

men. Road, or railway, or other works upon which they can be extended are more suitable for the unemployed; and it is strongly recommended that this class of labour be not again drafted wholesale to the defence works.

Military labour is superior to "unemployed," but necessitates the men being almost altogether taken away from their drill and other proper duties. As more and more guns are mounted, with their costly gear and equipments, it is obviously advisable that the men of the permanent forces, now considerably reduced, should have their attention confined to the work of keeping these all in order, practising, drill, &c.

Prison-labour is probably well adapted to the defence works in this country. A band of prisoners can be turned to most kinds of work, under good supervision, and also comprises, as a general rule, men of all the trades. The defence works in the harbours are, generally speaking, in such distant and inconvenient positions that labour upon them is more costly than in ordinary work. By utilising existing buildings as temporary prisons, it is probable considerable advantage will accrue. So far as prison-labour has been tried at present, the results are more satisfactory than were anticipated, and there is reason to believe they will continue to be so, and that the defence works at places where the convicts are housed can be carried on both expeditiously and economically by their labour. At other points embraced in the scheme of defence where convict-labour cannot be employed, it will be advisable to have direct or schedule-of-rates contract, and, at points where neither of the above systems is feasible, ordinary day-labour.

In the appended return, giving expenditure and liabilities, will be found also notes opposite the principal heads giving items of general information thereon. The general points referred to in Lieut.-Colonel Boddam's last report (1887, H.—12) under the paragraphs, "Submarine Defence," "Electric Light," "Brennan Torpedo," "Telegraphic Communication," "Whitehead Torpedo-boats," and "Protection of Cables," have all come under the consideration of General Schaw, and are either dealt with in his report or form the subject of separate memoranda. It appears, with regard to the year's work, only necessary, after General Schaw's report, to remark upon the following two points:—

1. *Electric Lighting of Magazines.*—Experiments in lighting magazines by electricity were exhaustively carried out. The method of installation, however, was adversely reported against by General Schaw and by the electrical experts of the Telegraph Department, and it has been decided to revert to the ordinary approved method of lighting by candle-lamps.

2. *Provision of Laboratories.*—It has become necessary, in order to carry on the filling of cartridges and shells, and other operations with ammunition, that there should be erected as adjuncts to the main storage-magazine at each port laboratories in which all heavy- and machine-gun ammunition which does not come out from England ready for action and for immediate disposition in the various battery-magazines can be made up for issue thereto as required. It is proposed to proceed with the construction of these as being urgently required.

The thanks of the country have been conveyed to General Schaw in His Excellency's Speech on the opening of Parliament. It would be more than difficult to express a due appreciation of the time, care, and invaluable advice which that distinguished officer has so freely given at all times to the practical working-out as well of the smaller details as of the main features of the designs recommended and proposals set forth in his report upon the defences.

The officers commanding permanent artillery at the four ports have acquired very rapidly the special knowledge required to deal safely and quickly with heavy ordnance. The arrival in the colony of the 8in. breech-loading guns, weighing over 13 tons, with their cumbrous carriages and other gear, has severely tested the resources of both the construction branch and the artillery, the appliances available being very inferior to those usually at the disposal of artillery when engaged in the transport and mounting of heavy guns. Notwithstanding this disadvantage, the two guns which have so far arrived have been hauled to their destination up very steep inclines, and one has been mounted, without any hitch or accident.

The progress made in submarine defences has been comparatively slow, owing partly to non-arrival of certain essential stores which are now under order, and partly to alterations in the original scheme. The delay, however, has been compensated for by the whole of the Torpedo Corps having been put through a complete course by Captain Falconer, the Inspector of Submarine Mining; and that officer, having also placed the dépôts and their appliances in as complete a condition as circumstances would allow, will be in a position, having now trained men at his disposal, to put the submarine defences rapidly in a forward condition.

The duty of inspecting and reporting upon the mounted guns, artillery stores, magazines and ammunition, and their several equipments, has been detailed to a special officer, Lieutenant Douglas, R.N.

Further information and valuable suggestions connected with the perfection of the equipment and fighting-powers of the guns mounted in the colony, and embodying the latest ideas derived from the results of trials in England, have been forwarded during the year by the Agent-General and General Steward, R.E.

There have been no new transactions in acquiring land for defence purposes. The expenditure under that head for the year has been in settlement of claims consequent upon previous purchases. To enable certain of General Schaw's recommendations to be carried out it will be necessary to acquire one or two additional sites; but the expenditure involved will in no case be serious.

The Inspectors of Works at the forts have paid much care and attention to their duties, and have intelligently carried out the works under their superintendence according to the plans and instructions they have received. Under the existing system of control their duties are both onerous and responsible, and I am pleased to bear testimony to the value of their practical knowledge, and to the intelligence displayed in its application to the works in hand.

Particulars of expenditure, &c., will be found in the return annexed.

The Under-Secretary for Defence.
31st March, 1888.

ARTHUR BELL,
Resident Engineer.