

From the London Mechanics' Journal.
ON NATURAL STEEL, OR GERMAN STEEL.

Three sorts of steel are usually distinguished: the steel of cementation often called blister steel, because its surface is usually covered with blisters; cast steel, formed from the former by melting in a crucible; and lastly, natural steel, or that of the forges, very frequently called German steel.

This steel is the most impure, unequal and variable of three kinds, but it is considerable cheaper; it has also the property of being easily welded, either to iron or to itself, and some other qualities which render it frequently preferable to the other two kinds of steel.

Its grain is unequally granular, sometimes even fibrous; its colour usually blue; it is easily forged; it requires a strong heat to temper it, and it then only acquires a middling hardness; when forged repeatedly it does not pass into iron as easily as the other kinds.

There are two subdivisions of this steel; that procured from cast iron, and that obtained once from the ore.

The steel yielded by cast iron manufactured in the refining houses, is known by the general name of furnace steel; and that which has only been once treated in the refining furnace, is particularly called rough steel, and is frequently very unequally converted into steel. Both these varieties are drawn in bars, then hardened, and broke into pieces.

The best cast iron for the purpose of making natural steel, is that obtained from hematites or from sparry iron ore; if it contains magnesia, this is thought to be of advantage; it should be of grey colour; white cast iron does not yield steel unless its charge of carbon is increased, either by stirring the melted metal with a long pole, and keeping it melted a long time, that it may absorb charcoal from the lining of the furnace; or by melting it with dark coloured iron. Black cast iron yields a bad brittle steel unless the excess of carbon that it contains is either burnt away, or it is melted with fiery cinder. The cast iron, to be converted into steel, is then melted in blast furnaces, and treated nearly the same as if it were to be refined into bar iron, only the blast is weaker; the twyer, instead of being directed so as to throw the wind upon the surface of the melted metal, is placed nearly horizontally; the melted metal is covered with slag, and is not disturbed by stirring; when judged to be sufficiently refined, and is grown solid, it is withdrawn from the furnace, and forged. After this natural steel is made, there is almost always taken out of the refining furnace, towards the end of the operation, one or more pigs of iron; which are rather hard, and used for implements of husbandry.

That is the best natural steel which is the densest—becomes the hardest when tempered, and is not brittle. Its grain should be very fine and equal; and it should be capable of being forged and welded without breaking or splitting; lastly, it should support the action of the forge well, without changing its nature.

Natural steel has in general the defect of being strawy or containing parts which are not steel, but merely cast iron, sometimes it is cindery, its surface being covered with small holes; but this seems merely accidental, and owing to its being treated with too strong a heat. It is in order to remedy these defects that steel is bundled together and forged.

The most esteemed natural steel, made in Germany, is that of Styria; it is usually sold in chests or barrels two and a half or three feet long. Its grain is even, close and fine; but when polished, it shows fibres, cinders, & threads, from which even this steel is not purely free—Sometimes when broke it has in

the middle of the fracture a spot, yellow, orange, or blue, which is called the rose, and the bars in which it appears are called rose steel. It has been thought that this rose was a mark of goodness, and the manufacturers of steel in other places have attempted to imitate it; but, in fact, this rose is a sign of defect, and is only found at the place where the bar breaks with the greatest ease; indeed, it appears, to arise from a straw which is formed at the time of tempering the steel. Files, and the best kinds of tools are, usually made of this steel in Germany; the proper colour for hardening it is a cherry red heat.

The next esteemed steel is that called distinctively German steel, or Pont stuff. It is not so good as the former; it is sold either in bars ten or twelve feet long, or in barrels about three feet long; it is marked with an anchor, or seven stars in a circle. This is the most used.

There is also a steel in Germany called Cologne steel, forged in bars 3 inches long, 1 inch 25 wide, and 1/2 inch 75 thick. Solingen steel. Hungarian steel, marked with an oak leaf, and sold in bundles of four or six bars, fastened together with iron bands; the bars are of different sizes, but 1 inch square.

LONDON.

From the London Gazette, May 13.

INDIA BOARD, May 13, 1826.

A despatch, dated the 17th of January, 1826, has been this day received at the East Indian house from the Secretary to the Government at Fort St. George, inclosing a copy of a despatch from Brigadier-General Willoughby Cotton to that Government, of which the following is an extract:—

Patanagh, Jan. 1, 1826.

I have the honor to acquaint you, for the information of the Hon. the Governor in Council, that the pursuit of the scattered columns of the enemy was continued from Meaday to Patanagh, by forced marches by the Madras division, accompanied by the body guard and a troop of horse artillery, and the Commander of the Forces; on reaching Neaugla, five miles below this place, we ascertained the enemy had crossed their whole force to the right bank of the river, and that they occupied the position of Maloon, consisting of a series of strong fortified heights and a formidable stockade, with from ten to twelve thousand men. It was also ascertained the King's brother-in-law, and most of the men of rank who had assisted Zehengai, were at Maloon; they dispatched a woodpole on the 28th, a flag of truce and a letter, stating it to be the wish of their Chiefs to put a period to hostilities, and that a Minister had arrived from Ava, with full powers to treat and ratify, and requesting a meeting for that purpose. Lt.-Col. Tidy and Lieut. Smith, of the navy, were accordingly despatched to arrange a conference to be held in a boat on the centre of the river, moored between Maloon and Patanagh. Accordingly the Commander of the Forces and the second Commissioner, Mr. Robertson, attended by myself and most of the Brigadiers, met the two Burmese Commissioners, Kelieu Manjee, and the Kee Woonjee, on the 30th ult, and I am most happy to state that the result of the conferences of that day and yesterday, has been a satisfactory adjustment, as far as regards territory and money. The ratification by the Commissioners of the Treaty takes place this day at two o'clock, and the terms of peace are as follow:—

"The four provinces of Arracan to be ceded in perpetuity to the Hon. Company."
"The provinces of Megui, Tavoy, and Zea, to be ceded to the Hon. Company in perpetuity."

"The Burmese Government engage to pay the Hon. Company one crore of rupees, by instalments the periods for the payment of which to be settled this day."

"The Provinces or Kingdoms of Assam, Cachar, Zeating and Manipote to be placed under Princes to be named by the British Government."

"Residents, with an escort of fifty men, to be at each Court; British ships to be admitted into Burmese ports; to land their cargoes free of duty, not to unship their rudders or land their guns; Burmese ships to have the same privileges in British ports; no person to be molested for their opinions or conduct during the war hereafter."

"The Siamese nation to be included in the peace."

Thus, I hope, has terminated a war which has been most expensive in its prosecution, not only in money, but also, by the effects of climate very destructive to both European and the native troops; but I hope the Hon. the Government in Council will hear permit me to express the unanimous grateful feeling of the Madras army for the considerate comforts the Madras Government have, upon every occasion, forwarded to their armies here, comforts which have been the means of saving many valuable lives, and which will be ever most gratefully acknowledged by every officer and man.

It will, of course, take a long period to arrange the move of the troops from hence to Rangoon, with the materiel and stores.

The ratification of the treaty by the King of Ava, and the English prisoners now at Amarapoorah, are to arrive at Patanagh in 15 days (15th January), on the receipt of which we shall immediately retrograde to Prome. The roads across the Arrican mountains present difficulties which will oblige the Bengal army to retire by Rangoon.

P. S. Jan. 3.—Owing to prolonged discussions the Treaty was not signed until this day, Jan. 3. at four p. m.

May 14.

The accounts with respect to Greece continue to be as contrary as ever. An almost equal uncertainty remains with regard to the relations between Russia and Turkey, and the intentions of the former power. We must however, content ourselves with the expression of our hopes, that the cause of liberty will be at length triumphant. If we were to attach implicit credit to one set of reports, the wonder would be, that the Greeks have not long since been annihilated; if to the other, we should suppose that not a single Arab or Egyptian could return to tell his tale of disaster and defeat.

STATE OF TRADE.

Manchester.—Partly owing, perhaps, to the stoppage of the canal, partly to the near approach of Whitsuntide, which is always a dull time in trade in Manchester, and partly to other circumstances, there have been very few country or London builders in town this week, and the demand for goods has therefore been limited.—There is, however, a little revival of demand for some of the foreign markets; and there continues to be more business doing in twist, for some qualities of which an advance of 1d. to 1d. per lb. we understand has been obtained within the last ten days. Nevertheless, it is yet far from commanding saving prices, to say nothing of a profit. There have been several failures here within the last few days, though fortunately not, with one exception on a large scale. They tend, however, to defer the restoration of confidence. Nevertheless, we still think that the most severe of our commercial trials are at an end; and, though our progress may be slow, and our course occasionally interrupted, we are still in the way of improvement.

Leeds.—The most perfect tranquility

has prevailed in Leeds, and all the principal manufacturing towns of Yorkshire, during the whole of the present week; and in one branch of business, the worsted stuff line, the master manufacturers here are increasing the number of their workmen. In other branches of the manufacture we hear of no improvement.

Blackburn Mail, May 10.—For several weeks past, we have forbore to say anything of the state of trade in this town and neighbourhood, because our report would have been a monotony of "evil tidings." We are happy, however, this week to announce a change for the better. The market at Manchester being more brisk on Tuesday week, produced a corresponding effect in the warehouses here. More work has been delivered out to the weavers, at, in some instances better prices, and some of the Printing Establishments in the neighbourhood have received during the last week, large orders, and have therefore begun again to employ their workmen. Notwithstanding this, there are a great number out of employ, and should a renewed demand for manufactures continue, it must be some time before the condition of our labouring classes can be effectually ameliorated.

Bradford, May 12.—This town has been perfectly tranquil during the present week; not the slightest indication of riot has been manifested. More goods were sold at the Pierce-hall yesterday than have been sold on any previous market day during the last three months; and though prices were not perceptibly advanced, considerable benefit will accrue to the public from the additional employment which the manufacturers will be enabled to give out.

HOUSE OF COMMONS, MAY 14.

British Shipping.—Mr. Huskisson said petitions had been presented from persons connected with the port of London, stating that the shipping of this country were going to decay, and that our ultimate ruin must be the consequence. But so far from this being the fact, the number of ships built last year exceeded the number built in any year since 1789, and was little short of double what it had been at the close of the war in 1824. In 1824 the number of British ships entered inwards was 19,164, the tonnage 2,364,000 tons; the number of foreign ships entered inwards in the same year was 5280, their tonnage 694,000 tons. In 1825, the number of British ships entered inwards was 21,786, their tonnage 2,786,845 tons; the number of foreign ships 6561, and their tonnage 892,000. This showed the shipping of Great Britain continued to increase beyond that of all rival countries. The Right Hon. Gentleman concluded by moving for a "Return of the number of ships built in the British dominions from 1814 to 1825, inclusive, distinguishing the amount in each year, and their tonnage."

Mr. Baring spoke of the satisfactory character of these explanations; and after some remarks from Mr. Robertson, Sir M. A. Ridley, Mr. Ellice, Mr. Hume, &c. the papers were ordered.

A motion was brought forward last night by Mr. Fowell Buxton, on the Slave Trade of the Mauritius, and produced what appears to be irresistible evidence, that long since the abolition of the slave trade the traffic has really been carried on in that colony, under the British Government. The only doubt seems to be, how long a period it has flourished. It is necessary for the honor of the British character, that the investigation, which was ordered on the motion of Mr. Buxton, shall be pursued in the most searching manner possible. The Mauritius is referred to by the French, in answer to the