

fringe are given in the table, and it will be seen that after five hundred and thirteen rounds the maximum increase of bore was 0.0400 inches and at 23 inches from the bottom. By deducting the play of the tube at this point we have only an actual maximum enlargement, due to the total five hundred and thirteen rounds, of 0.0295 inches. The results were especially satisfactory, as an official report of European experiments with a converted system (2-inch rifle) gave, in a case brought to the notice of the Board, a maximum enlargement after only one hundred and sixty odd rounds (with one hundred and fifty pound projectile and thirty pounds of powder) of 0.0600 inches. Impressions of the bore taken with gutta-percha show but little erosion from the gasses, and this and a slight general roughness and at the seat of the shot are the extent of the damage done to the surface of the bore in the entire experiments and tests. The table of comparison between the 8-inch converted and the English eight inch nine ton gun shows that we can calculate on a power from the former equal to that of the latter. The calculations are not carried beyond eighteen hundred yards, as to our more important harbor defences a greater range than this would not generally be required for their casemated guns, which would probably be used in case of attack as powerful auxiliaries to the larger calibres of 10-inch and 12-inch rifles. The calculated power against armor plates (unbacked) is at the muzzle a penetration of 8.66 inches; at six hundred yards, 7.87 inches; at one thousand yards, 7.42 inches, and eighteen hundred yards, 6.75. The Board believe that in some of our harbors, where the draught of water is comparatively light, guns of this power would have sufficient energy to afford by themselves an efficient armament. They here state that the nationalities of Europe embrace in their calibres for heavy ordnance as low as 7 inches. The record showed that an increase of power from two to threefold over the original smooth-bore 10-inch gun, at ranges varying from one thousand to three thousand yards, is gained by the conversion. The present armament for our seacoast includes for our casemated defences twelve hundred and ninety four 10-inch Rodman smooth-bore guns distributed in our harbors, as follows: At Port land, Me.; Boston and New Bedford, Mas.; Newport, R.I.; New Port, Fort Delaware, Hampton roads, Va.; Charleston and Savannah harbors, the forts of the Gulf and the harbor of San Francisco. "These guns," say the Board are worthless for purposes of defence against armor-plated vessels of modern construction, and the casemates provided for their emplacement (which have cost millions of money) are now useless, and demand for their utilization either a re-armament of new guns or that the old ones shall be converted into rifles of efficient power to render the casemate batteries powerful and efficient auxiliaries to our heavier calibres in harbor; all to provide effective harbor defences. Proof that effective and durable guns can be provided by conversion having been given by our recent experiments and conversion, affording an undoubted economy, it is recommended that the Department ask for liberal appropriations to make to initiate the work of providing converted rifles for already existing permanent casemated works now useless, as above stated, for the want of efficient armaments; yet for which appropriations are annually being made. The strong assurances afforded by

our experiments, that additional experimental guns of the heaviest calibre now fabricated by civilized nations, constructed on the principle of combining cast-iron with wrought iron or steel lining tubes, and after judicious and well matured plans, approved by the Department, will, when tested, give successful results and prove that an effective, durable and economical rifle armament can be secured, leads the Board to submit the additional recommendation that Congress be asked to appropriate an adequate sum for further experiments and tests, and especially for the manufacture, trial and tests of one 10 inch and one 12 inch experimental rifle, to be constructed in accordance with the general plan above suggested."

Compulsory Service.

The final remarks in Mr. Hardy's speech last week were as important as any he made, but they have not received any marked attention, and their force was altogether evaporated in the condensed accounts published in several newspapers. They were so candid and so pointed that we make no excuse for referring to them, and we shall have, in examining them, an opportunity for expressing opinions we have discreetly held in reserve, though occasionally hinting at them so that he who ran might read. Mr. Hardy's observations have almost the nature of a soliloquy. He fears we cannot hope to procure a better class of men for the Army. We must draw our recruits from the same sources as before. Conscription, if it overcome, "will come at a distant day. We have "only one compulsory force, the Militia, and we suspend the ballot for it every year "upon grounds which have hitherto commended themselves to the country." If Mr. Hardy had stopped here there would have been no special force in his remarks. But two observations followed, which helped us to understand what is passing in his mind. "I am bound to say, no continued, after making this reference to the Militia, "that I have been extremely struck lately at finding in many quarters, where I could hardly have expected such a feeling, a growing inclination to try in some shape the ballot for compulsory service." There was no ridicule of this inclination on his part. He was struck by the discovery as many others have been. But, of course, his duty was not to anticipate popular feeling. It is enough for him to understand what was going on. We now reach the second observation. "I do not deceive myself as to the difficulties of the position, but I wish to give a *fair trial* to the existing system, till I see myself obliged, if I should be obliged, to confess that the system is a failure. If I do make that discovery, I shall not hesitate to say that I have been wrong in giving it so long a trial, and I will ask this House to sanction such changes as will make the Army efficient for the purposes for which it is intended." These are highly important confessions. When a Minister of War takes the House of Commons into his confidence in this manner, we may be sure that he is more than half inclined to move in the suggested direction, and that direction is made sufficiently clear by the words we have italicised.

We have already noticed this growth of feeling. Reviewing Sir Henry Havelock's Army scheme in the first number of the *Broad Arrow* for this year, we stated that the Volunteer movement was "preparing us for universal service," that we are "much nearer it than we were twenty years ago,"

that we agreed with Sir Henry Havelock in regarding compulsory service for the Line as at present out of the question," and that, as regards compulsory service in the Militia, there had been a great advance of opinion since the last part of the Army Regulation Bill was quietly dropped in committee." What influences have been at work in creating this change of opinion? The abolition of purchase was, undoubtedly, a constitutional advance, but it merely registered a prevailing opinion. So long as first commissions were purchasable, promotion by selection, as well as pure seniority, was impossible. There could be no opening in the Army for military careers to the general public. Compulsory service would have been unjust under the old system. Lord Lyton, whose full blooded, high principled Conservatism no one doubted, in a work on France, published in 1836, and now almost forgotten, dwells on this point in comparing the French with the British Army. "The French Army," he says "is recruited, not by Volunteers of the working class, but by conscripts from every class; and the injustice would be terrible if you forced a man of fair prospects and education, to whom all professions were open, to engage in the Army, and then did not allow him any chance of advancing himself in the service into which you had forced him to enter." By abolishing purchase we made compulsion possible, not because we had compulsion in our minds, but because purchase was the one internal hindrance in the Army itself. Arguments were used in favour of selection that implied general service, and thus the public were rendered familiar with an idea which crept in under cover of a reform supposed to be complete in itself. But the full benefits of selection can only be obtained under conditions following universal service, and yet we are all ready to say that we did not make one radical change in immediate view of the other. Of course not, and yet one link in a chain draws the others after it, and it happens, in the long run, that we incline to accept conclusions we never intended, simply because they are logical outgrowths. Our course of thinking met with a break, and if we did not think of compulsion in the Line, we came to dwell upon it for the Militia.

This is precisely our present mood. We toy with compulsion, and yet we hesitate to adopt it. Our feelings are superior to our logic. It has always been so in military matters. The Volunteer movement might be called compulsion, deflected. The idea of a *quasi* compulsion was in it; and if we had been a military instead of a warlike nation, if we had had statesmen of a severer type in office, it is quite possible that we might have travelled to the goal which is still before us in a less circuitous manner. A very little coaxing would have directed the same patriotic impulses into a more military channel, and instead of organising a second army we should have reorganised the old one, either by devising new links between the Militia and the Line, or by reducing the standing Army in obedience to some principle of general service. Lord Cardwell called us a little way in the old direction, stopping short at the critical moment, and creating a feeling of, it may be, false security by increasing the Regular Army and encouraging the Colonies to do what we were, or seemed, hardly ready to undertake. To many observant mind, the localization scheme was a mere farce, except as a silent introduction to some more radical change, for which it was an education process. And this, in truth, it has really been, softening