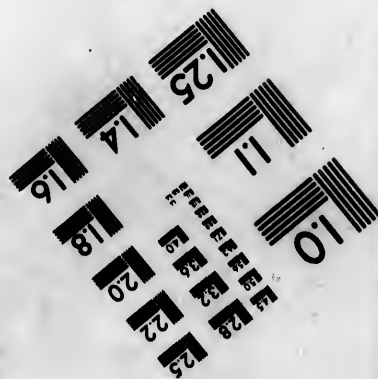
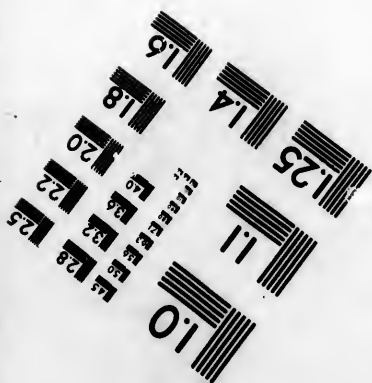
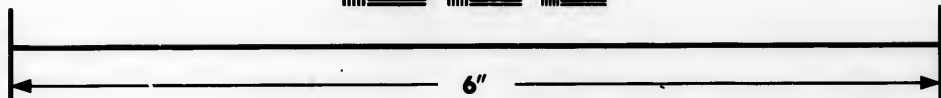
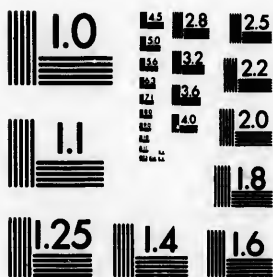


**IMAGE EVALUATION
TEST TARGET (MT-3)**



**Photographic
Sciences
Corporation**

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0

**CIHM/ICMH
Microfiche
Series.**

**CIHM/ICMH
Collection de
microfiches.**



Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40

© 1983

Technical and Bibliographic Notes/Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured covers/
Couverture de couleur
- Covers damaged/
Couverture endommagée
- Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée
- Cover title missing/
Le titre de couverture manque
- Coloured maps/
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur
- Bound with other material/
Relié avec d'autres documents
- Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distortion le long de la marge intérieure
- Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.
- Additional comments:
Commentaires supplémentaires:

- Coloured pages/
Pages de couleur
- Pages damaged/
Pages endommagées
- Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
- Pages detached/
Pages détachées
- Showthrough/
Transparence
- Quality of print varies/
Qualité inégale de l'impression
- Includes supplementary material/
Comprend du matériel supplémentaire
- Only edition available/
Seule édition disponible
- Pages wholly or partially obscured by errata slips, tissues, etc., have been refilmed to ensure the best possible image/
Les pages totalement ou partiellement obscurcies par un feuillet d'errata, une pelure, etc., ont été filmées à nouveau de façon à obtenir la meilleure image possible.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

The copy filmed here has been reproduced thanks to the generosity of:

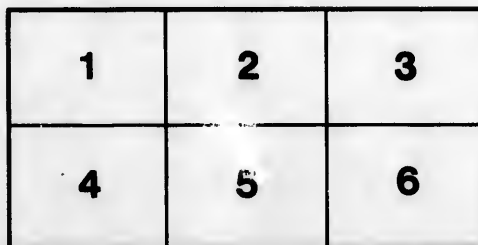
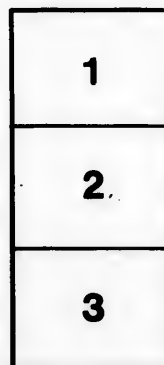
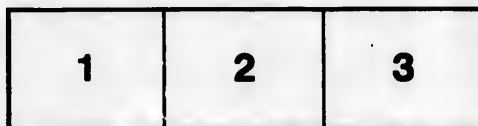
Library of the Public
Archives of Canada

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol \rightarrow (meaning "CONTINUED"), or the symbol ∇ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:



L'exemplaire filmé fut reproduit grâce à la générosité de:

La bibliothèque des Archives
publiques du Canada

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole \rightarrow signifie "A SUIVRE", le symbole ∇ signifie "FIN".

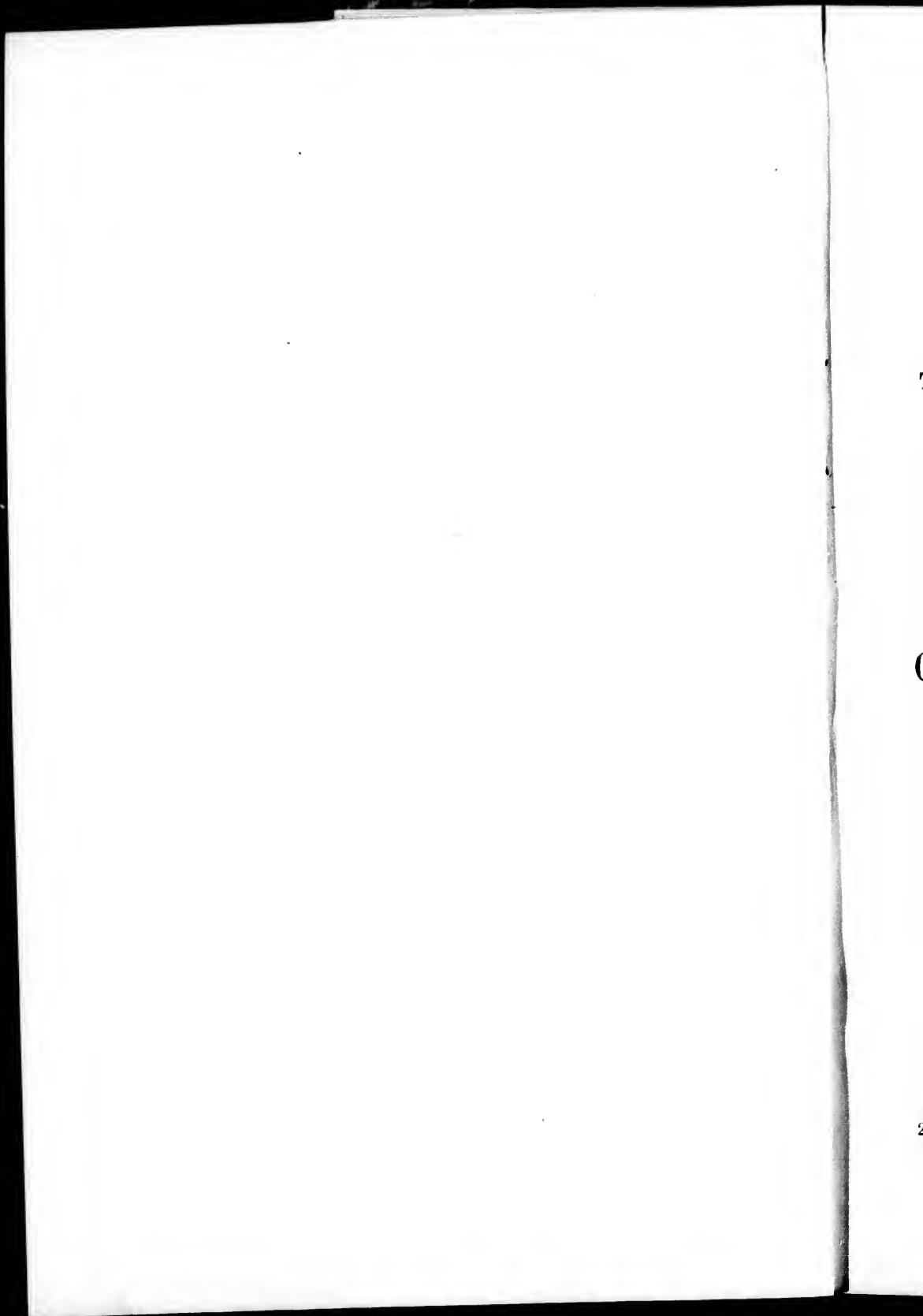
Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.

ails
du
odifier
une
mage

errata
to

palure,
on à





7

C

2

OBSERVATIONS
ON
THE PROSPECTIVE BENEFITS DERIVABLE FROM
THE INCORPORATION
OF THE
ARTILLERY
WITH THE
CAVALRY AND INFANTRY OF THE ARMY.

RESPECTFULLY ADDRESSED TO
THE RIGHT HONOURABLE THE LORD PANMURE, G.C.B., K.T.
Her Majesty's Secretary of State for the War Department.

BY
GENERAL SIR ROBERT GARDINER, K.C.B.
Royal Artillery

29th September, 1856.

1856
(16)

REFERENCES.

	PAGE
<i>Preliminary Observations</i>	7
<i>Past progressive Advancement of Efficiency in the Artillery of the British Army</i>	8
<i>Organization :</i>	
<i>Prospective Benefits derivable from the Incorporation of the Artillery with the Cavalry and Infantry of the Army</i>	13
<i>Organization :</i>	
<i>Inadequacy of the General and Regimental Staff of the Artillery of the British Army</i>	17
<i>Organization :</i>	
<i>Artillery of the Guard</i>	19
<i>Organization :</i>	
<i>Necessary Reorganization of Non-commis- sioned Officers and Men of the Driver Corps</i>	20

	PAGE
<i>Organization :</i>	
<i>Illimited Exportation of English Horses .</i>	22
<i>Numerical Proportion and Armament of the Field Artillery of the British Army.</i>	24
<i>Equipment of the Field Artillery of the British Army</i>	28
<i>Prejudicial influences of the slow Regi- mental promotion in the Artillery of the British Army, and non-employment of its Officers in command in common with those of the other branches of the Service.</i>	29
<i>Education of the Officers, and instruction generally of the Artillery of the British Army</i>	35
<i>Summary of Observations</i>	43

“ Let all things be done in order.”

5
3

Pre
Obs

September 29th, 1856.

MY LORD,

Preliminary
Observations.

THE importance of the measure recently effected by your Lordship of incorporating the Artillery with the Cavalry and Infantry of the Army, will, I hope, insure to me your indulgence, while I endeavour in the following observations to deduce and put into one view the prospective organic benefits to the corps, of which it affords such sanguine promise.

If apology was necessary for bringing any question of service under your Lordship's consideration, I might plead the fact, that at this moment there are before me seven printed pamphlets, (two with names, five anonymous,) written by officers of Artillery—each demonstrating the causes which have hitherto kept the Artillery an incomplete and inefficient arm in the British Service.

In the observations to which I respectfully

Preliminary
Observations.

solicit your Lordship's attention, I shall adhere solely to such exemplification as may be sanctioned on the grounds of personal experience; but I think your Lordship will infer from the mere existence of the documents I have named, that there prevails among the officers of Artillery a consciousness of the incompleteness and inefficiency of our service, which, under such conviction, it would be a dereliction of duty in them not to endeavour to see corrected.

Artillery, from various causes, but especially from our numerical deficiency, has too often in the British Service been thought of as an adjunct, rather than a substantive arm in warfare. Hence the advantages afforded by its overwhelming power have been but lightly calculated by our Staff Officers, and insufficiently employed by our officers in command.

It has consequently frequently resulted, that we have incurred vast loss of life, on occasions which would otherwise have proved comparatively bloodless victories.

Past progressive
advancement of
efficiency in
the Artillery
of the British
Army.

It may be advantageous towards the attainment of a right understanding of the past and present relations of the Artillery with the Cavalry and Infantry of the Service, to trace its progress

from utter inefficiency to its present rapidly-increasing military importance, and national appreciation. And in referring to the past and present estimation of the Artillery of the British Army, I feel assured, that that reference, however unfavourable it may be to the past, or sanguine as to the future, will imply no inadequate sense of the benefits derived to the corps under the administration of past Masters-General of the Ordnance. It is impossible to recall to memory the high and titled names of the early Masters-General without proud and grateful sense of the beneficial advancement we owe to their efforts to perfect our efficiency in garrison and field, by early education, by scientific teaching, and unceasing attention to improvement in our material. But my recollections would enable me to lead your Lordship back to strange contemplations of the British Artillery. Let me ask your Lordship to picture to yourself a few guns advancing against a strongly-posted enemy—drawn by horses in single file,—driven by a civilian on foot, wielding a carter's whip—the carriage of the gun receiving its direction from a trail-truck, traversed by a handspike! We were at that time an absolute incumbrance to the Army, and often a source of embarrassment to its movements.

We were first relieved from this state of use-

lessness, and advanced to facility of movement, by the Duke of Richmond, who, adopting the improvements of equipment in the continental services, gave the British army a few guns of Horse Artillery, equipped and adapted to serve and move with Cavalry.

That was the first dawn of efficiency that broke on the Artillery of the British Army; and from that day to the present, we have constantly had before us, though in far too limited numbers, a model of all that is perfect in Field Artillery.

Another improvement soon followed this advancement of efficiency in our field equipment. At the close of the administration of Lord Cornwallis, field guns were equipped to move with Infantry, with as perfect completeness and facility, as those equipped to act with Cavalry and light troops.

From that time our progress in military proficiency has advanced in proportion as we approached approximation with the other branches of the service.

The Duke of Wellington first gave promotion to the officers of Artillery by brevet rank.

before Special
Committee of
the House of
Commons.

Lord Hardinge, as far back as 1833, first advocated the employment of general officers of Artillery in command, in common with the officers of the Army generally.

The prospects thus opened to us, remained unfortunately for a long time clouded; but at length they brightened: and we owe to Earl Grey the great boon of first submitting to Her Majesty's approbation, the employment of general officers of Artillery to command on the Staff of the Army.

I now approach the notice of a measure that certainly may be regarded as the most beneficial and important that has ever yet influenced the advancement of the Artillery of the British Army. I need scarcely say I allude to our incorporation with the Cavalry and Infantry of the Army; and this measure, so long desired, so long manifestly necessary, so long urgently called for on every military principle of combined unity of system in all services, by which we have been delivered from the anomalous control of a Civil Board, and placed under military command, we owe to your Lordship.

The benefits that must result to Her Majesty's Service by our being made an integral part of

the Army, cannot be calculated. The proximate results will, we trust, be an emancipation from that repressive system which weighed on the energies and efficiency of the corps while under the control of the Board of Ordnance, which ever held the Artillery apart from the Army, and, consequently, as of secondary importance in the Service.

As a remoter consequence of the measure, its benefits will show themselves in a more extensive study, development, and understanding of the right uses and especial purposes of Artillery by the officers of Her Majesty's Service generally, especially as applicable to field warfare, by which countless numbers will be saved in our own ranks, and more destructive havoc carried into those of an enemy.

As this study and development advances, our officers in command of Armies, and officers of the Staff, will seek favourable positions in the field, from whence numerically powerful masses of Artillery will be enabled to command victory, if with adequate numbers, unaided by the other arms of the Service—at all events, to open to them more prompt and certain means for its attainment.

These prospective high results, however, will still remain a problem to be worked out, till we virtually and essentially arrive at the consummation of your Lordship's initiatory measure of combining the three arms of the service under one command, and necessarily, under one system of discipline, interior economy, and relative degree of efficiency. As regards ourselves, the pursuit of the problem comprises a necessary technical, classified, organization of the corps: an augmentation of its regimental and general staff: some changes in its armament: an effectual provision for the unfailing promotion of its officers while at an age at which they possess unimpaired mental and bodily faculties: and lastly, though first in importance, a consideration of the advantages of early military education to the Artillery officer. It is to these points, my Lord, I respectfully solicit your attention in the following observations:—

Numerical organization: prospective benefits derivable from the incorporation of the Artillery with the Cavalry and Infantry of the Army.

Without presuming to anticipate the numerical force contemplated by your Lordship as an adequate aggregate force to compose the British Army, I may venture to advert to such past services as the Corunna campaign in 1808—the subsequent continuation of the war till its close in 1814—that of Flanders in 1815—and the early part of the war in the Crimea, as so many

proofs that neither the numerical force nor armament of the Artillery have ever been computed or equipped in adequate proportion to the army with which they were to serve.

In exemplification of this inadequacy of means, I will instance that, during the progress of the Peninsular War, we were compelled to withdraw the men from our guns in the field to man our batteries. This occurred at the capture of the Salamanca forts on the Tormes, at the siege of Burgos, at that of St. Sebastian; and more recently, as your Lordship is aware, we were only enabled to prosecute our operations in the Crimea, by withdrawing men from the limited force of Artillery in our colonies. I revert to these recourses of expediency, not as they affect the security of Her Majesty's dominions, but as a system of war unknown in other services, and more than disadvantageous to that of Her Majesty.

The cause of such disadvantage can be easily traced: we have never, as yet, had any *stated* allotment of artillery, in men or guns, calculated on the aggregate strength of the army, or for any portions of the army with which we might be called on to act. I beg to draw your Lordship's attention to this fact, as a

numerical question for consideration before that of organization.

In the absence of any known scale for proportioning the relative numerical strength of artillery, cavalry, and infantry, in the British Army, I may briefly recur to that adopted by the first Napoleon.

The necessary relative proportion of artillery to cavalry and infantry, as computed by that great master, was two guns to every thousand men—and in men, one-eighth of the force in the field. But that calculation cannot be adopted in application to the Artillery of the British Army. The Emperor, in his calculation, provided only for the national fortresses and field artillery of the French Army; whereas England, from the vast extent of her littoral boundary, her numerous colonies, and important fortresses abroad, would require an Artillery double the number of any European power.

In regard to the required organization of the Artillery :

I have heard various suggestions on this question, and among others a division of the corps into battalions, as in the Rifle Brigade; but I

I have never yet heard any reasoning that made that measure desirable. Nor do I see how, from the nature of our divided and detached duties, and the stated periodical reliefs from foreign stations, it could be effected without embarrassments to the service which at present do not exist.

Your Lordship is aware that the Artillery is composed of three branches—Horse Artillery, Field Artillery intended to move with Infantry, and Garrison or Siege Artillery—and, as yet, requiring organization.

With perfect sincerity of respect to the opinions of other officers, I would submit to your Lordship's consideration a measure of organization, classifying the three branches of the service, with reservation of the organic unity of the corps.

The promotion of the officers of the corps would thus proceed, as at present, by seniority, and appointment promiscuously to the vacancies as they occurred in the three branches of the service.

In this classification it would be highly advantageous to our field service if the drivers were

permanently attached to our Infantry Batteries, as in the Horse Artillery.

The Artillery of the Guard, looking to that high and long-desired honour, would constitute a body to be held at all moments in readiness as a reserve, or prepared for any sudden emergency of service, and form a fourth branch in our classification, each branch having its head-quarter staff and depôt of men and horses, the whole forming the aggregate force of the Artillery of the British Army, commanded and disciplined by the Commander-in-Chief.

I will now solicit your Lordship's attention to some points of detail involved in the foregoing outline of organization.

Organization :
Inadequacy of
the General
and Regi-
mental Staff of
the Artillery
of the British
Army.

Among the benefits resulting from the incorporation of the three arms of the service is the important change already effected in the staff of the Artillery, by which the routine duty of Her Majesty's service may be assimilated throughout the Army generally, and the efficiency of the Artillery benefited especially. But the non-appointment of a Quartermaster-General, an officer more ostensibly required in the Artillery than in any other branch of the service, remains an impediment to our efficiency of long remote

acknowledgment, and urgent claim to your Lordship's attention.

It is inconceivable how it can be supposed that the duties of a branch of the service like the Artillery, if only regarded in its numerical strength, can be properly fulfilled, otherwise than under the responsibility of a Quartermaster-General conversant in all its varied and complicated material.

Pardon me, my Lord, if I freely say it is not enough to vaunt that we *do* get through the service with the means afforded to us. We should rather aim at fulfilling our duties more perfectly, by regarding the Army as what it ought to be, than what it is. We should make known the deficiency of our resources; and they grievously err, and incur a measureless responsibility to the service and to the country, who palliate instead of putting our deficiencies prominently forward.

Who that remembers the blunders in the embarkation of our armaments destined for Hanover, Spain, Walcheren, Spain again, Flanders, and lastly Turkey and the Crimea, with all the detriments to the service, and the long-acknowledged evils resulting from an inadequate

working staff, with consequent over-burdened responsibility and disjointed system, which have separately and conjointly impeded the progress of the corps to perfection from the first years of its foundation, and say that the Artillery of the British Army needs not the ostensible control and superintending responsibility of a Quartermaster-General ?

The Field-Train Department, a most important branch of an effective Artillery, and most improvidently reduced at the close of the war in 1815, calls for attention and reorganization.

The officers of this department should be thorough masters of all the requirements and nature of military stores, ammunition, and equipment—whether for service in garrison, field, or siege; and in all preparation, equipment, or embarkation of armament, should be employed under the superintendence and responsibility of the Quartermaster-General of Artillery.

Organization:
Artillery of
the Guard.

“The Guard,” in every army in Europe, save alone that of England, is composed of Artillery, Cavalry, and Infantry.

The hope which has ever existed with the Artillery of the British Army, of being organized

in a form which would open to them, similarly with the same arm of the continental armies, a wider field to emulate perfection, still exists, and with increasing ardour of ambition to be placed in a relative position with the Artillery of other armies—and thus, as they venture to hope, be afforded opportunities of rendering more extensive, frequent, and important services, and gaining distinction to Her Majesty's arms.

With that deep unalterable appreciation of all honour conferred by Her Majesty, a feeling paramount to all others in all ranks and branches of Her Majesty's service, we could not entertain a thought of this long-desired boon, but as of an impulsive grace, emanating from Her Majesty's favour—our claim to that honour must in respectful duty be limited to your Lordship's consideration of our services—but it will be a proud day to the corps, my Lord, when your Lordship can consider it as consistent with the advantage of the service, to submit to Her Majesty's gracious consideration a boon which they aim at, and value chiefly, as a means of advancing the perfection of an important arm in Her Majesty's service.

Organization:
Necessary re-
organization

The reduction of the corps of Drivers, was considered at the time, one of the heaviest blows

of Non-com-
missioned
Officers and
Men of the
Driver Corps.

that could be inflicted on the efficiency of our Field Artillery. The driver corps called for correction of organization ; but it is manifestly a branch of the service that must exist, and that can only be perfect when organized on a system similar to that of the Horse Artillery, by which the drivers would remain permanently attached to the field batteries.

At present, they are removed as gunners in the routine reliefs of the companies abroad, leaving the battery to be completed by gunners from abroad, becoming drivers. Men, perhaps, never before in their lives on a horse, or knowing anything about a horse ; their limbs stiffened from influence of climate, and useless for any purpose of a driver's duties.

The reduction was a fatal error effected during the administration of the Ordnance by the Duke of Wellington, consequent on the outcry for economy at the moment, without regard to the efficiency or requirements of the service.

It has been argued, that drivers, enlisted on the present system, are available as gunners.

So are sailors, or coast-guardsmen, when their duties can be dispensed with in their own branches

of the service. Such reasoning is really without claim to attention, when seriously put forward and advocated as a system of organization for our Artillery Service.

A man may be enlisted as gunner and driver, but the same man *cannot* be fit for both duties. If he is of powerful, athletic frame, as required in the gunner, besides adding considerable superfluous weight to his horse, he is but an unwieldy and inexpert driver; if he is short in stature, and of the light, wiry frame which is perfect in a driver, he is unfit for the duties of a gunner.

Every arm of the service should be perfect in itself, and independent of all resort to expedients, or we shall never work in the Artillery with those advantages and success, which can alone result from well-organized means.

Organization:
Illimited Ex-
portation of
English
Horses.

It may not be irrelevant, while remarking on the organization of the Artillery drivers, to solicit your Lordship's attention to the existing illimited exportation of our brood-mares and horses, for the supply of the Artillery and Cavalry of the continental armies.

We now rarely see the description of horse purchased for the Artillery during, and for some

years subsequent to the close of, the Peninsular War.

At the great northern fairs, the foreign dealers monopolize that peculiar description of horse, with the best horses in the market, at prices far above that allowed by Her Majesty's Government for the remounts of the Horse Artillery and Field Batteries.

I believe, also, that there exists in some of the continental ports, a prohibition against the embarkation of English brood-mares and horses.

If this is true, it is clear we provide a better description of horse for other services, than for our own.

It has been observed, that any interference in the exportation of horses, would be an interruption to free trade; but in a point so prejudicial to Her Majesty's service, it may be submitted to your Lordship's consideration, whether it would not be advisable to afford the officers charged with the purchase of horses for Her Majesty's service, some latitude of discretion of prices in their purchases, that would in some degree check an evil that, if disregarded, would manifestly lead to most injurious consequences to the service.

Numerical
proportion
and Armament
of the Field
Artillery of
the British
Army.

As in the question of numerical force in men required for the Artillery Service of the British Army, so I forbear anticipating the scale on which the number of field guns may be estimated as proportionate to the aggregate numbers of Her Majesty's Forces. The observations I am about to submit to your Lordship's consideration, have direct reference only to Artillery Armament, as understood in the calibre of guns, and number of pieces composing each Troop of Horse Artillery and Field Battery, whether attached to the divisions of an army or forming its field reserve. Such observations on our numerical armament as I consider deserving your Lordship's attention, I purpose to deduce from those occasions of service, in which the English Army have been employed in field operations of extensive scale, or lengthened duration.

It requires no illustration to prove the disadvantages under which the troops of Horse Artillery and Field Batteries of the English Army, armed only with six guns, must meet those of all other services, armed with eight. The difference of engaging with two guns less than an enemy, especially where the guns are limited to a troop or battery on either side, or in isolated fire, as in pursuit or retreat, can but be disadvantageous to the English service.

As regards our numerical armament :

If we call to remembrance the days of Stuart, Abercrombie, Moore, and Wellington, we shall find, in their official despatches, continued repeated representations, that the limited proportion of Artillery employed on all occasions, from the sieges in Corsica to the battle of Waterloo, was an evil in the administration of the English Army, either unheeded or not comprehended.

At a most important epoch in the Peninsular war, our operations were impeded by the want of appropriate guns to employ against the forts of Salamanca.

Our failure in the siege of Burgos, in 1812, was attributable solely to the same causes.

Subsequently to the battle of Vittoria, the operations of the army were impeded from the non-arrival from England of a siege-train, demanded by the Duke of Wellington at the close of the preceding year, in contemplation of having to lay siege to Pampluna.

These failures suggest the necessity of making siege batteries an indispensable part of the Reserve Artillery of an army, no less with the pur-

pose of preventing delay in overcoming serious obstacles, such as those presented at Salamanca and Almaraz, than others of lighter consideration, but of importance sufficient to arrest the movements of an army.

The Russians brought into the field at Inkerman batteries consisting exclusively of 32 lb. howitzers.

Commanded
by Major Bull.

I remember important service was rendered at Waterloo by a battery armed in similar manner. And such instances will doubtlessly draw your Lordship's attention to the importance of making such natures of armament a permanent portion of Field Reserve Artillery.

I have said, my Lord, that representations repeatedly made as to the inadequate proportion of Artillery on all occasions of service had been disregarded by the Government administering that branch of Her Majesty's service.

In 1812 the Duke of Wellington declared the number of his Artillery to be quite inconsistent with the number of his army, or "of any army" "that he had ever heard of."

Later in the year, in his public despatches, he

again complained that the Artillery had not been proportionally increased—and added the astonishing fact, that in the battle of Salamanca, the enemy had more than double the number of guns in the field than himself.

In the early part of 1813 the Duke stated to the Home Government his deficiency in Artillery in these words: “ I shall as usual take the field “ with an equipment of Artillery far inferior to “ that of the enemy.” And in 1815, just previous to the Battle of Waterloo, he exemplified the deficiency of artillery in the Army by stating to the Home Government the comparative numbers in the Army of Prussia, which commenced the campaign with “ 80 batteries of 8 *guns each*, “ manned by 10,000 Artillery.”

It may be said by persons not habituated to weigh such subjects in their minds, “ Yet with “ all this inadequacy of Artillery you always “ beat your enemy.” True; but with what unthought-of deplorable loss and waste of life!

To such inconceivable extent was false economy at one time carried in all that related to the military power of England, that in the year 1848 there actually was not a single 9-pounder equipped or horsed in Her Majesty's service.

Your Lordship has awakened us to this long inconceivable neglect of an arm of acknowledged foremost importance in all armies. And, as the Artillery of the British service is advanced in numerical sufficiency and completeness, the Army generally will become more and more sensible of its real uses and overwhelming power, and more confident in their own invincibility.

Equipment of
the Field
Artillery of
the British
Army.

We have, for upwards of half a century, possessed the decidedly best-equipped Field Artillery in Europe. The inefficiency of Artillery, as an arm in the British service, does not exist in its equipment, but in its insufficiency of numbers. In the Peninsular war all difficulty in movement, in the Infantry Divisional Brigades no less than in the Horse Artillery, had vanished long before its conclusion. Such was the nerve of our drivers, and faultless construction and equipment of our gun and ammunition carriages, that the steepest descents to rivers, or highest summits of the mountain passes of the Sierras of Portugal and Spain, were traversed without thought of difficulty.

Some time after the close of the war, I had opportunities afforded me of minutely inspecting the gun and ammunition carriages of the French service, subsequent to the adoption of what they

Pr
int
the
me
me
Ar
th
Ar
no
me
Of
Ce
cd
th
of
of

considered improvements from our equipment and construction. But they had not then, nor have they now, attained the strength of our fittings, or the facility of our movements.

Make the British Artillery as complete in numerical efficiency and armament as it is perfect in equipment, and it will be the first arm in its nature among the armies of Europe.

Prejudicial influences of the slow Regimental Promotion in the Artillery of the British Army; and non-employment of its Officers in Command, in common with those of the other branches of the Service.

The Artillery of the British army being a branch of the service scientifically instructed as in other services at the expense of the State, is to be regarded more exclusively than any other, as dependent on the State for the personal, no less than the scientific efficiency of its officers.

That the slow promotion of the officers of Artillery is of serious prejudicial consequence to the service, by the junior officers not attaining rank to command while in the vigour of their mental and bodily faculties, is an incontrovertible truth, long lamented as one of those evils arising from our want of regimental organization. Officers of Artillery have been known to serve as subalterns *three times* the prescribed period, at which officers of the other branches

of the service, are by the Army Regulations rendered eligible for the rank of Field Officer.

The recent regimental promotion, consequent on extensive augmentation necessitated by contingent circumstances, will at no very distant period magnify the evil of our system—and calls for a measure that will prevent increased impediment, while it insures certain future progressive promotion to the junior ranks of the corps.

Simultaneous advancement in graduated rank with the other arms of the service can always be secured to the officers of Artillery by brevet ; but such means would not alone correct or avert the evil of old age from the junior regimental ranks of our service. I know of no measure sufficiently comprehensive to correct that radical evil, but by a numerical increase of battalions, with reduction of the existing number of companies in each battalion. The greater number of vacancies that would thus accrue in the senior ranks of the corps would give circulation to promotion in its junior ranks.

I remember that while at Gibraltar in 1797, the Artillery in that fortress was commanded by a Major-General, and, I believe, a general

officer of higher rank has recently been appointed to the command of the Artillery in Ireland; but these are cases of rare occurrence, and are to be regarded exclusively and substantively as of regimental command.

If the difference of rank in the secondary commands of Artillery in the late war in the Crimea in no way prejudicially affected the operations of the Allied Armies, it certainly conspicuously exemplifies the prominent estimation in which the service of Artillery is held in the armies of Europe.

The officer in command of the French siege-train employed against Sebastopol held the rank of Lieutenant-General; at least his rank in the French service corresponded to that in ours.

The officer in command of the French left attack was a general officer.

The officer in command of the French right attack (comparatively a small command) was a Lieutenant-Colonel.

A general officer of the French Artillery, who received the second class of the Order of the Bath, has been appointed by the Emperor to the command of the Artillery of the Guard.

The officer chief in command of the French Siege Train has received the Grand Cross of the Bath.

For a considerable time during the siege, the officers commanding our attacks held the rank of Captain.

If the slow promotion of the Artillery officer impedes his advancement to the period of regimental command till he has passed the most efficient years of his life, so it will be found that his attainment of brevet rank (with the exception of one instance) is but a barren honour in the service. Brevet rank to an Artillery officer, as long as we are debarred from participation in the commands open to the other branches of the service, can but remain to them a dead letter. At present the participation of an Artillery officer in the direction, command, and responsibilities of the general service, virtually ends with his regimental rank of Field Officer.

It is not, my Lord, from sole regard to the individual mortification of the Artillery officer, that I thus solicit your Lordship's attention to this subject, but that, by the exclusion of Artillery officers from command in the Army, the service suffers: I say it with deep and true feelings of

honour to my brother officers not in the Artillery—in the loss of opportunity afforded to officers to develop talent for command, which from education and study they ought to be, and assuredly are, most fitted for. I confidently feel that in this view I shall be supported by the concurring opinions of every officer in Her Majesty's service, when I adduce as an instance in point the ever-memorable defence of Kars—one of the brightest episodes in the annals of European fame.

The advancement to rank which renders the officers of Artillery of the Continental Armies eligible for command is facilitated by their holding one and in some services two degrees of Army rank above their regimental rank.

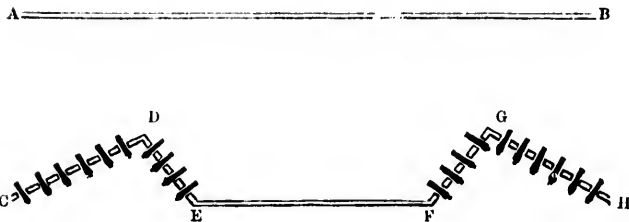
The duties of an Artillery officer are known to comprise those of Cavalry and Infantry. Without a knowledge of the movements of those arms, an Artillery officer would be useless in the field.

Accordingly in the Continental armies, we find many of their first Generals are drawn from the Artillery, as possessing the advantages of equal familiarity with the purposes and uses of the three arms.

Napoleon, educated as an Artillery officer,

early developed that scientific application of Artillery which, in later years of his career, so essentially facilitated his partial subjugation of Europe.

At Castiglione, one of the early and most brilliant of his successes in Italy, availing himself of a numerous Artillery and advantages of ground, he massed his guns at the extreme points of his position, as the flanks and faces of half-bastions, connected by a curtain formed by his infantry, thus: A B, Austrian Army; C D E, F G H, French Artillery; E F, French Infantry:—



The faces were withdrawn to nearly an acute angle in consequence of a movement made by Wurmser to outflank the French Artillery. Napoleon's success was complete, and led to consequences scarcely less important than his victory of Austerlitz, also gained by vast concentrated numbers of Artillery.

Edu
the
and
tion
of t
Arr

I have already adverted to Lord Hardinge's name in connexion with the advancement of the uses of the Artillery, and I will conclude these observations on the subject by an extract from his Lordship's opinions expressed before a Select Committee of the House of Commons in 1833, in advocacy of the employment of General Officers of Artillery in command, in common with other General Officers of the army :—

“ I consider the impossibility of Artillery
 “ Officers being employed in the highest branches
 “ of the service not only prejudicial to the
 “ individual, but also to the country at large :
 “ as, although science alone will not make a
 “ General, it can never prove an unprofitable
 “ adjunct to genius ; and the Officers of Artillery
 “ of all other nations have stood conspicuous in
 “ the highest commands.”

Education of
 the Officers,
 and Instruc-
 tion generally
 of the Artillery
 of the British
 Army.

The course of education for the Cadets of the Royal Military Academy at Woolwich, destined for the Royal Artillery, has hitherto commenced at the early age of fourteen years—a great advantage in a corps of slower promotion than the other branches of the Service. A cadet at Woolwich can thus, by diligent attention, obtain his commission before or at the age of sixteen years, which affords time to enable him to perfect him-

self before or at the age of eighteen years, in those essential practical acquirements, which an Artillery officer should possess before starting on the career of his duties.

The course of study for the Artillery cadets of the Royal Military Academy, has hitherto been considered as perfect in all the elementary requirements for his service as an Artillery officer. And if difficulty exists in numerically officering a scientific corps like the Artillery, it is not from impediment, or faulty system of the Institution at which he receives his education, but from the want of space to locate and instruct an adequate number of cadets, to keep the officers of an extensive branch of the Service at all times complete. The Cadet Academy has long required extensive augmentations of dormitories, and rooms of study.

Of all important positions, of all responsible duties, none can surpass those of the officer, who has not only to superintend the studies of youth destined to serve in the army, but who, in his manifold capacities attending that responsibility, is looked to as having influence over the minds, and conduct, and character of those, whose fortune it may be, in after life, to promote the

military glory, and exalt the name of their country.

I venture to make these observations, my Lord, from no indifferent study of the issue of our past system of educating our Artillery officers—and from conviction of the advantages they professionally derive from early education.

The Artillery officer is essentially a soldier of the state, and in his early education his character is formed, as it were, in boyhood, among companions of similar impulses with his own, and with whom, as with himself, devotion to the service may be made a second nature.

But a soldier does not become eminent so much from what he *learns*, as from what is inculcated by example of high character; and the power of this teaching is observable even in the lowest ranks of all armies of great commanders.

Napoleon showed himself a consummate master in knowledge of human nature by the manner in which he obtained and held such powerful influence over the affections of his army.

Sir John Moore ever aimed at elevating the character of the soldier by moral influences, and

possessed the devotion of his troops no less by the influence of his noble and exalted nature, than his heroic valour and daring enterprise in action.

Mémoires de
Sully.

The Duke of Wellington, until having reason to do otherwise, always acted as if he expected high principle and common sense were as strong in others as in himself, but punished where he detected fault—something in Sully's way, who, when appointed by the king Grand-Maitre de l'Artillerie, broke about five hundred officers for incapacity—" Les affaires de l'Artillerie étaient encore pires. Je commençai par une réforme des officiers de ce corps, qui, n'ayant pas la moindre teinture de leur metier, d'un seul coup j'en cassai environ cinq cents."

In his Dispatches, the Duke of Wellington has left the British Army an abstract of military and moral law, affording instruction, by example, in every position in life, and in every position or emergency of service.

The instruction of our Artillery officers appears to be considered as closed on attaining his commission, whereas it in reality ought then practically to commence. A long course of pro-

fessional application then awaits him, such as knowledge of Infantry movements—garrison duties—Repository course—construction of field batteries—passage of rivers—Laboratory course—knowledge of composition of all ammunition—making up all natures of ammunition—casting and boring of caannon—riding drill [from his appointment as a ca. t.]—fitting of harness—care and management of horses—cavalry movements—general duties in the field—foraging—bivouac—on the march.

Including his academical course at the Royal Military Academy, and subsequent practical course on obtaining his commission, the professional education of an Artillery officer can scarcely be completed under a period of four years.

The education of a gunner, whether of Horse Artillery, Field Batteries, or Siege, cannot be properly completed under a period of two years.

The Artillery officer, bent on the pursuit of his studies after obtaining his commission, is almost wholly dependent on the works of foreign writers. But there is great difficulty in acquiring technical information without that proficiency in *foreign languages* which is made so general, and

is considered so essential a branch of military education in all the armies of the Continent.

What we want, and what we have ever wanted, is a manual or code of instruction for the Artillery officer, compiled from official data, and under official authority, containing copies of official despatches of our past battles and sieges, not only with topographical illustrations of actions and plans of fortresses besieged, which, of course, exist in our War Departments, but affording full details of the number and calibre of guns engaged and employed—the sources from whence, in siege, we drew our supplies—the means employed for their transport—preparation of fascines and gabions—construction of platforms—arming of batteries—detail and object of flank and breaching fire—with all such nature of technical detail as can afford instruction in siege or field Artillery service.

With this, the young Artillery officer should have access to a series of *authorized* reading of military classics.

I am not aware of any authorized course of study or reading of that nature ; but as an aid to the young Artillerist, earnest and anxious in his pursuit of professional knowledge, I would,

with that respect I sincerely feel to the opinion of others, suggest that the following works might form a part of the series :—

Tactique de Guibert.

The Campaigns and Military Writings of the Archduke Charles.*

Ouvrages Militaires de Jomini.

Jones's Sieges.

Napier's History of the Peninsular War.

Dispatches of the Duke of Wellington.

General Orders of the Duke of Wellington.

Plutarch's Lives.

Mémoires de Sully.

Military Mentor.

* They are translated into French, but I have not seen a translation into English.

The latter work was written by a general officer, for the military education of his son. It is admirably calculated to inculcate high principles of honour in the intercourse of life, and of religion, without which, such honour is an empty name—with feelings of chivalrous devotion to duty, and sacredness of loyalty.

I have been drawn into observations of some length on the subject of education, from anxiety to place before your Lordship, as powerfully as I could, my impression of the advantages, which an experience of sixty years has afforded me, of the essential benefits that result to the individual,

and to the Service, in giving the Artillery Cadet an *early military* education.

Of the successful results and advantages of our early military education, I would instance the services of the Artillery in the Peninsular War and the Crimea. There were hindrances, impediments, and deficiencies in both Services, only to be understood by Artillery officers, and which could only have been surmounted by their individual technical proficiency, impelled by ardent zeal, and the highest sense of duty.

At the close of the war in the Crimea Her Majesty deigned to intimate to the corps her approbation of their services.

The Artillery, you will well believe, my Lord, can never forget the General Order of the 14th July last, in which Sir George Wetherall conveyed to the corps in such emphatic terms the honoured commands of Her Majesty, to communicate the gracious expression of Her Majesty's approbation of their services. The feeling excited by that gracious intimation of Her Majesty's favour will be shared in by every officer and man of the Artillery serving in the remotest parts of Her Majesty's dominions, no less than by those to whom it was addressed, and will

assuredly remain a record cherished in the proud estimation of the regiment, long after the existing generation shall have passed away.

Summary of
Observations.

In the foregoing observations I have directed my humble efforts to make clear the causes which, while under the administration of the Board of Ordnance, held the Artillery of the British Army abortive in efficiency as an arm of the service, and also to deduce from the opportunity afforded in our incorporation with the other arms of the service such suggestions of available advantages as would perfect its efficiency.

After the long duration of our past inefficiency, a wide field is open to work in—and work calling for an arm of no ordinary power and vigour. Evils of system to be corrected—deficiencies to be supplied—organization to be established—staff to be formed—promotion to be secured to the officers, while at an age at which they could assume command, while possessing their mental and physical faculties—and, above all, an attention to the early military education of the corps, as officers instructed at an institution of the State.

If ever one moment was more propitious than

another for carrying out these desired ends, it is the present.

We first owe to your Lordship the great measure of placing us under military command—an event to be regarded as one of those favourable epochs marking the advancement of our efficiency.

This measure, opening to us the means of perfecting military system with technical proficiency, occurs at the close of a war, the events of which have not alone demonstrated to the nation the evils and sufferings resulting from neglecting our military power during peace, but has awakened in the country a deep feeling for those sufferings, with a sense of the danger we incur by disregard of the completeness of our army, so strongly impressed, as to court demand of supply of means to guard effectually against our ever again incurring the chances or possibility of enduring such national bereavement, and waste of pecuniary outlay.

And finally, my Lord, we know that in carrying out our practical duties in aiming at perfection in our efficiency, we shall be supported by the illustrious Prince to whom Her Majesty has confided the command of her Army, no less by His Royal Highness's individual impulse and

attachment to Her Majesty's service, than by the influence of his exalted station.

In past outbreaks of war, England has had to create an army. The length of time to train a Cavalry or Infantry soldier, and the still greater length of time to form an Artilleryman, appears to have formed no part of our calculation as preparatory readiness for war.

Your Lordship has given to the English service a numerical force and armament of Artillery never yet known at the close of our past wars; and yet, take the aggregate number of our army in Cavalry and Infantry, and compute our numbers on any scale of relative proportion to those arms as in the component parts of all other armies, together with the numbers required for the efficient service of our home garrisons, our distant foreign fortresses and colonies, depôts of men and horses for the purposes of instruction, remounts, relief of foreign stations, and keeping in view that we have still to man our projected coast defences, who can advisedly say that our present strength of Artillery is adequate to these objects? There is not a Power in Europe that does not know that double our numerical force would not be more than commensurate to meet them.

The Duke of Wellington has said that England can never be engaged in a little war. Neither can England ever have a cheap army consistent with the security of her extensive divided dominions, and maintainance of her European influence.

An authority unsurpassed in human wisdom, who knew thoroughly the springs of government, with the causes of the rise and decline of nations, has declared that a nation, however prominent in arts or rich in commerce, must fall, if its military power is ever subordinated to their advancement.

Lord Bacon.

“ In the growth of a State, arms do flourish ;
“ in the middle age of a State, learning ; and
“ both together for a time ; in the declining age
“ of a State, mechanical arts and merchandize.”

I have the honour to be,
My Lord,
Your Lordship's most humble,
obedient Servant,
ROBERT GARDINER.

To the Right Honourable

THE LORD PANMURE, K.T., G.C.B.

*Her Majesty's Principal Secretary of
State for the War Department.*

