

XII.—*Hobart Town considered with regard to its Defence.* By AUG. FRED. SMITH, *Esq.*, *Lieut. 99th Regt.* [*Read 14th December, 1853.*]

THE defences of a town may be divided into two parts: the works forming the basis and passive part of the defence,—and the men and guns, which are the active part.

The men and guns are, I consider, our first care.

Were an Act passed for raising a Colonial Militia, any consideration of this part of the subject would be needless: but in the absence of a Legislative enactment an Artillery Company might in the meantime be formed, in the manner I am about to submit.

In the first instance, a body of gentlemen volunteers might be formed, who would assemble once or twice a week for exercise in artillery, under the guidance and instruction of an experienced and competent officer in the army, to be selected by themselves, subject to the approval of the officer in command of the garrison, or of the Governor of the Colony. They should then obtain leave to practise on one of the present Batteries, or, if possible, in one of their own construction, in some convenient place; making use of such guns as could be spared from the Ordnance Stores, or borrowed from merchant ships, chandlers, or the vessels in port, for the purpose of learning and perfecting themselves in the exercise. They should twice in the week hold meetings in the afternoon, when the main part of their other business has been concluded, and at each such meeting a lecture, or instructions in some form, should be delivered by the officer appointed. When these gentlemen volunteers

shall have perfected themselves in the science and practice of gunnery, so as to fit them for giving instructions to others, there might then be raised a general artillery corps of well-disposed citizens; the first body acting afterwards as instructors and officers in their turn, under the general superintendence and guidance of the officer before mentioned: and they should meet as often as their several avocations would allow.

The uniform worn ought to be of the plainest and most economical description, and found by the members themselves.

To further the general views, and cover incidental expenses, money should be raised by a general subscription of the inhabitants. The expenses would consist of ammunition for practice, side-arms, (*i.e.*, sponges and rammers, port-fire-sticks, handspikes, &c. &c.), and of the hire of a room for meeting in for the delivery of lectures, and other purposes.

The funds would be disbursed under the control of a Managing Committee, who would appoint a Secretary and Treasurer, and frame such laws and regulations as are requisite for the successful study and prosecution of military science and exercises, and for the government of a well-regulated Society.

Thus would be formed the nucleus of an effective Company of Artillery, which might be increased to any extent warranted by circumstances. If other force, as infantry, were required to be raised, the same method might be employed. Artillery is generally the chief difficulty, and is therefore dwelt upon in detail.

There are at present in the Ordnance Stores, in addition to the ten guns (32-pounders,) on the Battery, fourteen 32-pounders complete, making a total of twenty-four of these

powerful guns, which are considered the best for distant ranges against shipping, &c. This would give us three batteries of eight guns each, or four of six guns. In addition to these are two small mortars and two light six-pounders (field pieces); there are also other iron guns, most of which are condemned, but they might at any rate be used to instruct beginners in practice, and as models, should it be found requisite, to cast guns here.

The next questions are, what are the best situations as sites for defensive works, then what style of works should be constructed on those sites?

Beginning at the Harbour we find three good situations, viz.;—The place overlooking the present Battery, now occupied by the shipping signal-staff—that point in the Domain commonly called “Macquarie Point”^{*}—and Kangaroo Bluff: on the first two of these, batteries, and on the third a closed work, should be formed. (*Vide* Plate I.) By glancing at the plan it will be seen how works placed in these situations mutually support and defend each other.

Lower down the River we have Sandy Bay Point, a good situation for a fourth battery. I submit that a battery upon this point, having as a citadel of retreat a substantial closed work constructed on a convenient spur of Mount Nelson, so as to command the Brown’s River Road, would form the best disposition of works here.

Just below Kangaroo Bluff is a low sandy point, upon which a martello might be erected, or a similar work, to prevent the enemy landing in the bay below.

Thus far have we traced works down the River, and I presume that any erected further down would come more

^{*} Since this Paper was read, Batteries mounting heavy guns have been constructed on both these commanding sites.—ED.

appropriately to be discussed under the head of coast defences. We must now consider the reverse or rear of the Town.

This ought to be defended by detached works, which ought also to be closed works, unless indeed their rear should fall upon any building which could be used as a citadel of retreat, and thereby the means of a prolonged defence secured. Commencing at the end of Mount Nelson Range, near the termination of Davey-street, a strong work should be erected there to command the road which comes from the River Huon, and Procter's Road from Brown's River: this should be the first of a line of detached works (*vide* Plate I.), extending thence through the valley to Knocklofty, and along the top of the Knocklofty Range, and then down the ridge which leads from its northern extremity to the hill in the Government Domain. A few small works within a proper distance of each other should be disposed along the water's edge, so as to close the line up to the battery at Macquarie Point.

If any exterior defences were required in the direction of the Launceston Road, to check an attack from that direction, a line of works on the ridge of Mount Wellington, beyond New Town, would be necessary.

Thus far have I endeavoured, with the help of my plan, to show the ground to be occupied. I now come to make a few extracts from standard military authors, relating to the construction of such works as have been considered advisable to employ.

The Block-house is the style of field-work to be erected; and, after showing various modes of constructing it, I would ask why should not a block-house (with a little additional labour) be made a permanent work?

The Royal Military College Course (p. 225) thus defines block-houses. "A Block-house to resist musketry should be composed of trees squared, so that the parts in contact

may be at least 6 inches thick, that being the depth to which a musket-ball penetrates in fir. In order to resist artillery, two rows of similar trees are placed vertically in the ground, with an interval of from 3 to 6 feet wide, which is filled with earth well rammed.

“ The tiers or logs should be 11 or 12 feet long, so that they may be planted at least 3 feet in the ground, and allow the interior of the block-house to be 8 or 9 feet high; it should also be from 18 to 24 feet in the interior.

“ The earth used to render the covering shell-proof may be formed like a small parapet, and from this an additional fire of musketry may be obtained. I would here suggest that a small pivot gun, say a 3-pounder, might be used from this parapet, the pivot being stepped into the centre-prop of the block-house.” (*Vide* Plate III., fig. 1., the dotted lines.) The text goes on to say, “ The access to this upper parapet is through a trap door in the roof. To prevent the block-house from being set fire to, a ditch should be dug round it, leaving a basin of 8 or 10 feet; and on this the earth is piled up against the wood as high as the loopholes.

“ These works are sometimes constructed in the form of cross, when the flanking fire thus obtained renders them more powerful. Sometimes they have an upper story, the angles of which project over the lower story: the foot of the lower walls may thus be defended by the fire from above.”

Captain Macauley (page 149) says, “ A block-house may be constructed of less timber, by placing the upright timbers 6 or 8 feet apart against the interior slope, and covering them with a capsill.” (*Vide* Plate III., fig. k.)

Captain Straith (page 377) thus describes American block-houses:—“ The Americans build their block-houses like ordinary log habitations, of thick horizontal trunks of trees

roughly squared ; and several of these works disposed like bastions at the angles of an area, in such order as flank each other, and connected by a stockade, as a curtain loopholed for musketry, form no despicable strength." He speaks also of their being strengthened against Artillery by interior traverses of earth.

Block-houses are, I would submit, the closed works to be used,—as at Sandy Bay Point (or rather above it), one of the American build, in rear of the Town,—as at the top of Davey-street, &c. ; others of a simple kind, varying in strength, with the value of the position or its liability to attack.

The materials are at hand, and the inhabitants used to the construction of timbered edifices,—substantial reasons for their adoption.

But in case it should be thought advisable to erect at certain points Martello Towers, I append a description (and drawing, Plate IV., fig. *n.*) of one which may prove useful.

The R. M. College text-book says, they are " buildings of masonry, generally circular, (Plate IV., figs. *n o p*), from 20 to 140 feet diameter and from 30 to 50 feet high : sometimes they stand alone, and at others they are surrounded with a ditch and simple glacis. They generally consist of two stories, of which the upper one is shell proof, and is pierced with embrasures and loopholes ; the lower one is used as a store. The roof is surrounded by a parapet, and a gun on a traversing platform is placed thereon for the purpose of firing in every direction."

The batteries near the sea-shore, as at Macquarie Point, Battery Point, &c., may be constructed somewhat similar to the work in Plate II., fig. *a.* ; their faces are traced, of course, at right angles to the intended line of fire ; or should this be impracticable, then the embrasures must be traced

obliquely. Their parapets must be 18 feet thick at least, 15 feet being the penetration of a 24-pounder ball into earth.

In conclusion, I would remark that my suggestions would be,—at Sandy Bay a simple Battery of two faces, one up and another down the river,—on the side and near the top of Mount Nelson, an American block-house,—and in rear of the town smaller block-houses of simpler construction, joined where necessary by curtains of abattis, troupes de loup, entanglement, or fortified hedges or walls,—at Battery and Macquarie Points, (Plate II.) simple but well-defined batteries,—at Kangaroo Bluff another American block-house armed with artillery,—and at the little Point below a smaller block-house, armed with a swivel on the roof, to command the Bay, &c., beyond it.

I have, on the plates, copied diagrams from the best authorities; the survey of the neighbourhood (Plate I.,) and a few of the diagrams, are my own.

To fortify the place by detached works of a permanent nature might be too expensive to be at once carried out; still, the spots I have indicated might at any rate be *reserved* for purposes of defence, and the works I have described might be traced and picketed off, to be constructed when necessary, if only as a line of field works. Many of my readers are probably far more conversant with the matter in hand than I am;—let such, I would say, remember that a humble though earnest follower of the arts of which they are masters has offered his ideas for them to enlarge and improve upon, and that in doing so a hope of being instrumental in good alone has actuated him.

* NOTE: plates not available in bound volume

APPENDIX.

EXPLANATION OF THE PLATES.

PLATE I.—Represents the Town and its neighbourhood, surrounded by works varying according to circumstances.

The red figures denote the different works.

 An American block-house.

† One in form of a cross or smaller.

Λ  Batteries or other continuous lines of parapet.

○ Martello towers or block-house in lieu thereof.

⌈⌋ Lines of fortified hedge loop-holed walls, &c. &c.

Plate II., fig. *a*, of which fig. *b* is a section, is a battery of one face with returns. The parapet of the battery is 18 feet, to resist a 24-pounder; but that of the return is only 12 feet. Fig. *c* is the elevation of a loop-holed wall. Fig. *d* are sections of different cases. Fig. *e* a tarnhouse over a window. Fig. *f* shows five cases of fortifying hedges.

Plate III., fig. *g*, is the plan of a cruciform musketry block-house. Fig. *h* is its section and elevation. Fig. *i* is the section of a block-house to resist artillery, having its bomb-proof formed into a parapet. The dotted lines show how a swivel gun may here be used. Fig. *k* is Capt. Macauley's economical block-house, and fig. *l* the plan, and fig. *m* the elevation of an American block-house.

Plate IV., figs. *n o p*, are respectively the section, plan, and elevation of a Martello Tower. Fig. *q* is a two-storied dwelling, house fortified, and fig. *r* a single story cottage, with verandah in like condition.

TO FORTIFY A HOUSE.

Barricade doors and windows, loophole barricades, walls and partitions, and the upper floors, so as to be able to fire down through them; cut away the staircases, keeping up the communication by ladders. Place vessels of water in each room to extinguish fires. Remove thatched or wooden roofs adjoining the house. Sink ditches opposite the doors and windows, and place obstacles in front of them, give a flanking defence where it is required over a window, (Plate II., fig. *e*), or at an angle of the house. Lastly, if there is time, loop-hole the garden walls, and remove any thing that may afford cover for the enemy within musket range.

(Manuscript note to R. M. College Course.)

XIII.—*On the Science of Astronomy amongst the Ancient Jews.*

By Mr. PHINEAS MOSS.

TRUSTING that the subject may not be thought entirely out of place in the Transactions of the Royal Society of Tasmania, or altogether uninteresting to its members, I have ventured to throw together a few brief notices of the Science of Astronomy as known amongst the ancient Jews, taking encouragement from the circumstance, that as a lineal descendant of that people I may possess readier access to their records than a stranger could have. At the same time I experience some diffidence, from the feeling that the time and attention of the Society might be claimed for matters of higher importance and of greater practical utility.

The earliest notice we meet with of the stars and of the