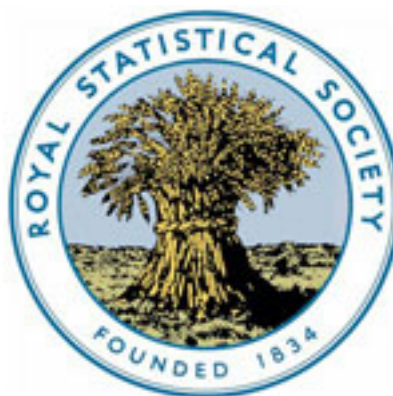


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Statistics of the Defence Expenditure of the Chief Military and Naval Powers

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# JOURNAL

## OF THE ROYAL STATISTICAL SOCIETY,

### MARCH, 1891.

#### STATISTICS of the DEFENCE EXPENDITURE of the CHIEF MILITARY and NAVAL POWERS.

*By the* RIGHT HON. SIR CHARLES W. DILKE, BART.

[Read before the Royal Statistical Society, 16th December, 1890.  
The President, Dr. F. J. MOVAT, F.R.C.S., LL.D., in the Chair.]

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THE enormous sums spent by the chief military and naval powers on national defence seem worthy of statistical examination, but some of the figures given upon the subject in books of reference are incorrect, and comparison is, for various reasons, far from easy. In an able article upon comparative naval expenditure which appeared in the “Times” of the 7th October last, the “Times” writer stated the annual cost of the German army as 18,345,258*l.*, in place of 28,000,000*l.* sterling at the least, and 33,500,000*l.* in the present year. The estimate of the “Times” must have excluded not only the extraordinary expenditure but even the ordinary “expenditure for once,” and thus have excluded the whole of the large items for guns, rifles, fortification, and barracks. In the case of Russia, which keeps, of all the powers, by far the largest army with the colours, and which has also a considerable marine, accurate budget figures are difficult to obtain, and all the books of reference

are wrong. In the case of the United Kingdom, the happy absence of a conscription swells our financial accounts, and prevents close comparison with other powers. On the other hand, it must be remembered that our Volunteers, who form, as regards Great Britain, the larger portion of our nominal force, receive no pay, while the Militia serve only for a short part of the year, and are not highly paid. The charges which are much affected by the absence of a conscription are only those, paid by us, which concern that Regular force at home that turns out with difficulty one Army Corps, and those, paid by India, which affect her army, able to place in the field upon the frontier two Army Corps. Three Army Corps in six weeks, as against twenty Army Corps in five days for France or Germany, is what we have to show as the net produce of our fully paid non-conscript Regular force. Foreign powers such as the five great powers of the continent, have, moreover, to heavily pay a portion of their force. The French conscripts, for example, serve only for between two and three years, a time too short for the production of an efficient serjeant, capable of preserving discipline in the barrack room and of teaching the recruits their drill. The result is that all the continental powers now pay heavily to keep their seasoned non-commissioned officers, paying in bounty, monthly pay, and deferred pay as well, to a very pretty tune indeed.

In the case of Germany we have to add to the Prussian budget the military budgets of Bavaria, Saxony, and Wurtemberg. In the case of France, as well as in that of Germany, there is confusion introduced by the habit of counting as "extraordinary" what is really ordinary military expenditure. We shall find that the Russians keep up their enormous army, which is half as large again as that of Germany or of France, at an expenditure altogether less than that of either France, Germany, or the British Empire. Russia is said to place in the field at her autumn manœuvres 330,000 men with a sufficient number of field guns, and to practise generals in handling 180,000 in one district and 150,000 in another. The Russian budgets appear to show that this is done with less strain than might have been supposed. France and Germany spend, roughly speaking, on defence, as we shall discover, about the same amount, the one with the other, and the British Empire a vastly larger sum than any other power.

### I.—*Army Pay.*

If we come to detail, France spends on army pay about 8 millions sterling, and Germany about 7 millions sterling; but this is almost the only item in which comparison between France and Germany is possible, as their accounts are kept in such different

form, that the items are built up of sums which contain the costs of services in hardly any case identical with those comprised under the same name in the other list. Although France spends more than Germany upon pay, captains and officers of higher rank in the German army are much more largely paid than in France; yet life in Germany is perhaps cheaper than life in France. The French captain or major often, and the French lieutenant-colonel generally lives, however, on his pay. A French captain has 12*l.* a month at the least, a major 20*l.* a month, and the latter sum in a small French garrison town means comfort. 3*l.* a month is the price for board, and under 2*l.* for lodging. The French hold, moreover, that poverty is a good school for officers, and that it is better to have a very large force of officers ready against mobilisation, than to have a smaller number more largely paid. When we turn to the British Empire, we find that it is difficult to arrive at the cost of pay as regards our Colonial forces. Counting home pay and Indian pay alone (to the extent of over 8½ millions of tens of rupees in the case of India—of which 5 millions are paid “at home” or paid to white troops—and 7 millions sterling in the case of the United Kingdom, or, let us say, 7 millions sterling in the United Kingdom and 6½ millions sterling in India, or at home on account of India; that is, 13½ millions in all), we find our army pay apparently double that of Germany. But, on the other hand, pay with us includes more than it includes in the German and French estimates, as some pay in them is put down to other votes, especially in the German case.

## II.—*Force.*

Our force with the colours is smaller than that of Russia, or Germany, or France, and for war we show for our Indian and United Kingdom budget on mobilisation, a nominal force—(purely nominal, I regret to say)—of 763,000 men, if we include volunteers (or about 850,000 with the colonial forces), as against a trained and organised force of over 2 million men on the twenty-first day of mobilisation in the case of Germany or of France. The nominal force of 763,000 men for war in the event of mobilisation, which is shown by the British and Indian army estimates is, in part, I fear, a sham. There is something disingenuous in the manner in which the War Office adds these items together on p. 7 of our Army Estimates, in the hope that the public will make no deductions for want of quality, and, assuming that one Briton is equal to any two foreigners, be thankful that we have so many persons in uniform and with rifles. The total is made up of 137,000 excellent regular troops on the home establishment, presenting however the defect of being weak in the costly arm

of horse and field artillery ready for work; 50,000 to 55,000 1st class army reserve, useful, but not periodically drilled as is the reserve of every continental army; 2,000 2nd class army reserve, hardly worth counting; 113,000 militia; 3,000 Channel Islands militia (but the Channel Islands are not, it should be observed, now in a condition of defence against a French attack); about 1,000 Malta and St. Helena militia; 11,000 yeomanry; 224,000 volunteers; 74,000 regulars in India, by far our finest force, and probably the best small army in the world; 68,000 good native troops in India; 56,000 bad native troops; and 21,000 odds and ends. The computation, it will be seen, is highly artificial. It excludes, for example, the Royal Irish Constabulary and drilled Indian native police, who, for some purposes, are soldiers. It includes some of those regiments of Indian infantry which from time to time are being disbanded as worthless. It includes the St. Helena militia! It excludes the 36,000 Canadian active militia, the 40,000 excellent troops of Australia and New Zealand, and the Cape mounted rifles, and other South African and Canadian forces of the Crown paid from colonial budgets. When we talk of 2 million active German troops, or 2 million active French troops, for the field army, we mean something pretty much "the same all through." When we count up our nominal force 763,000 troops borne on British or Indian estimates, or 850,000 men serving the Queen Empress as "land forces" in various parts of the world, we include the finest troops in the world, such as our foreign service British regulars, and our Indian native cavalry, and at the same time include men who would not be shown at all on the army lists or military budgets of other powers. Our force is also extraordinarily weak in horse and field artillery: against the from 2,000 to 4,000 guns of the other powers we can show only nominally about 600 guns, or about 320 guns in the event of war, for on the outbreak of serious war, a large portion of our artillery is intended, oddly enough, to disappear. Roumania and Switzerland can in practice each of them put into the field about as many guns as can the British Empire. The Germans added to their artillery on 1st October last almost as many guns as we have in the whole world, and now possess 47 batteries of horse artillery, of which we have little left, and 387 batteries of field artillery. The French have about the same.

### III.—*Victuals.*

To pass away from pay and number of men or guns, and continue a comparison between the various military budgets, victuals in the case of Germany are returned in such a form as to include forage. In the case of France rather over 2 millions

sterling is spent on victuals as against rather over 3 millions sterling in our own case, without counting our colonial forces. Our own expenditure upon military food appears to be a little under 1,500,000*l.* in the accounts of the United Kingdom, and a little over 1,500,000*l.* in the accounts of India.

The expenditure on pay is, as General Brackenbury has shown, largely affected by the question of conscription, and that on victuals slightly so affected.

#### IV.—*Forage.*

Our expenditure upon forage is extraordinarily less than that of France, on account of the small number of horses that we keep up, and also because the forage of the native cavalry regiments of India is provided on a different system.

#### V.—*Remount.*

Our expenditure upon remounts is small as compared with the remount expenditure of France or Germany, for the same reason of paucity of our cavalry, or rather of our horses—only 12,000 horses to 19,000 cavalry men in India and at home together! British cavalry are a costly luxury, and a terrible drain upon Indian finance, but their cost is partly caused by division into a great number of extraordinarily weak regiments, and partly by gaudy uniforms, worse than useless, and now being dropped by foreign military powers. These latter are thought necessary with us in order to attract men, but a serviceable uniform may be neat, as witness that of our tars. The French cavalry under the Empire wore a great number of different uniforms, some of them (such as those of the guides, and that of the lancers of the guard) of a popinjay description. They now have virtually but two uniforms, and these two both plain, and almost alike.

#### VI.—*French Expenditure on Forage.*

France spends no less a sum than 3 millions sterling in the present year on forage. This enormous expenditure on the part of France is in part the result of a change of system. Up till lately the French army was supplied with forage by contractors who were paid only on that which was delivered, although compelled to keep in store a large stock ready against a rapid mobilization. The French Government are now abolishing forage contracts, and they are to some extent buying out the contractors, and taking over the stores.

#### VII.—*Clothing.*

France and Germany are spending each this year a million more on clothing than is usual, because the new military laws greatly

increase the territorial troops, and for these increased forces uniforms are beginning to be supplied. Germany and France spend about 2,300,000*l.* sterling this year on clothing. We spend on clothing in the United Kingdom alone about 840,000*l.*, and the volunteers are not clothed out of this sum. But, on the other hand, a large portion of the Indian army is clothed from home, so that comparison is not possible.

#### VIII.—*Comparison of Detail difficult.*

Generally speaking it will be seen that comparison, except of totals, is out of the question, as the accounts of the different powers are not kept in such a form as to make comparison in detail possible. For example, in the comparison between Germany and France, the figures for transport in Germany include ammunition columns for the infantry, ambulances, and a large number of other services which in France are classed either under regimental expenses or under special heads.

#### IX.—*Pensions.*

English and Indian expenditure on pensions is far heavier than the expenditure on pensions of other countries; and while our expenditure on pay is, as has been seen, also vastly greater than that abroad, it is, I fear the case, that a portion of the purchase system, the abolition of which was the ground for an increase of pay and pensions, has crept in again in the form of "purses."

#### X.—*Repeating Rifles.*

There is one costly article in which comparison between England and France is possible. The excellent new French military rifle costs about 50 frs., though produced in a protectionist country, in which prices of metals and woods are higher than in England. The new British rifle, which is not a better weapon, costs at present 5*l.* 10*s.* The cost of our new weapon is one of the two grounds on which the Government of India have hesitated to buy the rifle, the other being that no proper ammunition for it as yet exists.

#### XI.—*Totals.*

The total expenditure upon the army, out of taxes, in the year, in the case of the United Kingdom, was last year 16½ millions, and in India the same; or 33 millions sterling (34 millions in the present year), besides the expenditure out of loans and that of the self-governing colonies, for the armies of the British Empire. Canada keeps up an organised militia of 36,000 men, at a cost of rather over a quarter of a million sterling in the year, but the Australasian colonies provide vastly more efficiently for their defence, keep up a larger force, and expend in the year among



them upon defence almost a million sterling. The tiny little colony of Victoria alone spends almost half as much again as the Canadian Dominion, although not exposed, such is her geographical position, to serious attack. On the whole the colonies spend for themselves about 1,500,000*l.* a year for army purposes, in addition to the contributions made by some of them towards the Imperial forces, and towards marine defence. While the armies of the British Empire cost about 35½ millions sterling a year in addition to the money raised from loans, the German army costs about 33½ millions sterling in the year in all, and the French army, with pensions, about the same. Germany, however, is at present manufacturing new rifles and new powder, whereas France has finished her new rifles and her stores of powder for the present, and the normal expenditure of France and Germany upon army may be looked upon as about the same.

#### XII.—*Alleged Waste in France.*

It must not be supposed that there is no waste in the case of France or Germany. There may be little waste in the German army; but as regards France a highly competent authority, the author of the anonymous book, "*L'Armée française et son Budget 'en 1890,'*" has computed, and has given facts to prove the truth of his statement, that the extraordinary budget might be put an end to, and over 2 millions sterling a year saved upon the ordinary budget. Some may object that Germany spends normally as much as France spends, is a saving country, and puts in the field in the event of war no larger force. But, on the other hand, there is reason to suppose that the French do not have so large a force permanently with the colours as their figures show, and that in the event of war their regiments would be more largely swelled by reserve men not equally well trained as the reserve of Germans. Each of these two powers, in other words, would have in the field on the twenty-first day of mobilisation, over 2 millions of men, with between 3,000 and 4,000 guns, and with a large garrison and territorial force in reserve, but the French army would be a slightly less thoroughly trained force. Russia, which has a far larger force with the colours in time of peace than either France or Germany, cannot mobilise her reserves with the same rapidity.

#### XIII.—*Cost and Results among Ourselves.*

While then France and Germany normally spend on army about 31 millions sterling each, for which they can immediately put in the field a mobile trained force of two million men each, furnished with an adequate proportion of artillery, we normally spend on the armies of the British Empire 35½ millions sterling



out of taxes, in addition to loan monies, for which we find a nominal war force of 850,000, of various degrees of merit and training, wholly unorganised, and supplied only with the professional artillery needed for a force of about 150,000 men.

#### XIV.—*Navies.*

On the other hand, as regards navies, we can show a more formidable force than that of France, and one by the side of which the German navy does not as yet exist. I say "as yet," for statistically this is true, but as the first living English authority on the German military system, Mr. Spencer Wilkinson, author of "The Brain of an Army," who is here to-night, will tell you, the Germans mean business with their navy, and have begun, in a business-like manner, at the top, putting at the head of it their best administrators, and working hard and with success to create good officers and good sailors of the fleet. Italy began with the material; Germany with what might, for contrast, be called the spiritual, *i.e.*, with the moral and intellectual portion of a navy. The French spend vastly larger sums upon their navy than do the Germans; the Italian navy, and not the German navy, being the third of the navies of the powers. The French expend over 8 millions sterling a year upon their navy, whereas the German expenditure is only  $4\frac{1}{2}$  millions. I may note in passing that the German naval expenditure is altogether understated in our books of reference, which mostly neglect the "extraordinary budget." "Whitaker's Almanack" gives a sum of under 2 millions and a half, or only about half the real cost. I may also note that the French naval expenditure includes their expenditure upon their marine light infantry, who are not employed at sea, but used as a colonial force, and who are really a portion of the French army rather than of the navy.

#### XV.—*Total Cost of Defence.*

The French spend between 36 and  $36\frac{1}{2}$  millions a year upon defence, in addition to a certain proportion of military pensions borne on the civil budget. The Germans are spending in the present year 38 millions upon defence. The Russian expenditure upon the army at the present rate of the rouble is less than 24 millions sterling a year, and the Russian expenditure upon the navy between  $4\frac{1}{4}$  and  $4\frac{1}{2}$  millions, and the total Russian expenditure upon defence between  $28\frac{1}{4}$  and  $28\frac{1}{2}$  millions.<sup>1</sup>

<sup>1</sup> The rouble varies much in value. It has even in the present year varied from 25½d. to 30½d. As a rule in recent years it may be said to vary from a rate of 8 roubles to a £ sterling, to 10 roubles to a £ sterling. I have taken it at 9 roubles to a £, at which it stood when I made my calculation.

XVI.—*Our own Defence Expenditure.*

Our own expenditure is upon a far larger scale, and puts us altogether before the other powers in the figures of defence expenditure, although our lack of organisation is so complete that we are never prepared for war. We are spending in the present year between  $33\frac{1}{3}$  and  $33\frac{1}{2}$  millions out of taxes upon defence in the United Kingdom, and, adding what we are spending out of debt,  $38\frac{1}{3}$  millions in the United Kingdom. India is spending 17 millions upon defence, to which perhaps an addition ought to be made for a certain amount of railway expenditure, which is in fact, although not nominally, strategic; but even without this addition we come up to  $55\frac{1}{3}$  millions, and with nearly 2 millions for the defence expenditure of the colonies, to 57 millions in the year. For this we obtain a fine navy, but no army in the modern sense of the word.

XVII.—“*Extraordinary*” *Expenditure.*

Some of the errors in the usual books of reference, are accounted for by the distinction between ordinary and extraordinary expenditure made in most continental countries. The ordinary army budget of France is about 23 millions sterling, in addition to some military pensions borne on the civil budget, but a large amount of the nominally extraordinary army expenditure of France is also in fact ordinary. It is often called “extraordinary” in reference to the nature not of the charge, but of the fund from which it is to be met. The French extraordinary budget for 1890-91, still contained nearly a million and a half sterling for new rifles, and half a million for stores of ammunition, but the expenditure upon this head will, of course, never wholly cease. Three-quarters of a million sterling are down for carts, and the other extraordinary sums are small, although the total is over 5 millions sterling. Generally speaking it is new fortifications, new guns, new rifles, and new powders, which come into the extraordinary budget of France. Germany has a different system, the ordinary military expenditure is roughly speaking only about half the whole military expenditure, after which there come in the budget two classes of expenditure “for once,” or in other words of expenditure not supposed to be recurrent, although a great deal of it as a matter of fact regularly recurs. Bavaria is spending of extraordinary expenditure in the year 1890-91, no less a sum than over three-quarters of a million sterling, upon new artillery and small arms; Saxony over a quarter of a million sterling upon the same; and Wurtemberg in proportion. Prussia alone divides her expenditure “for once” into classes A and B: A, expenditure for once, ordinary; and B, expenditure for once, extraordinary.

By far the largest items are, one of nearly a million sterling extraordinary for clothing and equipping the increased forces lately raised by the new military law; and a sum of nearly  $5\frac{1}{2}$  millions sterling extraordinary, for artillery and small arms, and an extraordinary fortification expenditure, chiefly upon fortifications in Alsace, of over 2 millions sterling. As a large portion of the German expenditure upon artillery and arms will not be annual, it may be taken that, although the German army expenditure at the moment exceeds that of France, in the long run that of France is equal to that of Germany. The French accounts are, however, complicated by the fact that a portion of the French army is in Algeria, and another portion in Tonquin, while all the German forces are at home. The normal military expenditure of France and of Germany may be taken, as I have said, at about 31 millions sterling upon each army, and the force kept up for this sum at about the same upon each side. We stand pre-eminent in our war expenditure, an expenditure vastly greater for a less force, but affected by our higher rate of pay and pension consequent upon the non-existence of a conscription.

#### XVIII.—*Naval Results.*

It is not so easy to estimate the results gained by expenditure as regards navies as it is in the case of armies, but when we consider the naval war material possessed in the shape of ironclads and big guns by the British Empire, France, Italy, Russia, and Germany, there is some reason to suppose that there is not much to choose between the French and ourselves as regards the return for our expenditure. On the other hand the Italian navy seems cheap so far as can be judged by what the Italians have to show. The weak point, however, in the statistics is connected with the wear and tear in the life of ships and in the life of engines on account of sea service; and until lately the Germans and Italians were less at sea than the British or French fleets, and a certain relative cheapness of the German and Italian navies might be accounted for in this way. Lately, however, there seems to have been but little difference in this respect, and the cheapness of the Italian service continues. A critic in the "Times" has ingeniously divided figures of expenditure by tons of sea-going fighting ships in commission, by engine power of the same, and by crews of the same, and has made out that our navy is the cheapest navy in proportion to results, but he does not give the figures of sea-going fighting ships in commission upon which he bases himself, and his English figures of results seem calculated upon a higher proportional scale than his Italian figures. He sets down the Italian sea-going fleet in commission as having between 90,000 and 100,000

tons, and between 100,000 and 110,000 horse power, and between 5,000 and 6,000 men, as compared with over 400,000 tons and horse power and over 28,000 men for Great Britain. But, to make his figures for Great Britain so high, he must, one would think, have brought in elements in the case of the British fleet such as are not included by him upon the Italian side. On the whole, I think, however, that he is so far right that we do not pay extravagantly for our navy in proportion to results, when we compare our expenditure and our results with those of the other great naval powers.

#### XIX.—*Conclusion.*

We are going beyond the region of statistics, and I will merely say that that enormous expenditure of the British Empire upon its defences, ought at least to lead us to insist upon that defence being afforded to us on land for which we undoubtedly pay.

#### XX.—*Moral.*

It is perhaps inadmissible here to draw a moral, but I may be permitted to ask my hearers to read for themselves the first section of the German official account of the Franco-German War of 1870, compiled by the historical division of the Great General Staff at Berlin. The moral which its compilers drew from the total failure of the French in 1870 to obtain even a momentary success, with an army of splendid courage and perfect training, was that, whatever the peace expenditure, war cannot be commenced with a fair chance of winning by a nation which waits until war to make her organisation perfect. Germany before 1870 prepared, in time of peace, her corps, her armies, and provided them all with officers for the various commands who knew what their duties would be in war. All countries spending much on their armies now do the same, except the United Kingdom, which stands alone in having still practically little but a regimental system in existence. But, although we are old fashioned, to the point of being utterly unprepared (except in India) for the stress of war, we, nevertheless, spend sums so vast as to stagger and amaze even those French and German critics who ought to be pretty well used, one would think from what we have heard to-night, to large sums for military expenditure. The Prussian official account of the war of 1870, points out how the French suffered by having only such a permanent formation of Army Corps in time of peace, as to give them but five organised forces, of which indeed one was included within one other, so that the number might be said to have been only four: the army at the camp of Châlons; the army of Algeria; the army of Lyons; and the Imperial Guard and army of

Paris, the larger organisation of the army of Paris including the smaller organisation of the Imperial Guard. We, in the United Kingdom have only one Army Corps in even nominal being, for the second Army Corps, sometimes talked of, is still a mere idle word, while the first Army Corps itself has but a shadowy existence. The authors of the Prussian history find another cause of the French defeat in the centralisation of the whole administration of the army, instead of its division under corps. In the United Kingdom we have only one centre for each branch of our force; a centre, sometimes Woolwich, sometimes London, sometimes Aldershot, as the case may be. In India we have two Army Corps, and in a certain sense two centres—Quetta and Rawul Pindi; for other purposes but one centre; and for some purposes only the home centre, as for example for the manufacture of large guns. The last of the main causes given by the Germans for their easy victories over the regular French army at the beginning of the war, also applies to us; they point out that the French army had never been mobilised, and that in the case of partial mobilisations these had never been real, inasmuch as the fraction of the army mobilised was mobilised by borrowing from other regiments and batteries, and other centres than its own. I need hardly say that the same is true of the United Kingdom, where we cannot even hold an ordinary review at Aldershot for the amusement of a foreign sovereign without drawing artillery, at least, from all portions of the country, and, after gigantic efforts, failing to place in the field as many guns as Bulgaria can parade, or half as many as the Roumanian military system annually furnishes for the Roumanian manœuvres.

Autumn manœuvres on a large scale, introduced in 1871, have been discontinued on account of their cost, by the richest power in the world; yet without manœuvres it is impossible to train generals and difficult to train officers and men. We spend 57 millions sterling on the defence of the British Empire, of which 35½ millions are spent out of taxes upon our land forces, and we are never able now to review 25,000 Regulars with over 100 guns. Russia spends 28½ millions upon defence, of which 24 millions are spent upon land forces, and puts in the field, as I have said, complete armies of 180,000 and of 150,000 men at her manœuvres, or 330,000 men in all at the sham fights of a single month, and gives her generals adequate training in the art of modern war.

I will hand to the Secretary for the use of members the French and German budget figures.

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## APPENDIX.

FRANCE.—*Military Budget "demandé pour 1891."*1<sup>ière</sup> SECTION.—*Service ordinaire.*

	frs.
1. Traitement du Ministre et personnel de l'administration } centrale et salaires des hommes de peine et ouvriers } employés à l'administration centrale.....	2,508,240
2. Officiers détachés à l'administration centrale .....	795,850
3. Matériel de l'administration centrale.....	351,720
4. Frais généraux d'impressions .....	420,000
5. Service géographique (personnel) .....	395,549
6. „ (matériel) .....	471,380
7. État major général. Archives et Bibliothèques .....	151,700
8. Télégraphe militaire (matériel) .....	270,000
9. Service des chemins de fer (matériel) .....	64,500
10. États majors .....	25,753,577
11. Écoles militaires (personnel) .....	9,761,667
12. Personnel hors cadres ou non classés dans les corps de troupe..	12,428,286
13. Solde de l'infanterie .....	120,672,791
14. „ des troupes d'administration.....	4,799,850
15. „ de la cavalerie .....	34,435,600
16. „ de l'artillerie .....	34,071,990
17. „ du génie .....	4,624,150
18. „ du train des équipages militaires .....	5,091,780
19. „ de la télégraphie militaire.....	137,500
20. Gendarmerie départementale et gendarmerie d'Afrique .....	34,965,960
21. Garde républicaine .....	4,764,770
22. Vivres .....	52,851,500
23. Chauffage et éclairage .....	1,194,240
24. Fourrages .....	70,971,883
25. Service de santé (personnel d'exploitation) .....	316,140
26. „ (matériel „ ) .....	9,681,760
27. Service de marche .....	11,490,580
28. Habillement et campement (personnel d'exploitation) .....	1,480,020
29. „ (matériel „ ) .....	55,570,890
30. Lits militaires .....	11,151,980
31. Transports spéciaux .....	779,000
32. Recrutement .....	759,500
33. Réserve et armée territoriale .....	499,000
34. Justice militaire (frais généraux) et prisons .....	735,760

FRANCE.—*Military Budget "demandé pour 1891"—Contd.*1<sup>ière</sup> SECTION.—*Service ordinaire—Contd.*

	frs.
35. Ateliers et pénitenciers militaires .....	193,100
36. Remonte générale .....	14,903,261
37. Recensement des chevaux et mulets .....	790,000
38. Harnachement .....	1,776,880
39. Établissement d'artillerie (personnel d'exploitation) .....	691,000
40. „ (matériel „ ) .....	14,033,310
41. Poudres et salpêtres (personnel d'exploitation) .....	932,190
42. „ (matériel „ ) .....	3,490,490
43. Établissements du génie (personnel) .....	523,300
44. „ (matériel) .....	16,413,000
45. Écoles militaires (matériel) .....	3,742,660
46. Invalides de la guerre (personnel) .....	105,120
47. „ (matériel) .....	296,030
48. Solde de non-activité, solde et gratifications de réforme .....	828,900
49. Secours .....	4,132,500
50. Dépenses secrètes .....	600,000
51. Construction de la nouvelle enceinte et des forts détachés de Lyon .....	600,000
52. Dépenses des exercices périmés non frappées de déchéance...	
53. „ clos .....	
54. Rappel de dépenses payables sur revues antérieurs à 1891 et non passibles de déchéance .....	
Totaux pour la 1 <sup>ière</sup> section.....	578,470,845
	<u>£23,138,834</u>

FRANCE.—*Dépenses extraordinaires pour 1891.*2<sup>me</sup> SECTION.

	frs.
1. Équipages de campagne .....	18,200,000
2. Armement des places .....	5,500,000
3. „ côtes .....	5,500,000
4. Équipages de siège .....	7,800,000
5. Armes portatives .....	36,000,000
6. Munitions .....	11,600,000
7. Dépenses diverses .....	700,000
8. Bâtiments et machines .....	1,700,000
Total pour l'artillerie .....	87,000,000
	<u>£3,480,000</u>



FRANCE.—*Dépenses extraordinaires pour 1891—Contd.*2<sup>me</sup> SECTION—*Contd.*

	frs.
9. Places de la frontière du Nord .....	3,000,000
10. Frontières de l'Est .....	10,000,000
11. Places de la frontière du Sud Est .....	4,500,000
12. Ports et embouchures .....	5,645,000
13. Magasins à poudre .....	8,000,000
14. Améliorations, transports.....	403,000
15. Bâtiments militaires .....	5,915,000
	<hr/>
Total pour le génie .....	37,463,000
	<hr/>
	£1,498,520
	<hr/>
16. Chemins de fer .....	3,210,000
17. Service de Santé .....	} 1,155,000
18. Subsistances .....	
19. Télégraphie militaire et aérostation .....	} 1,100,000
20. Cavalerie.....	
21. Service géographique.....	72,000
	<hr/>
Total général de la 2 <sup>me</sup> section .....	130,000,000
Report de la 1 <sup>ere</sup> section.....	578,470,845
	<hr/>
Totaux généraux .....	708,470,845
	<hr/>
Add from Civil Estimates for Pen- sions about £4,000,000 sterling military and £1,000,000 naval, or £5,000,000 sterling in all, from Civil Pension List .....	} £5,000,000
French navy .....	£8,125,925
	<hr/>
Total war expenditure.....	£41,464,759
	<hr/>

GERMANY.—*Military*I. *Ordinary Expenditure*

	Prussia and Small German States.	Saxony.	Württemberg.	Bavaria.
	Mark.	Mark.	Mark.	Mark.
1. Ministry of war .....	1,947,753	103,580	92,550	367,600
2. Military pay office .....	258,136	27,905	18,150	61,270
3. Commissariat .....	1,762,555	116,510	124,291	246,590
4. Military chaplains .....	663,624	38,300	11,112	66,020
5. „ justice administration.....	589,094	59,120	67,100	219,241
6. Higher military commands .....	2,493,642	188,268	139,770	330,906
7. Governors, commanders, and majors of the place .....	587,777	18,312	15,600	79,021
8. <i>Adjutant</i> officers and officers in special appointments .....	917,172	93,000	52,800	133,926
9. General staff and topography .....	2,015,535	125,390	69,450	309,170
10. Engineer and pioneer corps .....	1,692,768	87,688	45,792	235,004
11. Pay of troops .....	96,478,578	8,470,274	5,461,841	14,208,046
12. Victualling department .....	74,900,529	6,494,063	4,042,254	10,942,743
13. Clothing and equipment of troops .....	20,044,182	1,936,054	1,118,363	2,902,065
14. Garrison administration and service .....	34,274,482	2,906,389	1,673,936	4,791,487
15. „ building .....	497,892	5,300	23,860	70,708
16. Military medical department .....	5,728,053	472,739	314,539	912,962
17. „ train and equipages.....	806,176	59,847	51,212	109,054
18. Provision for dépôt and reserve troops ....	2,329,726	168,773	78,964	261,300
19. Purchase of remount horses .....	5,567,977	625,320	406,524	928,872
20. Administration of remount dépôts .....	1,698,847	—	—	399,755
21. Travelling expenses, carriage, and transport	5,416,177	322,282	302,861	721,100
22. Military educational establishments .....	5,050,429	318,478	61,987	479,508
23. „ prison administration .....	692,247	94,303	37,850	77,578
24. Artillery and armament .....	13,928,301	1,077,455	611,166	1,766,113
25. Technical artillery institutions .....	694,831	49,678	—	114,520
26. Building and repair of fortresses .....	2,627,248	31,914	12,300	294,785
27. Additional pay for house rent .....	7,514,365	630,471	439,106	1,310,632
28. Other payments to military men and officials not comprised in the above.... }	107,500	7,295	6,550	15,960
29. Payment in aid of military widows' fund..	1,676,200	180,000	139,000	500,000
30. Miscellaneous expenditure .....	113,400	6,658	3,450	13,500
Total of ordinary expenditure.....	293,075,196	24,715,366	15,422,378	42,869,436

*Budget.**for the Year 1890-91.*

Prussia and Small German States.	Saxony.	Würtem- berg.	Bavaria.	Total.	
£	£	£	£	£	
97,387	5,769	4,627	18,380	126,073	1. Ministry of war
12,956	1,395	907	3,063	18,321	2. Military pay office
88,127	5,825	6,214	12,329	112,495	3. Commissariat
33,181	1,915	555	3,301	38,952	4. Military chaplains
29,454	2,956	3,355	10,962	46,727	5. „ justice administration
129,682	9,413	6,988	16,545	162,628	6. Higher military commands
29,388	915	780	3,951	35,034	7. Governors, commanders, and majors (the place
45,858	4,650	2,640	6,696	59,844	8. <i>Adjutantur</i> officers and officers in special appointments
100,776	6,269	3,472	15,458	125,975	9. General staff and topography
84,638	4,384	2,289	11,750	103,061	10. Engineer and pioneer corps
4,823,928	423,513	273,092	710,402	6,230,935	11. Pay of troops
3,745,026	324,703	202,112	547,137	4,818,978	12. Victualling department
1,002,209	96,802	55,918	145,103	1,300,032	13. Clothing and equipment of troops
1,713,724	145,319	83,696	239,574	2,182,313	14. Garrison administration and service
24,894	265	1,193	3,535	29,887	15. „ building
286,402	23,636	15,726	45,648	371,412	16. Military medical department
40,308	2,992	2,560	5,452	51,312	17. „ train and equipages
116,486	8,438	3,948	13,065	141,937	18. Provision for dépôt and reserve troops
278,398	31,266	20,326	46,443	376,433	19. Purchase of remount horses
84,942	—	—	19,987	104,929	20. Administration of remount dépôts
270,809	16,144	15,143	36,055	338,151	21. Travelling expenses, carriage, & transpo
252,521	15,923	3,099	23,975	295,518	22. Military educational establishments
34,612	2,715	1,892	3,878	45,097	23. „ prison administration
696,415	53,872	30,508	88,305	869,100	24. Artillery and armament
34,741	2,483	—	5,726	42,950	25. Technical artillery institutions
131,362	1,595	615	14,739	148,311	26. Building and repair of fortresses
375,718	31,523	21,955	65,531	494,727	27. Additional pay for house rent
5,375	364	327	798	6,864	28. Other payments to military men and officials not comprised in the above
83,810	9,000	6,950	25,000	124,760	29. Payment in aid of military widows' fun
5,670	332	172	675	6,849	30. Miscellaneous expenditure
14,658,897	1,236,286	771,059	2,143,463	18,809,605	Total of ordinary expenditure

GERMANY *Contd.*—*Estimate, 1890-91.**Expenditure for once, i.e., not repeated annually, for PRUSSIA.*

<i>(a.) Ordinary Estimate.</i>		Marks.	£
1. Special additions to pay .....		411,249	20,562
2. Military railways .....		162,500	8,125
3. Administration of magazines .....		2,775,400	138,770
4. Clothing and equipment .....		1,353,420	67,671
5. Garrison establishments .....		13,401,798	670,091
6. Military medical establishments .....		1,722,280	86,114
7. Military train .....		1,764,900	88,245
8. Remounts .....		643,500	32,175
9. Expenses of moving and transport .....		1,230,000	61,500
10. Military instruction and education .....		1,219,425	60,971
11. Artillery and arms.....		421,550	21,077
12. Technical artillery institutes.....		15,000	750
13. Engineering and pioneers.....		1,030,000	51,500
14. Alsace Lorraine .....		6,894,700	344,735
Total .....		33,045,722	1,652,286
<i>(b.) Extraordinary Estimates.</i>			
1. Clothing and Equipment .....		16,788,600	839,430
2. Garrison buildings.....		525,000	26,250
3. Artillery and arms.....		109,789,700	5,489,485
4. Alsace Lorraine, including fortifications, } 34,800,000 ... ..		42,118,597	2,105,930
Total .....		169,221,897	8,461,095
Total of expenditure for once in Prussia ....		202,267,619	10,113,380
Total of ordinary expenses in Prussia .....		293,075,196	14,653,760
Grand total .....		495,342,815	24,767,140
Total for Saxony .....		—	1,628,892
,,   Württemberg .....		—	1,097,049
,,   Bavaria .....		—	3,480,461
Add from the "General Pension Fund" } (in addition to the sums given else- where), for additional military pensions and annuities .....		—	2,788,592
Grand total for Germany.....		—	33,762,134

GERMANY *Contd.*—*Estimate, 1890-91.**Expenditure for once for SAXONY.*

<i>(a.) Ordinary Estimates.</i>		Marks.	£
1. Additional pay to non-commissioned officers } and garrison troops in Alsace Lorraine .... }		18,000	900
2. Increased pension fund for officers and surgeons		3,500	175
3. New cavalry equipments .....		103,680	5,184
4. Infantry barracks at Leipsic .....		750,000	37,500
5. New garrison hospital .....		124,000	6,200
6. „ building of a drillhouse ....		95,000	4,750
7. Binoculars for troops.....		27,000	1,350
8. Building of a powder magazine .....		41,800	2,090
9. Ammunition materials .....		26,000	1,300
<b>Total .....</b>		<b>1,188,980</b>	<b>59,449</b>
<i>(b.) Extraordinary Estimates.</i>			
1. Clothing and equipment .....		1,550,000	77,500
2. Artillery and arms .....		5,123,500	256,176
<b>Total .....</b>		<b>6,673,500</b>	<b>333,675</b>
<b>Total of expenditure for once in Saxony .....</b>		<b>7,862,480</b>	<b>393,123</b>
<b>Total of ordinary expenses in Saxony .....</b>		<b>24,715,366</b>	<b>1,235,769</b>
<b>Grand total for Saxony .....</b>		<b>32,577,846</b>	<b>1,628,892</b>

GERMANY *Contd.*—*Estimate, 1890-91.**Expenditure for once for WÜRTENBERG.*

<i>(a.) Ordinary Estimates.</i>		Marks.	£
1. Additional pay to non-commissioned officers } and garrison troops for Alsace Lorraine.... }		12,156	607
2. Increased pension fund for officers and surgeons		3,000	150
3. New cavalry equipments .....		74,160	3,708
4. Improvement of barracks at Ulm .....		130,000	6,500
5. Erection of a drill hall at Ulm .....		55,000	2,750
6. Shooting range at Ulm .....		120,000	6,000
7. Drill ground at Stuttgart .....		1,500,000	75,000
8. Building of storehouses .....		136,400	6,820
9. Purchase of binocular glasses .....		17,800	890
<b>Total .....</b>		<b>2,048,816</b>	<b>102,425</b>
<i>(b.) Extraordinary Estimates.</i>			
1. Clothing and Equipment .....		1,042,000	52,100
2. Enlargement of barracks .....		540,000	27,000
3. Artillery and small arms .....		2,887,800	144,390
<b>Total .....</b>		<b>4,469,800</b>	<b>223,490</b>
<b>Total expenditure for once in Württemberg ....</b>		<b>6,518,616</b>	<b>325,931</b>
<b>Total of ordinary expenditure in Württemberg</b>		<b>15,422,378</b>	<b>771,118</b>
<b>Grand total for Württemberg .....</b>		<b>21,940,994</b>	<b>1,097,049</b>

GERMANY *Contd.*—*Estimate, 1890-91.**Expenditure for once, i.e., not recurrent in each year, for BAVARIA.*

	Marks.	£
1. Military pay .....	27,600	1,380
2. Magazines .....	312,500	15,625
3. Clothing and equipment .....	2,500,000	125,000
4. Garrison administration .....	2,545,400	127,270
5. Military medical service .....	180,000	9,000
6. Remounts .....	120,000	6,000
7. Military education and instruction .....	200,000	10,000
8. Artillery and small arms .....	15,240,000	762,000
Total of expenditure for once in Bavaria .....	21,125,500	1,056,275
„ ordinary expenses in Bavaria .....	42,869,436	2,143,472
Military pensions .....	5,614,293	280,714
Grand total for Bavaria .....	69,609,229	3,480,461

GERMANY *Contd.*—*Estimate, 1890-91.*I.—*Expenditure for once, Single Outlays.*

	Prussia.	Saxony.	Württemberg.	Bavaria.
	Marks.	Marks.	Marks.	Marks.
1. Ordinary estimates.....	33,045,722	1,188,980	2,048,816	—
2. Extraordinary estimates ....	169,221,897	6,673,500	4,469,800	—
Total of single outlays (expen- diture for once) .....	202,267,619	7,862,480	6,518,616	21,125,500
Total of ordinary expenses.....	293,075,196	24,715,366	15,422,378	42,869,436
Grand total .....	495,342,815	32,577,846	21,940,994	63,994,936
For Bavaria. Military pensions	—	—	—	5,614,293
Grand total for Bavaria .....	—	—	—	69,609,229

	Prussia.	Saxony.	Württemberg.	Bavaria.
	£	£	£	£
1. Ordinary estimates.....	1,652,286	59,449	102,440	—
2. Extraordinary estimates ....	8,461,094	333,675	223,490	—
Total of single outlays (expen- diture for once) .....	10,113,380	393,124	325,930	1,056,275
Total of ordinary expenses.....	14,653,760	1,235,768	771,119	2,143,471
Grand total .....	24,767,140	1,628,892	1,097,049	3,199,746
For Bavaria. Military pensions	—	—	—	280,715
Grand total for Bavaria .....	—	—	—	3,480,461

## GERMAN NAVY.

I. *Permanent Expenditure for 1890-91.*

CHAP.	Marks.
45. Headquarters (Oberkommando) of the navy .....	186,815
46. Imperial navy office .....	755,340
47. German naval observatory .....	235,815
48. Station commissariat.....	216,195
49. Law expenses.....	29,550
50. Cure of souls, chaplaincy.....	47,405
51. Military drafts (personnel) .....	9,443,155
52. Repairing and preservation of ships .....	6,858,300
53. Victualling .....	2,887,880
54. Clothing .....	114,304
55. Allowances and garrison administration .....	957,108
56. House and lodging allowances.....	761,900
57. Medical establishments.....	640,003
58. Passages and conveyance and freight.....	509,250
59. Educational .....	161,901
60. Dockyards .....	10,349,693
61. Artillery and fortification .....	2,162,825
62. Torpedo and mining.....	1,563,646
63. Pilotage and lighting .....	203,930
64. Miscellaneous.....	202,580
	<u>38,287,595</u>

II. *Expenditure for once.*

a. Ordinary estimates .....	47,312,020
b. Extraordinary estimates.....	3,181,550
	<u>50,493,570</u>
Total of II .....	50,493,570
„ I .....	38,287,595
„ I and II.....	<u>88,781,165</u>

	Total	Marks.
I. Permanent expenditure .....		38,287,595
II. Expenditure for once—		
A. Ordinary .....		47,312,020
B. Extraordinary.....		3,181,550
		<u>50,493,570</u>
Total of II .....		50,493,570
Grand total I and II .....		88,781,165
		<u>= £4,439,058</u>
Germany, army .....	£33,762,134	
„ navy.....	£4,439,058	
Total for defence .....	<u>£38,201,192</u>	

*Note.*—The translations of the figures are only rough estimates in pounds sterling, and have not been made to exactly balance.



DISCUSSION *on* SIR CHARLES DILKE'S PAPER.

MR. SPENSER WILKINSON said it seemed to him that the subject of military statistics resembled a sort of bottomless pit in which it was almost impossible to arrive at the lowest depths, but he thought that Sir Charles Dilke's paper dropped the plummet deeper than anything else put before the English public with which he was acquainted. It was very difficult indeed to find out how much a country really spent on its defence. For example, in Germany there were a large number of one-year volunteers who paid the whole of their expenses, and from information given to them by those who had served in that capacity, the average expense was between 200*l.* and 300*l.* a year. The number of these volunteers was about 7,000 in each year. That might be added to the total expenditure of Germany. Then Germany had a good deal of expenditure which did not appear as military items, such as the cost of the railways in Alsace and Lorraine, and in the estimates for 1890-91 the cost of their acquisition and of the construction of additional lines was put down at about 399 million marks, of which a certain amount ought to be added to the military expenditure. It was said that France was going to abolish the extraordinary military budget, but he had noticed that the newspapers had been giving extraordinary attention to the subject of increasing the defences of Toul. He was not aware that that appeared in the budget, and he suspected that it would have to be accounted for. The principal question raised by the paper was, "do we get our money's worth for our money?" When he saw the totals of the British forces, 700,000 men, he always felt an apprehension that the taxpayer would console himself with the thought that he got a very respectable force for his money. He believed that to be a mistaken impression. The question to ask was, "what warlike power does the aggregate force of the army represent which we get for our expenditure?" Besides numbers the quality of the troops must be taken into account, and the amount of training. It was also important to know what sort of organisation managed them in peace; and in order to get at those two factors it occurred to him that they might be represented by a figure of three dimensions. The diagrams on the wall were not intended in the strict sense as statistics, but rather as an interpretation of statistics. He had tried to give a representation of what to a soldier was the relative value of the different forces. (The PRESIDENT asked if Sir Charles Dilke's figures were taken as the foundation.) Mr. SPENSER WILKINSON said they were not, but there was no substantial difference. In the first instance he took the German army as it was on 1st April, 1888, and for that purpose he took the data given by our own intelligence division. The first question was, "what is the number available?" The number of an army

depended on two things, the annual contingent and the number of contingents. Up to 1888 the Germans used to take 12 contingents. They took a certain number of young men in their twentieth year and kept them for three years, but they regarded as available, immediately on the outbreak of war, all those who had passed through the service during twelve years. In 1888 they passed a law which empowered them to take 18 contingents instead of 12, and he had tried to represent the numbers on the diagram. Eighteen contingents meant about 1,980,000 men. That force he represented by a horizontal line on the scale of 1 millimètre for 2,000 men. Then the Germans had 18 contingents of one-year volunteers of 7,000 each, which with proper deductions gave 94,000 men, represented by another line. Then in 1888 they had also a number who had had only ten weeks' training. Those numbered 148,000 men. He had tried to represent the length of service by a perpendicular line on the scale of 1 millimètre for each week's training. The three-years' men did not serve exactly three years. He had taken it as thirty months, which gave another line, so that the rectangle represented nearly 2 million men with thirty months' service. Then there were 94,000 with twelve months' and 148,000 with ten weeks' service. Sir Charles Dilke had called attention to the fact that an army did not merely consist of a number of men trained and armed, but that organisation was the essential factor. That was a conclusion which every soldier was anxious to impress upon the public. By organisation they meant that the best intelligence which could be obtained was steadily directed to the preparation of all the available forces for their use in war. One thing was perfectly certain, and that was however beautiful a scheme of organisation was introduced, it would not produce its effect for a considerable time. Whatever the views of the authorities, it must take a long time before they permeated the various ranks and found practical expression in the perfect working of the military machine. He had taken as the graphic measure of organisation the time which had elapsed since each country had really devoted its mind to perfecting a modern military organisation. He did not press that however as a final criterion. The line on the diagram marking a third dimension denoted the length of time during which each country had been in possession of something like a modern system. In the case of Germany the basis of the present organisation was laid in 1860, and he had measured a line representing those thirty years. There he had taken 5 millimètres to represent a year; then he would take the solid figure thus produced and say, "that is the number of the German troops, and that is the kind of organisation with which it is to be multiplied." For France he had taken the figures published in the "Fortnightly Review" in 1889, but he did not guarantee them in any way. The French service at that time was five years, but the men did not serve quite five years, and he had taken forty months. He dated the period from which the French began to organise their army from 1873. He had tried to do the same for the English army. The actual average time of service was five years and eight months. He had taken 1882, the

year when Lord Wolseley became adjutant-general, as the date from which to draw the line, representing the state of English organisation. One question to be raised was, "when did the moment come when they ceased to get out of a man any labour or expense that had been put into training him?" The Germans evidently in practice thought that that was thirty months, but the English had gone on to sixty-eight months. He had very good reason to think that the opinion in Germany was that they would be able to gain all the benefit they wanted out of troops, for infantry, in two years. The tendency was the same in France, where the five years' term had recently been reduced to three years.

Colonel MAURICE, R.A., said that in order that statistics might be satisfactory, it was necessary that they should be as complete as possible, and take account of as many different points as possible. A unit of comparison was required as to the number of troops and the cost. It was not quite enough to consider what Germany did in the way of raising *corps d'armée*, and to compare that with what we did, because to a considerable extent that begged the question. It assumed that the conditions here were the same as in Germany. For all practical purposes the expense which Germany was incurring was for her European empire, which lay within a ring fence between Russia on the one side and France on the other. That territory was 211,000 square miles, while the British empire which the navy, army, and colonial forces had to defend for the 57 millions was over 9 million square miles. He thought it would not be an unfair method of assessment to take an area of 1,000 square miles, and consider who paid most for the area defended. In the budget for the present year there were expenses for fortresses and garrisons in each of the four continents, independent of India. In addition to that, the frontiers were peculiarly extensive in proportion to area as compared with those of Germany. Still it was not for the sake of those frontiers that Gibraltar, Malta, Bermuda, Halifax, &c., were held, but for that vaster territory on which the greater part of England's wealth was spread, namely, the sea. When considering the question of the forces of the British army, and whether we could base our organisation on the principle of turning out as many *corps d'armée* as possible, the fact should be recognised that there were 35,000 men spread in small detachments all over the world. That *corps d'armée* could by no accident be arranged in the manner in which a German *corps d'armée* was. "Empiring" all over the world must be paid for, and those costs had to be taken into account in estimating relative costs. Moreover another *corps d'armée* had to be kept for the relief of the colonial *corps d'armée*. Russia possessed the advantage that she could turn out a cheap army. The actual pay of a Russian soldier was 10s. a year, and when men could be got in England to serve for that sum, a comparison might be made between the English and the Russian army. Moreover no Russian army budget had ever included the cost of the autocratic action of the czar, when for strategical purposes he, with a ruler and pencil, determined

that a line of railway should pass for a thousand miles without regard to big towns or commercial centres. Of course that is a mere illustration of the misleading nature of continental budgets. He thought that Germany paid much more dearly for her army than England; but she paid in a way which may be illustrated by the following statistics: In the Austrian army in the contingent of 1888 there were 3,980 shoemakers, 1,096 farriers, 1,977 butchers, and a large number of joiners, bricklayers, &c. Those men were employed in carrying on their skilled work at nominal pay whilst they were serving in the army. What was extracted from them was the difference between the high rates of pay in civil life and the merely nominal pay they received in the army, and to all intents and purposes that was a tax on the country of the most costly kind, because it interfered with trade and commerce. Colonel Maurice then gave various statistics from General Brackenbury's evidence, illustrating the same point as to the German army. To turn again to our own army and the reliefs for them at home, there must in Great Britain be the relief for India. The whole British army at home consisted absolutely of these two relief forces, that for India and that for the colonial stations. The organisation into *corps d'armée* was merely as good an arrangement as we could make under the conditions of having to provide for the defence of a world wide empire. Therefore that was the first point which had to be taken into account in any statistical comparison. If it were counted on the miles defended, before any comparison as to relative strength could be instituted, the defences in all navy, army, Indian army, and colonial forces ought to be forty-five times the cost of the German army. That cost however of the continental army on which the multiple was taken ought to be the real cost to the country, and not the mere budget cost. Taking account of the facts he had mentioned, the unrecorded cost of the autocratic action of the tzar, the cost incurred by British navy and army in defending wealth upon the seas such as no other power has to protect, and the conditions of the relief of an army dispersed throughout the world, which determined the organisation and cost of the British defences, it appeared to him that the truest summary of the case was to say that in the money cost of the English army we paid for our liberties, our wealth, and our empire. No statistics therefore could be other than misleading which did not take these elements into account. A most valuable series of statistics on this subject was to be found in the twentieth volume of the "Journal of the United Service Institution," under the title "Comparative Cost of Armies of different Nations."

Captain MAY endorsed Sir Charles Dilke's arguments, and said that if anything he had understated the case, for if the return of the British Army for 1889 were examined, it would be found that the establishment was below its strength to the number of 3,994 men. He was glad that Sir Charles Dilke had referred to the great lack of guns. The guns on paper would not be forthcoming on mobilisation, because 14 batteries would be broken up to make ammunition columns, and because we needed horses. About two

years ago they tried to put a battery at Aldershot on a war footing, and in order to do that they had to take every horse away from another battery, and most of the horses of a third battery. In a German tactical book from 24 to 27 batteries were recommended as the proportion of artillery to an army corps. England only legislated for 14, and even they were not ready for the field. Until there was a separate army for India he did not see how they could hope to attain the same satisfactory organisation as existed in Germany. More guns were wanted, more horses, more autumn manœuvres, and more practice ground for the artillery. On the other hand he did not think people quite understood how much was gained by escaping conscription. The average wages of a French artisan were 37*l.* a year, and of a labourer 29*l.* a year; the average wages in France were therefore 33*l.* The French soldier cost on the average 20*l.* a year. The country therefore lost about 13*l.* a year on every soldier in the ranks. He had calculated that on the whole the French nation lost 5½ millions a year in this way. The cost of the English soldier was 55*l.* 1*s.* a year, and of the American soldier 108*l.* 13*s.* 8*d.*, and the comparison of expenditure with the only other nation that kept up a volunteer army was therefore in our favour. Although our organisation was undoubtedly defective, perhaps some crumbs of comfort were to be gathered from this.

The Right Hon. G. SHAW-LEFEVRE, M.P., said it was very satisfactory to him to find that Sir Charles Dilke had not the same cause of complaint with regard to the navy as with regard to the army. He entirely agreed with the paper that comparing the results of the expenditure upon our navy with that of France, Germany, and Italy, there was no reason for complaint. There were two great branches of expenditure in the navy, namely, the personal and the material, and roughly speaking the expenditure was evenly divided between these two heads. The results of the expenditure in England on the personal were decidedly inferior to those of France, whereas with regard to the material the case was different. Ships were built, and material for the navy provided on the average at 30 per cent. less than in France, while on the average the personal cost about 30 per cent. more than in France. The two thus balanced one another. The expenditure on the navy in France was 8 millions, while in England the average expenditure might be regarded as 12 millions, and the strength of the English navy as compared with that of France was as three to two. It was true that to a certain extent the conscription applied to the navy in France, but not to anything like the extent that it did to the army, because a large proportion of the crews must necessarily be of a permanent character. Still this consideration of the navy showed that there was no inherent difficulty in the organising process of the English departments, which made it impossible to get as good results here as in other countries. The question of comparative expense in the army was a vastly more difficult one to determine. He was a member of the committee three years ago to which Sir Charles Dilke had alluded, and he had always

regretted that that committee had not been reappointed, and had not given a report on the question of the comparative costs of our own and other armies. Officers who came before that committee stated that there were six important heads which it was important to bear in mind in comparing ourselves with France and Germany. The first was that those countries got their soldiers under conscription, and therefore in the main for nothing, whereas we had to pay wages. The second point was the higher scale of victualling in our army, which was necessary in order to tempt men into the service; the third, the higher cost of uniforms, which Sir Charles Dilke said officers regarded as also necessary in order to tempt men into the service. Next, the proportion of officers was very much greater in an English than in the German army. The fifth point was the higher rate of salaries both of officers and of civilians attached to the army. The English scale of salaries and pensions to officers was vastly higher than in either France or Germany, and it was extremely difficult to see how that could be amended; it had relation to the higher scale of salaries and profits in civil employments of all kinds in England. Lastly, there was the question of transports. Both the French and German armies were always to be found close to the places where they were recruited, whereas the English army had to be taken about to places all over the world. But even making allowance for all these things, he thought it could not be doubted that the expense of the English army was very high in proportion to the results obtained. The whole draft of Sir Charles Dilke's observations was that we did not get enough for the money expended, and he seemed to desire a great increase in the number of men, and possibly even a second army corps as the result of our present expenditure. There was another way of looking at the question, namely, whether we might not achieve the same results at a far less expenditure. For his own part he was satisfied with the existing strength of the army. He did not desire to have a second army corps ready to be sent to the continent on the event of war. On the contrary he thought it should be an axiom with us never under any circumstances to send an army to the continent to contend with the vast forces of European powers, but to rest mainly on the strength of the navy. In this sense he thought that whatever change was necessary should be in the direction of lowering the cost of our existing force rather than of increasing the force for the same expenditure.

Colonel GOLDSMID said that in the archives of the Society, no doubt, might be discovered how much the pyramids of Egypt cost per cubic foot building and how much the Thames Embankment. An interesting lecture might be delivered with a view to show the extravagant cost of building the Thames Embankment when compared to that involved in building the pyramids, which cost so much less per cubic foot. He thought that put the case fairly as between the English army and the armies of continental powers. England had a short service army recruited on the voluntary system, which had to safeguard a world-wide empire, whereas continental armies were as a rule confined to safeguarding



their own homes. In other countries conscripts came up at the age of 20, but in England we had to take what we could get in the labour market and were thankful if we could get recruits at 18. These enlisted for seven years with the colours, and this might be extended to eight years if the soldier was at the time serving abroad. It must be remembered however that for medical reasons it is not considered desirable to send soldiers under 20 years of age to most of our possessions, and that moreover it is not practicable to carry out reliefs except at certain fixed seasons depending on local climatic considerations. The consequence is that in many cases only four to five years' service abroad can be obtained from a soldier; hence a constant flow of troops between Great Britain and her colonies resulted, the expense of which was considerable. As regards pay he did not consider either our officers or men were better paid than those of continental armies, considering the circumstances under which they were raised, and taking into consideration, in the case of officers, that the cost of living in general society in England was considerably above that in foreign countries. Pay it is true is high in India, but it is unreasonable to expect that individuals would expatriate themselves to unhealthy or unpleasant climates without a *quid pro quo*. In conclusion, to illustrate his meaning as to the different conditions under which British and foreign troops served, he could not do better than quote the reply he gave a few years ago to the then German naval and military attachés, who said they would like to know the nature of the work in the Quartermaster-General's branch in England so as to compare it with that in their own country. He accordingly showed them a map of the world hanging up in the office, and explained to them what he was working at at the moment of their visit, *i.e.*, making out the programme of one of the many troopships proceeding on trooping duty that season, showing that it was to leave Portsmouth on 15th October with a battalion on board, dropping it at Bermuda, picking up another there and dropping it at Halifax, taking one there to Egypt to relieve another for Gibraltar, conveying the battalion from Gibraltar to the West Indies, the one at the West Indies to Natal, that at Natal to Singapore, the battalion from Singapore to Bombay, from whence the troopship sailed to Ceylon, Mauritius, Natal, the Cape, St. Helena, home, picking up at each station invalids and time expired men for discharge; a voyage of over 30,000 miles. On the same map a crown piece would have covered all the moves of the German army.

Sir CHARLES DILKE (in reply) said that with the greater part of Mr. Spenser Wilkinson's speech he so thoroughly agreed that he ventured to offer no criticism upon it, but it was only right that he should say that he does not think the question of organisation was capable of statistical treatment. Mr. Wilkinson's diagrams were most useful as regarded length of service and the value of the men, judging from their training, but he could not go all the way Mr. Wilkinson did, as to length of time proving the value of a system. He believed the body guard of Amazons in Dahomey



had been in existence for hundreds of years. Colonel Maurice's observations were most able, as everything that fell from his lips or came from his pen was, but he could not agree with him as to a large portion of his speech. He (Colonel Maurice) had pointed out that the British army had to act for the British empire, which was of vast size as compared with Germany, and that therefore not only the needs in time of war should be taken into account, but also the enormous area which was defended in time of peace. But was it defended? Between 3 and 4 millions of the 9 million square miles were in Canada, and in all that vast territory they only held the single fort of Halifax. There were 36,000 men of the Canadian militia, who were paid for partial service to defend an enormous frontier, which really could not be said to be defended. In the same way Australia was defended by herself, but her geographical position was such that no enemy could come against her as long as she remained a portion of the British Empire. The part that England defended was very small. If time had permitted he should have pointed out that provision was not made for the adequate garrisoning of coaling stations. He admitted that one army corps was scattered about the world at the coaling stations, but Colonel Maurice's general argument, of course like the argument of all soldiers, raised the question of the effect produced by the absence of conscription upon cost. He would ask any hearers of the paper to look into it for themselves, and try and see what were the items which conscription really affected. He thought they were only pay, and victuals to a smaller degree. A very large part of the pay was for officers, which was not affected by conscription, and the amount affected was not so large as some people were disposed to think. After all, the expense of the army was very great, even if allowance was made for the absence of conscription, 57 millions a year were spent on the defences of the British empire, and would not many members of the Royal Statistical Society be competent to run the thing for a less sum? He agreed with the greater portion of Mr. Shaw-Lefevre's remarks, but as regarded the high proportion of officers to men, distinctions must be drawn between foreign powers. In France there was a much higher proportion of officers to men than in Germany. Probably one of the weaker points of the French army was that there were rather fewer men with the colours than there were supposed to be, but they had a larger number of trained officers. With regard to transport France had a great deal, and during the past few years it had been larger than that of England in proportion, in consequence of the number of men that were sent to Tonquin. The French had been carrying on the war there with a short service army. He did not want to see more men for the money in England, but better organisation. Even without conscription there was no difficulty in this country in getting numbers of men, but what was needed was proper organisation. He concurred entirely with what fell from Captain May in regard to the difficulties that arose in consequence of our connection with India. Those difficulties pointed to a return to a separate army for India, though not like that of the old

Company. In conclusion he thanked the Society for the manner in which they had received his paper, and wished to express his satisfaction at its calling forth so good a discussion.

Mr. SPENSER WILKINSON wished it to be understood that the portion of his diagram representing organisation was not intended to be statistical, but merely a graphic way of expressing an opinion which he was by no means alone in holding.

The PRESIDENT directed the attention of the meeting to the approaching assembly of the International Congress of Hygiene and Demography in London, and hoped that all who took an interest in those important subjects would attend and share in its work, of which a programme would be given to all who applied for it.

On the conclusion of the discussion on Sir Charles Dilke's paper, the President referred particularly to the subject of the European force in India, which he considers was not taken sufficiently into account in estimating the cost of the British army when contrasted with that of the great military powers. He considered the short service system to be altogether inapplicable to India, and a source of considerable unprofitable expenditure, as he had shown some years since (in 1866) in his lectures on the re-organisation of the army, with special reference to the British soldier in India, given before the United Service Institution, and published in the tenth volume of its transactions, a quarter of a century since.

He also referred incidentally to a singular failure of the ammunition of the European regiments in the first China war, when he was attached to the Bengal Artillery, and how the want was supplied chiefly by his instrumentality, when attached to the select committee of artillery at Dum Dum—and concluded by proposing a hearty vote of thanks to Sir Charles Dilke and to the gentlemen who had taken part in the discussion.