



FOREIGN.

From papers received at the office of the Public Ledger, by the British Ship London, Capt. Amory from Liverpool—arrived at Norfolk.

LONDON, November 19.

The next arrivals from Spain must bring us intelligence of great importance. They will inform us of the result of that movement which general Blake had made with a detachment of his army, to cut off the French division which he had beat on the heights of Outaria, and whose retreat by the high road he had prevented. We shall also hear of a battle near Bilbao. The Spanish army, after having fallen back to join Romana's and the Asturian divisions, marched forward on the 6th with the avowed intention of attempting to dislodge the enemy from Bilbao. We have no later news than the afternoon of the 6th, when the Spaniards were in full march for Bilbao. Their force increased by Romana and the Asturian army, is estimated at between 30 and 40,000 men. When the enemy attacked Blake at Sornosa, they had 25,000 men.—It is probable that they would be increased so as to equal the force now under Blake. In the mean time Castanos has changed his position, and united his army with that of Palafox. They extended from Sanguessa to Villafranca, and cover Arragon.—Their force is stated to be about 20,000.—The protection of the capital will be confided to the British troops and the Estremadura Levies, amounting together to between 50 and 60,000 men.—Reding is advancing with 16,000 men to Catalonia.

We should have been glad to have found Castanos's force larger, because the line he occupies is of such vast importance, covering Saragossa and interposing between the French in Navarre and the French in Barcelona.

The total amount of the Spanish and British force is about 150,000 men, viz.

Blake's army	35,000
Castanos and Palafox	20,000
British and Estremadurian armies	55,000
Reding's corps	16,000
Valencian and Murcian levies	20,000
Total	146,000

November 8.

Don Cevallos, who lately published the admirable exposition of Bonaparte's conduct towards Spain, is arrived at Stockholm and has had an interview with his Swedish majesty, which terminated much to his satisfaction; and he is about to proceed to Petersburg to relate his affecting narrative to the emperor Alexander, which, we trust, will make a due impression on the mind of that hitherto misguided monarch.

BATTLE OF SORNOSA.

Private communications from an officer of rank in the Spanish army.

VALMASEDA, November 2.

At day break yesterday morning, the enemy, who had received very considerable reinforcements from Vittoria, attacked the Gallician army, posted about a league and a quarter in advance of Sornosa, in the following order:

The first regiment of the volunteers of Catalonia, being part of the vanguard, occupied a hill to the right of the road leading to Durango.

The third division, commanded by general Riquellai, was stationed on the heights to the right of Sornosa to support the vanguard, and defend the right flank of the position.

The vanguard, commanded by general Mandizabal, defended the road leading to Durango.

Our left, commanded by brigadier-general Figueroa, possessed themselves of a hill to the left of the road. The base of the hill was joined to that occupied by the fourth division and reserve.

During the night of the 30th, the enemy advanced his force in very large columns, opposite to the different points which he meant to assail. The next morning, at day break, the different columns moved forward to the attack, their approach being concealed by a very heavy and thick fog, which in these parts is prevalent in the morning.

The first attack was made on our right. Two large columns advanced with the intention of surrounding that part of our force. The enemy was opposed in a most steady and gallant manner by the 4th regiment of the volunteers of Catalonia; this famous corps kept up a tremendous and incessant fire by platoons, and for a considerable time kept in check a force upwards of four times its own number. Two battalions of marines, and the tiradores, or sharp shooters, of the third or fourth division, reinforced the regiment of Catalonia; however, being overpowered by numbers, they were obliged to retire on the third division; this enabled the enemy to place a column on the right of the third division, while another column attacked in front.—The enemy advanced in force along the road, and attacked the vanguard, which defended the road and valley leading to Durango.—The enemy was most gallantly and vigorously opposed, and compelled to retreat to a considerable distance, by the vanguard, headed by general Mandizabal. The enemy, however, having considerably increased his numbers in this point, advanced a second time, accompanied by a howitzer and a four pounder, and succeeded in gaining a sufficient advance on the road, to enable him to bring his gun to bear (within about three quarters of a gun shot) on the centre and the left division.

Whilst these operations were carrying on against our right and centre, the enemy advanced two very strong columns against the front of our left position; and at the same moment, a very numerous corps of sharp shooters (voliguers) advanced under cover of the howitzer & four pounder, & got possession of a wood which ascended from the road to within less than musket-shot of the right flank of the left position. This obliged general Figueroa to throw back one or two battalions upon his right, to oppose the enemy's light infantry. Nothing could be more gallant or more orderly than the enemy's attack of this post; he advanced in the greatest military regularity, under a most tremendous fire. The gal-

lantry of the enemy's attack could only be equalled by the intrepidity of the defence made by the first division. It is impossible for me to do justice to the soldier like conduct of this division. Attacked on their side by a very superior force, and occasionally fired on by the howitzer and four-pounder, they defended their post with determined obstinacy.—They appeared resolved not to yield a foot of ground. The enemy were equally obstinate and persevering, and being enabled by their very superior numbers to nearly surround the hill occupied by this gallant division, general Figueroa felt himself called upon to order a retreat; which was effected with as much order as existing circumstances would admit of.—Whilst the first division was thus engaged, the enemy kept up a heavy fire of shot & shell, and some musketry (from the woods in our front) on the centre division and the reserve. The guns were supported by two very large columns, and a disposable reserve.

Nothing could exceed the soldier like steadiness with which the fourth division and reserve remained on their post under this heavy fire; this courage will not be wondered at, when I mention that the commander in chief himself was at the head of the centre division, animating the soldiers by his presence and example. When the first shell burst, there general Blake repaired, and placed his horse on the very spot, displayed his division into two lines, part of the reserve remaining in columns. His address to the soldiers was simple, and spoke to their feelings.—"Remember you are Spaniards; be firm, soldiers."—Never did the most veteran troops, or those most accustomed to cannon, remain more cool, steady and determined. After an action of nearly nine hours incessant fire, and it became evident that the enemy had received very great reinforcements, and having been enabled, by the assistance of his cannon (of which aid this army was entirely destitute) to push forward a strong force against our centre, and having in consequence occupied the woods flanking the right of our left position, it was deemed advisable to retreat. General Blake placed himself at the head of the fourth division and part of the reserve, and in person superintended and directed the covering of the retreat of his army, which was effected in order, the enemy not appearing inclined to molest our movements.—by 11 o'clock on the night of the 20th October, the most part of the troops arrived at Bilbao.

Early in the morning of the 1st (yesterday) general Blake arrived in that town with the fourth division, and lost not a moment in proceeding to the great square, where he superintended in person the issue of bread and spirit to the troops. Nothing could exceed their joy at seeing their general return to them, a false report having been obtained that he had been cut off in covering the retreat.

No language of mine could do sufficient justice to the gallantry and ardour of the officers and soldiers of this army in the action of yesterday. I trust however, the statement of facts which I have given, in a plain unvarnished manner, will give some idea of their brave conduct.

Nothing can exceed the patience, and I may add, the cheerfulness of the Spanish soldiers, under difficulties and privations of all sorts.

The impressions left on my mind from the account of yesterday, is decidedly most favourable to the Spanish soldiers.

The effect produced on their bosoms from yesterday's defence, is a manly and soldier-like pride, arising from a self-conviction of their having done their duty.

Bonaparte's Entrance into Spain—Actions in Spain.

BAYONNE, Nov. 14.

The emperor set out to day, at noon, for Spain. His majesty will, it is said, sleep at Irun, and arrive early tomorrow with his august brother at Vittoria. His majesty was not able to keep himself long incoag at Marac; the Bayonnese were most eager to manifest the joy which they experienced at learning the happy arrival of their august sovereign. Last night the town was spontaneously illuminated.—An immense concourse of people filled all the streets and public places, and the cry of long live Napoleon, resounded from all parts. We learn that there has been a very brilliant affair for our troops near Longrono. The insurgents have been completely beaten. On the other side, a division of the army, commanded by marshal Moncey, had on the 25th of last month, an engagement at Lerin, in which the Spaniards were defeated.

"In this affair we took several pieces of cannon and 600 prisoners, which yesterday arrived at Bayonne. The officers are confined in the citadel.—These miserable Spaniards are in a most deplorable condition—their cloaths are mere shreds, and they are without shoes. Every disposition is making for vigorous offensive operations, and the arrival of his majesty will, without doubt, give birth to great events. Romano's corps will be the first attacked: we are even assured that every means have been taken for cutting off his retreat. The siege of Saragossa will commence in a few days, and be vigorously carried on. There is a report to day at Bayonne that Blake has lost 5 or 6000 men in an engagement which he had with Gen. Verdier, but this report appears premature. Troops of all descriptions are continually passing through this place; they are animated with the best spirit, and burn with impatience to fight under the eyes of the hero, who always leads them to victory. The army of Spain will, it is said, be divided into 8 grand divisions, and commanded by the Marshals Ney, Bessiers, Soult, Montier, Victor, Moncey, and by the generals St. Cyr and the Duke of Abrantes. They also talk of an army of reserve, but it is not yet known by whom it will be commanded. The imperial troops, infantry and cavalry, which were at Bayonne, all set out at break of day this morning preceded his majesty.—*Courier de l'Empire, Nov. 10.*

Nov. 5.

"According to intelligence which has this instant been received, the defeat of the Spaniards at Bilbao has been most complete. Marshal the duke Dantzic has made 4000 prisoners, among whom are two aid-camps of General Blake. A great number of carriages and servants belonging to the king of Spain, have arrived here this morning, on their way to Naples.—*Journal De l'Empire, Nov. 11.*

Nov. 5.

"The dispositions which were made to drive the Spaniards from the banks of the Ebro, have been attended with the most complete success at every point. General Castanos, after the defeat of his advanced guard, quitted his position at Sorla. By this

movement the marquis de Romana was no longer able to receive succours from the principal Spanish army. He has had reason to repent of the temerity with which he advanced. The French soldiers had no sooner perceived this corps which had rendered itself so guilty by the most signal perfidy, than they most impetuously waited the order for battle; the victory was quickly decided.—Romana was not able to effect his retreat but in the greatest disorder; and his position will no longer permit him to cover St. Andero, which will be immediately attacked and carried.

"The Spanish officers which have been made prisoners testify the greatest astonishment at the immense force which was brought against them—they were so far deceived as to believe that our troops could not quit Germany, & that all was in confusion in that country. Many of them admit that there exists in Spain the greatest subjects of division both between the different corps of their army and their generals, and between the different authorities.

"It is evident that the people of property are very seriously alarmed at the pretensions of an anarchal multitude, ever ready to commit the greatest excesses.—*Publiciste of Nov. 11.*

BAYONNE, Nov. 4.

"The head quarters of the imperial army has been removed from Irun to Tolosa. It is confirmed that Romana has been completely beaten, and that we are masters of Bilbao. St. Andero will soon be in our possession.

PARIS, Nov. 10.

A letter from Vittoria of the 31st contains the following intelligence,

"The army of king Joseph, our beloved sovereign, has already acted on the offensive. It has taken all the positions of the insurgents on the Ebro, and it has formed a junction with the left division commanded by Morelet—Viana, Logrono, Catalonia, are in the hands of our troops, together with 800 prisoners, and a great quantity of baggage.

"On the 5th inst. his majesty the emperor and king transferred his head quarters of Vittoria. The Argus announces that the arrival of his majesty was the signal for a general engagement, which was attended by a victory complete in every respect."

Journal de l'Empire Nov. 11.

NITRE, always in demand, would be greatly enhanced in value in case of a war, as it enters so largely into the composition of gun-powder. The publication of the following article, from a Philadelphia paper, is timed by our political prospects. There are several manufacturing of gun-powder now in this State, which may be improved by this Essay; and it may probably tend to the establishment of others, and thereby add to the wealth and security of our country.]

APPLICATION OF CHEMISTRY TO ARTS AND MANUFACTURES.

Remarks on the manufacture and refinement of nitre.

We shall consider in this number, the French mode of making salt petre, taken from a treatise in the memoirs of the Manchester philosophical society, by Mr. Massey; and conclude with the able remarks of Mr. John Gadolin; "upon the purification of crude salt petre, by means of charcoal powder, from the transactions of the royal academy of Stockholm. We have stated on a former occasion that salt petre may be extracted from rubbish of old houses, the earth of cellars, and from all composts of animal and vegetable substances, which have undergone the process of putrefaction. Nitre has been obtained in France from both these sources; but the United States may be supplied with it in abundance from the salt petre-caves. Every circumstance, however, that may be of service to this country, ought to be brought into notice. The principal object of this essay, is to exhibit the mode of refining nitre by the use of charcoal, which is to be employed after the separation of earthy substances, by means of potash, has been accomplished. The rubbish of buildings, earth of cellars, &c. is to be reduced by a coarse powder, and treated in the following manner. A number of small open tubes are to be provided, and placed about two feet high on stilages, and in such a manner, that one vessel may receive the ley that runs from two of them. A spicket and faucet is fixed in each tub near the bottom; and a quantity of the nitrous earth and wood ashes is thrown in, in the proportion of two bushels of the latter, to one of the former. The two are put in gently, so that when the water is added, it may readily run through; a hollow is generally made at the top. Twenty four of these tubs are commonly employed which they place in three rows;—and in each they put three bushels of wood ashes, and six of earth. Through the first row of 8 tubs, they pass ten demiquies of water (about nine hundred gallons) and the first lixivum is passed through the second, and afterwards the third. Fresh materials are now put in, and the fluid which had been used in the first, is poured on the second, till saturated. The liquor at this time is reduced, by absorption, &c. to about one hundred and twenty gallons. In three rows of eight tubs, only six demiquies of water are passed through, and each are newly replenished every day. The liquor under the name of *le cuite*, is carried to the boiler, where it is evaporated, and as a scum appears it is removed: when the evaporation has so far advanced that a pellicle begins to appear upon the surface, a workman is constantly employed, with a perforated ladle, to take out the marine salt, which now begins to form, and fall to the bottom of the boiler; this, being thrown into a wicket, drains into the boiler again.

When the lixivum has so far evaporated, says our informer, that a drop of it will congeal upon a piece of cold iron, it is taken out, and thrown into a tub, for the remainder of the marine salt, and other drugs, to settle; and, after standing about half an hour, it is drawn

off whilst yet warm, into shallow copper pans, and set into a cool place for the salt petre to crystallize. The produce of this operation is, generally about one hundred and thirty pounds of a brown sort of salt petre, which afterwards to be refined.

The liquor remaining in the basins, when the salt petre is crystallized, is called *eau mere*, or mother water, and is poured upon the matter, when the tubs are disposed for lixivum on; though some manufacturers think it best to dilute it with water, and percolate it thro' a fresh bed of wood ashes.—The matters, when discharged from the tubs, are thrown aside under a hovel, and, when dry, are spread about a foot thick, to receive the scum, *eau mere*, or any putrid liquor they can get to throw upon them, and in a few months, they are told, are fit for use a second time, particularly, if now and then turned over. To improve the colour of this salt petre, & to cleanse it still more of the marine salt, two thousand weight are thrown into a large boiler, with one demiquie of water, in which it dissolves; and, in the course of the boiling, another demiquie is added by pailuis, which every time it is thrown in, raises a thick scum that is carefully removed. The evaporation being pretty far advanced, and the marine salt (and we may add, the separation of earthy substances by the addition of pearl or potash, provided the alkali of the wood ashes be not sufficient) being accomplished, a large pitcher of white of eggs, or of a solution of ising glass, or of other glue is poured in. The lixivum is then crystallized. The mother water, by a particular treatment, will afford more of the impure nitre. Two or three days is sufficient to complete the crystallization.

With respect to the purification of nitre by the use of charcoal, recommended by Mr. Gadolin, we may give the following general remarks: After noticing the various impurities of crude salt petre, Mr. G. observes, "there is besides a certain quantity of greasy matter, which sometimes is accompanied by volatile alkali;" and in noticing the nature of the foreign salts, he concludes: "but so long as any considerable quantity of the greasy matter remains, it is impossible to obtain good crystals of salt petre, or to separate and extract from it, the other species of salts." He is of opinion, that the purification of crude salt petre consists principally in taking from it this greasy matter. this operation is performed in a large way, to a certain degree, by keeping a concentrated solution of salt petre boiling, so that the greasy matter may be removed by skimming; but there is apt to remain in the salt petre, a sufficient quantity of this matter to render it foul, which makes it necessary to repeat the operation several times, to bring the salt to the state of purity. Allum, he remarks, is among the means that has been used to separate the greasy matter; and we may add, that lime water, noticed on a former occasion, similar to its employment in refining of borax, which in its crude state, has also a quantity of greasy matter, is intended to separate this substance. How far the operation of a regular crystal or crystals of nitre thrown into the nitrous solution, to dispose it to crystallize can influence the separation of this greasy matter, is a subject yet to be determined.—Brewster, however, calls this property a peculiar species of corpuscular attraction which he has called polarity. In a letter I have received from a gentleman, he states as his opinion, that a great proportion of allum is present in some parcels of refined nitre; of course it may be inferred, that this salt was made use of, to separate the greasy substance. How would the exposure of nitre, containing the greasy matter, to a moderate heat, in certain vessels, dispose its separation from this substance. It is of the nature of that contained in crude borax? Neuman remarks, that borax may be very handsomely crystallized, by first exposing it to heat (for the separation of the greasy matter), and afterwards treating it in the usual manner. As charcoal powder has lately appeared to possess the property of absorbing those impure greasy matters, which so often adheres to salts, (and even the spiritous liquors) when it is digested or boiled with these substances, Mr. Gadolin thought that a similar process might very probably be made use of to purify salt petre; with that view he made some experiments, which he submitted to the judgment of the academy. It would be unnecessary to detail the various experiments in this place; I shall only make such observations as may be of utility in practice. The following is the manner, he says, in which I proceeded in making the four experiments hereafter described:—I first threw a pound of crude salt-petre, with the charcoal powder, and six pounds of pure water, into a copper vessel. I kept the whole boiling upon the fire for the space of ten minutes, and then filtered the decoction through a double filtering paper. I afterwards passed through the filter two pounds of boiling water, and then evaporated, by boiling the whole of what had passed through the filter, till a drop of it thrown upon a cold piece of glass, immediately shewed signs of crystallization, and was in a few seconds converted into crystals. I then poured the whole of the ley into a glass vessel, which I placed, uncovered, in a cold place, that the salt might crystallize. In this way I obtained from the first crystallization about 20 loads* of salt. The remaining ley was then again evaporated till the same disposition crystallization appeared as before. I ob-