

The report of the Chiefs of the different Bureaus of this department, which are herewith submitted, present the estimates of the probable amount of appropriations required, in addition to those already made for the year ending June 30, 1861, for the force now in the field, or which has been accepted, and will be in service within the next twenty days, as follows:—

Quartermaster's Department.....	$70,289,200 21
Subsistence Department.....	27,278,731 50
Ordnance Department.....	7,458,172 00
Pay Department.....	67,815,403 48
Adjutant-General's Department.....	408,000 00
Engineer Department.....	685,000 00
Topographical Engineer Department.....	60,000 00
Surgeon-General's Department.....	1,271,841 00
Due States which have made advances for troops.....	10,000,000 00
Total.....	$185,296,397 19

The Secretary adds:—

The calling forth of this large and admiraole force, in vindication of the constitution and the laws, is in strict accordance with a wise prudence and economy, and, at the same time, in perfect harmony with the uniform practice of the government. But three years ago, when the authority of the nation was contemptuously defied by the Mormons in Utah, the only safe policy considered consistent with the dignity of the government was the prompt employment of such an overwhelming force for the suppression of the rebellion as removed all possibility of failure. It will hardly be credited, however, that the following language in relation to that period was penned by John B. Floyd, then Secretary of War, and now actively engaged in leading the rebel forces, who have even less to justify their action than the Mormons:—

When a small force was sent to Utah, the Mormons attacked and destroyed their trains, and made ready for a general attack upon their column. When a sufficient power was put on foot to put success beyond all doubt, their bluster and bravado sank into whispers of terror and submission. This movement upon that territory was demanded by the moral sentiment of the country, was due to a vindication of its laws and constitution, and was essential to demonstrate the power of the Federal government to chastise insubordination and quell rebellion, however formidable from numbers or position it may seem to be. Adequate preparations and a prompt advance of the army was an act of mercy and humanity to these deluded people, for it prevented the effusion of blood.

I recommend the same vigorous and merciful policy now.

THE REPORT OF THE SECRETARY OF THE NAVY

Furnishes some very important facts respecting the past and present condition of the navy.

On the 4th of March last, of 69 vessels in the navy, only 42 were in commission, carrying but 555 guns, and these vessels were scattered on every sea,—most of them on foreigns stations. The home squadron consisted of only 12 vessels, carrying 187 guns, and but four small vessels, carrying 25 guns, were in northern ports. Demoralization prevailed among the officers, and no less than 259 of them have resigned their commissions or have been dismissed the service, for betrayal of trust. To the credit of the common seamen, while so many officers have proved unfaithful, their crews have been true, and have maintained their devotion to the Union under all trials and circumstances.

The faithful officers, engineers, carpenters, seamen and marines of the navy, have exhibited an energy and activity unparalleled. In the course of three months, a powerful navy has been raised from the vessels that had been dismantled, and new vessels purchased and engaged for the contest.

INCREASE OF THE NAVY.

There have been recently added to the navy, by purchase, twelve steamers, carrying from two to nine guns each, and three sailing vessels. There have been chartered nine steamers, carrying from two to nine guns each. By these additions the naval force in commission has been increased to eighty-two vessels, carrying upward of 1,100 guns, and with a complement of about 13,000 men, exclusive of officers and marines. There are also several steamboats and other small craft which are temporarily in the service of the department.

The squadron on the Atlantic coast, under the command of Flag Officer S. H. Stringham, consists of twenty-two vessels, 296 guns and 3,300 men.

The squadron in the Gulf, under the command of Flag Officer William Mervine, consists of twenty-one vessels, 282 guns and 3,500 men.

Additions have been made to each of the squadrons, of two or three small vessels that have been captured and taken into the service. The steamers Pawnee and Pocahontas, and the flotilla under the late Commander Ward, with several steamboats in charge of naval officers, have been employed on the Potomac river, to prevent communication with that portion of Virginia which is in insurrection. Great service has been rendered by this armed force, which has been vigilant in intercepting supplies, and in protecting transport and supply-vessels in their passage up and down the Potomac.

The squadron in the Pacific, under the command of Flag-Officer John B. Montgomery, consists of six vessels, 82 guns and 1,000 men.

The West India squadron is under the command of Flag-Officer G. J. Pendergrast, who has been temporarily on duty with his flag-ship, the Cumberland, at Norfolk and Hampton Roads, since the 23d of March. He will, at an early day, transfer his flag to the steam frigate Roanoke, and proceed southward, having in charge our interests on the Mexican and Central American Coasts, and in the West India islands.

The East India, Mediterranean, Brazil and African squadrons, excepting one vessel of each of the two latter, have been recalled.

The return of these vessels will add to the force for service in the Gulf and on the Atlantic coast about 200 guns and 2,500 men.

The places of the secession officers have been mostly supplied by patriotic officers who had retired to the pursuits of peace, but who, when their country required their services, came forward and made a voluntary tender of them, to support the government.

IRON-CLAD STEAMERS.

Respecting the building of new vessels of this character, the Secretary of the Navy says:—

Much attention has been given within the last two years to the subject of floating batteries or iron-clad steamers. Other governments, and particularly France and England, have made it a special object in connection with naval improvements; and the ingenuity and inventive faculties of our own countrymen have also been stimulated by recent occurrences toward the construction of this class of vessels. The period is perhaps not one best adapted to heavy expenditures by way of experiment and the time and attention of some of those who are most competent to investigate and form correct conclusions on this subject are otherwise employed. I would, however, recommend the appointment of a proper and competent board to inquire into and report in regard to a measure so important; and it is for Congress to decide whether, on a favorable report, they will order one or more iron-clad steamers, or floating batteries, to be constructed, with a a view to perfect protection from the effects of present ordnance at short range, and make an appropriation for that purpose.

STEAM GUN-BOATS.

The report states that for immediate, urgent service, transport steamers were secured to act as sentinels, mounting small batteries. As these vessels will not answer for coast service during the stormy winter months, the necessity of building new and strong gun-boats of light draft was urged, hence 23 new steam gun-boats, each 500 tuns burden, have been contracted for.

The burning of the Norfolk Navy Yard is apologized for as a measure of necessity, and yet it appears to us that it was a calamity which by energetic measures could have been prevented, and the property saved. It is, however, gratifying to know that the navy is now in such a state of efficiency, and that it is capable of blockading the whole coast in a very effectual manner. Large quantities of arms, which had been purchased in Europe and shipped for New Orleans, have been prevented from reaching their destination by the activity of the blockading squadron in the Gulf.

RECENT AMERICAN INVENTIONS.

Melodeons, &c.—The object of this invention is to enable players of little experience to play in different keys; and to this end the invention consists in a movable key-board, so applied and combined with the reeds, or their equivalents, that by the aid of a fixed scale in front of the key-board, it may be set to play in any desired key. Wm. F. Sheldon, of East Mendon, N. Y., is the inventor.

Boilers.—This invention consists in a certain novel arrangement of a superheating vessel, and feed water heating vessel, in combination with each other, and within the smoke box and chimney base, at the rear end of a horizontal multitubular boiler, whereby the heat of the escaping gases of combustion is utilized and the draft through the upper and lower tubes of flues of the boiler is rendered uniform or nearly so. The patentee of this ingenious device is Francis B. Blanchard, of Brooklyn, N. Y.

Statistics of British Cities.

The new census of Great Britain was taken last spring, and some statistics of the leading cities have already been published.

The total population of England and Wales is 20,205,504, being an increase of 2,169,576 during the past ten years. With Scotland, estimated at 3,200,574, the total population of Great Britain is now nearly twenty-three and a half millions, which, with the population of Ireland of six and a half millions, will give the United Kingdom a population of thirty millions. The emigration from the United Kingdom to different parts of the world during ten years has been 2,249,355.

The population of London is now no less than 2,803,034, an increase of 440,798 since 1851. It is the largest city in the world, and is growing with a rapidity that is perfectly astonishing.

Liverpool, which is the chief seat of American trade with England, had a population of 375,955 in 1851; it has now 430,000 inhabitants.

Manchester, the great cotton city of the world, had a population of 317,000 in 1851; it is now 357,000—this includes the suburbs.

Glasgow, the chief engineering city of Great Britain, had a population of 360,138 in 1851; it is now 446,395, including the suburbs. It is the second city in Great Britain.

GREAT RIVER.—Admiral Hope, of the British navy, has succeeded in ascending the great river of China, Yang-tse, to a distance of 570 nautical miles from its mouth, without any accident, and it was stated that it was navigable for 157 miles further up, making in all 727 miles, or about 842 statute miles from the sea. The Yang-tse, therefore, although it be in point of navigation neither the Mississippi nor the St. Lawrence, far excels the Ganges, the Rhine and the Danube; it is, indeed, the finest navigable river of the Old World.

PATENT COMMITTEES.—The following have been appointed on the Patent Committees of the Senate and House of Representatives:—

SENATE—Simmons, of R. I.; Sumner, of Mass.; Cowan, of Pa.; Thomson, of N. J.; Saulsbury, of Md.

HOUSE—Dunn, of Ind.; Rice, of Maine; Baker, of N. Y.; Johnson, of Pa.; Noble, of Ohio.

IN the British colonies there were no less than 647 sailing ships—all wood—built in 1860, also three timber steamships, and one of iron. Nearly as many sailing ships are now built in the British colonies as in the Kingdom of Great Britain.

The Herald says that the steam gunboats which the government have contracted for will be completed and ready for sea in about six months. The aggregate armament and force of these vessels will be as follows:—

Officers and men.....	8,000
32-pound cannon.....	480
10-inch guns.....	40
Rifled cannon.....	40

Manufacture of Hollow Iron Ware.

Our English cotemporary, *The Ironmonger*, gives a description of Dartmouth Works, Birmingham, carried on by Mr. David Jones, from which we condense the following :

The manufacturer of wrought iron hollow-wares procures the bars or rods and plates or sheets which he wants, from the iron-master. The first operation is to cut the wrought iron plates or sheets into the required shapes ; this is done with huge bench-shears, which are worked simply by hand ; they are made of the best-tempered steel, and are apparently so little affected by the hard wear and tear of the edges in cutting through endless successions of tolerably stout iron plates, that they want sharpening only once every three months. The disks for rice-bowls, sugar-bowls, tops and bottoms for iron casks, &c., are cut to shape by circular shears, which can be set to any guage required. Frying-pans, bowls, and a variety of other articles are stamped in dies. In Mr. Jones' establishment there are five stamping machines in active operation ; three of these are of the usual kind, whilst the other two are, to all intents and purposes, steam-hammers, upon Nasmyth's principle. The first step in the manufacture of frying-pans is, to heat the plate to redness, and then to place it in that condition on the lower or bed die of the first of three stamping machines, standing side by side in a row ; the hammer or drop, which bears the upper or counter die, is then released, by drawing forward the trigger or lever, and let fall upon the lower die, on which the disked plate lies. As the drop falls from a considerable elevation, the violence of the blow makes it recoil and bound upwards some distance ; the drop or recoiling is caught by a pair of pall levers, locked in racks fixed on the sides of the upright standards of the machine. The shallow pen is now rapidly shifted, by means of tongs, from the first to the second machine, and stamp again, to bring it nearer the required depth ; from the second machine it is then again shifted, in the same way, to the third, where it receives the final blow of the stamp. To mere superficial observation the pan looks now as if it required only paring the rough edges, and putting on the handle, to make it fit for use. This is, however, very far from being the case ; on the contrary, it is only now that the work begins. Violent concussion tends to impair the toughness of wrought iron, and to change the fibrous structure back to the original crystalline and brittle structure of cast iron. Now, this result is produced in the wrought iron disk, by the powerful blows of stamping machines ; to correct this and restore the iron to its proper condition, and also prepare it for the subsequent operation of tinning, the pan is re-annealed, and then subject to a systematic process of hammering, in which the hammer is made to fall with the greatest possible uniformity upon one spot, the pan being moved about beneath it until every part of it, from the center to the edge, has passed under the face of the hammer. When this has been fully accomplished, the rough edge or rim is properly pared, and the pan thoroughly scraped with an appropriate iron tool, to remove every scale of oxyde. It is then hammered once more, and after this taken to the mounting-shop, where the handle, forged out of a wrought-iron bar or rod, is firmly riveted on. A great many attempts have of late been made at simplifying the manufacture of frying-pans by introducing the aid of machinery, but hitherto without success.

The rice-bowls, sugar-bowls, &c., are stamped as already stated, under the steam-hammer. It is constructed somewhat after the fashion of the ordinary stamping machine, with upright planed standards, which serve as guides. The drop or hammer-block is connected with a piston-rod coming out at the bottom of a cylinder in which the piston works. High-pressure steam is let in over the piston, which raises it, together with the hammer attached to it, to any required hight within its vertical range of motion between the two planed guides. When the valve of the cylinder is opened the steam escapes, and the hammer, with the upper die attached to it, falls on the disked plates that lie on the lower die, dipping with unerring precision into the central parts, and converting the flat plate into a bowl of greater or less depth. The force with which the hammer is to descend may be measured to a nicety, by simply regulating the escape of the steam from the cylinder. The deep rice-bowls require several stampings with different dies before the full depth is attained, after which they pass the same processes of annealing and hammering as frying pans.

The stamped tops and bottoms for casks, kegs, buckets, corn-bins, &c., are taken to another department of the works, where they are properly joined in various ways, by seaming, soldering, riveting, to the body and the other parts of the vessel to which they belong ; thus for instance, the bottom of a bucket is seamed on, and the hoop then driven on to it. The heads of large casks for shipping cements, white-lead, oils, &c., are generally secured with screw-pins. Iron kegs and casks are now in extensive demand both for fluids and dry goods, as they present decided advantages over wooden-casks, being much more durable and secure.

In the brazier's department are made tea-kettles, saucepans, and other culinary utensils, sugar-boilers for the West Indies, and a variety of other articles too numerous to mention. The spouts of brass tea-kettles are made to assume the curved form in which we see them in the finished article, by filling the straight tube with molten metal, which is poured in at one end, the other end being stopped up with a paper plug, and when the metal has become solid, hammering the spout into the required shape, after which it is placed in the fire to get out the fusible metal. The process of soldering is conducted pretty nearly in the same way as for brass articles.

Some of the articles made of wrought iron, such as kegs, casks, corn-bins, bushel measures, &c., are painted, generally blue or green, or brown, with black hoops, &c. The painting shop contains a large drying stove, heated by steam supplied from the boiler, in which the painted articles are dried.

Frying-pans, bowls, and a variety of other articles, are coated over with tin, to protect them from oxydation.

Tin has a silvery white color, inclining slightly to yellow. It constitutes an important element in many alloys, imparting hardnesss, whiteness, and fusibility to them. It is the basis and principal component of the several varieties of pewter ; also of Britannia metal. The better sorts of pewter generally contain about 80—84 parts of tin to 16—20 of lead, occasionally also a trifling proportion of zinc, antimony, &c. The finest pewter, known in the trade as "*tin and temper*," is made of tin, with a very small proportion of copper. Britannia metal contains 900 parts of tin to 64 of antimony, 18 of copper, and 18 of brass. It is also largely used for solders ; the common plumber's solder, which melts at about 500° Fahrenheit, consists of 1 part of tin to 3 of lead ; the fine tin solder, which melts at about 360° Fahrenheit, contains 2 parts of tin to 1 of lead.

The wrought iron articles intended to be tinned are taken to the "*tinning*" department,—a large, thoroughly ventilated shop, with a number of vats containing dilute sulphuric acid, technically termed "*pickle*," and several "pots" containing molten tin, covered with a layer of some oily or fatty matter, or some other suitable material, to keep the surface of the liquefied metal free from oxydation. The articles which it is intended to coat with tin are first placed in the pickle, which thoroughly cleans them ; the action of the acid being aided by the application of a gentle heat, obtained by blowing in the steam from the boiler of the engine of the establishment. When the pickle has done its work, the articles are well washed in water, properly dried, covered on the surface with powdered resin, and then dipped into the tin bath ; they are finally wiped and rubbed with hurds. If a vessel is simply to be tinned on its inner surface it is, after pickling, &c., in the usual way, heated, and a portion of the molten metal having been poured in, the vessel is swung and twisted about to apply the tin on all sides ; after which the excess of the latter is returned to the pot.

Artificial Madder.

M. Dumas lately announced to the Academy of Sciences of Paris, that M. Roussin had obtained alizarine (the coloring principle of madder) from naphthaline, as follows:—

A mixture of binitro-naphthaline with concentrated and pure sulphuric acid is placed in a large porcelain capsule heated by an oil or sand bath. By raising the temperature, the binitro-naphthaline dissolves completely in the sulphuric acid. When the mixture has reached 392° Fah., granulated zinc is dropped into the mixture gradually, and with careful observation not to allow the temperature to rise much. In a few minutes a disengagement of sulphuric acid takes place, and the operation is terminated in about half an hour. If a drop of the acid liquid is then allowed to fall into cold water, a magnificent violet color is developed, due to alizarine.

When the reaction is over, the liquid is diluted with eight or ten times its volume of water and brought to the boiling point, and after boiling a few minutes, thrown into a filter. The alizarine is deposited upon cooling as a red jelly ; sometimes adhering to the vessels—sometimes suspended in the liquid. Examined by the microscope, it is seen to be composed of needle-shaped crystals of great definiteness. The mother waters are strongly red from dissolved alizarine, and may be used to dye directly. A quantity of alizarine remains in the filter, which may be removed by caustic alkalies.

In the preceding reaction, the zinc may be replaced by any one of a number of substances—such as iron, mercury, sulphur, carbon, or, in short, by any substance which reacts at a high temperature with sulphuric acid, with the production of sulphurous acid.

The substance thus obtained possesses all the characters and reactions of alizarine. It is but slightly soluble in water, but soluble in alcohol and ether ; volatilizes between 419° and 464° Fah., with a yellow vapor, and gives deep red needle-shaped crystals, whose tone of color is very variable. It is not attacked by chlorhydric or concentrated sulphuric acid. It dissolves in caustic and carbonated alkalies, with a deep purple color. Acids precipitate this solution in deep orange-red flocculi. Like alizarine from madder, it furnishes lakes of the most beautiful colors. It is fixed on stuffs like natural alizarine, and gives similar tints.

Mount Vesuvius.

Professor Palmieri, the resident director of the Royal Meteorological Observatory on Mount Vesuvius, writes to the *Athenæum*, London :

We do not find in the history of Vesuvius so long a period of continued eruption as that of these late years.—Since December 19, 1855, up to the present time, there has been a series of little continued eruptions of greater or less duration, with various phases. That which most attracted public attention was undoubtedly the opening of the cone in seven clefts, toward the end of May, 1858, with a great emission of lava, which devastated much fertile land, filled up the famous precipitous valley called "Fusso Grande," and destroyed fully a half of the carriageable road which led to the observatory. The greater part of this lava issued from the base of the cone, almost without interruption, from the end of May, 1858, to the beginning of April, 1861, that is to say, for little less than three years, which is a perfectly new fact in the history of our volcano.

Prof. Palmieri adds in a postscript:—"Just as I had finished writing the above statement, the guide of Vesuvius made his appearance with the following report, dated May 5 : 'Three small craters have been formed this morning, which make a great noise, but each different. One sounds like a steamer, and throws stones into the air ; another throws large masses out ; and the third, without ejecting matter, makes a noise like the report of a cannon.'"

To Clarify Oil for Rifle Gun Locks.—Fill a phial three parts with almond oil, then fill up the remainder with clean lead chips. Keep the phial in a warm room, and shake it now and then for a month, at the end of which time most of the mucilage acid naturally in the oil will have combined with the lead, and thus the oil will be clarified and fit for lubricating gun locks and other similar work. The lead is easily procured in chips by cutting up with a knife a couple of elongated bullets.—*Septimus Piesse.*

CORN LEAF AND GRASS PAPER.

Paper has been and is now manufactured somewhat extensively from dry grass and straw, but P. W. Runel, of Plumstead, England, states he has made the discovery that paper pulp can be manufactured at less cost, by using green, instead of dry grasses, for its production. He has taken out a patent for the improvement, and he states that when grass becomes dry its silica becomes hard and difficult of solution, whereas, when it is taken green, the silica and other unfibrous substances in it are more easily separated. He takes any green plants, such as sea grasses, which are abundant and cheap, and first mashes, then steeps them in warm water, and after this he boils them in a weak alkaline solution. They are now easily reduced to pulp by passing them between crushing rollers, or through the common beating engines used in paper mills. The pulp is bleached in the usual manner with chlorine.

The leaves of Indian corn are now used for making good paper, in Europe. There is one paper mill in operation in Switzerland, and another in Austria, in which paper is made from such leaves exclusively. The husks, which envelope the ears of corn, make the best quality. It is stated by the London *Mechanics' Magazine* to be excellent, and in some respects superior to that made from rags. As we are dependent upon Europe, in a great measure, for our supply of rags to make our paper, if we can obtain as good qualities from Indian corn leaves, we may yet become the manufacturers of paper for the whole world, as the greatest supply of cheap raw material is found in America. This is a subject worthy of deep attention, as we import rags to the value of about $1,500,000 annually, and paper manufactures to the value of about one millions of dollars.

It is really wonderful to what uses paper may be applied, and what a field there is still left for improvements in its manufacture. We may take some instructions from the Japanese in this department of the arts. A writer in *Blackwood's Magazine*, in describing the manners of the Japanese, says :—"It is wonderful to see the thousand useful as well as ornamental purposes for which paper is applied in the hands of these industrious and tasteful people. Our *papier mache* manufacturers should go to Yedo to learn what can be done with paper. We saw it made into material closely resembling Russian and Morocco leather ; it was very difficult to detect the difference. With the aid of lacker, varnish and skillful painting, paper makes excellent trunks, saddles, telescope-cases, the frames of microscopes ; and we even saw and used excellent water-wroof coats made of paper, which did keep out the rain, and were as supple as the best macintosh, (india rubber). The Japanese use neither silk nor cotton handkerchiefs, towels or dusters ; paper in their hands serves as an excellent substitute. It is soft, thin, and of a pale yellow color, plentiful and cheap. The inner walls of many a Japanese apartment are formed of paper, being nothing more than painted screens. Their windows are covered with a fine translucent description of the same material. We saw what seemed to be balls of twine which were nothing but long shreds of tough paper rolled up. If a shopkeeper had a parcel to tie up he would take a strip of paper, roll it up quickly between his hands, and use it for twine. In short, without paper, all Japan would come to a dead lock." The writer says "Japanese mothers-in-law invariably stipulate in the marriage settlement, that the bride is to have a certain quantity of paper allowed her."

The Japanese do not use rags for making paper, but the inner bark of trees. A partial description of the process of making their paper was given on page 407, Vol. 2, present series of the Scientific American. It is evident from the correspondent of Blackwood, that this peculiar people are far in advance of all the rest of the world in paper making.

Paints from Aniline.—A patent has been taken out in England, by T. H. Smith, of Islington, for obtaining paints from analine as follows :—He makes up a paste with alum and starch, mixed with water, and to this he adds liquid aniline used for dyeing, and stirs the whole together, then passes them through a grinding mill. The mass is now allowed to drip so as to remove from it the excess of water, when it forms a pigment capable of being used as a paint or for staining paper.