QUALIFICATIONS OF THE COMBATANT OFFICERS OF THE ACTIVE MILITIA.—*Continued.*

MILITARY DISTRICT No. 8.

Officers.	8th Regiment Cavalry. (*Apohaqui.*) 7 Troops.				Newcastle Field Battery.				Woodstock Field Battery.				N. B. Brigade Garrison Artillery. (*St. John.*) 9 Batteries.			
	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.
Lieut. Colonel	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....
Major	2	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	2	2	.....	.....
Adjutant	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....
Captain	5	.....	3	2	1	1	.....	.....	1	1	.....	.....	9	1	4	4
Lieutenant	6	.....	6	.....	2	.....	.....	2	.....	.....	.....	.....	8	2	2	4
2nd Lieutenant	6	1	1	4	1	.....	.....	1	1	.....	.....	1	8	.....	1	7
Total	21	3	10	8	4	1	.....	3	2	1	.....	1	29	7	7	15

—	73rd Battalion. (*Chatham.*) 5 Companies.				74th Battalion. (*Sussex.*) 6 Companies.				Deer Island Infantry Company.				St. Stephen Infantry Company.			
	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.
Lieut. Colonel	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Major	1	1	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Adjutant	1	1	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Captain	5	1	4	.....	6	.....	5	1	1	.....	1	.....	1	.....	1	.....
Lieutenant	4	.....	2	2	5	.....	4	1	1	.....	1	.....	1	.....	1	.....
2nd Lieutenant	5	1	.....	4	2	.....	.....	2	1	.....	.....	1	1	.....	1	.....
Total	16	4	6	6	16	3	9	4	3	.....	2	1	3	.....	3	.....

Officers.	N.B. Engineers Company. (*St. John.*)				62nd Battalion. (*St. John.*) 6 Companies.				67th Battalion. (*Woodstock.*) 10 Companies.				71st Battalion. (*Fredericton.*) 5 Companies.			
	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.
.....	.....	.....	.....	.....	1	1	.....	.....	1	1	.....	.....	1	1	.....	.....
.....	.....	.....	.....	.....	1	1	.....	.....	2	2	.....	.....	1	1	.....	.....
.....	.....	.....	.....	.....	1	1	.....	.....	1	1	.....	.....	1	1	.....	.....
1	.....	1	.....		6	1	5	.....	9	1	8	.....	5	3	2	.....
1	.....	1	.....		4	.....	4	.....	10	.....	9	1	4	1	3	.....
1	.....	1	.....		2	1	1	.....	9	.....	6	3	5	.....	3	2
3	.....	3	.....		15	5	10	.....	32	5	23	4	17	7	8	2

—	Dalhousie Infantry Company.				St. George Infantry Company.				Total.							
	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.				
.....	.....	.....	.....	.....	.....	.....	.....	.....	6	6	.....	.....				
.....	.....	.....	.....	.....	.....	.....	.....	.....	10	8	.....	2				
.....	.....	.....	.....	.....	.....	.....	.....	.....	7	7	.....	.....				
1	.....	.....	1		1	1	.....	.....	52	10	34	8				
1	.....	.....	1		1	.....	.....	1	48	3	33	12				
1	.....	.....	1		1	.....	.....	1	44	3	14	27				
3	.....	.....	3		3	1	.....	2	167	37	81	49				

QUALIFICATIONS OF THE COMBATANT OFFICERS OF THE ACTIVE MILITIA.—*Continued.*

MILITARY DISTRICT No. 9.

Officers.	King's Troop of Cavalry. (*Kentville.*)				Halifax Field Battery.				1st Halifax Brig. Garrison Artillery. 6 Batteries.				2nd Halifax Brig. Garrison Artillery. 6 Batteries.				Lunenburg Garrison Battery.			
	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.
Lieut.-Colonel	.....	.....	.....	.....	...	.....	.....	...	1	1	.....	...	1	1	.....	.....	..	.....	.....	...
Major	.....	.....	.....	.....	...	.....	.....	...	1	1	.....	...	1	1	.....	.....	...	.....	.....	...
Adjutant	.....	.....	.....	.....	...	.....	.....	...	1	1	.....	...	1	1	.....	.....	...	.....	.....	...
Captain	1	.....	1	.....	1	1	.....	...	6	2	4	...	6	2	4	.....	1	.....	.....	1
Lieutenant	1	.....	1	.....	2	1	1	...	6	....	5	1	5	1	3	1	1	.....	.....	1
2nd Lieutenant	1	.....	.....	1	1	.....	1	...	1	.....	.....	1	5	.....	1	4	...	.....	.....	...
Total	3	.....	2	1	4	2	2	...	16	5	9	2	19	6	8	5	2	.....	.....	2

—	63rd Battalion. (*Halifax.*)				66th Battalion. (*Halifax.*)				68th Battalion. (*Kentville*)				69th Battalion. (*Paradise.*)				72nd Battalion. (*Wilmot.*)			
	6 Companies.				8 Companies.				9 Companies.				9 Companies.				6 Companies.			
Lieut. Colonel	1	1	.....	.....	1	1	.....	...	1	1	.....	...	1	1	.....	.....	1	1	.....	...
Major	2	2	.....	.....	2	2	.....	...	2	2	.....	...	1	1	.....	.....	1	1	.....	...
Adjutant	1	1	.....	.....	1	1	.....	...	1	1	.....	...	1	1	.....	.....	1	1	.....	...
Captain	5	1	4	.....	8	2	6	...	9	4	5	...	9	8	1	.....	6	1	5	...
Lieutenant	5	.....	5	.....	8	2	6	...	8	2	6	...	9	4	4	1	6	.....	6	...
2nd Lieutenant	5	.....	4	1	4	...	3	1	8	.....	4	4	7	2	2	3	2	.....	2	...
Total	19	5	13	1	24	8	15	1	29	10	15	4	28	17	7	4	17	4	13	...

Number borne.	Mahone Bay Garrison Battery. Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Digby Garrison Battery. Qua ified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Pictou Garrison Battery. Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Liverpool Garrison Battery. Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Yarmouth Garrison Battery. Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	.....	1	1	.....	1	.....	1	.....	1	...	1	.....	.....	1	1	1	.....	.....
1	.....	.....	1	1	.....	.....	1	1	.....	1	.....	1	.....	.....	1	1	.....	1	.....
1	.....	.....	1	1	.....	1	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	3	3	.....	2	1	3	.....	2	1	2	.....	.....	2	2	1	1	.....

Number borne.	75th Battalion. Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	78th Battalion. Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Cumberland Provisional Battalion. Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Victoria Provisional Battalion. Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.	Number borne.	Total. Qualified: 1st Class.	Qualified: 2nd Class.	Without Certificate.
6 Companies.				7 Companies.				5 Companies.				5 Companies.							
.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8	8	.....	.....
1	.....	.....	1	1	1	.....	.....	1	1	.....	.....	1	1	.....	.....	14	13	.....	1
.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	1	1	.....	.....	9	9	.....	.....
6	.....	3	3	7	1	5	1	5	2	3	.....	5	1	4	.....	80	26	47	7
5	.....	2	3	7	1	4	2	4	.....	2	2	5	.....	3	2	77	11	50	16
6	.....	1	5	7	.....	3	4	4	.....	.....	4	4	.....	.....	4	58	2	22	34
18	.....	6	12	23	4	12	7	15	4	5	6	16	3	7	6	246	69	119	58

QUALIFICATIONS OF THE COMBATANT

MILITARY DIS

OFFICERS.	Winnipeg Troop.				Winnipeg Field Battery.				Kildonan Infantry Company.			
	Number borne.	Qualified. 1st Class.	Qualified. 2nd Class.	Without Certificate.	Number borne.	Qualified. 1st Class.	Qualified. 2nd Class.	Without Certificate.	Number borne.	Qualified. 1st Class.	Qualified. 2nd Class.	Without Certificate.
Lieut. Colonel												
Major												
Adjutant												
Captain	1	1			1	1			1		1	
Lieutenant					1			1	1		1	
2nd Lieutenant					1			1	1			1
Total	1	1			3	1		2	3		2	1

MILITARY DIS

—	Seymour Garrison Battery.				Victoria Garrison Battery.				No. 1 Co. Rifles, Victoria.			
Lieut. Colonel												
Major												
Adjutant												
Captain					1			1	1	1		
Lieutenant	1	1			1	1			1	1		
2nd Lieutenant	1			1	1			1				
Total	2	1		1	3	1		2	2	2		

OFFICERS OF THE ACTIVE MILITIA.—*Continued.*

TRICT No. 10.

	Emerson Infantry Company.				Winnipeg Infantry Company.				—				Total.			
	Number borne.	Qualified. 1st Class.	Qualified. 2nd Class.	Without Certificate.	Number borne.	Qualified. 1st Class.	Qualified. 2nd Class.	Without Certificate.	Number borne.	Qualified. 1st Class.	Qualified. 2nd Class.	Without Certificate.	Number borne.	Qualified. 1st Class.	Qualified. 2nd Class.	Without Certificate.
	1		1		1	1							5	3	2	
	1			1	1			1					4		1	3
	1	1			1			1					4	1		3
	3	1	1	1	3	1		2					13	4	3	6

TRICT No. 11.

	No. 2 Co. Rifles, Victoria.				No. 1 Co. Rifles, Nanaimo.				New Westminster Rifle Company.				Total.			
	1		1						1			1	4	1	1	2
	1			1					1	1			5	4		1
					1			1	1			1	4			4
	2		1	1	1			1	3	1		2	13	5	1	7

QUALIFICATIONS OF THE COMBATANT

MILITARY DIS

OFFICERS.	No. 1 Charlottetown Garrison Battery.				No. 2 Charlottetown Garrison Battery.				Georgetown Garrison Battery.				Summerside Garrison Battery.			
	Number borne.	Qualified		Without Certificate.	Number borne.	Qualified		Without Certificate.	Number borne.	Qualified		Without Certificate.	Number borne.	Qualified		Without Certificate.
		1st Class.	2nd Class.			1st Class.	2nd Class.			1st Class.	2nd Class.			1st Class.	2nd Class.	
Lieutenant Colonel	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Major	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Adjutant	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Captain	1	1	.....	.....	1	1	.....	.....	1	.....	1	.....	1	1	.....	.....
Lieutenant	1	.....	1	.....	.....	.....	.....	.....	1	.....	.....	1	1	.....	.....	1
2nd Lieutenant	1	.....	.....	1	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	3	1	1	1	2	1	1	.....	2	.....	1	1	2	1	.....	1

SCHOOLS OF GUNNERY AND PERMANENT ARTILLERY.

OFFICERS.	"A" Battery. (*Kingston.*)				"B" Battery. (*Quebec.*)				Total.			
Captain	1	1	.....	.....	1	1	.....	.....	2	2	.....	.....
Lieutenant	4	4	.....	.....	4	4	.....	.....	8	8	.....	.....
Total	5	5	.....	.....	5	5	.....	.....	10	10	.....	.....

OFFICERS OF THE ACTIVE MILITIA.—*Continued.*

TRICT No. 12.

Charlottetown Engineer Co.				82nd Battalion. (*Charlottetown.*) 6 Companies.				King's Co. Provis'l Battalion. (*Georgetown.*) 2 Companies.				Prince Co. Provis'l Battalion. (*Alberton.*) 3 Companies.				Total.			
Number borne.	Qualified		Without Certificate.	Number borne.	Qualified		Without Certificate.	Number borne.	Qualified		Without Certificate.	Number borne.	Qualified		Without Certificate.	Number borne.	Qualified		Without Certificate.
	1st Class.	2nd Class.			1st Class.	2nd Class.			1st Class.	2nd Class.			1st Class.	2nd Class.			1st Class.	2nd Class.	
.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	1	1	.....	.....	2	2	.....	.....
.....	.....	.....	.....	1	1	.....	.....	1	.....	.....	1	1	1	.....	.....	3	2	.....	1
1	1	.....	.....	6	2	2	2	2	.....	.....	2	3	.....	1	2	16	6	4	6
1	.....	.....	1	6	.....	1	5	2	.....	.....	2	3	.....	.....	3	15	.....	2	13
1	.....	.....	1	2	.....	.....	2	2	.....	.....	2	.....	.....	.....	.....	7	.....	1	6
3	1	.....	2	16	4	3	9	8	1	.....	7	8	2	1	5	44	11	7	26

QUALIFICATIONS OF THE COMBATANT

ABST

Officers.	Number borne.	Qualified. 1st Class.	Qualified. 2nd Class.	Without Certificate.	Number borne.	Qualified. 1st Class.	Qualified. 2nd Class.	Without Certificate.	Number borne.	Qualified 1st Class.	Qualified 2nd Class.	Without Certificate
	Schools of Gunnery and Permanent Artillery.				Military District No. 1.				Military District No. 2.			
									Ontario.			
Lieutenant Colonel	.....	.....	.....	.....	12	12	.....	.....	15	14	.....	1
Major	.....	.....	.....	.....	20	20	.....	.....	21	18	.....	3
Adjutant	.....	.....	.....	.....	9	9	.....	.....	14	14	.....	.....
Captain	2	2	.....	.....	87	23	45	19	130	41	77	12
Lieutenant	8	8	.....	.....	82	7	32	43	98	9	46	43
2nd Lieutenant	.....	.....	.....	.....	54	2	9	43	70	4	9	57
Total	10	10	.....	.....	264	73	86	105	348	100	132	116
	Military Districts Nos. 1, 2, 3, 4.				Military Districts Nos. 5, 6, 7.				Military District No. 8.			
	Ontario.				Quebec.				New Brunswick.			
Lieutenant Colonel	43	42	.....	1	26	25	.....	1	6	6	.....	.....
Major	73	68	.....	5	54	52	.....	2	10	8	.....	2
Adjutant	40	40	.....	.....	27	26	.....	.....	7	7	.....	.....
Captain	338	106	184	48	229	90	111	28	52	10	34	8
Lieutenant	293	35	125	133	215	28	110	50	48	3	33	12
2nd Lieutenant	200	10	38	152	150	11	38	101	44	3	14	27
Total	987	301	347	339	701	232	260	209	167	37	81	49

ADJUTANT GENERAL'S OFFICE,
OTTAWA, 26th Decemb

OFFICERS OF THE ACTIVE MILITIA.—*Continued.*

RACT.

Number borne.	Qualified 1st Class.	Qualified 2nd Class.	Without Certificate.	Number borne.	Qualified 1st Class.	Qualified 2nd Class.	Without Certificate.	Number borne.	Qualified 1st Class.	Qualified 2nd Class.	Without Certificate.	Number borne.	Qualified 1st Class.	Qualified 2nd Class.	Without Certificate.	Number borne.	Qualified. 1st Class.	Qualified. 2nd Class.	Without Certificate
Military District No. 3.				Military District No. 4.				Military District No. 5.				Military District No. 6.				Military District No. 7.			
								Quebec.											
10	10	.....	.....	6	6	.....	.....	15	14	.....	1	4	4	.....	.....	7	7	.....	.....
20	19	....	1	12	11	.....	1	26	25	.....	1	10	10	.....	.....	18	17	.....	1
11	11	.....	.....	6	6	.....	.....	12	12	.....	.....	3	3	.....	.....	12	11	1	.....
75	29	37	9	46	13	25	8	111	44	51	16	38	9	21	8	80	37	39	4
66	14	27	25	47	5	20	22	110	17	52	41	35	3	11	21	70	8	47	15
43	3	16	24	33	1	4	28	93	7	21	65	28	.....	2	26	29	4	15	10
225	86	80	59	150	42	49	59	367	119	124	124	118	29	34	55	216	84	102	30
Military District No. 9.				Military District No. 10.				Military District No. 11.				Military District No. 12.				Total, Active Militia.			
Nova Scotia.				Manitoba.				British Columbia.				P. E. Island.							
8	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	..	.....	.....	84	82	.....	2
14	13	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	2	2	.....	.....	153	143	.....	10
9	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	2	.....	1	86	84	1	1
80	26	47	7	5	3	2	.....	4	1	1	2	16	6	4	6	726	244	383	99
77	11	50	16	4	.....	1	3	5	4	.....	1	15	.....	2	13	665	89	321	255
58	2	22	34	4	1	.....	3	4	.....	.....	4	7	.....	1	6	467	27	113	327
246	69	119	58	13	4	3	6	13	5	1	7	44	11	7	26	2,181	669	818	694

W. POWELL, Colonel,
Adjutant General

APPENDIX No. 10.

REPORT ON BRITISH COLUMBIA COAST DEFENCES.

KINGSTON, ONT.,
15th November, 1878.

REPORT on the site, construction and armament of the Coast Batteries, erected for the defence of the Harbours of Victoria and Esquimalt, Vancouver Island, British Columbia—during the months of June, July and August 1878, by Lieut.-Colonel D. T. Irwin, Captain, Royal Artillery, and Inspector of Artillery.

General Instructions.

The following extract from the general instructions received by me on the day of my departure from Kingston, 13th May, 1878, affords sufficient information as to the general nature of the work proposed to be undertaken, together with the limitations imposed as to its extent, viz:—

"The Dominion Government have given orders for the erection of a battery on McAulay's Point, Victoria, Vancouver Island, for the protection of the entrance to Victoria and Esquimalt harbours respectively.

"Her Majesty's Government has sent orders to supply such guns as may be required from the Dockyard reserves at Esquimalt.

"I enclose a plan prepared by Lieut.-Colonel Blair, R. A. You will observe he proposes a small battery on Victoria Point, and another on Fisgard Island for the better security of both harbours, in addition to that now proposed on McAulay's Point.

"The latter is considered of the chief importance, the other two only subsidiary.

"It is presumed the Royal Naval Authorities will take steps to arm Fisgard Island.

"You will use your discretion as to whether McAulay's Point alone or in conjunction with Victoria Point should be armed.

"In this you will be guided by regard to economy combined with efficiency, and the means of manning two Batteries.

"A volunteer Battery of artillerymen has been ordered to be raised and equipped at Victoria. You will satisfy yourself that means are at hand for instructing the officers and men and rendering them efficient, and you will assist in doing so if necessary."

(Signed) E. SELBY SMYTH,
Lieut.-General.

On my arrival at Victoria on the 27th May, I reported to Lieut.-Colonel Houghton, the Deputy Adjutant-General of the District, and with him on the same day attended the first muster of the Garrison Battery, under Captain Dupont, the Inspector of Inland Revenue, and arranged for a systematic course of evening drills and lectures, to be held three times a week, under my instruction and supervision.

Choice of sites for Batteries.

Having placed myself in communication with Captain F. Robinson, H. M. S. "Opal," the then senior Naval Officer on the Station, I made with him, and Lieut.-Colonel Houghton, a careful examination of the coast, with a view to determine upon the best sites for defensive works.

In this important duty I was afterwards assisted by a Board of Officers, detailed for this duty by Rear Admiral de Horsey, Commander-in-chief on the Pacific, and composed of Captain Bedford, H. M. S. "Shah," Captain Burrowes, R. M. A., and Gunnery Lieut. Lindsay, H. M. S. "Shah."

The results of this careful examination have already been fully detailed in my previous reports on this subject, 6th June, 16th June and 3rd July, 1878.

It may be sufficient here to state, that the plans proposed by Lieut.-Colonel Blair were not found to be practicable, and it was found necessary, in order to defend, with the fire of at least one gun, all the approaches to both harbours, to place ten pieces of ordnance in position at the sites shewn in accompanying general plan, (Plan V.) and arranged as follows:—

Finlayson Point,	2	64-pr.	R. M. L.
Victoria "	2	64-pr.	"
Macaulay "	3	7-in 6½ ton	"
Brothers Island	1	8-in 9	" "
and	2	64-pr.	R. M. L.

It may here be observed that the Victoria Point, mentioned in the general instructions previously quoted, has no existence except as a designation, chosen by Lieut.-Colonel Blair, for a point close to Point Ogden, and the Victoria Point as shewn in accompanying plans is a point nearly midway between Finlayson Point and Holland Point, and so designated by me, in default of any local nomenclature.

Construction of Batteries.

The accompanying plans I to IV shew on a sufficiently large scale the construction of the several batteries, the following details with reference to which may however be found useful.

The general nature of the works is that of sunken barbette batteries. The position of the sites being in all cases elevated, and close to the steep slopes leading to the sea beach, it was not found necessary to excavate a ditch in front, the earth for the traverses being more conveniently obtained in rear of the parapet, better cover in less time, and with more solid construction, being obtained by this arrangement.

The guns are all mounted *en barbette*, it being necessary to command as extended an area of water front as possible.

Traverses.

The guns are separated in every case by shell-proof traverses, and in one instance, at Victoria Point, this traverse has been constructed to contain the expense magazine.

This mode of construction was not found practicable in the other batteries, owing to want of space.

Revetments.

The slopes where excavated are not revetted, with the exception of the portion in front of each gun platform, revetted with planking nailed on cedar uprights.

The slopes of the traverses above the plane of site are revetted with sods placed in double layers, and the upper surfaces are sodded over.

It is not considered probable, owing to the uniform mildness of the climate and the absence of severe frosts, that the excavated slopes will fall in, but it will be necessary from time to time to renew portions of the sod revetment, and remove any *débris* that may have collected.

Platforms.

The gun platforms are constructed in a uniform manner, as shewn in the several plans; the substructure is composed of 10" x 10" cedar sleepers 2'-6" apart, carefully levelled and earth well rammed between them—10" x 10" cedar struts being placed at intervals to distribute the strain.

These cedar sleepers are planked over with pine 3" x 12', the planks being spiked down with 10" spikes.

Racers.

The racers are of wrought iron 4" x ¼",made by bending a flat bar of the required radius.—The short racers are in a single piece, and the long racers in two pieces. They are secured to the platforms by 4" screws at an interval of one foot along the outer and inner edges.

In the case of the 8-in. gun, it was found possible to obtain a short gun-metal racer of the required radius from the Naval stores.

Pivots.

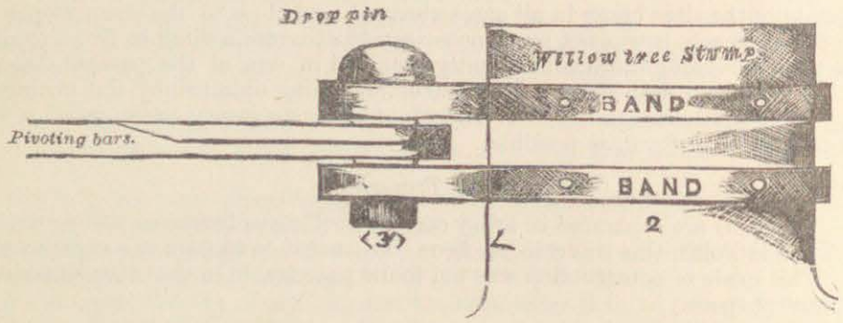
The pivots in use are all obtained from the Naval stores, and are of the kind known as deck pivots, they are of gun-metal, with solid head, and flat square shoulder recessed into the platform, and secured by large gun-metal screws.

The pivot passes through the planking and the front sleeper, being further secured by a nut screwing on to the lower end of the bolt.

These pivots are arranged to suit the drop pivoting plates in front of the traversing platforms, and with the exception of the 8-in. gun racers are curved with this point as centre.

This arrangement was found necessary, as without very considerable expense in the construction of masonry holdfasts, it would not be possible to make use of the ordinary pivoting bars in use on board ship, where the pivot is placed in the port.

In the case of the 8-in. gun, however, use was made of a large sized willow tree, as a holdfast for the front pivot, two wrought iron bands, 2' diam,, being placed round the stump, and a 3" wrought iron pin adjusted to fit between eyes in the bands, and the eyes in the pivoting bars.



In addition to the above, the ordinary deck pivot was inserted as an additional precaution, and oak knees placed so as to strengthen the stump against a lateral strain.

The above pivoting arrangements were all tested by firing service charges with shell from the guns, and were found to be in all respects satisfactory.

Magazines.

In each battery a small expense magazine is constructed. These magazines are all constructed of cedar in a uniform manner,with internal dimensions of 12' x 6' x 6'. Those at Finlayson Point and Brothers Island are placed in sheltered situations, and are consequently not shell proof, but at Victoria Point and Macaulay Point Battery, they are covered with earth and cedar logs, the roof of the magazines having in every case a slope of about 1' in 6' and being covered with splinter-proof timbers and sheeting planks. The frame work of the magazines is composed of 6" x 6" cedar, and they are sheeted with 1½" cedar planking.

They are calculated to hold about 63 metal lined cases, each.

Artillery Storerooms.

A wooden building of somewhat similar dimensions and construction is provided in each battery for the storage of side arms, sights, &c., and the various small stores required for the service of these guns.

As it is not anticipated that gunpowder will be stored, otherwise than in filled cartridges in metal lined cases, and then only when required for immediate use, and that shells will only be kept in the batteries under similar circumstances, shell and shifting rooms have not been constructed.

If, however, it is contemplated that these batteries should be permanently maintained, it would be advisable to construct magazines, artillery storerooms and shell and shifting rooms of stone or brick, and to replace the plank revetments in front of the guns, and elsewhere, with the same material.

The great expense, however, attendant on the employment of all skilled labor in the Colony, and the obvious necessity of having guns placed in position with as little delay as possible, effectually prevented any work of a very permanent character being undertaken by me at the time.

ARMAMENT.

The following is a detailed description of the present armament of the several batteries.

Finlayson Point.

(Plan I.)

Ordnance.

Two 64 pr (8 in) c. SS. 71 cwt. R.M.L.

Carriages.

Two O.P. Naval wooden sliding.

Slides.

O.P. Naval wooden traversing.
One 14" long, radius rear racer, 11' 4"
" front " 2' 6"
Weight of platform 19¾ cwt.
One 11' 6" long, radius rear racer, 10' 4"
" front " 3' 10"
Weight of platform 18 cwt.

NOTE.—This latter platform has no trucks, but traverses on metal friction plates.

Victoria Point.

(Plan II.)

Ordnance.

Two 64-pounder (8 in c.) 71 cwt. SS. R.M.L.

Carriages.

One wooden naval sliding.
One O.P. wooden naval sliding.

Slides.

One O.P. naval wooden traversing.
Length 10½' radius rear racer, 9' 10"
" front " 4' 1"
Weight 16 cwt.

NOTE.—The 64-pounder on standing carriage, with stores, has been left at the drill shed for the use of the volunteers.

Macaulay Point.

(Plan III.)

Ordnance.

Three 7 in. 6½ ton. S.S. R.M.L.

Carriages.

Three wrought iron naval sliding, 31¼ cwt.

Slides.

Three wrought iron naval, traversing with E. O. C. compressor and Winch gear. Weight, 42 cwt.

Brothers Island.

(Plan IV)

Ordnance.

One 8-in., 9 ton, S.S., R.M.L.
Two 64-pounder, 64 cwt., S.S., R.M.L.

Carriages.

One 8-in. wrought iron naval sliding. Weight 42¾ cwt, with E.O.C. compressor and winch gear.
Two wooden naval standing.

Slides.

One wrought iron naval traversing fitted with E. O. C. compressor and winch gear. Weight 60 cwt.

Stores.

The stores for the above armament are all complete according to the naval equipment, and are with the guns in the various storerooms.

Protection of Batteries.

Closed weather-proof wooden sheds, triangular in section, have been placed over the three 7-in. guns, and the 8-in. gun, carriages and platforms; the batteries have been fenced in with ordinary post and rail fences, to keep off cattle, and the various magazines and storerooms are provided with strong doors and locks, but owing to the isolated situation of the batteries and the expense necessarily attendant on building caretakers' quarters in their vicinity, it was not considered advisable to take any further precaution against damage, which it is not considered probable is likely occur.

A caretaker has been appointed, whose duties are to visit the batteries regularly, but as it was not found possible to obtain the services of any artilleryman or other properly qualified individual at Victoria, I would strongly recommend that this appointment be given to a properly qualified non-commissioned officer from the Royal Artillery, or School of Gunnery, as the guns and stores are of very considerable value, and may become considerably deteriorated and even unserviceable if suffered to get rusty or out of order. For the preservation of the wooden platforms, it is also necessary that the gun platforms should be traversed at least once a month, and the guns on standing carriages run up and back at the same intervals. For this purpose a working party of six men will be required, and should be employed under the direction of a competent non-commissioned officer.

General Remarks.

The actual work of excavating the batteries began on the 10th June and was continued with only one day's (1st July) intermission until the 30th August.

The working party was entirely composed of civilian labourers under the immediate control of a foreman; their number averaged from 12 to 28 men, the men being paid by the day.

As I was entirely without assistance, and the work required continual personal supervision, it was only found possible to employ one party of men, each battery being completed before another was commenced.

The working hours were from 7 a.m. until 6 p m, with one hour for dinner.

The guns, stores &c., were all taken from the Naval stores at Esquimalt—a heavy transporting axle mounted on wheels, in conjunction with an ordinary lumber wagon, being used for this purpose, and horses and drivers hired for the occasion.

The guns were mounted on their carriages and platforms by the labourers employed on the works. I was anxious to obtain the services of the Garrison Battery for this purpose, but from reasons entirely beyond my control, I was unable to get more than a very few volunteers for this duty, and then only in the evenings.

The work of transporting the guns, stores, &c. from the Naval storeyard to Brothers Island being of exceptional difficulty, if obliged to be effected with the ordinary means at my disposal, I applied to the Naval Cmmander-in-ch ef for assistance, and Rear Admiral de Horsey was pleased to undertake the entire execution of this work, which was successfully effected by a Naval detachment under the direction of Captain F. Robinson, H. M. S. "Opal." The detachment received the ordinary rates of working pay, from the Dominion Government.

With reference to the subject of manning the guns in these batteries, it will be observed that for this purpose the only means at present provided are the members of the Garrison Battery enrolled about the time of my arrival, numbering about fifty of all ranks.

Of this number about thirty attended the voluntary evening drills and lectures, held on the average twice a week during my stay in Victoria, about twenty men are fairly proficient in gun drill and artillery exercises, and a class of about ten of the officers and probable non-commissioned officers, who were able to attend occasionally at special afternoon drills, are capable of instructing at standing gun drill and elementary exercises.

The battery is fortunate in being commanded by an officer of great energy and zeal, and also in possessing the services as instructor of Lieut. D. G. McNaughten, who obtained a 1st class short course certificate from this shool of gunnery in January 1876, he being then a sergeant in the New Brunswick Garrison Artillery.

Owing to the isolated position of Victoria, the very limited number of its population, and the high rate of wages paid for labour, special and almost insuperable difficulties are placed in the way of the establishment of any thing like an efficient volunteer artillery force sufficiently numerous, or well trained, for the purpose of manning this number of guns, and maintaining an effective fire against ships in motion, a duty the successful performance of which requires the greatest possible amount of training and intelligence on the part of the gunners.

My previous reports and recommendations (16th June '78) on this subject have indicated the advisability of maintaining a small permanent force at Victoria or Esquimalt, whether composed of Royal Marine or Canadian Artillerymen, trained at the Shools of Gunnery.

This force would serve as a nucleus and training shool for the volunteers, could be profitably employed in the care of the several batteries, guns, stores &c., and if a sufficient number of artificers, such as stone masons, bricklayers, and carpenters, several of whom are generally found in the ranks of "A" & "B" Batteries, were included in their number, the work of converting the present earthen batteries into defences of a more permanent character, could be gradually carried on with considerable economy of expenditure.

With the exception of firing a salute from Macaulay Point Battery, on the opening of the Provincial Legislature, the volunteers did not turn out for actual duty, or perform any paid drills previous to my departure, a very general wish having been expressed to postpone their annual drill and competitive gun practice until their uniforms arrived.

A 64-pr. gun (8-in.) on common standing carriage, with stores &c., is at present retained in the drill shed, and available for drill purposes.

I availed myself of the services of the volunteer battery for the purpose of firing trial shots, with service charges and common shell, from the 7-in. and 8-in guns, and took every opportunity of drilling the battery at the 7-in. guns and 64-pr. after they were placed in position.

In conclusion I may state that I received several offers of assistance from individuals not connected with the volunteer force, who expressed their willingness to volunteer for service in anticipation of hostilities, and I have no doubt that in such an event a considerable number of volunteers could be obtained; but as the value of such assistance, especially in the case of duties requiring the most practical intelligence of an artilleryman, would be of very little account unless previously enhanced by a careful course of training under competent instructors, it is to be hoped that every encouragement and assistance may be given to the present volunteer Battery; and, taking into consideration the fact, that the ordinary price of labor in the province of British Columbia is at least twice as much as that paid in the Province of Ontario or Quebec, it might be advisable to offer special inducements to attend drill, and a higher rate of pay to those officers, non-commissioned officers and men, who have obtained efficiency badges from the Dominion Artillery Association, and who have passed a qualifying examination by Lieut.-Colonel Houghton, Deputy Adjutant General, an officer who has already obtained a 1st class short course certificate at the School of Gunnery, Quebec.

D. T. IRWIN, Lieutenant-Colonel.
Captain R. A.,
Inspector of Artillery,
Dominion of Canada.

The Adjutant General of Militia,
Ottawa.

APPENDIX No. 11.

PALLISER GUNS.

ARMY AND NAVY CLUB,
LONDON, 14th November, 1878.

SIR,—I have the honor to enclose a tracing of a 7-inch rifled gun designed by Sir William Palliser for Canadian coast service. I have appended underneath it a drawing to the same scale of the service pattern 7-inch rifled gun in order the better to explain the reasons for recommending the former guns.

Although the Palliser gun is longer, it fits the same carriage as the service gun, but from its greater length of bore it consumes a larger charge of pebble powder, and also carries a heavier projectile, and is altogether a more formidable weapon.

The power of this gun is such that it may be fairly compared with the service 8-*inch gun* in regard to *cost*, *range* and *penetration*. The velocity of its 120 pound projectile with 35 pounds of pebble powder will be 1,700 feet a second, that of the service 8-inch gun with 180 pound projectile is 1,413 feet a second.

You will observe that the Palliser gun is provided with two barrels at the seat of the powder charge, and of the projectile. The total thickness of the two tubes is 4 inches, the same as the total thickness of the two tubes in the 40-ton, 12-inch 700-pounder Palliser rifle, which is giving excellent results at Sandy Hook with 120 pounds of powder.

A great many Palliser 8-inch rifles are in the service of the United States, both in the fleet and on the fortifications at the entrance of New York Harbour; the total thickness of the tubes in these guns is 3 inches, so that the 7-inch gun designed for Canada is a stronger gun. However, in these days of pebble powder it is hardly necessary to talk about the *strength* of a properly designed gun any more than to discuss the probability of the locomotive exploding which draws passenger cars from Montreal to Ottawa.

There is now in the Citadel of Quebec a 7-inch Palliserrifle, weighing only 5 tons. The official record forwarded with this gun from Shoeburyness states "80 rounds of "30 pounds of Rifle Large Grain powder, and 115-pound shot, gun in excellent con- "dition."

R. L. G., or "Rifle Large Grain" powder was so destructive in its sudden and violent action on large guns that it has been named "poudre brutale" by French officers, and has been abandoned in the English service for heavy artillery.

The performance of the 5-ton gun has led Sir William Palliser to fix on a battering charge of 35 pounds of pebble or mild powder, for his 7-inch gun, and in order to reduce the length of the cartridge, he recommends that the gun should be chambered to a calibre of 8 inches in the powder chamber.

My principle object in recommending this large ordnance to you is to draw attention to the fact that there is no difficulty in making these guns in Canada after a little practice. We have, as you are aware, commenced the conversion of a 32-pounder gun at Messrs. Gilbert's works at Montreal.

If Messrs. Gilbert makes the tube for this gun of 6.3 inches calibre so as to pass proof without flaws, it may be taken for granted that they can make 7-inch tubes, and even tubes of greater calibre, and as the casings for the guns are cast hollow and require little boring and grinding to prepare them for the tubes, the Canadians will be able to make their own guns and spend their money in their own country.

In case it may be mentioned to you that steel tubes being so much used in Europe must be a proof that they are better adapted than coiled barrels for th interior lining of heavy guns, I would here mention that coiled barrels made on the system explained in my book "United States Artillery" are more to be depended

on than steel barrels. Sir William Palliser has adhered to this opinion all along, *but never had a trial of a large gun in England.* At last his opinion and advice has been proved to be correct by the late great competition trials in America in which the steel barrels failed under a course of continuous firing, and coiled wrought iron barrels have been adopted in the United States for lining guns of large calibre.

Sir William Palliser attributes the splitting of steel barrels to two causes:—

1. To the shrinking on of the large casing which may crush the barrel unequally. When the gun is fired, one part of the circumference is pressed too much, while another part is insufficiently supported.

2. As long as a steel barrel is uniformly and tightly encircled by a thick powerful casing to a degree that prevents it from stretching appreciably under the strain of firing, so long will it last. If, however, a strain be powerful enough to *stretch* the steel slightly, the barrel would crack, while under similiar circumstances the coiled wrought iron barrel would be only slightly bulged but otherwise unimpaired.

As coiled wrought iron barrels are put into their casings by hand, they are not subjected to a crushing process, nor are the casings in a state of tension. The whole gun is in fact in a state of repose, and therefore, as every engineer will admit, in the best condition to meet the work to be imposed on it.

Officers of experience in the Royal Artillery, who are authorities on the subject now, admit that Sir William Palliser has proved his case with his heavy guns in America, and that his system of having the barrels of his big guns *uncrushed,* and the casings in a state of *repose,* is the correct principle on which to make large guns.

I have the honor to enclose to you the price of Sir W. Armstrong & Co., for the 7-inch Palliser guns. As royalty and also a commission of 5 per cent has to be deducted from these prices, the cost of the 7-inch 8½-ton gun would be £570. Without wishing to make any undue insinuation, it is an undoubtful fact that wrought iron carriages afford a great amount of work for large iron working establishments, and that a large amount of the support such carriages have enjoyed has come from those connected with some iron working establishments, both in the Royal Gun Factories and in the general trade.

There can, however, be no doubt, but that at all events for garrison purposes, wooden carriages, more especially when strapped with iron, will answer every purpose and could be easily made by the artificers of the Canadian Artillery.

Lieut.-Colonel T. B. Strange, Royal Artillery, Dominion Inspector of Artillery, is giving his able advice and assistance in converting the gun at Montreal, and I feel confident that carriages, projectiles and even guns, could readily be made in Canada, under his supervision and advice.

A private firm in America makes the heavy Palliser guns for the United States Government, and I can see no reason why a private firm in Canada should not do the same for the Dominion, with a little encouragement.

I beg to inform you that whether the guns be made in Canada, in England, or elsewhere, Sir William Palliser and I will guarantee them, and by the personal inspection of either my brother or myself during manufacture, we will ensure that our guarantee is to be relied on.

I cannot conclude this letter without thanking you, Sir, on behalf of my brother and myself, for the great interest you have taken in the question of the proper armament of the Dominion; without your encouragement and support we could not have made the first steps at Montreal. They are, it is true, but feeble so far, but I hope you will be satisfied with the result before very long, and that your period of command in Canada will witness the establishment of the manufacture of at least a portion of her armaments, which would greatly strengthen her military position, and so add to the power and importance of the British Empire.

I have the honor to be, Sir,

Your obedient servant,

EDWARD PALLISER,

Late Captain 7th Hussars.

Lieutenant General Sir EDWARD SELBY SMYTH, K.C.M.G.

ARMY AND NAVY CLUB,
14th November, 1878.

DEAR SIR EDWARD SELBY SMYTH,—I send you an official letter, carefully corrected by my brother, in case you may wish to insert it in your report of the Canadian Militia for this year. I only hope it will not be too late, but owing to the length of my correspondence with Sir W. Armstrong & Co. I could not send it sooner.

As I anticipated, that firm is not well inclined to our large guns, which are rivals to the Armstrong guns, but they have an exclusive license to manufacture Palliser guns in England, under which they are bound to make our guns, but they put on a high, almost prohibitory price, and I cannot get them to reduce it. Notwithstanding this, you will find that my brother has so designed his gun as to quite surpass the Government 7-inch gun in power, and yet even with Armstrong's price of £570 I do not think it will be more costly than the Woolwich 7-inch gun. I send you in this letter the price of our 6·3 inch guns, but my brother desires me to say that 64-pounders are not powerful enough for coast defence, although our 64-pounders, such as Armstrong has tendered for, would be more powerful than the Woolwich 64-pounders, and would fire an 80 lb. projectile.

In the great price charged by Armstrong & Co. for the Palliser 64-pounder can be traced the fact that it will clash with the Armstrong 70-pounder, about which so much has appeared lately (whilst you were at home) in the *Times.*

I look on the price of the Palliser 6·3 gun, viz: £513, as prohibitory, and my brother has desired me not to enclose it in my official letter to you, and, further, he asks me to beg of you to abandon 64-pounders as fit for coast defence. In page 2 of my book you will find that a Palliser 64-pounder defeated two Woolwich 64-pounders in competition, since then the charge of our guns of that calibre has been reduced from 10 lbs. to 8 lbs. of powder without any reason, and the guns that failed are recommended for the front rank and ours condemned to secondary work. The design in all this is a very old story, but it answers the purpose of him who arranged it very well.

The cost of iron carriages is monstrous, and I would direct your attention to that portion of my letter which touches on the subject as it was penned by my brother. He feels that the action of Canada is of vital importance to him, and he hopes that the complete success of his large guns in America will be sufficient to lead to a step which would make a little breach in the all powerful opposition he has to meet with.

I have arranged that you are to have prices from Messrs. Gilbert & Son, and also from the American manufacturers, so that you will be able to publish very important matter under the head of guns. Sir W. Armstrong & Co. have no objection to their prices appearing in your report, but I do not think the price of the Palliser 64-pounder would be worth printing. The gun would be the same pattern as the 7-inch Palliser gun, only of course smaller.

Believe me,

Yours very sincerely,

EDWARD PALLISER.

P.S.—I forward by this post the report of Lieutenant Duncan Kennedy, United States Navy, in case you might wish to put the competition in your report, commencing at page 13.

"Before deciding on the present method of conversion, an Army Ordnance Board carried out a series of experiments to determine whether steel or iron would be the proper material of which to form the lining. Four 10-inch Rodman smooth bores were converted, two into 8-inch rifles, and the other two into 9-inch rifles, one of each calibre with a wrought-iron and the others with a steel tube. The wrought-iron tubes were inserted, as has already been described, for the navy gun. The steel tubes were 2 inches in thickness, reinforced on the breech end to a short distance

in front of the trunnions by a steel jacket 2 inches thick, shrunk on, and still further supported in the rear by a steel screw plug through the jacket. The whole was inserted from the breech end and held in place by a coarse screw thread on the jacket which worked in a corresponding thread in the cast-iron. The only difference in the manufacture of the 8-inch and 9-inch steel lined guns was that in the 9-inch gun, the cast-iron casing was expanded when the tube was screwed in and then allowed to shrink on it. The wrought-iron tubes were made at Sir William Armstrong's works at Newcastle-upon-Tyne, England; and the steel tubes and jackets were manufactured by the Bochum Manufacturing Company, Bochum, Prussia.

No. 1—8-inch *wrought-iron* tube has fired, up to the last reports published, seven hundred and sixty-one rounds; some small weld marks are noticeable in the bore, but the gun is still considered as serviceable as it was in the beginning.

No. 2.—8-inch *steel* tube.—At the one hundred and seventy-first round a small crack was noticeable, which increased as the firing progressed; at the four hundred and fifty-sixth round, or two hundred and eighty-five fires after the tube split, the gun blew to pieces.

No. 3.—9-inch *wrought-iron* tube has been fired five hundred and two rounds in all, and is still in perfect condition.

No. 4.—9-inch *steel* lined.—No reports.

No. 5.—8-inch *wrought-iron* tube, manufactured by Paulding, Kemble & Co., Cold Spring, New York, has been fired five hundred rounds, and shows less erosion of the bore than either No. 1 or No. 3 experimental guns, for the same number of rounds.

During the proof of the navy guns, the average internal pressure, using thirty-five pounds hexagonal powder, the battering charge was thirty thousand pounds per square inch. This at the surface of the cast-iron bore would only give, at the very greatest, a pressure of eleven thousand pounds per square inch, or a strain a little over one-third of the tensile strength of the cast-iron. It is evident from these figures, and from the tests for endurance to which the experimental guns were subjected, that this system of conversion is a very strong one; also that wrought-iron is a more reliable material than steel for the tube. The army experiments have fully proved that American coiled tubes are fully equal, if not superior, to the English coiled tubes.

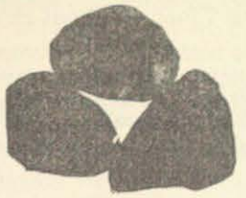
More work has been obtained from the Palliser navy 8-inch rifle than from the Woolwich 8-inch 9-ton gun, or the army 8-inch rifle, firing the same charge of powder, and the same weight of projectile. This is probably due to its greater length of bore:—

Palliser Navy 8-inch rifle, calibre to length of bore, 16 to 1, 1. V. 1,466·7 feet.
Palliser Army 8-inch rifle, calibre to length of bore, 14·6 to 1, 1. V. 1,374·0 feet.
Woolwich 8-inch rifle, calibre to length of bore, 14·7 to 1, 1. V. 1,413·0 feet

The projectiles for the 8-inch rifle are of two kinds, a cored cast-iron chilled head shot of one hundred and eighty pounds. The points are ogival, struck with a radius of 1¼ calibres. The rifle motion is imparted by means of an expansion ring. This ring, the invention of Captain Butler, U.S.A., is double lipped, and either screwed or cast on a reduced portion at the base of the shot. When the charge is ignited the gas enters the annular groove between the lips, expands the outer lip uniformly all around into the rifling, while at the same time the inner lip is made to grip the shot more closely, thus insuring its receiving the proper twist and effectually preventing stripping. This expansion centres the base of the shot. The ring is purposely made sufficiently stiff so as not entirely to fill the grooves and cut off all windage. The forward end of the projectile is centred by the pressure of the gas escaping through the grooves surrounding and supporting the shot during the passage along the bore.

The foregoing description has been compiled from various army and navy ordnance publications at the disposal of the writer, and also much increased by valuable information kindly given by the Commander F. J. Higginson, U. S. Navy."

MILITARY POWDERS.



30th November, 1878.

To Sir W. Palliser.

Price of Pebble powder up to ·6 inch is 75*s.* per 100 lbs., F.O.B.

Elswick Works, Newcastle-upon-Tyne,
31st October, 1878

Estimate by Sir W. G. Armstrong & Co. for 7-inch Palliser gun to accompany letter of this date to Captain E. Palliser, London.

	£	*s.*	*d.*
One 7-inch muzzle-loading Palliser gun with coiled wrought-iron barrel with polygroove rifling, weight about 9 tons; including sights and sighting. Price £645. Royalty deducted by direction of Sir W. Palliser £45	600	0	0
Garrison carriage and slide of wrought iron suitable for the above gun	525	0	0
Racers	75	0	0
Projectiles for 7-inch muzzle-loading gun:—			
Palliser chilled shell, each	1	19	5
Common shell, each	1	14	3
Shrapnel shell, each	3	7	3
The above prices include gaschecks and gun-metal plugs.			
6·3-inch gun with coiled wrought-iron barrel with polygroove rifling, weight about 6½ tons; including sights and sighting. Price £580. Royalty deducted by direction of Sir W. Palliser £40	540	0	0
Garrison carriage and slide of wrought-iron suitable for the above gun.	410	0	0
Racers	50	0	0
Palliser chilled shell each	1	14	8
Common shell, each	1	7	9
Shrapnel, each	2	12	9

Packing and delivery extra; terms cash; one third payable with order, one third when work to half the contract amount is done, and the balance on completion for delivery at our works.

W. G. ARMSTRONG & CO.

5 per cent. commission has to be deducted from the above prices of gun, carriage and projectiles.

E. PALLISER.

Sir William Palliser has offered to supply and land at Halifax ten 7-inch guns, ten wrought-iron carriages, 1,000 Palliser 120-pound shot, and 100 shell, for £9,000 sterling, including insurance and proof.

Prices charged by Imperial Government as per priced vocabulary, 1875, for wrought-iron muzzle-loading guns :

	£	s.	d.
Woolwich pattern, 7-inch 7 ton, mark II, III; including sights and sighting	541	2	11
Wrought-iron carriages 7-inch, without racers	178	3	0
Palliser shot, 7-inch	1	3	5
Common shell	1	1	3
Shrapnel, without fuze hole plugs or fuzes	1	6	4½
" section, with time fuze	3	9	7

With 5 per cent. added to cover departmental charges.

Report of Messrs. Gilbert & Sons, of Montreal.

MONTREAL, 18th December, 1878.

SIR,—Your communication of 16th instant, requesting us to report on the progress made in converting the 32-pounder smooth-bore gun into a 64-pounder rifled "Palliser," was duly received, and appended hereto we beg to hand you the report and scale of prices you require.

Owing to the unusual mildness of the winter of 1877-78, the ice-bridge between the Island of St. Helen's and this city was not formed until the month of February.

As soon as the ice was considered sufficiently firm to carry the gun and horses, a squad of men of the Montreal Garrison Artillery, under Sergeant-Major Lyndon, "B" Battery, was sent by your order to load and assist in transporting a gun to our factory.

On the morning of 12th February, a cast-iron 32-pounder gun, No. 70,230, 53.3.14 cwt., Carron 1806, was received at our works.

The Lachine Canal having been emptied for repairs, we were deprived of water required for use in our forge boilers and large engine, and were consequently obliged to defer commencing operations in converting the gun until the early part of May.

We had in the meantime, during the remainder of the winter, carefully considered the verbal and written instructions given us by yourself and Captain Palliser to enable us to work out the details of boring, turning, construction of furnaces for coiling and welding, &c., and which you were kind enough to supplement from time to time by a personal inspection of our drawings and by directions in details of constructive preparation, which our previous engineering experiences did not cover.

On carefully callipering the exterior of the gun it was found to be not precisely circular, and it was then deemed necessary to make moveable bearings, clipped in halves, upon the guns—one pair at the breech and one pair at the muzzle—bolted together, and then fitted on the gun by pinching screws, so arranged that those moveable bearings could be adjusted exactly concentric with the bore.

The drawings, patterns and castings having been made for these adjustable bearings, they were accurately turned and fitted up to revolve in heavy cast iron pillow blocks in bracket form, the lower limbs spreading diagonally and attached to heavy cast iron beds, that were solidly bolted to the gantry of the boring machine, giving a firm and rigid structure, in which the gun revolved steadily and without vibration.

The boring bar, for enlarging the gun from its original calibre of 6·3 inches to that required for the reception of the coil, was made of cast iron, 6 inches in diameter, by 13 feet 9 inches long, cast with strong bearings, held in a bracket framework of similar design to that of the gun bearings, this frame being also rigidly attached to the saddle or carriage which was traversed by an automatic feed motion along the gantry of the machine during the operation of boring.

This boring bar has had attached to its extremity a head for holding the necessary cutter bits and bearing pieces, in accordance with the sketches and drawings which you sent us. The end of the bar was also made as you suggested, in such manner that the boring head could be removed, and the grooving tool sent us by Captain Palliser substituted during the process of rifling.

As soon after the commencement of work in the spring as this machinery could be manufactured and erected, it was placed in position, the gun swung into the bearings, and the boring completed to the required enlargement.

We had during the winter ordered the iron required for the tubes from the "Steel Company of Canada," Londonderry, N.B., through Messrs. Gillespie, Moffat & Co., the agents in this city.

This iron was received early in April, and proved to be a very superior quality of iron, called by the manufacturers "Siemens" iron; it has a guaranteed tensile strength of 65,000 lbs. per square inch, being more than 23 per cent. greater than that of the "Ridsdale" iron used for gun tubes in Britain, of a reported tensile strength of 52,500 lbs. per square inch, or the well-known "Ulster" iron used by the United States Government in the conversion of ordnance at the West Point Works, of a reported tensile strength of 52,000 lbs. per square inch. Its guaranteed ductility of 30 per cent., although slightly less than that of "Ridsdale" (31), is slightly in excess of "Ulster" (29.) This iron, in working, also showed remarkable properties of welding, remarkable in an iron of such high tensile resistance and that consequently must be supposed to contain so small a percentage of cinder or welding flux. Of the perfection of the weld you can judge by the piece of iron which we send you herewith—it is a sectional slice cut off longitudinally through the ends of the bars composing a coil, and bent round by hammering until parted at the welds, which you will observe expose a pure metallic fracture, ragged at the edges on either side, from the pieces torn out of adjoining bars.

From our experience with this iron we should expect, when its valuable properties become more widely known, that, although its first cost is something greater than the irons before referred to, its extreme tensile strength, great ductility and facility of welding will cause it to be widely used in the manufacture of wrought iron ordnance, where those properties are so essential.

Furnaces.

For the accomplishment of the process of forming the coils from the bars, and butt-welding the rough turned coils, it was found necessary to erect two extra furnaces in addition to the heavy forging furnace and forge fires belonging to the works.

The bar furnace was built about forty feet in length, with a double grate fire at the mouth, and four side relay fires, disposed along either side, for the purpose of imparting a uniform mellow heat along the whole length of the bar.

The butt-welding furnace, consisting of the usual single grate and flame bed, leads to a welding chamber, into which through side apertures the rough turned coils are inserted and placed in such a position that the whole intensity of the flame can be concentrated on the junction of the butts, and the heating carefully watched through transparent plates of mica, which, while they afford a view of the progress of the heating, shut out the cooling current of air that would otherwise pass through the coil and retard the process of welding.

Coiling Machine.

It was at first intended to perform the operation of coiling the bars by a temporary machine worked by manual power; further consideration determined us not to jeopardize the success of the undertaking by allowing a weak link to creep into the chain of operations, but as want of length in the shops precluded the adopting of the machines used in Great Britain and the United States, it became necessary to

design machinery that could successfully and surely accomplish the work, and still be sufficiently compact to be placed within the space we could command.

Keeping these objects and limits in view, a machine was designed, the drawings and patterns prepared, the castings and forgings made, the machine completed, and put in operation, which performed the work of coiling with perfect success.

In the new machine designed by us, an independent engine, supplied with steam from the main boilers of the works, was used to actuate a train of gears terminating in a heavy spar wheel, firmly keyed on, and imparting the desired rotation to a steel mandril, around which the bar was coiled.

A comparison of the difference in construction between the machine designed by us and that used in Britain and the United States will, we think, indicate several points in favor of our machine.

In the earlier machine, the mandril is placed at right angles to the run of the furnace and as it (the mandril) has no longitudinal traverse, the bar, as it is drawn from the furnace in coiling, necessarily travels along the mandril, and the bar which at one time feeds on at right angles, gradually with each revolution diminishes the angle, inducing a tendency in the bar to lap over or ride on its parts, winding itself into a volute, instead of the required helical coil. This tendency is neutralized by the use of a guide, through which the bar passes, traversed along the front of the mandril over a long bending roller. This motion of the bar travelling along the mandril as it coils necessitates the placing of the mandril a sufficient distance from the mouth of the furnace, depending on the length of coil to give it drift to clear the mouth of the furnace and avoid tearing it away, thus exposing during the process a considerable portion of the highly heated bar to the cooling and scaling produced by contact with the cold air.

As the bar in coiling travels along the mandril, increasing its distance from the support of the journal bearing, the heavy strain of rotation tends strongly to spring or bend the mandril, which is in part counteracted by the use of an outside bearing, which entails the removal of the bearing covers to permit of the hoisting out and swinging round of the mandril and its completed coil, before the latter can be removed by the usual process of wedging, sledging and hauling.

In the new machine, by allowing the mandril to travel in the direction of its longitudinal axis, as well as to rotate while coiling; and instead of placing the mandril at right angles to the run of the furnace, by placing it at an angle depending upon the desired pitch of the coil, the bar travels straight from the furnace under a short bending roll. There is no tendency to form a volute, and therefore no guide required; as the mandril is close to the mouth of the furnace, the heated bar is not exposed to cooling and scaling, and as the mandril travels out in coiling, the strain is always close to the journal; no outside bearing is required, the outer end of the mandril being unimpeded by any outside bearing, presents no obstacle to the instant removal of the coil the moment it is completed, and the end pin knocked out. The removal of the coil being effected automatically by the action of a screwed collar on the inner threaded end of the mandril, withdrawing it by the same motion which imparts its rotation, the coil dropping quietly on to the floor plate as the mandril is withdrawn.

After the completion of the coiling operations, the coil goes through the usual operations of welding up, rough turning and boring; and in all these processes, so far we have been perfectly successful.

The present position of the work is:—

The gun bored ready to receive the coil.

The coils individually completed in forging, welding, rough turning and boring rebated and joined in parcels ready to butt-weld into a continuous whole.

The furnace is completed ready for the operations of butt-welding which it was at first intended to proceed with on the Woolwich plan of a through bolt traversing and drawing together the coils, but a visit of one of our firm last week to West Point convinced us that the practice there followed of using a screw press was preferable

for several reasons. We have accordingly got up the drawings and patterns for a press which will be ready in a few days.

As the result of our experience in converting the 32-pounder smooth-bore, we are prepared to undertake the conversion of any portion of the four hundred smooth bore guns now in Canada into tube lined rifled guns on the "Palliser" system, at prices and of qualities which will compare favorably with the productions of Woolwich or Elswick—subject to your inspection, approval and modification of details, that experiment may, from time to time, suggest.

We are also prepared to undertake the manufacture of new guns up to 9-inch bore of coils, with cast iron jackets on the "Palliser" system, and to guarantee to turn out as perfect and complete work as the best produced in Britain or the United States.

We have a full knowledge, theoretical and practical, of the processes required in the manufacture, good mechanics for executing the work, a native iron superior to anything imported, and a most generously accorded privilege from Sir William Palliser to convert and manufacture guns under his patent, free of royalty, fee or commission of any kind.

We append a list of prices at which we would undertake the conversion of guns, supposing they could be ordered in lots of twenty or twenty-five yearly.

We have already been at great expense in erecting large and permanent furnaces, building heavy machinery, and acquiring information and experience in the conversion and manufacture of rifled ordnance, trusting much to the strong feeling shown to exist in favor of home productions. We hope that you will kindly bring our statements under the notice of the Major General Commanding and of the Honorable the Minister of Militia—that they may feel that they are acting prudently, as well as patriotically, in encouraging our efforts to initiate and develope a new industry which, under your technical supervision and through your suggestions, may keep one branch of manufacture, uniting both skill and science, abreast with the advance and progress of other countries.

Respectfully submitted,

E. E. GILBERT & SONS,

Engineers, Canada Engine Works.

Lieut.-Colonel T. B. STRANGE, R. A.,

Inspector of Artillery,

Citadel, Quebec.

COMPARATIVE COST OF BRITISH AND CANADIAN MANUFACTURED OR CONVERTED ORDNANCE.

LIST of prices of converted and new guns on the "Palliser" system, manufactured by E. E. Gilbert & Sons, Engineers, Canada Engine Works, Montreal.

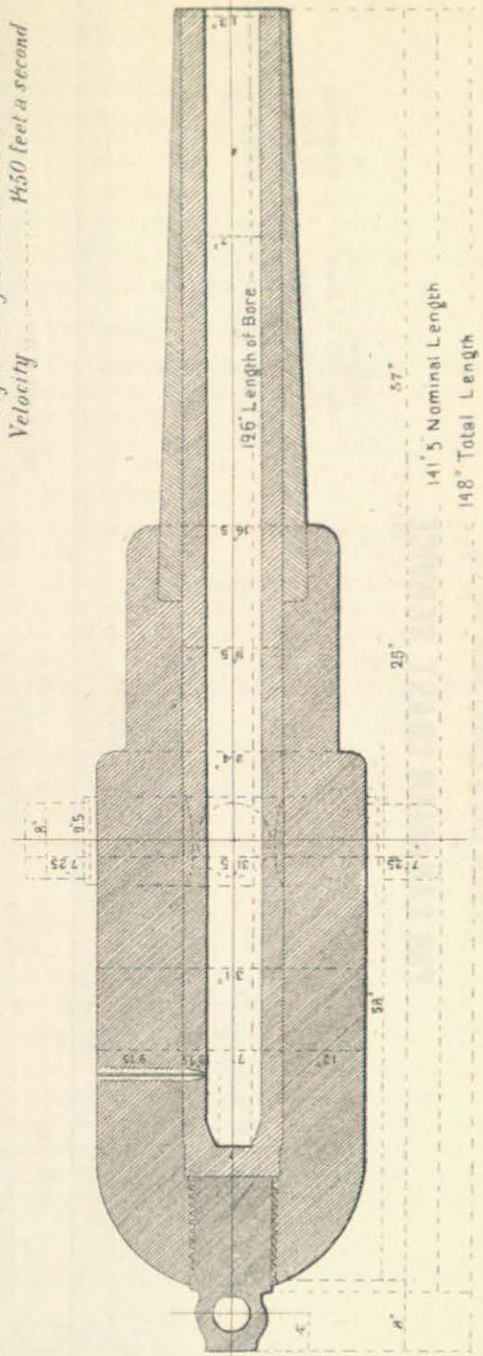
Description of Guns, &c.	Canada Prices.	Woolwich or Elswick Prices.	Difference in Favor of Canada
	$ cts.	£117	$ cts.
32-pounder smooth bore, cast-iron gun, converted to 64-pounder rifled Palliser gun	650 00	Extra 60	
		£177 $860 00	210 00
7-inch rifled gun, with cast-iron jacket and 100 rounds of projectiles	3,750 00	£1,000 $4,860 00	1,110 00
6·3-inch rifled gun, cast-iron jacket, Palliser, and 100 rounds projectiles	2,680 00	£650 $2,916	236 00
Ammunition, &c., at Woolwich prices			Saving transport and charges.

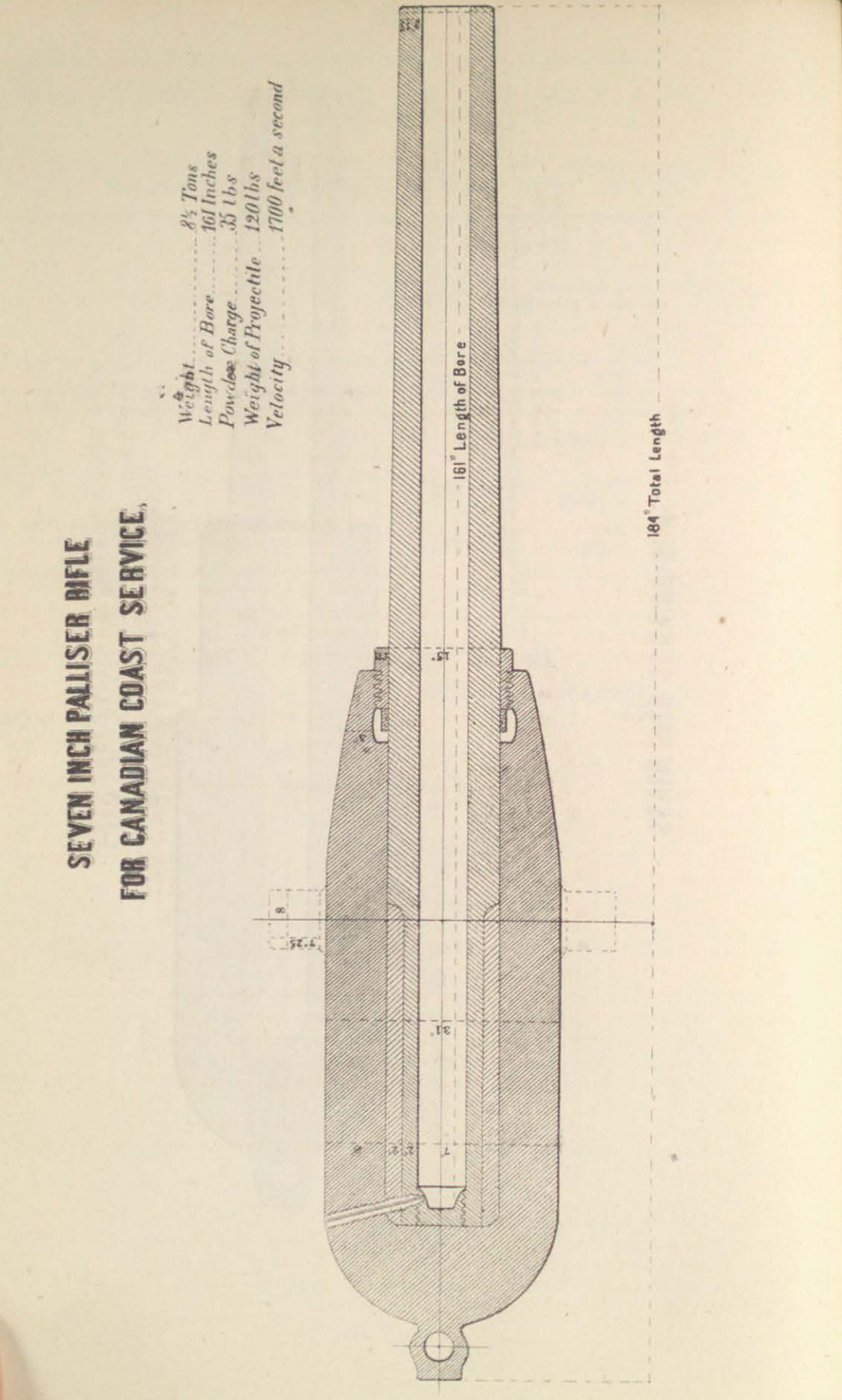
(Signed) E. E. GILBERT & SONS,
Engineers, Canada Engine Works.

Lieut.-Colonel T. B. STRANGE,
Inspector of Artillery,
Citadel, Quebec.

SEVEN INCH SERVICE GUN.

Weight ..... 7½ Tons
Length of Bore ..... 196 Inches
Powder Charge ..... 30 l.b.s
Weight of Projectile ..... 115 l.b.s
Velocity ..... 1450 feet a second





APPENDIX No. 12.

REPORT OF DIRECTOR OF STORES.

DEPARTMENT OF MILITIA AND DEFENCE,
STORE BRANCH, OTTAWA, January 1st, 1879.

SIR,—I have the honor to submit, for your information, the following Report respecting the Militia stores and properties in my charge:—

CLOTHING.

The clothing issued this year to the Militia has been principally that received from England, which on inspection has proved satisfactory and according to contract. The aggregate issues for the past year have been 8,771 tunics, 9,125 pairs of trowsers, 6,726 forage caps and 4,992 greatcoats. The issues being a little in excess of those of the previous year.

AMMUNITION.

The practice ammunition issued during the year amounted to 478,340 rounds of Snider ball, and 378,870 rounds of blank.

The amount sold for rifle practice to rifle associations, and members of the force, has been 668,516 rounds of Snider ball and 15,600 rounds of Martini-Henry.

For this quantity deposit receipts amounting to the sum of $11,232.69 have been received and credited to the Government in the usual way. In the above amount is also included the gunpowder and friction tubes supplied to the Post Office Department for the service of the time gun at Ottawa.

DEPOSIT RECEIPTS.

The gross amount received by the Store Branch for stores sold, and for rents collected, is shown in the statement underneath.

Ammunition.		Clothing.		Rents.	Accoutrements.	Miscellaneous.	Total Amount.
Rounds.	Amount.	Officers.	Men.				
	$ cts.	$ cts.	$ cts	$ cts.	$ cts.	$ cts.	$ cts.
684,116	11,232 69	143 31	876 43	4.823 88	270 01	210 16	17,556 48

32,514 pounds of gunpowder, and 9,028 friction-tubes have been issued for practice and salutes to the different corps of field and garrison artillery. Also the usual quantity of shell, shot, fuzes, &c. The large excess of gunpowder used this year, over that of the previous year, is due to the necessity which arose in the month of May last, for supplying filled cartridges for the armament at Quebec, and St. John, N. B.

See Appendixes A B and C for the details of the above issues.

Appendix D. shows the quantity of S.A. ammunition and gunpowder in the magazines at the close of the year.

ARMS.

Three additional armourers have been added to the Staff of the Store Branch during the past year, and have been stationed at Toronto, Kingston, and Halifax. These added to the two previously stationed at Montreal and Quebec will much facilitate the repairs to the arms now in possession of the Militia, and whose condition has been the subject of frequent complain

BOARDS OF SURVEY.

These were held in all the Districts on the Militia Stores in charge of the different store-keepers as is customary at the commencement of each year. The stores condemned by these Boards were small, as compared with those of previous years. No recommendation was therefore made for their sale, as the quantity offered for sale would have hardly paid expenses. There has been no serious loss by fire or otherwise to record.

ORDNANCE STORES

The usual annual supply of these consisting of gunpowder, S. A. ammunition, shot shell, fuses, &c., were received at Montreal in August last ex-steamer "City of Quebec" and ship "Romsdal," and stored on St. Helen's Island. 18,455 pounds of gunpowder were also received at Halifax, N.S., in November last by steamer "Louisa Wait." This gunpowder on arrival had to be sent to St. John, N.B., by railway, there being no magazine accommodation for it at Halifax. This gunpowder forms part of the armament stores intended for the coast defence of New Brunswick and Nova Scotia, as provided for under the conditions of the Order in Council of the 18th June, 1878.

REQUISITIONS FOR STORES.

947 requisitions for issues of various kinds of stores have been made during the past year, and 156 for receipts into store.

TENANTS AND RENTAL.

The underneath statement furnishes information relative to the above. The arrears that have accrued during the year, added to those of previous years, are considerable, and are shown in the columns opposite each locality. Much of the arrears are no doubt due to the continued depression now existing for some years past.

Tenants.	Locality.	Rental per Annum.	Arrears to 31st Dec., 1878.
		$ cts.	$ cts.
1	Manitoba	1 00	
1	Chatham, Ont	5 00	
3	Niagara	70 00	227 00
4	Toronto	320 00	90 00
2	Ottawa	2 00	
25	Kingston	588 00	60 50
4	Montreal	250 75	
1	Laprairie	1 00	
2	Isle aux Noix	104 00	
34	Quebec	3,087 13	621 50
33	Point Levis	828 25	705 25
9	New Brunswick	353 08	10 00
2	Nova Scotia	150 00	10 00
1	Prince Edward Island	1 00	
	Total	5,761 21	1,724 25

I have the honor to be, Sir,
Your obedient servant,
THOS. WILY, Lieut.-Colonel.
Director of Stores and Keeper of Militia Properties.

To the Honourable
The Minister of Militia and Defence,
Ottawa.

(A.)

S. A. AMMUNITION issued for practice during the Year 1878.

Date.	Corps.	Rounds. Ball.	Rounds. Blank.
	Military District No. 1, London.		
May 13	1st Regt. of Cavalry	1,680	
do 13	Sarnia Gar. Artillery	840	
do 13	Inf. Corps, Windsor	840	
do 13	do Leamington	840	
do 13	25th Batt	2,520	
do 13	27th do	840	
June 15	30th do	8,400	8,400
do 15	Wellington F. Bat'y	1,480	1,480
do 27	1st Regt. of Cavalry	840	840
do 27	Leamington Inf. Co.	840	840
July 3	1st Regt. of Cavalry	700	700
do 5	Windsor Inf. Co	840	840
Aug. 3	Sarnia Gar. Artillery	840	840
do 26	7th Batt	5,880	5,880
do 29	29th do	5,040	5,040
Sept. 4	28th do	5,040	5,040
do 16	33rd do	6,720	6,720
Oct. 5	Ontario F. Batt	1,480	1,480
do 18	26th Batt	4,440	
Nov. 11	26th do	1,680	
do 25	22nd do		600
		51,780	38,760
	Military District No. 2, Toronto.		
Mar. 18	10th Batt	500	
May 13	19th do	12,000	
do 13	37th do	7,000	
do 13	44th do	14,000	
June 12	34th do	5,880	5,880
do 13	77th do	5,040	5,040
do 21	12th do	6,720	6,720
do 22	Engineer Co.	1,400	1,400
do 28	Gov. Gen. Body Guard.	1,500	1,500
July 11	2nd Batt	8,400	
Aug. 9	10th do	8,400	8,400
Sept. 6	35th do		4,000
Oct. 1	38th do	3,340	2,640
do 23	Toronto Gar. Bat'y	840	840
		75,020	36,420
	Military District No. 3, Kingston.		
April 10	"A" Bat'y	5,480	5,480
June 14	3rd Regt. of Cavalry	1,280	
do 14	15th Batt	10,040	5,040
do 19	3rd Regt. of Cavalry		1,280
do 20	40th Batt	4,160	4,160
July 1	14th do	5,040	5,040
do 1	48th do	4,200	4,200
Sept. 2	45th do	5,040	5,040
Oct. 9	47th do	840	840
do 9	49th do	5,040	5,040
Nov. 27	Royal Military College		2,000
		41,120	38,120

Date.	Corps.	Rounds. Ball.	Rounds. Blank.
	Military District No. 4, Ottawa.		
May 3	Gov. Gen. Ft. Guards		4,000
do 18	do do		6,750
do 22	18th Batt	6,000	
do 22	41st do	5,000	
do 22	42nd do	7,000	
do 22	56th do	6,000	
do 22	Goulbourn Inf. Co.	1,000	
do 22	Prescott Trp. Cavalry	1,000	
June 6	do do		1,000
do 6	41st Batt		3,000
do 6	42nd do		3,000
do 6	56th do		2,000
do 6	59th do		3,000
do 6	Metcalfe Inf. Co.	1,000	1,000
do 6	Vernon do	500	1,000
July 31	No. 5 Co., 56th Batt	1,000	
do 31	Prescott Gar. Artillery	1,000	
Sept. 30	Gov. Gen. Ft. Guards	6,600	
Dec. 26	Dragoon Guards		500
		36,100	25,250
	Military Districts Nos. 5 and 6, Montreal.		
May 11	2nd Corps Engineers		500
do 16	53rd Batt	6,000	
do 16	79th do	4,000	
do 17	54th do	8,000	
do 17	58th do	20,000	
do 18	Brome Cavalry	500	
do 18	Montreal Gar. Artillery	5,000	5,000
do 18	65th Batt	7,590	
do 18	St. Jean Baptiste Inf. Co.	1,260	
do 21	59th Batt	7,000	
do 23	Montreal Gar. Artillery		9,000
do 23	Nos. 1 and 2 Cos. Engineers		2,400
do 23	1st Batt		9,000
do 23	3rd do		9,000
do 23	5th do		9,000
do 23	6th do		9,000
do 24	"B" Bat'y		1,800
June 24	do	500	
do 28	Three Rivers Batt	4,200	4,200
do 28	64th Batt	5,040	5,040
do 28	76th do	5,040	5,040
do 28	Sorel Inf. Co	840	840
do 29	65th Batt	5,040	5,040
do 29	St. Hyacinth Batt	2,520	2,520
July 5	St. Andrew's Trp. of Cavalry	600	600
do 9	Montreal F. Bat'y	900	900
do 9	Montreal Engineers	1,680	1,680
do 9	5th Batt	5,000	5,000
	Carried forward		

(A.)—S. A. Ammunition issued for practice during the Year 1878.—*Con.*

Date.	Corps.	Rounds. Ball.	Rounds. Blank.
	Brought forward ...	.....	.....
	Military Districts No. 5 and 6, Montreal.—Con.		
July 10	6th Batt	5,000	5,000
do 11	65th do	4,000	.....
do 11	Montreal Gar. Artillery	5,000	.....
do 11	Montreal Engineers	1,600	.....
do 11	1st Batt..	5,000	.....
do 11	3rd do	5,000	.....
do 11	6th do	5,000	.....
do 27	St. Jean Baptiste Inf Co.	840	840
Aug. 2	1st Batt	5,000	5,000
do 19	Sheffield F. Bat'y	500	500
Sept 5	St. John's Gar. Artillery	800	800
do 13	Missisquoi Trp. Cavalry	700	700
do 13	52nd Batt..	1,600	1,600
do 17	21st do	750	750
do 17	60th do	2,500	2,500
do 30	3rd do	5,000	5,000
Oct. 7	Montreal Trp. Cavalry..	700	700
do 17	50th Batt..	3,000	3,000
do 17	11th do	2,500	2,500
do 17	51st do	3,300	3,300
do 17	53rd do	3,000	3,000
do 17	54th do	3,000	3,000
do 17	Sherbrooke Trp Cav'y.	600	600
Nov. 20	Laprairie Infantry Co..	840	840
		153,940	124,090
	Military District No. 7, Quebec.		
Jan. 28	8th Batt	4,200	.....
Feb. 25	Quebec Gar. Artillery ..	840	840
Mar. 15	8th Batt	.....	2,600
April 12	do	840	840
do 12	9th Batt	840	840
do 20	8th do	.....	1,600
May 23	8th do	.....	6,300
do 27	55th do	2,280	2,280
do 27	23rd do	3,040	3,040
do 28	Kamouraska Batt	760	760
July 2	do	760	760
do 3	17th Batt	1,520	1,520
do 3	70th do	2,280	2,280
do 3	Rimouski Batt	760	760
do 4	Charlevoix Batt..	1,520	1,520
do 4	Quebec Batt..	760	760
do 5	Dorchester Batt..	760	.....
do 9	Gaspé Garrison Bat'y...	760	760
do 12	Temiscouata Batt	2,280	2,280
do 22	Quebec Field Bat'y	1,480	.....
do 27	"B" Battery	5,760	5,760
do 30	Grosse Isle Gar. Art	480	480
Aug. 13	17th Batt	760	760
Sept. 19	17th do	840	840
Oct. 22	9th do	5,880	.....
do 25	Quebec Cavalry	1,680	.....
		41,080	37,580

Date.	Corps.	Rounds. Ball.	Rounds. Blank.
	Military District No. 8, St. John, N.B.		
May 28	71st Batt	1,680	1,680
do 28	New Brunswick Gar. A.	5,880	5,880
do 28	73rd Batt.	1,680	1,680
do 28	62nd do	5,040	5,040
do 28	St. Stephen's Inf. Co.	840	840
do 30	St. George's do	840	840
do 30	67th Batt	4,200	4,200
do 30	74th do	840	840
do 30	8th Regt. Cavalry	1,680	1,680
do 30	Deer Island Inf. Co	840	840
do 30	N.B. Engineer Co.	840	840
Aug. 12	Newcastle Field Bat'y..	840	.....
		25,200	24,360
	Military District No. 9, Halifax, N.S.		
July 2	1st Brigade Gar. Art	5,040	5,040
do 2	63rd Batt..	5,040	5,040
do 2	66th do	6,720	6,720
do 8	78th do	4,680	4,680
do 8	Pictou Gar. Art.	780	780
do 8	Digby Gar. Art	780	780
do 8	Halifax Field Bat'y	1,500	1,500
do 16	Lunenburg Gar. Art	780	780
do 16	Mahone Bay Gar Art...	780	780
do 16	Victoria Batt	780	780
do 16	68th Batt	2,340	2,340
do 16	2nd Brigade Gar Art.	4,720	4,720
do 23	69th Batt	2,340	2,340
do 23	75th do	1,560	1,560
		37,840	37,840
	Military District No. 10, Winnipeg, M.		
Ma 16	Emerson Inf. Co.	800	.....
do 23	Kildonan do	.....	100
June 16	Emerson do	900	900
do 28	Kildonan do	900	900
Oct. 30	Winnipeg Troop Cav'y.	.....	840
Nov. 9	do Inf. Co..	900	900
		3,500	3,640
	Military District No. 11, Victoria, B.C.		
Jan. 2	No. 1 Victoria Co.	800	800
do 2	No. 2 do	800	800
July 26	No. 1 do	1,600	1,600
do 26	No. 2 do	1,600	1,600
do 26	No. 1 Nanaimo Co.	800	800
Aug. 27	Seymour Gar. Art.	500	500
do 27	No. 1 N. Wesminster Co.	800	800
		6,900	6,900

(A.)—S. A. Ammunition issued for practice during the Year 1878.—*Con.*

Date.	Corps.	Rounds. Ball.	Rounds. Blank.
		5,900	5,970

RECAPITULATION.

	Rounds. Ball.	Rounds. Blank.
M.D. No. 1, London	51,780	38,700
do 2, Toronto	75,020	36,420
do 3, Kingston	41,120	38,120
do 4, Ottawa	36,100	25,250
do 5 and 6, Montreal.,	153,900	124,090
do 7, Quebec.	41,080	37,580
do 8, St. John, N.B.	25,200	24,360
do 9, Halifax, N.S..	37,840	37,840
do 10, Winnipeg, Man	3,500	3,640
do 11, Victoria, B.C..	6,900	6,900
do 12, Charlottet'n, P.E.I.	5,900	5,970
Total	478,340	378,870

THOS. WILY, Lieut.-Colonel,
Director of Stores, &c.

STORE BRANCH,
OTTAWA, 31st December, 1878

[B.]

S. A. Ammunition sold during the Year 1878.

Military District No. 1, London.

Date	Purchaser.	Corps.	Rounds.	Amount.	Total Rounds.	Total Amount.
1878.				$ cts.		$ cts.
Jan. 1	Capt. Leckie	33rd Battalion	500	10 20		
do 2	Capt. Kennedy	45th do	500	10 00		
Feb. 9	Major Martin	24th do	500	8 00		
Mareh 4	Lieut.-Col. Leys	District Paymaster	1,000	16 00		
April 16	Capt. Wilson	33rd Battalion	2,000	32 00		
do 17	G. W. Railton	Huron Rifle Associat'n	1,000	16 00		
do 27	Capt. Wilson	33rd Battalion	1,500	24 00		
do 27	Major Martin	24th do	700	11 20		
do 30	Capt Morden	7th do	500	8 00		
do 30	W. H. Moore	St. Thomas R.A.	5,000	80 00		
May 2	Lieut.-Col. O'Malley	25th Battalion	500	8 00		
do 2	Major Wilkinson	Leamington Infty. Co	3,000	48 00		
do 7	G. W. Railton	Huron R.A.	1,000	16 00		
do 23	Lieut.-Col. Attwood	26th Battalion	1,500	24 00		
June 3	Capt. Morden	7th do	500	8 00		
do 10	J. Wilson	Perth R.A.	500	8 00		
do 10	G. W. Railton	Huron R.A.	1,000	16 00		
do 11	Lieut.-Col. Attwood	26th Battalion	500	8 00		
do 11	Major Martin	24th do	800	13 00		
do 15	Lieut.-Col. Smith	24th do	500	8 00		
do 18	Lieut.-Col. Attwood	26th do	500	8 00		
do 21	Capt. Wilson	33rd do	2,000	32 00		
do 23	Lieut.-Col. Cole	1st Regt. of Cavalry	500	8 00		
do 26	Lieut.-Col. Smith	24th Battalion	500	8 00		
July 4	J. Wilson	Perth R.A.	500	8 00		
do 9	Lieut.-Col. Attwood	26th Battalion	500	8 00		
do 27	do	do	1,000	16 00		
Aug. 3	do	do	500	8 00		
do 3	do	do	500	8 00		
do 8	G. W. Railton	Huron R.A.	1,000	16 00		
do 15	J. Wilson	Perth R.A.	1,000	16 00		
do 20	Capt. Morden	7th Battalion	500	8 00		
do 21	Lieut.-Col. Attwood	26th do	2,500	40 00		
do 24	do	26th do	1,000	16 00		
do 26	do	26th do	1,000	16 00		
do 31	do	26th do	500	8 00		
Sept. 4	Major Wilson	33rd do	2,000	32 00		
do 5	M. B. Wilson	Stratford	500	8 00		
do 10	G. W. Railton	Huron R.A.	1,000	16 00		
do 15	Capt. Rice	Windsor Infty. Co.	1,000	16 00		
do 16	Major Wilson	33rd Battalion	1,200	19 20		
Oct. 2	Capt. Williamson	22nd do	1,000	16 00		
do 16	Capt. Rice	Windsor Infty. Co.	840	13 44		
do 16	Lieut.-Col. Smith	24th Battalion	1,500	24 00		
do 18	Major Martin	24th do	800	12 80		
do 28	Lieut.-Col. Attwood	26th do	500	8 00		
Nov. 26	G. W. Railton	Huron R.A.	1,000	16 00		
Dec. 3	Lieut.-Col. Attwood	St. Thomas R.A.	2,000	32 00		
do 23	do	26th Battalion	1,000	16 00		
do 30	Major Starr	Over issue	120	1 92		
do 30	Lieut.-Col. F. B. Leys	District Paymaster	350	5 60		
					51,810	833 36

S. A. Ammunition sold during the year 1878.—*Continued.*

Military District No. 2, Toronto.

Date.	Purchaser.	Corps.	Rounds.	Amount.	Total Rounds.	Total Amount.
1878.				$ cts.		$ cts.
April 15	Lieut.-Col. Alger	Ontario R.A.	10,000	160 00		
do 18	Capt. Fothergill	34th Battalion	2,500	40 00		
May 3	Sergt. Marston	2nd do	2,000	32 00		
do 11	do	2nd do	2,400	38 40		
do 11	Lieut.-Col. Alger	Ontario R.A.	10,000	160 00		
do 22	Mr. Rawbone	Gov. Genl's. By. Gd.	500	8 00		
June 8	Lieut.-Col. Alger	Ontario R. A.	10,000	160 00		
July 9	W. Taylor	Co. Ontario R.A.	3,000	48 00		
do 10	Capt. Fothergill	34th Battalion	2,000	32 00		
do 26	Lieut.-Col. Alger	Ontario R.A.	20,000	320 00		
do 26	Sergt. Marston	2nd Battalion	2,400	38 40		
do 30	Capt. Irwin	12th do	2,000	32 00		
Aug. 3	Lieut.-Col. Alger.	Ontario R.A.	10,000	160 00		
do 19	Sergt. Marston	2nd Battalion.	2,000	32 00		
Aug. 19	Capt. Fothergill	34th Battalion	2,000	32 00		
do 22	Lieut.-Col. Alger	Ontario R.A.	20,000	320 00		
do 23	Capt. Panton	20th Battalion	560	8 96		
do 23	Mr. Rawbone	Gov. Genl's Body Gd.	500	8 00		
do 28	Lieut.-Col. Alger	Ontario R.A.	10,000	160 00		
Sept. 9	Sergt. Marston	2nd Battalion	2,000	32 00		
do 23	do	do	2,000	32 00		
Oct. 12	do	do	2,000	32 00		
do 17	Lieut.-Col. Alger	Ontario R.A.	20,000	320 00		
Nov. 5	Sergt. Marston	2nd Battalion	1,000	16 00		
do 21	Lt.-Col. Otter	do	500	8 00		
do 30	Lt.-Col. Alger	Ontario R.A.	400	6 40		
Dec. 17	Lt.-Col. Otter	2nd Battalion	1,000	16 00		
					140,760	2,252 16

Military District No. 3, Kingston.

Jan. 17	Capt. Gordon	14th Battalion	4,000	64 00		
May 4	Major Hooper	Napanee G.A.	1,000	16 00		
Aug. 3	Lieut.-Col. Irwin	"A" Battery	2,000	32 00		
do 26	Major Hooper	Napanee G. A.	1,000	16 00		
do 31	Sergt. Marshall	49th Battalion	500	8 00		
Sept. 2	Lieut.-Col. Fairfield	48th do	1,000	16 00		
do 11	Lieut.-Col. Irwin	"A" Battery	2,000	32 00		
do 25	Major Bell	Peterborough R.A.	3,000	48 00		
Oct. 9	Lieut. Johnson	Hastings R.A.	1,500	24 00		
do 17	Lieut.-Col. Cubitt	49th Batt	2,000	31 75		
do 17	Capt. Bailie	47th do	5,000	80 00		
					23,000	367 75

Military District No. 4, Ottawa.

Jan. 18	Capt. Kennedy	45th Battalion	500	10 00		
do 28	do Leckie	33rd do	500	10 20		
Feb. 9	Major Cates	Wakefield Infty. Co.	500	8 00		

S. A. Ammunition sold during the year 1878.—*Continued.*

Military District No. 4, Ottawa—Continued.

Date.	Purchaser.	Corps.	Rounds.	Amount.	Total Rounds.	Total Amount.
1878.				$ cts.		$ cts.
March 13	Sergt. Cawdron	G.G. Foot Guards	500	8 00		
April 18	E. Waldo	do	1,096	20 96	500 M.H.	
do 23	F. Newby	do	560	8 96		
do 23	J. W. Deslauriers	do	500	8 00		
do 24	W. J. Jennings	do	1,000	16 00		
do 24	W. Anderson	do	500	8 00		
do 26	Capt. Todd	do	500	8 00		
do 26	Major Bennett	56th Battalion	1,000	16 00		
May 1	W. J. Jennings	G.G. Foot Guards	500	8 00		
do 8	Sergt. Cawdron	do	500	8 00		
do 13	F. W. Smith	do	500	8 00		
do 15	Sergt. Cawdron	do	1,000	16 00		
do 15	E. Waldo	do	500	10 00		
do 16	T. A. Walters	do	500	8 00		
do 17	Corpl. Reardon	do	500	8 00		
do 22	Sergt. Cawdron	do	500	8 00		
do 27	Major Cates	Wakefield Infant. Co.	500	8 00		
June 5	Sergt. Cawdron	G.G. Foot Guards	1,000	16 00		
do 6	Major Macpherson	do	500	8 00		
do 10	Sergt. Cawdron	do	500	8 00		
do 18	do	do	1,000	16 00		
do 18	Mr. O'Grady	do	500	8 00		
do 19	E. Waldo	do	500	8 00		
do 24	W. P. Anderson	do	500	8 00		
do 26	Sergt. Deslauriers	do	500	8 00		
do 28	H. H. Gray	do	500	8 00		
July 2	Lieut. Cole	42nd Batttalion	500	8 00		
do 4	H. Johnson	G.G. Foot Guards	500	9 00		
do 8	Sergt. Cawdron	do	1,500	24 00		
do 13	Veter.-Surgeon Harris	Ottawa Field Battery	500	8 00		
do 15	Sergt. Cawdron	G.G. Foot Guards	500	8 00		
July 17	Major Bennett	56th Battalion	1,000	16 00		
do 18	Capt. Todd	G. G. Foot Guards	500	8 00		
do 22	Sergt. Cawdron	do	1,000	16 00		
do 26	Major Macpherson	do	500	8 00		
do 26	Sergt. Cawdron	do	500	8 00		
do 29	H. T. Fitzsimmons	Brockville R.A	2,000	32 00		
do 31	A Throop	G. G. Foot Guards	500	8 00		
Aug. 6	Major Macpherson	do	500	8 00		
do 8	Sergt. Cawdron	do	2,000	32 00		
do 10	Lieut.-Col. Cubitt	45th Battalion	500	10 00		
do 13	Major Macpherson	G.G. Foot Guards	500	8 00		
do 14	Ensign Imley	Metcalf Infty. Co	500	10 00		
do 17	Major Macpherson	G. G. Foot Guards	500	8 00		
do 19	Capt. Todd	Metropolitan R.A	3,000	48 00		
do 19	Capt. Cates	Wakefield Infty. Co	500	8 00		
do 27	do	do	750	12 00		
do 30	do	do	500	8 00		
Sept. 5	Major Bennett	56th Battalion	1,000	16 00		
do 5	H. T. Fitzsimmons	Brockville R.A	2,000	32 00		
do 5	Lieut.-Col. Macpherson	Dominion R.A	15,260	266 56	2,200 M.H.	
do 13	Sergt. Cawdron	G. G. Foot Guards	1,000	16 00		
do 19	Capt. Cates	Wakefield Infty Co	1,000	16 00		
do 20	Sergt. Cawdron	G. G. Foot Guards	500	8 00		
do 26	do	do	500	8 00		
do 27	H. T. Fitzsimmons	Brockville R.A	2,000	32 00		
Oct. 3	Sergt. Cawdron	G.G. Foot Guards	1,000	16 00		
do 3	J. Wright	do	500	8 00		
do 9	Capt. Chamberlain	Aylwin Infty. Co	500	8 00		

S. A. Ammunition sold during the year 1878,—*Continued.*

Military District No. 4, Ottawa—Concluded.

Date.	Purchaser.	Corps.	Rounds.	Amount.	Total Rounds.	Total Amount.
1878.				$ cts		$ cts.
Oct. 11	Sergt. Cawdron	G.G. Foot Guards	500	8 00		
do 12	T. Coulter	Ottawa	1,000	16 00		
do 15	Sergt. Cawdron	G.G. Foot Guards	1,000	16 00		
do 18	Major Mowatt	56th Battalion	500	8 00		
do 21	Major Bennett	do	1,000	16 00		
do 23	Capt. Chamberlain	Alywin Infty. Co	1,000	16 00		
do 24	Ensign Finlay	Ramsay R.A	500	8 00		
do 25	Sergt. Cawdron	G.G. Foot Guards	500	8 00		
do 29	G. D. Sutherland	do	500	8 00		
Nov. 5	Capt. Wyman	18th Battalion	4,796	79 75		
do 13	Sergt. Cawdron	G.G. Foot Guards	500	8 00		
do 14	Capt. Wyman	18th Battalion	1,000	16 00		
do 18	Ensign Finlay	Metcalfe R.A	500	8 00		
do 29	Sergt. Cawdron	G.G. Foot Guards	500	8 00		
Dec., 9	do	do	500	8 00		
do 16	Capt. Cates	Wakefield Infty. Co	500	8 00		
do 31	P. O. Department	Time Gun Ottawa	500 lbs. Powder.	129 64		
					76,662	1,392 07

Military Districts 5 and 6, Montreal.

Jan. 11	Lieut.-Col. Hon. Matthew Aylmer	Sutton R.A	560	8 96		
do 19	Capt. Hockwell	79th Battalion	560	8 96		
April 25	Jno. Bowden	3rd Battalion R.A	1,120	17 92		
do 30	Lieut. Caverhill	5th do	2,240	35 84		
May 11	J. Marks	Caretaker Rifle Range Montreal	2,240	35 84		
do 14	Lieut.-Col. Stevenson	Montreal F.B	560	8 96		
do 27	Lieut. Col. Fraser	Montreal G.A	560	8 96		
do 29	J. Marks	Caretaker Rifle Range Montreal	2,240	35 84		
do 29	Lieut. Cushing	6th Battalion R.A	1,120	17 92		
do 21	Capt. Trenholme	58th Battalion	560	8 96		
do 21	Qtr.-Master Bowden	3rd Battalion R.A	1,120	17 92		
June 4	Lieut. Caverhill	5th do	1,120	17 92		
do 8	Capt. Morehouse	Sherbrooke R.A	1,120	17 92		
do 12	Color Sergt. Harkom	1st Battalion	1,120	17 92		
do 12	T. Marks	Caretaker Rifle Range Montreal	560	8 96		
do 12	Capt. Tatlow	1st Battalion	2,240	35 84		
do 13	Lieut.-Col Fraser	Montreal G.A	1,120	17 92		
do 19	Lieut. Cushing	6th Battalion	1,680	26 88		
do 24	Capt. Mairs	54th do	1,000	16 00		
do 24	J. Marks	Caretaker R. Range, Montreal	2,240	35 84		
do 27	Lieut. Caverhill	5th Battalion	560	8 96		
do 28	Lieut.-Col. Fraser	Montreal G.A	1,120	17 92		
do 29	Capt. Morehouse	Sherbrooke R.A	1,120	17 92		
July 4	Lieut Caverhill	5th Battalion	1,120	17 92		
do 4	Lieut. Cushing	6th do	1,680	26 88		
do 26	Qtr.-Master Bowden	3rd Battalion R.A	1,120	17 92		
do 27	Color-Sergt. Harkom	1st do	1,120	17 92		
do 30	Lieut. Caverhill	5th do	2,240	35 84		

S. A. Ammunition sold during the year 1878.—*Cootinued.*

Military Districts 5 and 6, Montreal—Concluded.

Date.	Purchaser.	Corps.	Rounds.	Amount.	Total Rounds.	Total Amount.
1878.				$ cts.		$ cts.
July 30	Lieut.-Col. Rowe	60th Battalion	560	8 96		
Aug. 2	Capt. Oswald	Montreal F.B	560	8 96		
do 3	Lieut. Cushing	6th Battalion	1,120	17 92		
do 8	Lieut.-Col. D'Orsonnens	5th Brigade Dist. R.A.	560	8 96		
do 8	Lieut. Cushing	6th Battalion R.A.	1,680	26 88		
do 8	Messrs. Workman	Montreal	1,000	16 00		
do 12	Capt. Laurie	Montreal G A.	1,120	17 92		
do 12	Capt. Morehouse	Sherbrooke R.A.	1,120	17 92		
do 15	Lieut.-Col. Fraser.	Montreal G A	13,600	236 80	2,400 M.H.	
oo 15	Capt. Oswald	do F.B	1,120	17 92		
do 16	Lieut. Caverhill.	5th Battalion	2,240	35 84		
do 17	Lieut. Cushing	6th do	1,680	26 88		
do 22	J. Marks	Caretaker R. Range	4,480	71 68		
do 26	Capt. Laurie	Montreal G.A.	1,120	17 92		
do 26	Lieut.-Col. Sinton	6th Battalion	2,800	44 80		
do 30	Lieut,-Col. Bacon	Brigade Major	560	8 96		
do 31	Capt. Laurie	Montreal G.A.	2,240	36 00		
do 31	Lieut.-Col. Fraser.	do	2,240	35 84		
Sept. 5	J. Marks	Caretaker R. Range	3,360	53 76		
do 5	Major McLaren	50th Battalion	560	8 96		
do 9	Lieut. Caverhill	5th Battalion R.A.	3,360	53 76		
do 12	J. Marks	Caretaker R. Range	3,360	53 76		
do 17	Capt. Morehouse	Sherbrooke R.A.	1,120	17 92		
do 17	Lieut. Cushing	6th Battalion R.A.	1,680	26 88		
do 17	Qtrmr.-Sergt Gough	do	560	8 96		
do 19	Lieut.-Col. Fraser.	Montreal G.A.	2,240	35 84		
do 19	Capt. Laurie	do	1,120	17 92		
do 23	Lieut.-Col. Labranche	65th Battalion	2,240	35 84		
do 23	Lieut· Caverhill	5th Battalion R.A.	1,120	17 92		
do 23	J. H. Cook	Wellington R A.	1,120	17 92		
do 23	C. W. Sleeper.	58th Battalion	560	8 96		
do 23	Lieut.-Col Shephard	Joliette Battalion	560	8 96		
do 23	Lieut. Cushing	6th Battalion R.A.	560	8 96		
do 25	Major Kennedy	Montreal Engineers	2,240	35 84		
do 25	Lieut.-Col. Handyside	3rd Battalion	3,360	53 76		
do 25	Lieut. Davis.	Montreal Engineers	560	8 96		
Oct. 7	Lieut. Cushing.	5th Battalion R.A.	1,120	17 92		
do 10	Lieut.-Col. Fraser.	Montreal G.A.	2,240	35 84		
do 10	Sergt. Wilson	do Water Police	560	8 96		
do 15	C. L. Bosse.		2,000	48 00	2,000 M.H.	
do 23	Lieut.-Col. Hon. Matthew Aylmer	Brigade Major	1,120	17 92		
Nov. 7	Capt. Morehouse	Sherbrooke R.A.	560	8 96		
do 7	J. Marks	Caretaker R. Range	3,360	53 76		
do 30	E. S. Baker	Wellington R.A.	560	8 96		
					115,304	1,876 11

Military District No. 7, Quebec.

Mar. 13	Capt. Scott	8th Battalion	560	8 96		
April 3	do	do	560	8 96		
do 13	do	do	560	8 96		
do 13	Capt. Ray	do	2,240	35 84		
do 24	Capt. Scott	do	1,120	17 92		
do 24	Capt. Pentland	do	560	8 96		

S. A. Ammunition sold during the Year 1878.—*Continued.*

Military District No. 7, Quebec—Concluded.

Date.	Purchaser.	Corps.	Rounds.	Amount.	Total Rounds.	Total Amount.
1878.				$ cts.		$ cts.
April 26	Capt. Ahern	8th Battalion	560	8 96		
May 17	Capt. Demers	17th do	560	8 96		
June 6	do	17th do	1,120	17 92		
do 26	do	17th do	1,120	17 92		
do 12	Major McDonald	Quebec Squadron Cavalry	500	8 00		
do 28	Capt. Ray	8th Battalion	1,680	26 88		
do 28	Capt. Scott	8th do	750	12 00		
July 5	Major Demers.	17th do	1,680	26 88		
do 26	Major Pentland	8th do	560	8 96		
do 27	Capt. Scott	8th do	750	12 00		
do 27	Major Demers.	17th do	560	8 96		
Aug. 1	Capt. Scott	8th do	560	8 96		
do 1	Major Demers	17th do	1,120	17 92		
do 7	Capt. Ray	8th do	560	8 96		
do 8	Capt. LeSueur	8th do	2,240	35 84		
do 8	Secretary and Treasurer,	Stadacona R.A	560	8 96		
do 8	Capt. Sewell	8th Battalion	560	8 96		
do 12	Lt.-Col. Montizambert	"B" Battery	1,620	25 92		
do 13	Major Stewart	Megantic R.A.	2,190	35 00		
do 13	Capt. Scott	8th Battalion	560	8 96		
do 15	Capt. LeSueur	8th do	560	8 96		
do 21	Capt. Scott	8th do	750	12 00		
do 28	Major Demers	17th do	1,120	17 92		
do 31	C. A. Dubé.	Rimouski R.A.	1,500	24 00		
Sept. 3	Lieut. Martin.	Quebec Squadron Cavalry	560	8 96		
do 7	Lieut.-Col. Hudon	Temiscouata Battal'n	1,000	16 00		
do 9	Capt. Scott	8th Battalion	660	10 56		
do 26	Major Demers	17th do	560	8 96		
do 28	Capt. Scott.	8th do	1,120	17 92		
do 16	Capt. Routhier.	Quebec Prov. Battal'n	500	8 00		
Oct. 3	Major Demers	17th Battalion	560	8 96		
do 3	Lieut.-Col. Hudon	Temiscouata Battal'n	1,000	16 00		
do 15	do	do	1,000	16 00		
do 15	C. A. Dubé.	Quebec R.A.	2,500	40 00		
do 21	Lieut.-Col. Montizambert	"B" Battery	500	8 00		
do 22	Lieut.-Col. Hudon	Temiscouata Battal'n	2,000	32 00		
do 25	do	do	1,000	16 00		
Dec. 26	Capt. Scott	8th Battalion	560	8 96		
					42,860	685 72

Military District No. 8, St. John, N.B.

Mar. 21	G. F. Thompson	N.B. Engineers	560	8 96		
May 1	Capt. Perley	do	2,240	35 84		
do 3	Major Stickney	Reserve Militia	1,120	17 92		
do 3	Capt. Hartt	62nd Battalion.	560	8 96		
do 17	Lieut. Hunter.	N.B. Engineers	1,120	17 92		
do 20	Capt. Earle	62nd Battalion.	560	8 96		
do 23	Lieut. Wallace	62nd do	560	8 96		
do 25	Capt. Hartt	62nd do	560	8 96		
June 10	Lieut. McLeod	67th do	2,240	35 84		
do 18	Lieut. Hunter.	N.B. Engineers	560	8 96		

S. A. Ammunition sold during the Year 1878.—*Continued.*

Military District No. 8, St. John, N.B.—Concluded.

Date.	Purchaser.	Corps.	Rounds.	Amount.	Total Rounds.	Total Amount.
1878.				$ cts.		$ cts.
July 4	Capt. Hartt	62nd Battalion	1,120	17 92		
do 15	Capt. Earle	62nd do	560	8 96		
do 20	Capt. Hunter	N.B. Engineers	560	8 96		
Aug. 5	Capt. Langstroth	N.B. Cavalry	1,120	17 92		
do 6	Capt. Hartt	62nd Battalion	560	8 96		
do 6	Capt. Hunter	N.B Engineers	1,120	17 92		
do 9	Capt. Perley	N B. Rifle Assoc'n	11,200	179 20		
do 10	Capt. Bourne	County Carleton R.A.	1,680	26 88		
do 17	Capt. Langstroth	N.B. Cavalry	1,120	17 92		
do 26	Major Stickney	Charlotte Co. R A	1,120	17 92		
do 27	do	do	560	8 96		
Sept. 4	Lieut. Hunter	N. B. Engineers	560	8 96		
do 7	Capt. Wetmore	74th Battalion	560	8 96		
do 16	Lieut. Hartt	St. John Co. R.A	2,240	35 84		
do 20	Capt. Hartt	62nd Battalion	560	8 96		
do 23	Lieut.-Col. Beer	Kings Co. R.A	1,120	17 92		
do 24	T. G. Loggie	York Co. R.A	1,120	17 92		
do 27	Major Stickney	Charlotte Co. R.A	1,680	26 88		
Oct. 1	Lieut. Hunter	N.B. Engineers	560	8 96		
do 3	Major Stickney	Charlotte Co. R.A	560	8 96		
do 4	Lieut. Hunter	N.B Engineers	560	8 96		
do 4	Lieut. Loggie	71st Battalion	560	8 96		
do 9	Lieut. Hunter	N.B. Engineers	1,120	17 92		
do 17	Major Stickney	Charlotte Co. R.A	560	8 96		
do 21	Major Hunter	Loyalist R. Club	1,120	17 92		
do 21	Sergt. Carmichael	N.B. Engineers	560	8 96		
do 26	Capt. Howard	North Co R.A	1,120	19 92		
do 29	Capt. Hartt	62nd Battalion	560	8 96		
					45,920 00	736 72

Military District No. 9, Halifax, N.S.

Jan. 3	Lieut.-Col. McPherson	2nd Halifax G.A	500	8 00		
April 29	Colonel Laurie	Provincial R.A	1,000	24 00	M.H.	
May 1	Lieut.-Col. Pallister	63rd Battalion	500	8 00		
do 2	Lieut.-Col. Lawrence	78th do	500	8 00		
do 10	Capt. Burgess	do	500	8 00		
June 7	Col. Laurie	Provincial R.A	3,000	48 00		
do 7	Lieut.-Col. Pallister	63rd Battalion	500	8 00		
do 11	Capt. Ryan	Kings Co. R.A	1,500	24 00		
do 26	Col. Laurie	Provincial R.A	500	12 00	M.H.	
do 26	Capt. Lawrence	78th Battalion	1,000	16 00		
do 28	Capt. Oxley	Cumberland Batt	500	8 00		
do 28	Col. Laurie	Provincial R.A	3,000	48 00		
July 10	Lieut.-Col. Pallister	63rd Battalion	500	8 00		
do 12	Lieut.-Col. Bremner	66th do	1,000	16 00		
do 12	Capt. Lawrence	78th do	1,000	16 00		
do 16	Lieut.-Col. Pallister	63rd do	1,000	16 00		
do 19	Capt. Lawrence	78th do	500	8 00		
do 19	Capt. Beckwith	68th do	500	8 00		
do 22	Capt. Church	Cumberland Batt	1,000	20 00	500 M.H.	
do 23	Col. Laurie	Provincial R.A	500	12 00	M.H.	
do 24	Lieut.-Col. Pallister	63rd Battalion	1,000	16 00		
do 29	Major Harrison	Cumberland Batt	500	8 00		
do 30	Capt. Black	do	500	8 00		

S. A. Ammunition sold during the Year 1878 —*Continued.*

Military District No. 9, Halifax, N.S.—Concluded.

Date.	Purchaser.	Corps.	Rounds.	Amount.	Total Rounds.	Total Amount.
1878.				$ cts.		$ cts.
Aug. 1	Lieut.-Col. Bremner	66th Battalion	1,000	16 00		
do 5	Lieut.-Col. Pallister	63rd do	1,000	16 00		
do 6	Capt. Stairs	2nd Brigade G.A	500	8 00		
do 9	Lieut.-Col Mitchell	1st do	1,000	24 00	M.H.	
do 9	Lieut.-Col. Pallister	63rd Battalion	1,000	16 00		
do 9	Capt. Oxley	Cumberland Batt	500	8 00		
do 9	Capt. Raine	78th Battalion	500	8 00		
do 10	Lieut.-Col. Mitchell	1st Brigade G.A	1,000	16 00		
do 13	Capt. Harris	68th Battalion	500	8 00		
do 15	Capt. Burgess	78th do	500	8 00		
do 15	Capt Gordon	Picton G.A	1,000	16 00		
do 15	Lieut.-Col. Pallister	63rd Battalion	1,000	16 00		
do 16	Lieut.-Col. Bremner	66th do	1,000	16 00		
do 19	Major Harrison	Cumberland Batt	500	8 00		
do 19	Col. Laurie	Provincial R.A	21,500	356 00	1,500 M.H.	
do 30	Capt. Payne	78th Battalion	500	8 00		
do 31	Lieut.-Col. Pallister	63rd do	1,500	24 00		
Sept. 10	Ensign Marshall	69th do	500	8 00		
do 11	Capt. Black	Cumberland R. A	2,000	32 00		
do 12	Lieut.-Col. Pallister	63rd Battalion	1,000	16 00		
do 17	Capt. Lawrence	78th do	500	8 00		
do 19	Capt. Gordon	Picton G.A	1,500	24 00		
do 20	Capt. Payne	78th Battalion	500	8 00		
do 21	Lieut.-Col. Mitchell	1st Brigade G.A	500	8 00		
do 21	Col. Laurie	Provincial R.A	500	12 00	M.H.	
do 21	Capt. Lawrence	78th Battalion	500	8 00		
do 23	Lieut.-Col. Pallister	63rd do	1,000	16 00		
do 24	Capt. Nelson	78th do	1,500	24 00		
do 26	Lieut.-Col. Mitchell	1st Brigade G.A	500	8 00		
do 28	Col. Laurie	Provincial R.A	1,000	24 00	M.H.	
do 30	Paymaster Miller	Digby R.A	1,500	30 00		
Oct. 2	Capt. Bland	Halifax R.A	3,500	56 00		
do 2	do	Provincial R.A	500	12 00	M.H.	
do 2	Capt. Burgess	78th Battalion	1,500	24 00		
do 5	Capt. Payne	do	1,000	16 00		
do 7	Lieut.-Col. Bremner	66th do	2,000	32 00		
do 8	Capt. Gordon	Pictou G.A	500	8 00		
do 9	Capt. Bland	Provincial R.A	1,000	24 00	M.H.	
do 9	Capt. Stairs	2nd Brigade G.A	500	8 00		
do 10	Lieut.-Col. Hudson	Pictou R.A	1,000	16 00		
do 30	Capt. Ryan	Halifax R.A	1,000	20 00		
do 31	do	do	500	12 00	M.H.	
Nov. 1	Capt. Gordon	Pictou G.A	500	8 00		
do 7	do	do	1,500	30 00		
					83,500 00	1,420 00

Military District No. 10, Winnipeg, M.

May 20	E. G. Conklin	Manitoba R.A	2,000	32 00		
June 5	do	do	2,000	32 00		
do 20	do	do	2,000	32 00		
do 26	Capt. McIntosh	Kildonan Inf. Co	500	8 00		
do 28	E. G. Conklin	Manitoba R.A	2,000	32 00		
July 13	do	do	2,000	32 00		
do 20	do	do	2,000	32 00		
Aug. 1	do	do	2,000	32 00		
do 13	do	do	4,000	64 00		
do 20	do	do	4,000	64 00		
Oct. 24	Capt. McIntosh	Kildonan Inf. Co	500	8 00		
					23,000	368 00

S. A. Ammunition sold during the Year 1878.—*Continued*

Military District No. 11, Victoria, B.C.

Date.	Purchaser.	Corps.	Rounds.	Amount.	Total Rounds.	Total Amount.
1878.				$ cts.		$ cts.
Feb. 22	Capt. Vinter	No. 2 Co., Victoria	420	6 72		
April 2	Lieut. Wolfenden	No. 1 do	840	13 44		
do 17	Capt. Vinter	No. 2 do	420	6 72		
May 2	Major Roscoe	No. 1 do	1,680	26 88		
July 2	Ens. Harvey	No. 1 Co., Nanaimo	4,200	67 20		
Aug. 29	Major Roscoe	No. 1 Co., Victoria	3,360	53 76		
do 29	Capt. Vinter	No. 2 do	2,100	33 60		
do 29	Insp. of Prisons	Penitentiary	500	8 00		
Sept. 6	Major Roscoe	No, 1 Co., Victoria	2,100	33 60		
Oct. 1	do	No. 1 do	5,460	87 36		
					21,080	337 28

Military District No. 12, Charlottetown, P.E.I.

Jan. 9	Capt. Irving	Garrison Artillery	500	8 00		
Feb 15	Capt. McRae	Queen's Co. Batt	500	8 00		
do 26	Capt. Longworth	do	2,000	32 00		
April 12	do	do	1,000	16 00		
do 19	Capt. McRae	do	1,000	16 00		
do 26	Capt. Longworth	do	2,000	32 00		
do 27	do	do	1,000	16 00		
May 27	Capt. Owen	Garrison Artillery	500	8 00		
do 27	Lieut. Kennedy	Queen's Co. Batt	500	8 00		
do 27	Capt. Longworth	do	1,120	17 92		
June 6	do	do	1,120	17 92		
do 15	do	do	2,240	35 84		
do 21	Major Morris	Garrison Artillery	2,000	32 00		
do 26	Capt. McRae	Queen's Co. Batt	1,000	16 00		
July 5	Capt. Dogherty	do	1,120	17 92		
do 29	Capt. McLeod	King's Co. Batt	1,000	16 00		
Aug. 3	Capt. McRae	Queen's Co. Batt	1,000	16 00		
do 5	Capt. Owen	Garrison Artillery	1,000	16 00		
do 5	Lieut. Williams	do	500	8 00		
do 6	Major Pollard	do	500	8 00		
do 6	Major Morris	do	3,000	48 00		
do 10	Capt. Irving	Local R.A	6,000	96 00		
do 10	Capt. McRae	Queen's Co. Batt	1,000	16 00		
do 10	Capt. Longworth	do	1,120	17 92		
do 23	Major Dogherty	Engineer Co	2,000	32 00		
do 24	Capt. Longworth	Queen's Co. Batt	1,000	16 00		
Sept. 9	Capt. McRae	do	2,000	32 00		
Oct. 22	Capt. Irving	Prov'l R.A	2,000	32 00		
Nov. 1	Capt. McRae	Queen's Co. Batt	1,000	16 00		
do 7	Major Dogherty	Engineer Co	2,000	32 00		
do 20	Capt. Longworth	82nd Battalion	2,000	32 00		
do 27	Capt. McRae	do	1,000	16 00		
do 29	Major Dogherty	Engineer Co	2,000	32 00		
Dec. 6	Capt. McRae	82nd Battalion	2,000	32 00		
do 6	Major Dogherty	Engineer Co	1,000	16 00		
do 9	do	do	3,000	48 00		
do 12	Capt. McLeod	Kings Co. Batt	1,000	16 00		
do 13	Major Mabon	82nd Battalion	1,500	24 00		
do 28	Major Dogherty	Engineer Co	3,000	48 00		
do 30	do	do	1,000	16 00		
					60,220	963 52

S. A. Ammunition sold during the year 1878—*Continued.*

RECAPITULATION.

Military District.	Rounds.	Amount.
		$ cts.
Military District No. 1, London	51,810	833 36
do No 2, Toronto	140,760	2,252 16
do No. 3, Kingston	23,000	367 75
do No. 4, Ottawa	76,662	1,392 07
do Nos. 5 and 6, Montreal	115,304	1,876 11
do No 7, Quebec	42,860	685 72
do No. 8, St John, N.B	45,920	736 72
do No 9, Halifax	83,500	1,420 00
do No. 10, Winnipeg	23,000	368 00
do No. 11, Victoria, B.C.	21,080	337 28
do No. 12, Charlottetown, P.E.I.	60,220	963 52
Total	684,116	11,232 69

THOS. WILY, Lieut.-Colonel,
Director of Stores, &c.

Store Branch,
Ottawa, 31st December, 1878.

(C.)

RETURN of Gunpowder and Friction Tubes issued during the Year for Practice and Salutes.

Stations.	Corps.	Gunpowder.	Friction Tubes.
		Lbs.	
Toronto	Field and Garrison Batteries	2,215	1,700
Kingston	"A" Battery	128	325
do	Royal Military College	348	320
do	Field and Garrison Batteries	2,745	1,035
Ottawa	Time gun, Ottawa	500	305
do	Salutes	638	335
Montreal	"B" Battery	100	110
do	Field and Garrison Batteries	3,120	990
Quebec	"B" Battery	12,360	1,611
do	Field and Garrison Batteries	628	700
St. John, N.B.	Armament Forts and Field and Garrison Batteries	8,171	1,099
Manitoba	Winnipeg Field Battery	100	215
P. E. Island	Garrison Batteries	1,461	283
	Total	32,514	9,028

THOS. WILY, Lieut.-Colonel,
Director of Stores, &c.

STORE BRANCH,
OTTAWA, 31st December, 1878.

(D.)

RETURN of Ammunition in Magazines at the undermentioned places on the 31st December, 1878.

	Stations.	S. A. Ammunition, Rounds.					Gun-powder.	Friction Tubes.
		Ball.				Blank.		
		Snider.	Spencer.	Colt's.	Martini-Henri.	Snider.		
								Lbs.
District Magazines.	London	310,020	.....	1,426	.....	63,580	50	.....
	Toronto	57,360	808	9,184	.....	67,490	20,622	18,475
	Kingston	1,230,900	2,646	950	.....	94,450	45,913	8,778
	Ottawa	970,532	.....	700	21,860	134,060	800	9,593
	Montreal	4,449,688	98,879	123,992	438,000	98,344	31,101	14,704
	Quebec	70,521	.....	14,100	.....	167,292	76,550	10,644
	St. John, N.B.	178,920	10,988	.....	.....	184,940	23,701	2,526
	Halifax, N.S.	70,850	.....	.....	6,200	69,355	.....	500
	Winnipeg, M.	191,471	11,309	.....	.....	25,941	1,000	901
	Victoria, B.C.	162,405	.....	.....	.....	31,000	.....	.....
	Charlottetown, P.E.I	59,723	.....	.....	.....	117,142	4,371	1,828
	Total	7,692,390	124,630	150,352	466,060	1,053,594	204,108	66,949

THOS. WILY, Lieut.-Colonel,
Director of Stores, &c

STORE BRANCH,
OTTAWA, 31st December, 1878.

APPENDIX No. 13.

ROYAL MILITARY COLLEGE OF CANADA.

(Kingston, Ont.)

The following papers are published for general information, viz :—

(A) "General Regulations for the Government of the Royal Military College of Canada." This gives the information required for persons desirous of being examined for admission to the College.

(B) Is a list of those who have been authorized for admission as Cadets to the Royal Military College.

(C) Is a series (six sets) of all the questions, German excepted, issued to present date for examination, before Military District Boards, of candidates for admission to the Royal Military College.

(A.)

GENERAL REGULATIONS FOR THE GOVERNMENT OF THE ROYAL MILITARY COLLEGE OF CANADA.

Objects of the College.

(1) The Military College is established for the purpose of imparting a complete education in all branches of military tactics, fortification, engineering, and general scientific knowledge in subjects connected with, and necessary to, a thorough knowledge of the military profession, and for qualifying officers for command and for staff appointments.

(*a*) The length of the course of instruction will be for four years.

Regulations for Admission.

(2) Admission to the College as Cadets will be granted to the successful candidates at an open competitive examination.

(3) The examinations will be conducted by Examiners appointed annually by the Governor in Council as provided by law.

(4) Notice will be given from time to time of the day and place of the examinations, and of the vacancies to be competed for at each examination.

(5) Boards will be appointed by the Governor in Council in each Military District to supervise the examination of candidates.

(6) No person will be accepted as a Cadet who is not considered eligible as to stature and physical power. The limits of age will for the present be from 15 to 20, the candidates being required to be within those limits on the first day of the month following the examination.

(*a*) The selections will be made by the Governor in Council from the lists of names forwarded by the Board of Examiners, having reference to the order of merit in which the candidates pass their examinations.

(7) Each candidate for admission must send to the Adjutant General of Militia, not less than one month before the examination is held, an application accompanied by the following papers *in duplicate :*

(*a*) A certified abstract from the register of his birth, (giving date and place) or, in default, a declaration by one of his parents or guardians before a magistrate, giving his exact age, with date and place of birth.

(*b*) A certificate of good moral character, signed by a clergyman of the locality in which he has recently resided, or by the head of a school or college at which he has received his education for at least the two preceding years.

(8) When a candidate who has once been examined applies to be examined again, he will only be required to forward a certificate of his moral character for the interval between the two examinations.

(9) The number of trials allowed will not exceed three.

(10) All candidates will be examined by a medical officer (medical fee payable by person examined), and no candidate will be allowed to proceed to examination unless certified by such officer to be free from all bodily defects or ailments, and in all respects, as to height and physical qualities, fit for the military service.

(*a*) Each Cadet will be examined annually by a medical officer, and if from any cause he is found to be unlikely to become physically qualified for the military service, he will be required to resign.

(11) Only persons who are British subjects and who have resided, or whose parents have resided in Canada for five years immediately preceding the date of examination, shall be eligible as candidates for admission as Cadets, and all such persons shall be eligible. Short periods of absence in Europe for purposes of education to be considered as residence.

(12) Each Cadet before being examined will be required to sign a certificate that he is not married, and no Cadet will be permitted to marry during the period he remains in the College.

(13) The candidates will be required to satisfy the examiners appointed under paragraph 3, in the subjects subjoined.

(14) The examination will be divided into two parts, viz : "Preliminary" or qualifying, and "Further examination ;" the former is obligatory, the latter optional.

(15) The subjects of "Obligatory or Preliminary Examination" will be as follows :

	Marks.
(1) Mathematics :	
(*a*) Arithmetic, including vulgar and decimal fractions, simple and compound proportion, simple and compound interest, partnership, profit and loss	500
(*b*) Algebra, including simple equations	500
(*c*) Geometry, first book of Euclid	500
(2) (*a*) Grammar, English or French, and writing English or French correctly, and in a good legible hand from dictation	500
(*b*) Composition as tested by the power of writing an essay, precis or letter, in English or French	500
(3) Geography, general and descriptive	500
(4) History, British and Canadian, general	500
*(5) French : grammar and translation from the language	500
*(6) German : grammar and translation from the language into either English or French as may be preferred by the candidate	500
(7) Latin : grammar and simple translation from the language into either English or French as may be preferred by the candidate	500
(8) Elements of freehand drawing, viz : Simple copies from the flat (outline)	300

*(16) French and German to be considered as *alternative* subjects, in either, but only *one* of which, the candidate need be qualified, and both to be optional.

(17) No candidate will be considered qualified for a cadetship or be allowed to count marks in the "further examination," unless he obtains a minimum of forty per

cent. of the total number of marks in each of the subjects Paragraph 15 :—1, (*a*, *b*, *c*, together) 2, (*a* and *b* together) 3, 4 and 8; and a minimum of one-third in each of the subjects 5, 6 and 7.

(18) The subjects of "Voluntary or Further Examination" will be as follows :

	Marks.
(1) Mathematics :	
(*a*) Algebra, up to and including simple and quadratic equations	1000
(*b*) Geometry, up to and including third book of Euclid..	1000
(*c*) Theory and use of common logarithms, plain trigonometry, mensuration	1000
(2) English or French literature—limited to specified authors, the names of the authors being given beforehand	1000
(*a*) (*Books for the examination will be specified.*)	
(3) Geography—Physical, particularly of Dominion of Canada and United States	1000
(*a*) (*Books for the examination will be specified.*)	
(4) (History—British and Canadian—limited to certain fixed periods, the names of the authors and the periods being specified beforehand	1000
(*a*) (*Books for the examination will be specified.*)	
(5) French—translation from English into French, or from French into English	1200
(6) German—translation from either English or French, as may be preferred by the candidate, into German	1200
(7) Latin—including the fifth book of Cæsar's commentaries, to end of 23rd chap., and second book of Virgil's Æneid. Translation into either English or French as may be preferred by the candidate	1500
(8) Drawing—copy from flat, shaded. Simple object drawing	1000

(19) No optional subject, except mathematics and drawing, shall gain a Cadet any marks, unless he obtains a minimum of one-third of the marks assigned to that subject.

(20) The marks gained in the obligatory subjects, as laid down in paragraph 17, will be added to those gained in the optional subjects, as laid down in paragraph 19, to make a second total.

The resulting total will determine the candidate's place in the competitive list, the successful candidates being those who stand first on the list up to the number of vacancies competed for, if otherwise qualified. The answers, in writing, at the examinations may be prepared in either English or French as may be preferred by the candidate, except in the cases specially mentioned.

The standard of knowledge of English required from *French speaking* candidates for the present will be :—To write and speak English sufficiently to understand and be understood in that language.

(21) Blank forms of certificates and the necessary printed questions for use at the examinations, will be forwarded to the several Boards from Headquarters, Ottawa, and a list of the successful candidates, together with the total number of marks gained by each, will be published in the *Canada Gazette*.

Every Cadet entering upon a course of instruction in the College will be required to sign a roll of entry and be thenceforward for the period of his pupilage, subject to the Queen's Rules and Regulations, the Mutiny Act, the Rules and Articles of War, and to such other rules and regulations as Her Majesty's troops are subjected to.

Rewards.

(22) A sword will be given at each final examination as a special reward for excellence of conduct.

(23) The commissions in the Militia service of not more than three Cadets who are recommended by the Commandant on their finally leaving the College as having specially distinguished themselves, and who at the end of twelve months are reported by the Officer commanding the Militia as having performed their duty in a satisfactory manner for that period, shall be ante-dated twelve months.

Payments and Allowances.

(24) Each Cadet will be required to provide himself with and keep in repair at his own expense such articles of uniform, boots and personal clothing as may be determined.

(25) Each Cadet will be required to provide himself with such books, instruments and apparatus as may be determined.

(26) Articles required under paragraphs 24 and 25 must be obtained by the Cadet from the Government stores, and will be issued to him at cost price.

(27) Each Cadet will be provided free of expense with barrack furniture, board, washing and attendance.

(28) Each Cadet will be required to pay in advance, previous to joining, a contribution of $200 to cover the value of articles under paragraphs 24 and 25, and in every future year a sum of $150 in advance, for the same purpose.

(29) These sums will be accounted for annually to the Cadet; any surplus will be carried to his credit towards his next annual contribution, and any deficit must be paid by the Cadet in addition to his next annual contribution.

(30) Each payment must be deposited to the credit of the Receiver-General, Royal Military College account, payable to the order of the Bank of Montreal, Kingston. In places where there is no agency of that bank, the deposit must be in such other bank as is authorized to receive such deposits. The bank will issue receipts in triplicate; the original to be retained by the depositor, the other two to be sent by him to the Commandant of the College, for transmission to Headquarters, Ottawa.

(31) Cadets who, under special circumstances, may be permitted to remain at the College more than forty-eight hours after the commencement of the summer vacation, shall pay the sum of one dollar and twenty-five cents a day, for board and lodging.

(32) Cadets who may be permitted to withdraw from the Royal Military College without completing the full term of their engagement, will, before receiving their final discharge, be required to pay the sum of one hundred dollars, in addition to any amount owing by them to the Department of Militia and Defence or College Funds.

(33) On finally leaving the College each Cadet will be allowed to take with him all articles obtained under paragraphs 24 and 25.

(34) In the case of a Cadet who is absent a whole term on account of sickness or *rusticating*, a payment of $50 shall be required of him for the privilege of his name being kept on the rolls of the College and for a vacancy being guaranteed at the commencement of the next term.

(35) An allowance for travelling expenses at the rate of four cents a mile for the number of miles beyond 500 necessarily travelled between the headquarters of the Military District in which he resides and the College, will be paid to each Cadet at the time he is first admitted, and a similar allowance for travelling expenses at the headquarters of the same Military District will be paid to each such Cadet who has satisfactorily passed final examination at the College.

(*a*) No allowance for travelling expenses will be granted to those who reside within 500 miles from the College.

WALKER POWELL, Colonel,
Adjutant General of Militia,
Canada.

HEADQUARTERS, Ottawa, 1878.

(B.)

LIST OF THOSE AUTHORIZED FOR ADMISSION AS CADETS TO THE ROYAL MILITARY COLLEGE OF CANADA, UP TO 16TH DECEMBER, 1878.

			General Orders Authorizing Admission.
		Province of Ontario.	
Military District No. 1.—	William M. Davis	Aylmer,	7th March, 1876.
	Victor B. Rivers	Brockville,	19th May, 1876.
	Charles O. Fairbank	Petrolia,	19th May, 1876.
	Alexander B. Ross	Goderich,	29th Dec., 1876.
	John A. Coryell	Strathroy,	6th April, 1877.
	William R. Greig	London,	20th July, 1877.
	William H. Hewitt	Mount Forest,	5th July, 1878.
Military District No. 2.—	Frederick Davis	York,	7th March, 1876.
	Lukin H. Irving	Hamilton,	7th March, 1876.
	Cuthbert W. Shanly	Toronto,	6th April, 1877.
	William J. Graham	Everett,	20th July, 1877.
	Ralph D. Avery	Niagara,	5th July, 1878.
	Arthur E. Hodgins	Toronto,	4th Oct., 1878.
	Septimus J. A. Denison	Toronto,	7th March, 1876.
	Walter T. English	Toronto,	20th Sept., 1876.
Military District No. 3.—	Aylesworth B. Perry	Napanee,	19th May, 1876.
	Francis J. Dixon	Belleville,	19th May, 1876.
	George C. Clark	Kingston,	6th April, 1877.
	Ernest W. Hubbell	Kingston,	20th July, 1877.
	Arthur H. Van Straubenzee	Kingston,	6th April, 1877.
	Edward Ford	Kingston,	20th July, 1877.
	Robert E. Kent	Kingston,	20th July, 1877.
	Barton W. Yates	Brantford,	4th Jan., 1878.
	Robert Cartwright	Kingston,	4th Jan., 1878.
	Sidney F. Gordon	Kingston,	5th July, 1878.
	Alexander K. Kirkpatrick	Kingston,	5th July, 1878.
	George M. Duff	Kingston,	5th July, 1878.
	Henry S. Greenwood	Kingston,	5th July, 1878.
Military District No 4.—	Harry C. Freer	Brockville,	7th March, 1876.
	Henry E. Wise	Ottawa,	7th March, 1876.
	James Spelman	Ottawa,	19th May, 1876.
	John B. Cochrane	Brockville,	19th May, 1876.
	Harold W. Keefer	Ottawa,	30th June, 1876.
	Duncan Macpherson	Napanee,	30th June, 1876.
	William J. McElhinney	Brockville,	4th Jan., 1878.
	Frederick C. Anderson	Ottawa,	5th July, 1878.
	Herbert Clarke	Prescott,	5th July, 1878.
	Fred H. Powell	Ottawa,	5th July, 1878.
		Province of Quebec.	
Military District No. 5.—	John G. Gibson	Dunham,	29th Dec., 1876.
	Mario E. A. Doucet	Montreal,	29th Dec., 1876.
	Ernest F. Würtele	Montreal,	5th July, 1878.
	Huntly B. MacKay, jun	Montreal,	4th Jan., 1878.
	Henry H. Hogan	Montreal,	4th Jan., 1878.
	Edward T. Taylor	Montreal,	5th July, 1878.

Military District No. 6.—(None.)			
Military District No. 7.—	Alfred G. G. Würtele	Quebec,	7th March, 1876.
	William T. Bridges	Quebec.	6th April, 1877.
	William G. B. Dunscomb	Quebec,	6th April, 1877.
	George W. Shaw	Quebec,	20th July, 1877.
		Province of New Brunswick.	
Military District No. 8.—	George E. Perley	St. John,	19th May, 1876.
	Thomas L. Reed	St. John,	7th March, 1876.
	Charles A. DesBrisay	Bathurst,	19th May, 1876.
	Edmund H. Drury	St. John,	20th July, 1877.
	Herbert M. Campbell	Fredericton,	20th July, 1877.
	Allan W. Daniel	St. John,	20th July, 1877.
	James W. Sears	St. John,	4th Jan., 1878.
		Province of Nova Scotia.	
Military District No. 9.—	Walter G. Jones	Halifax,	5th July, 1878.
	William G. Stairs	Halifax.	5th July, 1878.
	Græme S. Duffus	Halifax,	2nd Aug., 1878.
		Province of Manitoba.	
Military District No. 10.—	Richard C. Laurie	Winnipeg,	19th Jan., 1877.
	James M. McVicar	Winnipeg,	6th April, 1877.
		Province of British Columbia.	
Military District No. 11.—(None.)			
		Province of Prince Edward Island.	
Military District No. 12.—(None.)			

(C.)

FOR FEBRUARY, 1876.

No. I.

(Preliminary Examination.)

ARITHMETIC.

February 8th, 1876, from 10 a.m., to 11.30 a.m.

Candidates are required to observe the Regulations strictly.

Values.

55 (1.) A man walks a certain distance and rides back in 3 hours and 45 minutes, he could ride both ways in $2\frac{1}{2}$ hours, how long would it take him to walk both ways?

55 (2.) How can you ascertain whether a vulgar fraction can be expressed exactly as a decimal?

55 (3.) Find the value of $\frac{\frac{1}{3} \text{ of } \frac{2}{3} + \frac{1}{4} \text{ of } \frac{5}{6}}{\frac{1}{3} + \frac{3}{7} - \frac{8}{9} + \frac{15}{16}}$ of $\frac{6\frac{15}{16}}{4\frac{5}{8}}$ of $\frac{1}{3}$ of a square foot.

55 (4.) Distinguish between a Measure, a Common Measure and the Greatest Common Measure.

55 (5.) Explain the principle upon which the process of finding the G. C. M. is based.

55 (6.) If $\frac{1}{2}$ of $\frac{3}{5}$ of $3\frac{1}{3}$ yards of cloth cost $\frac{2}{7}$ of $\frac{3}{11}$ of $\$4\frac{2}{3}$, what will $\frac{3}{8}$ of $\frac{1}{2}$ of $\frac{5}{56}$ of a yard cost?

55 (7.) Define the terms: interest, discount and present worth.

60 (8.) An agent receives $4,000 with instructions to purchase Great Western Railway Stock. After deducting his commission at $1\frac{1}{2}$ per cent., how much money had he to invest, and what was his commission?

55 (9.) How many bricks 8 inches long, 4 inches wide and 2 inches thick will it require to build a wall 25 feet long, 20 feet high, and 2 feet 6 inches thick?

No. II.

(Preliminary Examination.)

ALGEBRA.

February 8th, 1876, from 11.30 a.m. to 1 p.m.

Candidates are required to observe the Regulations strictly.

Values.

62 (1.) Resolve the following expressions into factors: (*a*) $x^2 + 9x + 20$, (*b*) $x^4 - 81$.

62 (2.) How is one fraction divided by another? Prove the rule.

62 (3.) Find the L. C. M. of $x^2 - 1$, $x^3 + 1$, $x^3 - 1$.

62 (4.) Solve the equation $(x-a)(x-b) = (x-a-b)^2$.

Values.

62 (5.) Find the value of x in the following equation:

$$\frac{7x-4}{8} + 2\frac{2}{3} + \frac{4-7x}{4} = x - \frac{7}{12}.$$

62 (6.) Distinguish between an equation and an identity.

64 (7.) The side of a square is 110 inches long; find the length and breadth of a rectangle which shall have its perimeter 4 inches longer than that of the square, and its area 4 square inches less than that of the square.

64 (8.) Two messengers, A and B, were despatched at the same time to a place at the distance of 90 miles, the former, by riding one mile per hour more than the latter, arrived at the end of his journey one hour before him; find at what rate per hour each travelled.

No. III.

(Preliminary Examination.)

ENGLISH GRAMMAR.

February 8th, 1876, from 2 p.m. to 3.15 a.m

Candidates are required to observe the Regulations strictly.

What is our duty here? To tend
From *good* to *better*—thence to best:
Grateful to drink life's cup—then bend
Unmurmuring to our bed of rest;
To pluck the flowers that *round* us blow,
Scattering our fragrance *as* we go.

BOWRING.

Values.

70 (1.) Divide into propositions and analyze the above passage.

50 (2.) Parse the italicized words.

50 (3.) Define a transitive and an intransitive verb, a preposition, an adverb, a demonstrative pronoun.

50 (4.) State the different ways in which adjectives admit of comparison.

50 (5.) Which of the following words are qualifying adjectives; some, few, cold, simple, small, square?

50 (6.) What are meant by *strong* and *weak* verbs? Give an example of each.

50 (7.) Distinguish between simple, complex and compound sentences, giving an example of each.

40 (8.) Compare the following verbs: Fall, fell; lie, lay; rise, raise; sit, set, stride and swim.

Values.

50 | (9.) What is meant by attributive and predicate adjectives? Give an example of each.

40 | (10,) Correct where necessary the following: (a) James or John has done this. (b) He only reads the book but not the letter. (c) Diligent industry, and not mean savings, produce honorable competence. (d) Veracity, as well as judgment, is to be our rule of life.

No. IV.

(Preliminary Examination.)

COMPOSITION.

February 8th, 1876, from 3.15 a.m. to 4.30 p.m.

Candidates are required to observe the Regulations strictly.

Values.

250 | (1.) Write a biographical sketch of the Duke of Wellington.

250 | (2.) Write an essay on "Social Life."

No. V.

(Preliminary Examination.)

GEOMETRY.

February 9th, 1876, from 10 a.m. to 12 m.

Candidates are required to observe the Regulations strictly.

Values.

71 | (1.) Define a parallelogram, a right angle, and an acute angled triangle.

71 | (2.) If two angles of a triangle be equal to one another, the sides which subtend the equal angles are equal to one another.

71 | (3.) If one side of a triangle be produced, the exterior angle thus formed is greater than either of the two interior opposite angles.

71 | (4.) If two triangles have two angles of one equal to two angles of the other, each to each, and a side of the one similarly situated as to the equal angles, the two triangles are equal in every respect.

74 | (5.) If a straight line falls upon two parallel straight lines, it makes the alternate angles equal; the exterior angles equal to the interior and opposite angle on the same side of the straight line; and the two interior angles on the same side of it together equal to two right angles.

71 | (6.) If the square described upon one of the sides of a triangle be equal to the square described upon the other two sides of it, the angle contained by these two sides is a right angle.

71 | (7.) Show how from the last proposition, a perpendicular may be drawn to a given straight line from any point in the same.

No. VI.

(Preliminary Examination.)

GEOGRAPHY.

February 9th, 1876, from 12 m. to 1 p.m.

Candidates are required to observe the Regulations strictly.

Values.

38 | (1.) Mention the principal rivers on the East Coast of England.

38 | (2.) Give the names of the Channel Islands.

38 | (3.) For what are Belfast, Londonderry, Dundee, Birmingham and Burslem noted?

41 | (4.) Draw an outline map of Great Britain, marking the position of Liverpool, Bristol, Newcastle, Falmouth, Aberdeen, Edinburgh and Inverness

38 | (5.) Mention the British Presidencies of India.

41 | (6.) Where and what are Hong Kong, Trinidad, Cuba, Azores, Hammerfest, Gottland and Macao?

38 | (7.) Give the Capitals of Maine, New Hampshire, Massachusetts, New York, Ohio, Michigan and Wisconsin.

38 | (8.) Through what American States does the Grand Trunk Railway pass?

38 | (9.) Give the names of the Provinces of the Dominion of Canada, with their Capitals.

38 | (10.) What is the most easterly County of the Province of Quebec, opposite Anticosti?

38 | (11.) Name the Counties in the Province of Ontario bordering on Lake Erie.

38 | (12.) Give the names of the principal rivers of Manitoba and British Columbia.

38 | (13.) What bay is on each side of the isthmus connecting Nova Scotia and New Brunswick?

VII.

(Preliminary Examination.)

February 9th, 1876, from 2 p.m. to 3 p.m.

HISTORY.

Candidates are required to observe the Regulations strictly.

Values.

41 | (1.) Between whom was the Battle of Hastings fought? Give its date.

41 | (2.) What effect had the Norman conquest on the English language?

41 | (3.) Give an account of Doomsday Book and of Trial by Ordeal.

Values.

41 (4.) Who was the first and the last of the Plantagenet line of Kings?

45 (5.) Where and by whom was Magna Charta signed? Mention some of its leading provisions.

41 (6.) What English King was the first to assume the title of King of France? State the ground on which he based his claim.

41 (7.) Give the Brunswick line of Kings.

41 (8.) What gave rise to the Crimean War? Mention the parties engaged in it.

41 (9.) How did the inhabitants of North America come to be called Indians?

41 (10.) What were the Indian names of Quebec and Montreal?

45 (11.) Write a short account of the capture of Quebec in 1759.

41 (12.) Mention some results in Canada of the transference of the supreme power from France to Britain.

No. VIII.

(Preliminary Examination.)

LATIN.

February 9th, 1876, from 3 p.m. to 4 p.m.

Candidates are required to observe the Regulations strictly.

Values.

30 (1.) Decline *opus, acies, hic* and *jugerum.*

30 (2.) Distinguish between Heteroclites and Heterogeneous nouns.

30 (3.) What is peculiar about the ablative singular of *fames*?

30 (4.) Distinguish between the singular and plural of *finis, litera, opera* and *sal.*

30 (5.) Give the plural of *locus, cœlum, epulum* and *vas.*

30 (6.) Compare *bonus, vetus, facilis, juvenis* and *senex.*

30 (7.) Give the principal and historical tenses.

30 (8.) Conjugate the verbs *juveo, video, domo, mano* and *maneo.*

30 (9.) Give the imperative of *dico, duco, fero, facio* and *nolo.*

30 (10.) Distinguish between the use of the indicative and subjective moods.

Values.

200 (11.) Translate the following:

Deinde Romulus et Remus urbem in iisdem locis, ubi expositi, ubique erant educati, condiderunt; sed orta inter eos contentione, uter nomen novae urbi daret, uter conditam imperio regeret, auspicia adhibuere. Remus prior sex vultures, Romulus postea duodecim videt. Sic Romulus, augurio victor, urbem "Romam" vocavit. Remus, fratris ludibrio, novos transiluisse muros dicitur; eum iratus Romulus interfecit, his increpans verbis: Sic deinde pereat, quincunque alius transiliet moenia mea. Ita solus potitus est imperio Romulus

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No. IX.

(Preliminary Examination.)

DRAWING.

February 9th, 1876, from 4 p.m. to 4.30 p.m.

Candidates are required to observe the Regulations strictly.

Values. Draw the outlines of

60 (1.) A cube.

60 (2.) A round glass jar half filled with water

60 (3.) A chair.

60 (4.) A candlestick.

60 (5.) A triangular prism.

No. X.

(Preliminary Examination.)

FRENCH.

February 10th, 1876, from 10 a.m. to 11 a.m.

Candidates are required to observe the Regulations strictly.

Values. Translate the following:

320 (1.) Androclès, esclave en Afrique d'un pro-consul romain qui le maltraitait tous les jours inhumainement, prend la fuite et s'enfonce dans le désert. Il y rencontre un énorme lion que la douleur, causée par une épine enfoncée dans son pied, faisait rugir d'une manière épouvantable. Androclès ose le soulager en retirant l'épine. Pendant trois ans le lion reconnaissant nourrit son bienfaiteur de sa chasse. Pris tous deux, et conduits à Rome, ils se retrouvent, après quelque temps, dans le cirque destiné aux combats des esclaves et des animaux. Le lion reconnaît son bienfaiteur; il s'avance vers lui, et loin de le dévorer, comme on s'y attendait, il se couche à ses pieds, le flatte de la queue, lui lèche les membres, et rappelle par ses caresses qu'Androclès n'a pas oblige un ingrat. Le peuple rempli d'admiration, demande que l'esclave et le lion soient nourris au dépens du fisc. Lorsque l'esclave et le lion parcouraient ensemble les rues de Rome, on se disait: "Cet homme a été le médecin de ce lion; ce lion a été le sauveur de cet homme."