

time. Russia seems to be gradually rousing herself to a full sense of her position. She has only just begun to understand what it means to have a vigorous nation of the first class as a neighbour, and standing between herself and the rest of Europe. It would be exceedingly interesting to know what the real history was of the recent negotiations concerning Denmark. The question had scarcely come upon the tapis when it was hustled off again. England and Russia, it was said, had agreed to urge Germany to yield Schleswig to Denmark, and thus afford a solution of the difficulties which are felt by the Berlin Government with regard to the inhabitants of that province. What the *quid pro quo* was to be was not clearly stated, but the threatening attitude which the question at one time seemed to be likely to assume was quickly put an end to by the cessation—if indeed they had ever begun—of the negotiations. Even supposing the whole matter to have been of the nature of a mere *canard*—and it was certainly more than that—we learn from it what the public idea of Europe is with regard to the attitude of Russia towards Prussia.

We do not think that the public idea is at all an incorrect one on this head. In the relation between the two countries we see what we now call the contest of nationalities—a few years ago the same thing would have been called the “balance of power.” We do not look with feelings of regret upon this state of affairs. The last few years have found a great deal of charlatanism mixed up with the new ideas in politics, both domestic and international. If we find ourselves coming back to the old lines, and working round the same pivot as in former years, we need not be surprised. The balance of power was an old and exploded idea. The new generation knew something worth a great deal more than that, and yet, in the end, we find two great nationalities standing opposite to one another, each eager to prevent the other from growing too strong. Is this altogether an evil thing? May we not rather fairly congratulate ourselves and one another on the fact that Germany is not to have it quite all her own way? We deprecate, both, for ourselves or for Russia, the idea that there is and safety to be found in what would be called in private life mere fussiness. We, on the whole, sympathise with German objects, especially in relation to her contest with Rome, but for all that we should be sorry to see England following the lead of Russia, either if she shuts her eyes on the one hand to the preponderating influence which Germany is aiming at in Europe, or if she should exhibit a tendency on the other to fidget and worry without giving due effect to her opinions.

NORTHERN COLONIZATION RAILWAY.—The survey of an extension of the Northern Colonization Railway, from Aylmer to the mouth of the river Mattawan, through the Province of Quebec have just been completed. A line has been obtained which is held to be very favourable, the course of the line general being very direct with easy curves and grades. The total estimated cost of this extension, including rolling stock telegraph and all the appurtenances necessary for a first class railway, does not exceed \$28,000 per mile, and if steel rails and iron bridges are employed the cost will not exceed \$33,000 per mile.

THE MACOMBIE GUN.

In February last a non-official trial, necessarily very brief in detail, was made in the proof room of the *Nettle*—a vessel attached to the *Excellent* at Portsmouth for proving the quality of armor plates—in the *Excellent* gunnery establishment, and at the present time filling the onerous post of Director of Naval Ordnance at the Admiralty, of a breech loading cannon, constructed in England upon the patent of Mr. Macombie, who is an American, and so far as the trial was carried the results were considered highly favourable in their relation to the primary objects sought by the inventor—i.e., the production of a breech loading gun that should burn larger powder charges with freedom from any escape of gas at the breech than any English or Continental gun breech or muzzle loader, and a gun that could not be burst by gun powder. After this trial the gun was taken to London with the intention of having the velocity of its shot proved at Shoeburyness, but for some reason as yet unexplained this has not been done, and thus one of the most important points connected with any measurement of the power of the gun remains unsettled. This (says the *Times*) is to be regretted, for everything relating to breech loading arrangements for heavy ordnance is of the greatest importance to us just at the present time, when we are compelled to admit that foreign breech loading guns, and especially the German guns, give their shot a greater initial velocity and penetrating force than the best English muzzle loading guns. We have certainly for a long time past had the question of breech loading in its possible application to the heaviest ordnance under consideration, and there the question appears to remain. It is understood that Sir Joseph Whitworth has long been prepared to produce a breech loading gun of large calibre and of exceptional penetrating power, to order of the Government, and that Mr. Fraser of Woolwich Arsenal, has also prepared drawings of breech loading arrangements for heavy ordnance. Official objections, however, appear to stop the way, for neither the Whitworth nor Fraser breech loader has yet put in an appearance and under these circumstances we may, even with some chance of profit to ourselves, give a little attention to the American Macombie, although as yet ignorant of the initial velocity of its shot, excepting by approximate calculation from their penetration into iron, and an opportunity for this occurred in a trial made with the gun at the land firing range of the Royal Marine Artillery at Fort Cumberland, near Portsmouth, on Friday last week. Before entering further into the particulars of the trial, it is necessary to say something here relative to the gun, the powder-charge, and the shot. The gun weighs 1200 lb., the rifled tube having a diameter of 1.275 in., and a length of 24 in. The powder chamber has a diameter of 2.5 in., and a length of 7.25 in. The quickest burning powder procurable, Curtis's fine grain sporting, is used for the charge. The shot weighs 3 lb., and 1 1/2 lb., one-half the weight of the shot, forms the firing charge. Whatever the size of the gun, these proportions between its shot and powder charge would be observed. The breech of the gun is built up of rings of three different kinds of wrought iron, which increase in density from the centre to the circumference. Heavy steel rings are driven over the forged iron rings by a powerful hydraulic press. The breech is closed after loading by two and a half turns of a three thread

screw. The inner end of this screw is fitted with projecting steel blades as the gas check. The shot is loaded round its base to take the grooving of the rifled tube. On Friday the gun and a small iron target three inches in thickness were taken down to Fort Cumberland, and five shots fired at the target at a distance of 100 yards. The target had no backing, and was set upon and supported by beach sand and shingle. No. 1 was taken as a trial shot, the latter passing immediately over the top of the target. No. 2 struck near the bull's eye, the shot penetrating 2 1/2 in., and remaining embedded in the plate. No. 3 struck on the opposite side of the bull's eye, penetrating to a depth of 2 3/4 in., and also remained embedded in the plate. No. 4 struck the target low down, penetrated to a depth of two inches, and rebounded from the plate on to the shingle of the beach. No. 5 shot was attended with nearly the same results as No. 4. Two facts were deducible from the firing, and they must just be taken for what they are worth in the opinion of practical artillerymen. 1. There was no observable escape of gas. 2. A gun with a rifled tube of 1.275 inches diameter obtained with its shot a maximum penetration of 2 1/2 inches in a piece of unbacked rolled iron plate, three inches in its thickness. Our authorities may possibly know all about the Macombie gun, but if the principle of the breech and its powder chamber is correct it should be worth some attention from us, however faulty we may consider many of the details.—*Broad Arrow.*

Some very novel and interesting experiments, says the *London Iron*, have recently been made at Tyne Dock. In consequence of the increased depth of the river—the results of the recent dredging—ships of larger tonnage and draught are enabled to enter the dock, but a number of large blocks of concrete, which were laid down to secure moorings, interfere with the dredging, and require to be removed. As these blocks are of large dimensions (12 feet long by 12 feet broad by 6 feet thick, and 20 feet under water), the task of removal has hitherto proved laborious and expensive, but it is found that small charges of dynamite laid on the centre when fired reduce the mass to a heap of rubbish, which can be easily lifted by the dredger. The charge, 10 lbs., was enclosed in a canvas bag, and simply laid on the concrete by a diver, who secured it in its place with some strong clay, and it was fired by means of a gutta serena fuse, ending with a copper cap containing a charge of fulminate of mercury, without which this powerful agent cannot be exploded. A loud report announced the ignition of the dynamite, and a large body of water was upheaved. On descending, the diver found the large solid mass reduced to a heap of rubbish.

General di Cesnola has been actively engaged for some months past in excavations in the Island of Cyprus. In September he discovered the ancient site of Curium or Kuri and the Temple of Apollo Hylates. Several long Greek inscriptions bearing the name of that deity have already been unearthed, also some smaller inscriptions in the Cypriot language. The latter are for the most part upon statuettes of calcareous stone. The General has also found a beautiful Greek statuette of white marble over two feet in height, representing a naked youth, perfect from the knees upward; there is only the left foot wanting. Other statuette and a large quantity of beads in terra cotta and some terra cotta equestrian figures wearing armor were found.