

NOTES ON MILITARY AND NAVAL AFFAIRS.

OUR FORCES APPROACHING CHARLESTON.

Just south of the entrance to Charleston harbor, is Stone inlet and creek. On the north bank of the creek lies James Island, a considerable parcel of the sacred soil. It is a low, marshy tract, forming part of the westerly bank of the Ashley river, between that and the Stone, and is the only territory between us and the city. The enemy have fortifications here and are bringing reinforcements from Savannah via the Charleston and Savannah railroad. The precise nature of their defences is coming slowly to light with each day's advance. The Federal gun boats have succeeded in shelling out some batteries which were erected for the defence of that point and have made their way up the creek toward the city. Recent intelligence from southern journals state that the Federal forces under Generals Hunter and Benham are now on the Island and have had a spirited engagement with the enemy. No victory being claimed by them we may properly conclude that our forces did not get worsted in the fight. A Georgia regiment was cut up severely and one colonel mortally wounded. The Federal forces there are estimated at 16,000 and appearances seemed to indicate that the enemy was very strong. We shall be very happy to chronicle the capture of this stronghold of secession. The war began there, and if judgment should earnestly begin at this point few would complain. We are anxious to hear the result of the engagement from reliable sources.

The women, children, and household property are being removed from Charleston, by its residents, in anticipation of its early bombardment.

GEN. McCLELLAN AND HIS COMMAND.

The *Tribune* correspondent writing from the battle field of Fair Oaks, and with a full knowledge of the facts says, "it would have been economical, humane and politic to have given McClellan all the disposable troops north and west of the Ohio, when he commenced the invasion of Virginia," intimating that this policy would have enabled him to have reached Richmond weeks ago. If Napoleon left any legacy to the science of which he was a master, it was the concentration of forces, and the striking an enemy with overwhelming numbers, or with a rapidity of success in blows that stun while they surprise.

The intelligence which comes from Richmond, of McClellan's progress, leaves no apprehension of the result, for, as the veteran Spanish General Prim is reputed to have said, after a visit to the camp, "mortal man cannot do more than Gen. McClellan is doing at this moment, and success is certain if you only leave him alone." Gen. McClellan's military judgment, and comprehension of the situation, are confirmed by the military criticisms in Europe, which, supposing the disposition of the troops to be his, condemn him for cutting off his army on the Peninsula from McDowell's and Banks's divisions.

MISCELLANEOUS.

General Sumner's passage of the Chickahominy river, on the first day of the battle of Fair Oaks, was one of the most daring and successful operations of the war. The correspondent of the *New York World* says:—"If it astonished the enemy then to learn that he had crossed, it is equally surprising to us now to learn how he did it. His rearmost battery wagons had scarcely been hauled off the floating and perilous causeway of logs before the rushing waters swept the timbers away, making huge gaps in the work, and rendering that avenue of approach entirely useless."

Camp Douglas, Chicago, now embraces one hundred and fourteen acres. It contains 8,962 rebel prisoners. Five hundred and ten have died or have been discharged.

The rebels rate their own forces at Richmond at ninety-five thousand men and McClellan's at one hundred and twenty thousand. We presume they know all about McClellan's army as hundreds of spies are continually hovering about the camp.

HOTCHKISS & Sons, of Sharon, Conn., are actively engaged in the manufacture of shot and shell for the government. They employ 300 persons, and make shells varying in weight from five to one hundred and fifty pounds for different guns.

THE Bangor (Me.) *Whig* states that 100 men are employed in the granite quarries near that place on a government contract.

SECRETARY WELLES AND OUR IRON-CLAD NAVY.

The Secretary of the Navy has recently made an important communication to the naval committee of both houses of Congress in regard to the construction of iron-clad war vessels, in which he states that a radical change has commenced in the construction and armament of war ships, which dispenses with such navies as have hitherto existed, and Congress is solicited to decide whether the government will promptly take the initiatory steps to place our country in the front rank of naval powers. The Secretary says:—

It is now generally conceded that vessels for fighting purposes must be heavily plated with iron if they are not built entirely of that material. In this, as in most costly fabrics, economy is reached through durability.

Iron ship building is new in this country, but few persons are engaged in it, and it is a novelty in our navy yards. Heavy iron beams, shafting and thick iron plates can be procured from only two or three parties, and then in limited quantities, and subject to great delay. Individuals have little use for iron of such magnitude as the navy must have, and there must unavoidably be great outlay to prepare for the execution of such work. With only the navy for a purchaser, there can be no competition, and the government will be compelled, under such circumstances, to pay almost any price the mills and forges may demand.

No inconsiderable portions of an iron ship can be made and procured at the ordinary mills, and, so far as it can be done, it may be the best policy to be so supplied; but the heavy and expensive portions cannot be so procured; and, unless the government is prepared to execute the work, it will be subject to imposition, and its vessels to marked inferiority.

The Secretary suggests that a million or two of dollars judiciously expended at present to improve the machinery, &c., in some of the government yards, for fabricating the heavy iron work for vessels, "may save hundreds of dollars and the honor of the nation." A number of gunboats are now being constructed on our Western waters, and a government navy yard and foundry is recommended to be established on some favorable point in the Mississippi Valley. Secretary Welles trusts that Congress will not adjourn without making appropriations for providing such workshops in our navy yards as will enable us to construct a first-class navy, and he enforces this suggestion by saying:

No nation can have an advantage over us if we avail ourselves of our means and opportunities, and it is no longer doubtful that our future safety and welfare are dependent on our naval strength and efficiency. It is a duty, as well as a necessity, that we make these United States a great naval Power. We owe it to ourselves to commence at once this work, and the present Congress should, in my opinion, take the preliminary steps at the present session for laying the foundation for the construction of a navy commensurate with the wants and magnitude of the country. The place or places, the shops and tools, and other appurtenances for this great work, must be provided in season.

It is rather mortifying to our patriotism to be informed that unless the government provides suitable work shops to manufacture the most important portions of iron-clad vessels, it will be "subject to imposition," and "compelled, under such circumstances, to pay almost any price the mills and forges may demand."

A very general opinion prevails in the community that it costs the government more to build steamers in the national navy yards than to obtain them from private builders. And it is also believed by many persons who have given this subject attention, that any kind of iron work for war vessels, may be furnished by several manufacturers of angle iron, shafting and rolled plates, at less cost than such work can ever be made at any national navy yard. But whatever decision Congress may come to on the subject, it is imperative that we should have an effective iron-clad navy at the earliest possible date.

LARGE profits on a small capital. This is what we are all striving to make. We cannot possibly suggest to our friends a surer or better way of realizing the above results than to invest the sum of 4 cents weekly in purchasing the *SCIENTIFIC AMERICAN*. For this trifling amount you can have our paper sent regularly to your own address or to that of any friend or neighbor. We believe that such an investment would be productive of greater profits, in money and mind, than a hundred times the sum spent in any other way. Our new volume commences next week.

A MANUFACTURER in Buffalo, N. Y., is filling a large order for petroleum oil for Mexico. The shipment goes to Acapulco, and a heavy business is anticipated all along the Mexican coast.

MEERSCHAUM.

This famous substance of which many tobacco smoking pipes are made is a hydrated silicate of magnesia. When pure it is white, but when it contains silicate of iron it is yellow. Good meerschaum can be indented with the thumb-nail, and is easily cut with a knife. It is found of different degrees of density—some kinds will float on water while others will sink. Those of medium density are preferred by pipe makers. Most of the genuine meerschaum obtained comes from Asia, but it is also found in Greece, Spain and Moravia. It is exported in the form of irregular blocks. In some cases meerschaum is fashioned into rough pipe bowls where it is dug, but it is mostly sent to Europe. The cities of Pesh and Vienna were formerly celebrated for their meerschaum manufactories. In forming a pipe-bowl the material is prepared for the operation by soaking it in a composition of beeswax and olive oil. The wax and oil absorbed by the meerschaum are the cause of the color produced in such pipes by smoking. The heat of the burning tobacco causes the oil of the tobacco to mix with the wax and olive oil in the meerschaum, and these gradually assume those dark tints so much prized by some inveterate smokers. In some cases the bowls of these pipes are stained artificially by soaking them in a solution of iron mixed with dragon's blood. The white meerschaums, however, should always be preferred.

The scrapings of the blocks of which the solid pipes are made, are triturated and reduced to powder, then boiled in soft water until a thick paste is formed, which is molded into blocks, that are dried, then cut out into pipes as from natural blocks. There are very many pipes sold under the name of meerschaum which are spurious compositions, but it is very difficult to detect the false from the true by mere inspection. Some fancy meerschaum pipes are very costly. These are mostly to be found in Austria. They are furnished with amber mouth pieces and studded with silver.

THE PATENT LAW AMENDMENT.

We regret not to have received the new Patent Bill in time to give it an intelligible review in this number. We have our suspicions that the amendments are designed in some degree to cripple the rights of applicants in their appeal privileges. We hope we are mistaken in this supposition, and that we shall get the bill in time to discuss it in our next number and before its passage through the Senate. A correspondent writing from Washington intimates that the amendment is the result of hasty and ill-advised legislation.

Wheat and Corn Export.

In the memorial of the Hon. S. B. Ruggles to President Lincoln, regarding the enlargement of the Erie Canal, he states that in 1861 no less than 6,712,233 barrels of wheat and flour, and 6,796,390 barrels of corn were carried on the Erie canal, all of which had come from the Great West. The total product of the wheat and corn of New York growth, carried on the canal in the same year, was only 955,532 barrels. The annual wheat crop of New York is stated to be now only 8,681,000 bushels, that of New England only 1,077,000. The former amounts to only one-third of that required by the State; the latter is only sufficient for three weeks' consumption in New England.

TO PRESERVE STRAWBERRIES.—To two pounds of fine large strawberries, add two pounds of powdered sugar, and put them in a preserving kettle, over a slow fire, till the sugar is melted; then boil them precisely twenty minutes, as fast as possible; have ready a number of small jars, and put the fruit in boiling hot. Cork and seal the jars immediately, and keep them through the summer in a cold, dry cellar. The jars must be heated before the hot fruit is poured in, otherwise they will break.

NIEPCE DE ST. VICTOR is now in Paris devoting his energies in making experiments for the purpose of solving the great problem of taking photographic pictures in their natural colors.

THE *American Agriculturist* states that the month of June is the best time to prune. A sharp knife should always be used, so as to make a clean cut.