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Vol. XXVI.] [Part III.

JOURNAL OF THE STATISTICAL SOCIETY,

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On Sufficient *and* Insufficient Dietaries, *with especial* Reference *to the* Dietaries *of* Prisoners.

By William A. Guy, M.B., *Cantab, Fellow of the Royal College of Physicians, Professor of Forensic Medicine, King's College, London, Medical Superintendent to the Prison at Millbank, and one of the Honorary Secretaries of the Statistical Society.*

[Read before the Statistical Society, 16th June, 1863.]

If the most distinguished of our chemists, physiologists, and physicians were asked, each for himself, to prescribe a fitting diet for an individual of a given sex and age, the task would not be found an easy one. The results would perhaps display a general agreement in principle, but they would certainly exhibit a wide divergence in detail; for the elementary constituents of a wholesome diet, and the proportions in which they ought to be blended, are much better understood than the quantities necessary to the support of life and health.

But the difficulties which attach to the selection of a suitable diet in the case of individuals, are increased tenfold when we come to arrange the dietaries for men, women, or children, in the mass; especially when the element of economy has to be added to the considerations of fitness by which our choice must be mainly determined. Even in the comparatively simple case of a boys' school, the diet which would be sufficient for the eldest boy could scarcely fail to be in excess for the youngest, and *vice versâ;* and in the army and navy, which consist of men selected from the population on account of their freedom from deformity and disease, there is a similar disparity of age, as well as great diversity of constitution. But in such institutions as workhouses, prisons, and hospitals, the task of constructing suitable dietaries is beset with unusual difficulties. If we take the case of prisoners, to which I wish especially to direct the attention of the Society this evening, we shall find the task of prescribing proper dietaries by no means easy. For in the first place, though the majority of prisoners are between the ages of

20 and 35, a considerable minority, even in convict prisons, are under 20, or above 35.* There are lads and aged men to be provided for in the same prison; and a single dietary, though recommended by convenience, if sufficient for the majority, must needs be excessive for some, and defective for others, among the minority. In the second place, the prisoners, instead of being picked men, as in the army and navy, or selected boys, as in some of our large schools, constitute a mixed class of whom about 60 per cent. are found to be free from mental infirmities or bodily defects, while nearly 25 per cent. suffer from bodily deformities or defects, congenital or acquired, more than 11 per cent. from scrofula and chronic diseases of the lungs or heart, and 4 per cent. from weak mind, insanity, and epilepsy.† In the third place, the prisoners at Millbank or Pentonville, with the exception of the few who are under treatment, are variously occupied; some at the light labour of picking coir; others as tailors, or shoemakers, or weavers, or matmakers, or basket-makers; others again in jobbing work, as bricklayers, carpenters, or smiths, or as gardeners; and a few as cooks or bakers, or as nurses in the infirmary. So that we have at least three well defined causes of difference between prisoner and prisoner—age, constitution, and occupation—which may fairly claim to be taken into account in the arrangement of our dietaries; and yet, as any minute classification of prisoners based upon these considerations is impracticable, for obvious reasons of convenience and economy, there seems to be no alternative, but to adopt, for all male prisoners not under medical treatment, one uniform diet, which must prove in excess for some and in defect for others, if it is to maintain the mass in a state of health, and with a capacity for labour.

The work of devising suitable dietaries for prisoners is also rendered difficult by the necessity of giving practical effect to certain considerations, affecting in a special manner this class of persons. Inasmuch as they are under punishment, their diet should minister to their correction by being unattractive and monotonous; and inasmuch as they are maintained at the cost of the community which they have injured and impoverished, it ought to be as economical as possible. But these very natural conditions are met on the opposite side, by a theory of which I shall have more to say presently, that

* The ages of convicts, which will be found in detail in a paper by the author, read at the London Meeting of the Social Science Congress, "On some Results of "a Recent Census of the Population of the Convict Prisons in England; and "especially on the Rate of Mortality at present prevailing among Convicts," may be very roughly stated as follows:—

Under 20, less than 10 per cent.
From 20 to 35, more than 60 per cent.
Above 35, less than 30 per cent.

† For particulars, see the paper cited above.

men in prison require a better and more nutritious diet than the rest of the community; and that the necessity for such a diet increases with the length of their sentences. Hence the anomaly, that the worst offenders come to have the best diet; hence, also, the further anomaly that the able-bodied pauper in the workhouse, and the honest working man, unless very favourably circumstanced, have less food to eat than the worst criminals, and that even soldiers and sailors have little, if any, advantage over them in this respect.

Such being the inherent difficulties of the subject which I have undertaken to examine, I shall begin by seeking to throw some light upon it from the researches of science; then proceed to place myself under the direct teaching of experience; and conclude by giving some account of our existing prison dietaries.

I.—*Scientific Considerations.*

For one or two years, and in some cases longer, nature nourishes and builds up the frame of the infant, by the milk of the mother, which may be described as an emulsion consisting of a certain quantity of solid elements, intimately mixed up with about eight times their weight of water. The researches of the chemist have shown that this solid portion consists of less than half its bulk of saccharine matter, more than a third of its bulk of the matter of cheese, somewhat more than a quarter of its bulk of oil or butter, with about one hundredth part of mineral substances, of which by far the larger proportion consists of phosphate of lime. The cheese, the mineral matters, and part of the butter supply the solid structures, while the sugar and the rest of the butter keep the body warm by their combustion. It is worthy of a passing remark that the milk of herbivorous animals is sometimes found to contain a free acid, while that of carnivorous animals constantly shows an acid reaction, and that the saccharine matter, in either case, readily takes on the acid fermentation.

If we adopt the usual calculation, and assume $2\frac{1}{2}$ parts of sugar to be equivalent as fuel, to 1 part of oil, we have in human milk an emulsion which contains plastic or nitrogenous material in the proportion of about 1 part to 3 of respiratory material. This proportion is sometimes stated as 10 of plastic material to 40 of respiratory matter calculated as starch,* a proportion which I shall assume as correct in what I have further to say on the scientific aspect of my subject.

By chemical research, then, we learn that the body of the infant is nourished and gradually built up by a fluid which contains one part of the constructive element to three or four parts of the non-constructive or respiratory elements; to which we may perhaps add

* For exact figures, see "Day's Physiological Chemistry," pp. 280 and 491.

that the occasional existence in milk of a free acid, and the great ease with which it turns sour, point to the possible necessity of a free acid as a constituent of a good diet. But this teaching of nature, and of science as her faithful interpreter, fails us in an important point. We do not know the quantity of this typical emulsion which the infant requires and consumes for the support of its life, and the progressive growth of its frame; and if we did, the knowledge would not admit of application to the human being at his full growth.

From milk, which nourishes and builds up the frame of the young of men and animals, it is natural to turn to the egg which performs the same function for the bird in the earliest stage of its existence. Here we find resemblances and differences well worthy of observation. The water which, in milk, was eight times as abundant as the solid matters it held dissolved or suspended, is found in the egg to be only three times as abundant; and the solid matters themselves are found to consist wholly of albumen (the equivalent of casein as constructive material), of oil (the equivalent of butter), and of saline matters, to the exclusion of sugar.* The albumen holds to the oil the proportion of 14 to $10\frac{1}{2}$, or about 7 to 5. By this analysis then we learn that, as with animals so with birds, a material fitted to build up the body must be combined with a material which also enters into the composition of its textures, but which at the same time is a supporter of respiration and a producer of heat. Perhaps, too, we are intended to learn this lesson, that the sugar which exists in the milk of the breathing creature, and not in the egg of the bird which has not yet respired, and holds communication with the air only through its porous shell,—that the sugar is in some peculiar manner the food of respiration.

Of the milk of animals it may suffice to observe that, while it is made up of the same constituent parts as human milk, those parts are blended in different animals in different proportions. Of this difference no feasible explanation can be given. The most obvious difference between the human infant and the young of animals, namely that the former does not derive its clothing from the milk of the mother, while the latter does, only partially explains the discrepancy in question. But the difference between human milk and that of animals is not such as to prevent the latter from being very freely used as an article of diet in every part of the world, and for persons of all ages. Cow's milk, especially, is everywhere in large demand, and enters into many of our prison dietaries. Eggs, though much used by the community at large, do not figure in the ordinary dietaries of our gaols.

What milk is to the support of infant life, that (as the chief,

* See "Johnston's Chemistry of Common Life," by Lewes, pp. 131 and 138.

though not the exclusive, nutriment of the adult) is wheaten flour, and the flour of the cereals, oats, barley, rye, and maize. The analyses and calculations of the chemist have shown that all these substances consist of the plastic, or constructive material, gluten (the equivalent of casein in milk and of albumen in the egg), mixed with from five to six times its weight of the respiratory elements, sugar, starch, and oil. For 10 parts of casein in human milk, there are 40 parts of respiratory or heat-producing elements calculated as starch, while in wheaten flour 10 parts of gluten are mixed with 46 parts of respiratory elements, also calculated as starch. How near the flours or meals of the other cereals approximate to this standard of human milk, the following table will show:*

	Plastic.	Non-nitrogenous (calculated as Starch).
MILK (HUMAN)	10	40
Wheatflour	10	46
Oatmeal	10	50
Ryemeal	10	57
Barleymeal	10	57
MILK OF COW	10	30

But though the cereals which are most largely employed as staple articles of food, resemble thus closely the food of the infant, and the proportion of the two leading elements in wheat approximate to the proportions in milk more nearly than in the other grains, it must not be supposed that the chemical composition of milk and of wheat presents more than this general resemblance. This is so far from being the case that, while in human milk the saccharine element constitutes little more than one-third of the dry solid matter, the sugar and starch of wheat taken together constitute more than four-fifths; while the casein in milk forms little less than a third, in wheat it is little more than a tenth; and while the butter or oil counts also for less than a third in milk, it scarcely constitutes a fiftieth part in wheaten flour. Wheaten flour, then, as compared with milk, is defective in plastic or constructive material, and still more in oily matters; and it is worthy of remark that the poorer classes in towns very generally supply this defect of oil by butter or dripping, and in the country by the fat of pork or bacon. The deficiency of gluten and albumen, as compared with the casein of milk, is supplied by milk itself, by eggs, by meat, fresh or salt, and by the seeds that abound in casein—the pea, the bean, and the lentil.

Of wheaten flour I have only further to remark, that it stands at

* The figures are taken from "Day's Physiological Chemistry," p. 491.

the head of the cereals, if measured by its yield of sugar; that in the abundance of its starch it yields the palm only to rice (differing in this respect little from Indian meal); that in gluten and albumen (its plastic materials) it follows next in order to lentils, beans, peas, and oats; that in fat it occupies an intermediate position; and that in gum, and in mineral matters, only, does it occupy a place somewhat below the average.

From chemical analysis, then, as well as from large experience, we learn that wheaten flour is admirably adapted to the support of human life. We also know that, when converted into bread, it enters more or less largely into all our dietaries. For this reason, and especially because bread and water, for three days or more in succession, form the staple food of prisoners under punishment, I shall offer a few remarks on this article.

A sack, or 280 pounds, of wheaten flour, mixed into a dough with salt and water, whether fermented or unfermented, issues from the oven as about 360 pounds of bread. The yield varies according to the quality of the flour and the skill of the baker, and also with the two different processes of fermentation and aëration. But, for my present purpose, it will suffice to state that the raw wheaten flour, in being converted into cooked or baked bread, absorbs 2 parts of water for every 7 parts of flour.* Of other changes it is not necessary to speak; but it should be understood that, though part of the starch may be converted into sugar and gum, neither the gluten and albumen, nor the oil in which wheaten flour is acknowledgedly deficient, admit of any increase in the process of bread making. And yet, in cases where bread is the only article of food, as in prisoners under punishment, or almost the only one, as in the very poorest classes both in town and country, it may be desirable to augment the glutinous element, to introduce the oil usually supplemented by butter or dripping, fat pork or bacon, and even to add something to the saccharine element. Now there are two ways of effecting this. We can make a considerable addition to the gluten and the oil by adding the bran to the flour,† or making the bread of

* 100 parts of wheaten flour already contain about 16 parts of water, so that an addition of two-sevenths, or nearly 29 parts of water, will raise the whole quantity of water contained in bread to 45 per cent., at which it is usually stated.

† The superiority of brown bread, or of whole-meal bread, to white bread as commonly made, may be inferred from a comparative statement of the constituents of fine wheaten flour and bran respectively.

	Fine Flour.	Bran.
Water	16	13
Gluten	10	18
Fat	2	6
Starch, &c.	72	63
	100	100

whole-meal obtained from the grain either before or after the modern process of decortication. By adding to bread so made a certain quantity of treacle, the element of sugar may be economically augmented, while the oil may be considerably increased by substituting for part of the wheaten flour a portion of Indian meal, which is remarkable for the quantity of oil it contains.* In this way, by substituting the whole-meal for the fine flour, adding a certain quantity of treacle and a certain proportion of Indian meal, a bread might be produced which would prove at once nutritious and economical, and form the nearest convenient approach to the composition of human milk, which is generally, and, I believe justly, assumed as the standard of a perfect food. On bread of this mixed composition, prisoners under punishment might, I think, be confined for a longer period than at present; and if the element of a free acid, of the necessity of which I shall have more to say shortly, were added in the form of the potato, this period might be still further extended.

If such a mixed bread as is here spoken of should be objected to as requiring the use of too many materials, or for any other reason, no difficulty ought to be raised in substituting brown, or whole-meal, bread for the white bread, now so generally in use, both within and without the walls of our prisons. I have no doubt whatever, that it would prove more wholesome as well as less expensive.†

* The statement in the text respecting Indian meal is justified by the following figures:—

	Fine Wheaten Flour.	Indian Corn Meal.
Water	16	14
Gluten	10	12
Fat	2	8
Starch, &c.	72	65
	100	100

See "Johnston's Chemistry of Common Life," vol. i, p. 100.

† In support of the opinion expressed in the text, the following passages may be adduced:—1. Pereira, in his treatise on food and diet, quotes with approval the following passage from Dr. Prout's well-known work on the "Nature and "Treatment of Stomach and Urinary Diseases," p. 300, "Bread, therefore, made "with undressed flour, or even with an extra quantity of bran, is the best form in "which farinaceous and excremental matters can be usually taken; not only in "diabetes, but in most of the other varieties of dyspepsia, accompanied by obstinate "constipation. This is a remedy, the efficacy of which has been long known and "admitted; yet strange to say, the generality of mankind choose to consult their "taste rather than their reason, and by officiously separating what nature has "beneficently combined entail upon themselves much discomfort and misery."

2. "Bread made from the whole-meal is therefore more nutritious; and as

I have hitherto spoken only of wheaten bread, to the exclusion of rye, barley, and Indian corn, which equally admit of being wrought and baked into bread; of oatmeal, which can be used for a similar purpose; of the potato which is advantageously used as an ingredient of the best bread; and of rice which, on account of its power of absorbing water, is conveniently introduced into the cheaper kinds of bread. Of peas, beans, and lentils I have already spoken incidentally. The exact composition of these substances is given in a table at p. 127 of Dr. Lankester's work on food, to which I refer, and of which I now avail myself to the extent of placing them in the order in which they stand in relation to their most important elements, beginning always with that substance which contains the element under notice in the largest quantity.

Starch.—Rice; wheat and maize; rye and buckwheat; barley; oats; peas; beans; lentils; potatoes.

Sugar.—Wheat; oats; barley and rye; potatoes; beans, peas, lentils, and buckwheat; rice; maize.

Fat.—Maize; oats; beans, peas, and lentils; wheat; buckwheat; rye; rice; barley; potatoes.

Gluten, Casein, and Albumen.—Lentils; peas and beans; oats; rye; wheat; barley; maize; buckwheat; rice; potatoes.

Ashes.—Barley; beans; oats; peas; buckwheat; rye; wheat; lentils; maize; potatoes; rice.

It is obviously on the flour or meal of one or other of these cereals that we must depend for supplying the staple of our dietaries. We must supply our paupers and prisoners with bread made from wheat, barley, rye, or Indian meal, or with bread skilfully constructed

"many persons find it also a more salutary food than white bread, it ought to be "more generally preferred and used. 'The bran of wheat possesses also the "'property of dissolving the flour or bread with which it is mixed, and of render-"'ing it more easily digestible in the stomach.' To this property of bran, as well "as to the nourishment it yields, is to be ascribed a portion of those wholesome "qualities which many persons have recognised in whole-meal bread."—"Johnston's "Chemistry of Common Life," vol. i, p. 97.

3. "The husk of the grain is ground along with the grain to make this,"—namely, *brown bread.* "This husk contains more gluten, more nutritive matter "than the whole interior, the proportion being, in the husk, about 17, in the seed "about 12, in 100 parts. White flour is not only more expensive, but it is far less "nutritious than flour in which the bran is ground. Yet the poor as well as the "rich prefer white bread. The former even consider the recommendation to eat "brown bread as a sort of insult. This is one of the matters in which the world "has gone grievously wrong. Brown bread is not only more nutritive, but it is "more digestible than white, and if it were not from long habit, would probably "be considered more palatable."—"Dr. F. W. Headland's Medical Handbook," p. 94.

with the best elements of several of these; or we must make use of oatmeal with water, as gruel, or of oatmeal or Indian meal with milk, as porridge or pudding. Assuming these productions of the cereals as the basis of our dietaries, we must (especially where milk is not admitted as an element) be careful to provide the potato, or some equivalent vegetable or potherb, or some soup containing or not containing meat, but rich in vegetables or potherbs, as guarantees against the scurvy. With bread and potato as a groundwork, it would not be difficult to construct a great variety of diet tables to which no serious objection could be taken on scientific grounds, and which would be sure to maintain a fair state of health in those who are placed upon them.

Thus far I have allowed myself to be guided by the light of science—of science herself largely indebted to nature and experience—and have been led to the discovery of certain suitable forms of food which may be conveniently taken as the staple of our dietaries. But I have not exhausted the teachings of science, for she professes to guide us, not merely to the discovery of suitable articles of food, but also to prescribe the quantities and proportions in which they should be administered. Vierordt, an eminent German physiologist, weighing carefully the results of numerous and precise experiments on that which enters the body as food, and that which leaves it through its several channels of purification and discharge, tells us that an adult male, to keep in good condition, should take about 4 ounces of albuminous matters, nearly 3 ounces of fat, and about 10½ ounces of amylaceous food daily. About 84 ounces of water would be taken as drink, and about an ounce would have to be allowed for the saline matters contained in, or added to, the three leading articles of food.*

If we take this scientific estimate of Vierordt as our standard for an adult male, assume a free access to water, and that the saline matters which the body requires are partly contained in any food which we may select, and partly added, as common salt, in the preparation of it, it will not be difficult to frame a dietary which shall fitly carry this scientific theory into practice.

The dietary of Vierordt, expressed in grains, consists of—

Albuminous Matters.	Fat.	Amylaceous Matters.
1,920 grains.	1,440 grains.	5,040 grains.

Now if we assume a pound of bread per diem and a pound of potatoes to be a good basis on which to build up a sufficient dietary, it will be seen how moderate an addition is required to bring the several quantities up to this standard. The three elements, albu-

* See "Day's Physiological Chemistry," p. 496.

minous, oily, and amylaceous, exist in the pound of bread and pound of potatoes in the following quantities:—

	Albuminous Matters (Gluten and Albumen).	Fat.	Amylaceous Matters (Starch, Sugar, and Gum).
	Grains.	Grains.	Grains.
Wheaten bread ..... 1 *lb.*	861	65	3,847
Potatoes ..... 1 ,,	100	14	1,402
Total	961	79	5,249
Vierordt's dietary as above	1,920	1,440	5,040
Deficiency	959	1,361	209
Requiring about	2 ozs. lean meat or its equivalent	3 ozs. fat or its equivalent	excess

The amylaceous matter is more than sufficiently supplied by the pound of bread and pound of potatoes, while the remaining elements might be readily supplied by 4 ounces of lean meat three times a-week, 6 ounces of fat pork three times a-week, and a pint of nutritious pea-soup once a-week.

This dietary then would consist of the following elements in the quantities annexed:—

	Per Diem.	Per Week.
	ozs.	ozs.
Bread	16	112
Potatoes	16	112
Lean meat	—	12
Fat pork	—	18
Meat, peas, pot-herbs, &c., &c., in soup	—	8
Weekly total	—	262

If a dietary based on Vierordt's data were required from which the meat element should be wholly excluded, it might be obtained by the following ingredients:—

	Albuminous Matters (Gluten and Albumen).	Fat.	Amylaceous Matters (Starch, Sugar, and Gum).
	Grains.	Grains.	Grains.
Bread ..... 1 *lb.*	861	65	3,847
Potatoes ..... ½ ,,	50	7	701
Oatmeal ..... ½ ,,	638	198	1,810
Milk ..... 1 *pint*	350	245	315
Vierordt's dietary as above	1,899	515	6,673
	1,920	1,440	5,040
	In defect 21 grains	In defect 925 grains add 653	In excess 1,633 = 653 grains of fat
		In defect 272	

By the figures of this table it is shown that the dietary indicated by Vierordt, but containing plastic material slightly deficient, with little more than half an ounce in defect of fatty matters (the excess of amylaceous matters being converted into its equivalent in fat), may be obtained by combining—

Bread	1 lb.	=	112 ozs. per week
Potatoes	½ ,,	=	56 ,,
Oatmeal	½ ,,	=	56 ,,
			224 ozs. per week, with 7 pints of milk

These dietaries, thus roughly based on the scientific formula of Vierordt, I shall distinguish by the epithet "Scientific;" and shall so designate them throughout what remains of this communication. I shall now examine the dietary question (still in relation to prisoners chiefly) by the light of experience, but also by an occasional appeal to authority. Indeed, I shall commence this second division of my paper by referring to the views of John Howard.

II.—*Teachings of Experience.*

Howard, in his work on prisons,* says that "those who drink "only water, and have no nutritious liquor, ought to have at least a "pound and a half of bread every day," and he further recommends half-a-pound of meat on the Sunday with a quart of the broth in which it had been boiled, and a penny a-day in money for cheese, butter, potatoes, pease, or turnips. If we suppose the penny a-day to be expended in the purchase of potatoes, it would procure a pound, and leave some surplus for other purchases, so that the dietary thus recommended by Howard might consist at least of—

Bread,	24 ozs. per day, or		168 ozs. per week
Potatoes,	16 ,, ...		112 ,,
Meat			8 ,,
Total			288

a quantity of solid food greatly in excess of that comprised in the dietaries based on the scientific calculations of Vierordt.

In another place† Howard, referring to a previous statement of his, that he was not an advocate for "*extravagant and profuse allow-*"*ance* to prisoners," and that he pleaded "only for necessaries in

* "The State of the Prisons in England and Wales," &c., 2nd edition (1780), section 3, p. 40.

† The section headed "Bridewell's," p. 47.

"such a moderate quantity as may support health and strength for "labour," declares himself to be "no advocate for luxury in prisons," and says that "he would have no meat diet for criminals in houses of "correction, or at most only on Sundays." Yet he "would plead "that they should have, at least, a pound and a half of good house-"hold bread a-day, and a quart of good beer; besides twice a-day a "quart of warm soup made from peas, rice, milk, or barley. For "a change they might sometimes have turnips, carrots, or potatoes." For this very liberal dietary, consisting of 168 ounces of bread per week, with 14 quarts of nutritious soup, and 7 quarts of good beer, Howard deems it necessary to offer an apology. "It may be said, "this diet will starve those who work in houses of correction; but I "am persuaded of the contrary, by what I have seen abroad, in the "galleys, in the houses of correction, and among the most robust "labourers. *Though I am sensible that persons confined, whose "minds are depressed, need more nourishment than such as are at "liberty.*"

I ask the attention of the Society to the very liberal notions respecting diet of this great prison reformer, and especially to the concluding words of this passage, which I have distinguished by italics. It is the earliest expression that I have met with of an opinion to which I have already once adverted, and which I shall have occasion again to notice.

The views of John Howard, which I have just cited, were expressed by him about the year 1780, and may be taken to be the opinions of a man in habits of intimacy with the most accomplished physicians of his day, and of a large experience, formed after visiting the prisons of England and the Continent; but at a period when all our prisons abounded with every conceivable moral abuse and sanitary defect, when it was easy to ascribe to one cause evils really due to another, and when mental depression to a degree unknown at present was likely to prevail.

An interval of upwards of forty years must be understood to elapse between the date of Howard's experiences and the important event in the history of prison dietaries to which I am now to refer.

The Penitentiary at Millbank was opened for the reception of prisoners in the year 1816, and in the year 1822 became the scene of the events I am about to relate. The building was erected on a piece of made ground bordering on the Thames, saturated with water and surrounded by a stagnant ditch. Drinking water was supplied from the river, and there is reason to believe that the arrangements for warming and ventilating the building were defective. That these unwholesome influences made themselves felt, there is ample evidence in the fact that in a period of two years and eight months preceding

the events to which I am about to refer eleven cases of diarrhœa and dysentery, severe enough to be entered in the monthly reports of the then medical superintendent, occurred, of which six proved fatal; and in the further significant fact that after the diet of the prisoners had been reformed, and the scurvy with its associated diarrhœa and dysentery cured, these last-named diseases reappeared with great severity in the summer and autumn of 1823, so that the prison was obliged to be closed for several months, and the prisoners to be removed.

I may add that my predecessor in office, Dr. Baly, basing his opinion on facts which came under his notice, and especially on the frequent re-appearance of the fever, dysentery, and nervous affections, which formed part of the epidemic of 1823, but without the scurvy, always considered the site of the prison unhealthy, and constantly acted on that belief; until at length the old dietary of 1822, condemned as excessive, was virtually restored, being replaced by a dietary nearly equal in quantity, and even more nutritious.

My own experience of four years leads me to think that, thanks to the progressive sanitary improvements of the last quarter of a century and upwards, Millbank Prison is now in a very healthy condition.

The tenants of a prison in the unhealthy state just described became in the years 1822-23 the involuntary subjects of the following disastrous experiment.

On the 22nd March, 1822, Dr. A. Copland Hutchison, the then Medical Superintendent, in obedience to the instructions of the Committee, addressed to them a letter in which he stated that from the high state of health the prisoners had hitherto enjoyed, and the absolute state of plethora which a great majority of them had shown after a certain residence within the walls of the Penitentiary, as well as the frequent recurrence of disease arising from that cause, he had no hesitation in stating that the quantity of food consumed by them was greater than sufficient to maintain them in robust health, with all due consideration to the labour they might, by any possibility, be subjected to.

After adverting to the long terms of imprisonment to which the convicts in Millbank were at that time subjected, Dr. Hutchison proceeded to recommend a reduced scale of diet. The Committee, however, preferred a dietary of their own, which came into play on the 5th of July of this same year, 1822.

The elements of the original dietary which Dr. Hutchison deemed excessive, of the reduced dietary which he suggested in its place, and of the reduced dietary of the Committee, are shown in the subjoined table, together with the present ordinary diet for male prisoners at Millbank:

	Original Dietary.	Dr. Hutchison's Suggestion.	Dietary of the Committee.	Present Ordinary Diet.
	ozs.	ozs.	ozs.	ozs.
Bread	168	168	168	154
Meat (boiled beef)	24	8	Nil	35
Potatoes	112	16	Nil	112
Total solid food	304	192	168	301
	Pints.	Pints.	Pints.	Pints.
Broth or soup	8	12	14	3¼*
Gruel or porridge	14	14	7	7
Cocoa	—	—	—	5¼
Total liquid food	22	26	21	19¼

* This is little more than the liquor in which the meat is boiled. But the broth or soup in the dietary of the Committee was probably scarcely more nutritious; for it contained less than one ox-head in 100 pints.

This reduced diet which consisted of 1½ lbs. of bread per diem or 168 ounces per week, with 7 pints of gruel and 14 pints of broth or soup, containing about 10 ounces of meat per week, to the total exclusion of solid meat and potatoes, severely affected the health of the prisoners. In the autumn following, they became feeble and languid, and a few slight cases of scurvy showed themselves; and in the early spring (in the months of February and March), the scurvy, with diarrhœa and dysentery as its associates, became very prevalent; so much so, that more than half the prisoners were attacked. The deaths from dysentery up to the 5th April, 1823, were six in number.

That this reduced dietary was the most efficient and direct of the causes which combined to produce this outbreak of scurvy and dysentery there can be no doubt. An unusually cold winter and the low temperature of the prisoners' cells at night were favourable to the disease, and the unhealthy character of the site probably tended to the development of diarrhœa and dysentery; but there is no room for doubt, that the reduced and altered dietary was the cause of the scurvy and afforded the only adequate explanation of the extent and severity of the outbreak.*

Here then we have two examples of sufficient if not of redundant dietaries, consisting of solid food to the amount of about 300 ounces, and liquid food to the extent of 22 pints in the one and 19 pints in

* Consult the Report of the Select Committee on the State of the Penitentiary at Millbank, ordered by the House of Commons to be printed, 8th July, 1823; also Dr. Latham's "Account of the Disease lately prevalent at the General Peni-"tentiary," and Dr. Baly's papers "On the Prevention of Scurvy in Prisons, "Pauper Lunatic Asylums," &c., published in the "London Medical Gazette," 10th February, 1843; and "On the Mortality of Prisons," read before the Royal Medical and Chirurgical Society, in February, 1845.

the other. Of the sufficiency of the one, Dr. Hutchison's statements may be taken to be satisfactory evidence; of the sufficiency of the other, my own experience of nearly four years may be allowed to stand as voucher. We have also in the dietary of the Committee an example of an insufficient dietary,—proved to be insufficient by the event; but whether that insufficiency consists in mere reduction of quantity, or in the omission of some element essential to a wholesome dietary, is a question that must be reserved for discussion till I have given the results of later experience.

I now turn for information to two important documents, published in the year 1836. They are contained in the "Second "Annual Report of the Poor Law Commissioners for England and "Wales." The first is the circular letter relative to workhouse dietaries, addressed to the Clerks of the Boards of Guardians by Mr. Edwin Chadwick; and the second the "Report on Middle-"sex and Surrey," by Mr. C. Mott, Assistant Poor Law Commissioner. Mr. Chadwick's letter offers to the Board of Guardians six several dietaries for able-bodied paupers, all of which it is alleged had been used in different parts of England, and proved to be sufficient in quantity, and perfectly unexceptionable as to the nature of the provisions specified in each. These six dietaries for able-bodied male paupers consisted of the following elements in the quantities stated.* The constituents are so arranged as to admit of comparison with the other dietaries quoted in this paper.

English Pauper Dietaries, 1836.

	Ounces per Week.					
	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Bread	84	112	132	116	98	102
Meat (pickled pork or bacon*)	15	—	13	6*	10	8
Potatoes (or other vegetables*)	24	—	24*	—	48	24
Total of the above	123	112	169	122	156	134
Meat pudding	—	16	—	12	—	—
Suet or rice pudding	14	32	—	24	14	16
Yeast dumpling	—	—	—	—	—	22
Cheese	8	18	18½	14	8½	8
Total of solid food	145	178	187½	172	178½	180
Soup or broth (*pints, pr. wk.*)	7	—	1½	6	3	2
Gruel or porridge ,,	10½	—	10½	10½	10½	—
Total liquid food	17½	—	12	16½	13½	2
Vegetables (quantity not specified*)	—	*	—	*	24	—

* The corresponding dietaries for women are not given in this paper, which must be understood throughout to deal only with adult males.

Of these six dietaries, the most liberal (No. 5) allows to the adult male able-bodied pauper 202½ ounces of solid food, including vegetables, and 13½ pints of liquid food, against the 301 ounces of solid food and 19¼ ounces of liquid food of the present ordinary dietary at Millbank for the male convicts, being an excess of food in favour of the convict of nearly 100 ounces. Mr. C. Mott, referring to these six dietaries, says of them, that he is prepared to show that this allowance is not only sufficient, but that it exceeds the quantity consumed by agricultural labourers and mechanics, who support themselves by their own exertions; and he alleges that agricultural labourers are unable to procure for themselves and families more than an average allowance per head of 122 ounces of food (principally bread) per week, of which he supposes that the man consumes 140 ounces, namely, 134 ounces of bread and 6 ounces of meat. These statements were based on returns from labourers in the southern agricultural counties, whose income did not average for the family more than 2*s.* per head per week. From similar returns obtained from *manufacturers* or *mechanics* living in towns, with average incomes of 3*s.* 9*d.* per head per week; Mr. Mott inferred that these persons did not consume so large a quantity of nutritive matter, though they ate more meat; and this was found to hold good also in reference to workmen able to earn on an average 6*s.* 9*d.* a-week. On extending his inquiries to classes of men using extreme bodily exertion, as mowers, or sawyers, and prize-fighters when training, he found their consumption to extend to from 27 to 30 ounces per day, being 189 or 210 ounces per week; and he quotes the experience of Sir Edward Parry, to the effect that 10 ounces of biscuit, 9 ounces of pemmican, and 1 ounce of cocoa daily (being 20 ounces of solid food per diem, or 140 ounces per week) were found amply sufficient to support his sailors under the ordinary exertions of performing the regular ship duties, while it was agreed on all hands that 27 or 28 ounces per diem (being 189 or 196 ounces per week) would have been amply sufficient for their support under all the hardships of that climate. After noticing the strange discrepancies then existing in the workhouse dietaries, and especially the extreme instances of the Farnham Workhouse, where he caused the day's food to be placed in the scales, and found it to weigh 66 ounces,—a quantity at which the paupers grumbled as insufficient, and the case of the pauper washerwomen of Bulcamp Workhouse, Suffolk, who were formerly allowed 8 pints of beer per day each. Mr. Mott alludes to similar discrepancies in the dietaries of prisons, and instances the allowance to transported felons as amounting to 49 ounces per diem (being 343 ounces per week). Though some of these statements of Mr. Mott are wanting in precision, they go far to justify the allowance of food to the able-bodied pauper, as contained in the six dietaries given in the table, and to raise a doubt of the necessity of the more liberal scale of diet awarded to the criminal.

The statements made by Mr. Mott in this Report of 1836, were partly anticipated by Mr. Chadwick, in his "Extracts from the "Information received by His Majesty's Commissioners as to the "Administration and Operation of the Poor Laws," published in 1833. From this interesting and instructive document, I extract (in a condensed form) the dietary table given at p. 261.

	Ounces of Solid Food.
1. The independent agricultural labourer	122
2. „ soldier	168
3. „ able-bodied pauper, with the addition, in most workhouses, of vegetables 48 ozs., soup 3 quarts, milk porridge 3 quarts, table beer 7 quarts, and many other comforts	151
4. „ suspected thief	181–203
5. „ convicted „	239
6. „ transported „	330

Mr. Chadwick also quotes an important statement made by Mr. Hewitt, to the effect that a reduction from a diet consisting of 169 ounces of solids weekly to one of 134 ounces, was productive of no bad effects; the paupers maintained on the low diet were as well, if not better, after, than before the change; and few of them, comparatively to those who had been accustomed to live on a more full diet, suffered by the cholera. It is worthy of remark that the first quantity stated (169 ounces), is one ounce in excess of the reduced diet at Millbank, which preceeded the outbreak of scurvy and dysentery, and that this 169 ounces was further reduced without injury to health.

But I ought not to rest satisfied with the ingenious comparison made by Mr. Chadwick, in 1833, seeing that the materials exist for a more exact comparison between the dietaries of paupers and criminals at the present time, and that the present opportunity is a favourable one for either invalidating or confirming the popular impression that the prisoner is better fed than the pauper. Now it would be an act of injustice to those gentlemen on whom the supervision and management of our gaols and convict establishments devolves, if we were to compare the able-bodied inmates of our workhouses whose average term of residence does not perhaps exceed two months, with prisoners whose sentences are of much longer duration, or with convicts who are incarcerated for periods of three years and upwards.

The only satisfactory course to adopt is to compare the dietary of some class of prisoners whose period of detention does not greatly exceed the sojourn of the able-bodied pauper in the workhouse with the dietary of such able-bodied pauper.

Such a dietary is to be found in class 3 of the "Dietaries recommended for the use of County Gaols and Prisons," by the Home Office."* It is the dietary for "convicted prisoners employed "at hard labour for terms exceeding twenty-one days, but not "more than six weeks; and convicted prisoners not employed at "hard labour for terms exceeding twenty-one days, but not "more than four months." Though the several county gaols and prisons do not always exactly conform themselves to this description, class 3 may in all cases be taken to represent a class of prisoners resembling more closely than any other the condition of the able bodied pauper. In order to render this comparison as fair as possible, I have arranged in one table twelve dietaries of county prisons, as given in the Return for 1857, and the same number of dietaries of union workhouses, the unions being situate in the same cities or county towns as the prisons, or at least in the same counties. The union dietaries, for copies of which I am indebted to the kindness of my colleague, Mr. Purdy, are those which have received the formal sanction of the Poor Law Board at various dates from 1845 to 1859. I give the broad results of an analysis of these two classes of dietaries in the annexed table. The circumstance most worthy of notice in relation to the two dietaries, is that while the prison dietaries rarely comprise more than three solid and two liquid elements (bread, meat, and potatoes; and meat-soup and gruel), the pauper dietaries exhibit a much greater variety both of solid and liquid elements.

Prisoners (Class III) *and Paupers Compared.*

Prisons.	Solids.	Liquids.	Solids.	Liquids.	Unions.
	ozs.	pts.	ozs.	pts.	
1. Gaol of Newgate	212	17	190½	20½	1. City of London
2. Horsemonger Lane Gaol	160	18	177½	13	2. St. Mary, Newington
3. Bedford Prison	210	16	237	13½	3. Bedford
4. Stafford County Gaol	210	16	220	22½	4. Burton-upon-Trent
5. St. Augustine's Prison, Canterbury	210	16	210	—	5. Canterbury City
6. Chester County Gaol	210	16	224	36	6. Chester City and County
7. Durham ,,	232	17	170	11	7. Durham
8. Sussex Gaol, &c., Lewes	168	21	196½	15½	8. Lewes
9. Nottingham County Gaol	238	16	175	36	9. Nottingham
10. Southampton County Prison	199	17	186	15	10. Southampton Town and County
11. Salford New Bailey Prison	210	—	162	43	11. Salford
12. York House of Correction, Wakefield	167	18	200	22½	12. Wakefield

* See Parliamentary Return, No. 154, printed 21st March, 1857. The dietaries were first recommended in 1813.

If we carefully examine this table, we shall find that the prisoner in our county and borough gaols has little, if any, advantage over the pauper. In six prisons, the diet is somewhat better than in the six unions compared with them, while in the six others it is somewhat worse. Taken one with another, the prisoners have a slight advantage in the more solid elements of their diet, and the paupers in the liquid elements. The prison diet may be fairly represented by an average of 202 ozs. of solid food and 16 pints of liquid food, the pauper diet by 196 ozs. of solid food and 20 pints of liquid food per week.

A very interesting document, bearing on the question of dietaries, is to be found in the Second Annual Report of the Board of Supervision for the Relief of the Poor in Scotland. It is in the shape of a report by two accomplished Scotch physicians, Drs. Alison and Christison, and bears date 16th January, 1847. After examining the dietaries of the charity workhouses in Scotland, and the documents relating to the diet of the poorhouses in England and Ireland, these gentlemen recommend three dietaries—for the healthy adult male inmates of workhouses who do little or no work, and who have no great appetite; for those who also do little or no work, but have a vigorous appetite; and for those who do work. These three dietaries consist of the following elements:—

Scotch Pauper Dietaries (Drs. Alison and Christison), 1847.

	Per Week.		
	No. 1.	No. 2.	No. 3.
	ozs.	ozs.	ozs.
Bread	42	56	56
Meat	—	—	28
Oatmeal	42	56	56
Total solid food	84	112	140
	Pints.	Pints.	Pints.
Butter-milk or skimmed milk	7	10½	10½
Broth (containing 2 ozs. of meat, and vegetables	10½	10½	10½
Total liquid food	17½	21	21

These dietaries do not admit of exact comparison with those comprised in the table at p. 253; but it is obvious that they are on a much less liberal scale. The third dietary of the series, or that devised for able-bodied paupers who do work, contains five ounces less of solid food than No. 1 (the least liberal of the six English dietaries), while the liquid elements (milk and broth) are only in excess by 3½ pints. It ought, however, to be understood that the oatmeal of the Scotch dietary is reckoned as solid aliment, and that there

is an excess of milk in the Scotch dietaries; but even when these differences are taken into account, the best of the three Scotch dietaries will be found to be less liberal than five out of six of the standard English dietaries.

And here it will be interesting to observe how much more liberally the worst class, of the worst section, of our criminals has been dealt with than the English or Scotch pauper. The convicts in Millbank, who are under punishment for serious breaches of prison discipline, are placed upon a diet which is known as the "*Penal Class Diet.*" It was so framed as to exclude meat, but it offers ample compensation in the abundance of the milk element, and of the highly nutritious meal of the oat and maize. I will compare this penal diet of the convict with the diet of the able-bodied English pauper which is the most liberal in its allowance of bread and meat, and with the dietary of the Scotch pauper with a good appetite but doing little or no work, premising that the convicts of the penal class also do little or no work.

	Penal Class, Millbank.	English Pauper.	Scotch Pauper.
	ozs.	ozs.	ozs.
Bread	84	132	56
Oatmeal	70	—	—
Indian meal	70	—	—
Potatoes	56	24	56
Meat	—	13	—
Cheese	—	18½	—
Total solid food	280	187½	112
	Pints.	Pints.	Pints.
Milk	10½	—	10½
Soup or broth	—	1½	10½
Gruel or porridge	—	10½	—
Total liquid food	10½	12	21

The indication afforded by these tables of a disposition to treat the criminal with more liberality than the pauper, is very strikingly confirmed by the proceedings of the prison authorities in the experiments which they caused to be made at Pentonville during the years 1842 and 1843. The object which they had in view was to discover a suitable diet for prisoners under solitary confinement in a building planned with the utmost attention to every sanitary requirement, and erected on a site selected for its salubrity. It could not be alleged that a liberal diet was necessary to counteract the depressing effects of a low and unhealthy site such as that occupied by the prison at Millbank, though it might be required to support the prisoner under the depressing influence of the separate system of

confinement. But whatever the motive, certain it is that the dietary adopted at the very opening of the prison, was such a diet as would scarcely have been employed in a workhouse. It consisted of the following elements:—

	Per Week.		Per Week.
Bread ozs.	120	Soup pints	2½
Meat ,,	20	Gruel ,,	7
Potatoes ,,	40	Cocoa ,,	5¼
Cheese ,,	4	Milk ozs.	14
		Molasses ,,	1½
Total solid food ,,	184	Total liquid food ,,	15½

This dietary, it will be observed, is in excess of the most liberal of the six selected for the guidance of our English workhouses, and still more in excess of the best of the three Scottish dietaries. But it was only the first of a series of five experimental dietaries; and it fell short of the one ultimately adopted, and now in use, by no less than 96 ounces of solid food, and 1 pint of liquid food, per week.

I will present these five dietaries in the most intelligible form I can devise, and then offer some observations upon them. The gruel, cocoa, milk, and molasses, it should be observed, are common to all the dietaries.

Experimental Dietaries, Pentonville Prison, 1842-43.

	Per Week.				
	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.
Gruel pints			7		
Cocoa ,,			5¼		
Milk ozs.			14		
Molasses ,,			1½		
Bread ozs.	120	140	112	112	140
Meat ,,	20	20	28	28	28
Potatoes ,,	40	40	56	112	112
Cheese ,,	4	4	—	—	—
Soup pints	2½	2½	3½	3½	3½
Percentage of prisoners—					
Losing weight	62	43	70	22	16
Gaining ,,	26	46	14	45	59
Stationery	12	11	16	33	25
Average loss (in pounds)	5	1·68	1·75	1·50	1·58
,, gain ,,	2·25	2·16	1·21	1·55	1·84
Total loss	310	73	122	33	25
,, gain	58	98	17	70	108
Balance of loss	252	—	105	—	—
,, gain	—	25	—	37	83

The first of these experimental diets was in use nearly 3½ months (from December 21st, 1842); the second, less than 2 months (from May 4th, 1843); the third, about 5½ months (from May 24th, 1843); the fourth, nearly 2 months (from November 14th, 1843); and the fifth from January 10th, 1844, onwards.

Before I proceed to examine these important experiments, I must observe that they are wanting in some elements of scientific exactness. The periods for which the prisoners were placed on the respective diets are unequal; the experiments were not made at the same season of the year, and the groups submitted to the several experiments did not consist of the same prisoners. Still the results of the experiments are instructive, and deserving of careful attention. I will state them in as few words as possible, distinguishing, for the sake of clearness, additions from substitutions.

Experiments 1 *and* 2.—An addition of 20 ounces of bread in the week leads to a decrease in the number of prisoners losing weight from 62 to 43 per cent., and an increase of prisoners gaining weight from 26 to 46 per cent., a balance of loss of 252 lbs. being exchanged for a balance of gain of 25 lbs. This increase of 277 lbs. is altogether out of proportion to the extent of the change in the diet, and to the results of any other comparison for which the experiments afford the materials.

Experiments 3 *and* 4.—On making a simple addition of 56 ounces of potatoes to the diet of experiment 3, the number of prisoners losing weight falls from 70 to 22, while the number gaining weight rises from 14 to 45, the balance of loss of 105 lbs. being changed to a balance of gain to the amount of 37 lbs. The increase of weight is therefore equivalent to 142 lbs.

Experiments 3 *and* 5.—An addition of 28 ounces of bread and 56 ounces of potatoes causes the prisoners losing weight to fall from 70 to 16, and those gaining weight to rise from 14 to 59, and substitutes a balance of gain of 83 lbs. for a balance of loss of 105 lbs., which is equivalent to a gain of 188 lbs.

Experiments 4 *and* 5.—On adding 28 ounces of bread, the prisoners losing weight fall from 22 to 16, and those gaining weight rise from 45 to 59, and the balance of gain of weight rises from 37 lbs. to 83 lbs., equivalent to a gain of 46 lbs.

Experiments 1 *and* 3.—On substituting 8 ounces of meat for 8 ounces of bread, and 16 ounces of potatoes, with 1 pint of soup for 4 ounces of cheese, the number of prisoners losing weight is increased from 62 to 70, while those gaining weight fall from 26 to 14; but in consequence of the extraordinary average loss of 5 lbs. per man under experiment 1, the balance of loss is reduced from 252 lbs. to 105 lbs., which is equivalent to a gain of 147 lbs. In this case the improvement is altogether disproportionate to the change of diet.

Experiments 1 *and* 4.—By substituting 8 ounces of meat for 8 ounces of bread, and 72 ounces of potatoes with a pint of soup for 4 ounces of cheese, the number of prisoners losing weight falls from 62 to 22, while the number gaining weight rises from 26 to 45, a balance of loss of 252 lbs. being changed to a balance of gain of 37 lbs. This is equivalent to a gain of 289 lbs. So that an addition of 56 ounces of potatoes in the week raises the gain under experiments of 1 and 3 from 147 lbs. to 289 lbs.

Experiments 1 *and* 5.—The substitution of 20 ounces of bread, 8 ounces of meat, 72 ounces of potatoes, and 1 pint of gruel for 4 ounces of cheese, causes the number of prisoners losing weight to fall from 62 to 16, and the number gaining weight to rise from 26 to 59; while it substitutes a balance of gain of 83 lbs. for a balance of loss of 252 lbs. This is equivalent to a gain of 335 lbs.

Experiments 2 *and* 3.—A substitution of 8 ounces of meat, 16 ounces of potatoes, and 1 pint of soup for 28 ounces of bread and 4 ounces of cheese, causes the number of prisoners losing weight to rise from 43 to 70, and the number gaining weight to fall from 46 to 14, while it substitutes for a balance of gain of 25 lbs. a balance of loss of 105 lbs. This is equivalent to a loss of 130 lbs. As the dietary in experiment 3 is at least as nutritious as that in experiment 2, this very considerable loss of weight is in striking opposition to the theory on which the experiments are based.

Experiments 2 *and* 4.—A substitution of 8 ounces of meat, 72 ounces of potatoes, and 1 pint of soup for 28 ounces of bread and 4 ounces of cheese causes the number of prisoners losing weight to fall from 43 to 22, and the number gaining weight to fall from 46 to 45, and raises the balance of gain of 25 lbs. to 37 lbs. This is equivalent to a gain of 12 lbs.

Experiments 2 *and* 5.—A substitution of 8 ounces of meat, 72 ounces of potatoes, and 1 pint of soup for 4 ounces of cheese, causes the number of prisoners losing weight to fall from 43 to 16, and the number gaining weight to rise from 46 to 59, and substitutes a balance of gain of 83 lbs. for a balance of gain of 25 lbs., being an increase of 58 lbs.

Taken one with another, these experiments are not satisfactory or convincing. They are, as I have already stated, wanting in scientific exactness; they deal in substitutions where simple additions of food would have been preferable; and though the general tendency of the experiments is to connect increase of weight with increase of food, the one increase is not in proportion to the other, and the exception to the rule, in experiments 2 and 3, is striking and suggestive of doubt. But of this, I think, there can be no doubt whatever, that the small increase which, in the fifth experiment, followed an addition of 28 ounces of bread, did not justify the

experimenters in bringing their series of trials to a conclusion, and in fixing on 140 ounces of bread as the proper allowance to the prisoner, rather than the 112 ounces of the fourth experiment, or some quantity intermediate between 112 ounces and 140 ounces.

Now the value of these experiments rests upon the assumption that there is a very intimate relation existing between increase of food and increase of weight, and that this relation is not apt to be seriously disturbed by other causes patent or obscure, known or or unknown. But if it can be shown that the weight of prisoners rises and falls in a marked degree from obscure causes, which cannot be controlled or set aside by the experimenter, then it must follow that the experiments under consideration are not to be trusted as guides to a sufficient dietary. That such obscure causes are in operation, a reference to some experiments made in the Glasgow Bridewell in 1840 will show.†

A series of eight experiments were made, consisting of six (the first three and the last three) on groups of 10 prisoners variously constituted of men and women at different ages, and of boys and girls about 13 or 14 years of age; and of two larger groups of 21 and 20 respectively, of which the greater number were adult males. The particulars of the eight dietaries, with the average weights of the prisoners at the end of the month (each dietary being continued for that period), are given in the table annexed.

Experiments at Glasgow Bridewell, 1840.

	Per Week.			
	No. 1.	No. 2.	No. 3.	No. 4.
	ozs.	ozs.	ozs.	ozs.
Oatmeal	91	91	91	91
Potatoes, boiled (baked*)	336	336	336*	224
Meat	—	—	—	28
Total solid food	427	427	427	343
	Pints.	Pints.	Pints.	Pints.
Butter-milk (skimmed milk*)	10½	2⅓*	10½	10½
Total liquid food	10½	2⅓	10½	10½
Average weight gained	4 lbs.	4 lbs.	—	—
,, lost	—	—	1½ lbs.	1¼ lbs.
Prisoners submitted to experiment	5 men, 5 boys	5 men, 5 girls	3 young men, 5 ,, women, 2 boys	16 males, 5 females

† See "Fifth Report of the Inspectors of Prisons (Scotland)," p. 9.

Experiments at Glasgow Bridewell, 1840—*Contd.*

	Per Week.			
	No. 5.	No. 6.	No. 7.	No. 8.
	ozs.	ozs.	ozs.	ozs.
Oatmeal	91	56	91	—
Potatoes, boiled	112	112	—	672
Bread	—	112	56	—
Meat	56	—	—	—
Total solid food	259	280	147	672
	Pints.	Pints.	Pints.	Pints.
Butter-milk	10½	7	10½	—
Broth*	—	—	14	—
Total liquid food	10½	7	24½	—
Average weight gained	—	2¾ lbs.	—	3½ lbs.
,, lost	very slight loss	—	less than ½ lb.	—
Prisoners submitted to experiment	15 males, 5 females	5 youths, 5 young women	5 young men, 5 ,, women	10 young men and boys

* Containing to the quart 4 ozs. of barley and 1 oz. of bone, with vegetables.

Now, though the groups of prisoners are small and variously constituted, and the experiments consequently wanting in scientific exactness, some of the results are worth noting as throwing light upon the value of these weighings, when used as tests of a sufficient dietary. Between the first and third experiments, for instance, there is this difference only, that the potatoes are boiled in the one and baked in the other; but while the ten prisoners in the one experiment gain on an average 4 lbs., the same number, in the other experiment, lose, on an average, 1½ lbs. Again, though the substitution in the second experiment of 1⅓ pints of skimmed milk for 10½ pints of butter-milk in the first, leaves the average gain of 4 lbs., unaltered, the restoration of the 10½ pints of butter-milk in the third experiment is followed by an average loss of 1½ lbs., in lieu of an average gain of 4 lbs. It is also worthy of remark that, while the four dietaries which are followed by a considerable average gain are all vegetable diets, and one of them consists solely of 6 lbs. of potatoes daily, two out of four dietaries which show a loss of weight contain a liberal element of meat. Lastly, it may be observed that, while the eighth dietary, consisting wholly of potatoes, shows an average gain of 3½ lbs., the seventh dietary, the only one from which the potato is wholly omitted, shows an average loss of less than half-a-pound.

The inference to be drawn from these experiments, that gain or loss of weight is a deceptive test of a sufficient diet, is strengthened by more exact experiments now to be described.

On the 29th of last January, I caused 25 healthy prisoners continuously employed as mat-makers, and the like number of prisoners continuously employed as tailors, the whole 50 prisoners being fed during the whole duration of the experiments on the ordinary diet of Millbank prison, to be carefully weighed for six weeks in succession. By comparing the weights of the first and fifth weighings, and those of the second and sixth weighings, in the case of the matmakers and in that of the tailors, I obtained four results fairly comparable with those of the Pentonville experiments, but without any alteration of diet.

After the first complete interval of one month, the experiments on the 25 mat-makers yielded the following results:—

68 per cent. had *gained*, on an average.....	1·09 lbs.	
20 ,, *lost*, ,, ...	1·15 ,,	and
12 ,, *neither gained nor lost:* while the ultimate result was an average nett *gain* of	0·51 ,,	

After the second complete interval of one month, this experiment being supposed to begin one week later than the first,—

16 per cent. had *gained*, on an average.....	2·12 lbs.	
80 ,, *lost*, ,, ...	2·10 ,,	and
4 ,, *neither lost nor gained:* while the ultimate result was an average nett *loss* of.....	1·46 ,,	

The corresponding experiments on the 25 tailors gave the following results:—

First Experiment.

68 per cent. had *gained*, on an average.....	1·98 lbs.	
28 ,, *lost*, ,, ...	1·14 ,,	
4 ,, *neither gained nor lost:* while the ultimate result was an average nett *gain* of	1·02 ,,	

Second Experiment.

32 per cent. had *gained*, on an average.....	2 lbs.	
56 ,, *lost*, ,, ...	1·59 ,,	
12 ,, *neither gained nor lost:* while the ultimate result was an average nett *loss* of.....	0·11 ,,	

Here, then, under as complete an equality of circumstances as it was possible to command, with the same men, the same occupations, and the same food, the two experiments in each case being separated by the short interval of one week, the mat-makers lose in the second experiment nearly a pound more than they gain in the first; while the tailors, who gain more than a pound in the first experiment, lose a small fraction of a pound in the second.

Now, as the prisoners submitted to experiment at Pentonville were placed on each of the five dietaries for periods exceeding one month, we have only to suppose the weighings to have commenced a week earlier or a week later to have obtained widely different results.

One fact established by these experiments at Millbank is well worthy of remark. In the first experiment, the 25 mat-makers gained, one with another, about half-a-pound, while the tailors, in the corresponding experiment, gained more than one pound; the mat-makers, in the second experiment, lost nearly a pound and a half, while the tailors only lost a small fraction of a pound. But it is not to be doubted that the mat-makers, who gained least and lost most, were in quite as good a state of health as the tailors, who gained more and lost less.

In these experiments one result well worth noting is the different order of weekly increase and decrease of weight in the two classes of prisoners—the mat-makers and the tailors.

In the first week the mat-makers, who weighed collectively 243 stone, *gained* 56 lbs., and the tailors, who weighed collectively nearly 250 stone, *gained* only 38 lbs. In the second week, the mat-makers *lost* 24 lbs., while the tailors *gained* 12 lbs. In the third week, the mat-makers *gained* 3 lbs., while the tailors *lost* 4 lbs. In the fourth week, the mat-makers *lost* 22 lbs., and the tailors 19 lbs. In the fifth week, the mat-makers and tailors *both gained*, the one 7 lbs., the other 11 lbs.

One other result worthy of attention is obtained by throwing the two classes of prisoners into one mixed group, and noting the fluctuations of weight from week to week. A group of 25, consisting of 12 mat-makers and 13 tailors, yielded the following weekly fluctuations:—

In the first week there was a gross *gain* of 56 lbs.; in the second week a *loss* of 14 lbs.; in the third week a *gain* of 2 lbs.; in the fourth week a *loss* of 14 lbs.; in the fifth a *gain* of 10 lbs.; in the sixth a *gain* of 18 lbs.; in the seventh a *loss* of 5 lbs.; in the *eighth* a *gain* of 11 lbs.; in the ninth a *gain* of 12 lbs.; and in the tenth and last a *loss* of 5 lbs. These weighings were continued from January 19th to March 30th.

If we suppose a series of weighings to be made at intervals of one month from each successive week of this series, so as to resemble the experimental weighings at Pentonville, we should have had, as the result of the first weighing, a gain of 29 lbs; as the result of the second, a loss of 17 lbs.; and, as the results of the five remaining weighings, a gain of 16 lbs., 9 lbs., 36 lbs., 37 lbs., and 13 lbs., respectively.

The facts which I have now brought forward, proving, as they do,

that there are great and constant fluctuations in short intervals of time, in the weights of men whose diet, occupation, and mode of life remain unchanged; and also that men who are differently occupied, though fed on the same food, and in other respects similarly treated, differ from each other in the order as well as the degree of fluctuation in weight; these facts cannot but impair the value hitherto attached to weight as a test of sufficiency or insufficiency of diet. And I must repeat my conviction, that the experiments conducted at Pentonville Prison in 1842-43 have not sufficed to determine, with any approach to exactness, the quantities of the several articles of food comprised in the dietary of that prison which are necessary to the maintenance of the health and efficiency of the prisoner.

Hitherto I have been dealing with mixed dietaries, several of which contain meat in some form or other; and the experiments at Pentonville were with dietaries of which meat formed a part; but I must now ask the attention of the Society to dietaries from which meat has been wholly excluded, and to three dietaries especially which contain no animal food whatever. The first of these exclusively vegetable dietaries is very interesting, inasmuch as it is a prison diet on which prisoners were fed for long periods, and weighed at the beginning and end of their sentences. The history of this dietary, and of its effects on the health of the prisoners, and on their weight, will be found in the Report of 1823, on the epidemic at Millbank. The facts are given on the authority of the Governor of the Devizes House of Correction. The dietary consisted of—

	Ounces per Week.
Bread	196
Potatoes	112
Total solid food	308, and gruel 7 pints.

On two days in the week a vegetable soup was substituted for the potatoes; but there was no meat whatever in this dietary, and no milk, or other animal matter. Nevertheless, the Governor was able to report that this dietary agreed well with the prisoners, that no loss of strength was noticed, and that no prison could be more healthy. And he added "There is not now, nor has there been, any "case of scurvy." It should also be observed that this exclusively vegetable diet, having been adopted in an English prison, must have been strange to most of the inmates who, before they became prisoners, had doubtless been able to procure more or less of animal food and of meat. The prisoners had been kept on this diet for various periods up to eighteen months—many of them for six months and more; 292 prisoners, in various groups, were weighed on entering and on leaving the prison. Of 38 prisoners thus weighed after

periods varying from two weeks to six months, 27 were found to have gained, 2 to have lost, and 9 to have neither gained nor lost. The average gain in weight was 3 pounds. Two other prisoners, after eighteen months, had gained, on an average, 6 lbs., and 20 prisoners, confined for twelve months, had gained at the end of that period 5 lbs. on the average. Four other groups of prisoners, confined during six months, three months, two months, and one month, respectively, gained, on an average, 3 lbs., 3 lbs., 2 lbs., and 2 lbs.

Here then we have in favour of a bread—potato—and—gruel diet the most conclusive evidence. There was no loss of strength, an excellent state of health, no scurvy, and a most satisfactory addition to the weight of the prisoners. It should also be observed that there were among the prisoners several whose terms of imprisonment were sufficiently long to severely test any dietary.

Dr. Baly, in his paper in the "London Medical Gazette," to which I have already had occasion to refer, gives an example of the same kind. It is that of the Stafford County Gaol, in which the weekly allowance of food consisted of—

Bread	196 ozs.
Potatoes	112 ,,
Total	308 ,,

with 21 pints of gruel, but no meat and no soup, and yet scurvy did not occur, its absence being verified by his own inspection of 70 prisoners confined in that gaol for periods of from three to six months.

In this case, also, a diet consisting wholly of vegetable food must have been new to the prisoners.

The third example of an exclusive vegetable diet is afforded by the eighth of the series of Glasgow experiments. The ten prisoners were fed for one month on 6 pounds of potatoes per diem; and at the end of that period had increased in weight, one with another, no less than $3\frac{1}{2}$ lbs., or only half-a-pound less then the average gain in the first and second experiments of that series.

These are the only examples that I have happened to come across of a purely vegetable diet—a diet from which not merely meat, but every animal product, even milk, was excluded. But I have already, in this paper, given several examples of dietaries from which meat was wholly excluded, the only animal element being milk made into porridge with oatmeal, and into pudding with Indian meal. I ask your attention again to these exceptional dietaries, of which I am able to give you two notable examples. In the Report on military prisons (1861), the diet for military prisoners in solitary confinement for periods less than fifty-six days is shown to consist of---

	Ounces per Week.
Bread	56
Oatmeal	56
Indian meal	42
Total solid food	154, with 10½ pints of milk.

and the penal class diet of Millbank Prison comprises---

	Ounces per Week.
Bread	84
Oatmeal	70
Indian meal	70
Potatoes	56
Total solid food	280, with 10½ pints of milk.

The diet of military prisoners given above does not encounter objection on the part of the Governors or Medical Officers whose views are stated in the Report, and it may, therefore, be assumed to be sufficient for the support of robust men in confinement for periods less than fifty-six days; and this view receives strong confirmation from a passage in Dr. Tufnell's Report from Dublin; he says, "To "the increase in the dietary, and especially its alteration, I have ever "been, upon principle, opposed, because I found that I could, upon "the old scale of dietary, maintain the men in the most perfect "condition."

Of the sufficiency of the more liberal penal class diet of Millbank, not merely for prisoners undergoing short terms of imprisonment, but for those who are in close confinement, and under punishment, for many months together, I am able to furnish the most convincing proofs. This dietary was favourably reported upon by my predecessor, Dr. Baly, in 1858, and in my own report for 1859. It has stood the test both of experimental weighings and of more general observation of the state of health of the prisoners; and I have recently had occasion to report cases of men whose health has been maintained on this diet for seven, nine, eleven, fourteen, fifteen, seventeen, and eighteen months; and cases of women similarly kept in good health on a similar diet for nine, ten, eleven, fourteen, and eighteen months. The women who are on this diet are weighed every month, and the results are quite satisfactory.

I have no hesitation, then, in expressing an opinion in favour of the sufficiency of a dietary from which the meat element is wholly excluded. I have no doubt that health may be preserved, and with it the capacity for labour, on a diet consisting of milk and vegetable food; and I should have no hesitation in prescribing for all criminals under short terms of imprisonment a diet consisting wholly of bread and potatoes. I think that the experience acquired at the Devizes House of Correction, at Stafford, and at Glasgow would be a complete justification for such a dietary.

I must now revert to the outbreak of scurvy and dysentery which occurred at Millbank in 1823, and endeavour to answer the important question whether that fatal epidemic ought to be attributed to the reduction which took place in the quantity of the food, or to the omission from that dietary of some important element. Now, the reduction effected in the original dietary of the prison went to the extent not merely of cutting down the quantity of bread, meat, and potatoes from a total of 304 ounces to one of 168 ounces per week; but the meat and potatoes were struck off altogether, except such small quantity of the juice and fibre of meat as was to be found in a broth containing one ox-head, and even less, to 100 rations. On a liberal estimate, the quantity of meat in the weekly rations of soup did not exceed 10 ounces for each prisoner. In order to ascertain whether the mere reduction in the quantity of the food could have been productive of such disastrous effects, I must again refer to the diet scales given in the earlier part of this paper. I find that the least liberal of the six pauper dietaries of 1836 allowed only 145 ounces of solid food, and 18 pints of liquid food, that the average of those dietaries only exceeded the reduced Millbank allowance in the solid elements by 5 ounces per week, while the liquid elements amounted only to 10 ounces in lieu of 21; that the minimum of the twelve pauper dietaries sanctioned by the Poor Law Board (doubtless after experience of their sufficiency) gives only two additional ounces of solid food per week, the liquid food amounting to only 11 ounces as against 21 of the Millbank dietary; that all the dietaries prescribed for the Scotch paupers in 1847, by Drs. Alison and Christison, fall greatly short of the Millbank reduced standard in their solid constituents; that the diet for soldiers under solitary confinement for less than 56 days also falls short of it both in the solid and in the liquid constituents; that the seventh of the Glasgow dietaries has 21 ounces less of solid food, and 10½ pints of butter-milk for 21 pints of gruel and broth; and lastly, that the consumption of agricultural and other labourers, according to Mr. C. Mott's inquiries, falls short of the Millbank reduced dietary by no less than 28 ounces. This last comparison, if the consumption of the labourer is correctly estimated, is the most important of all, inasmuch as of the 140 ounces said to be consumed by him 136 consist of bread, of which the quantity given at Millbank amounted to 168 ounces.

After making due allowance for the long terms of confinement to which the prisoners at Millbank were subject in 1822, I am still of opinion that the mere reduction in the quantity of the food would

not account for the outbreak of scurvy, even in a site so notoriously unhealthy as Millbank then was. Nor, with the experience of Devizes, Stafford, and Glasgow before us, would it be safe to attribute the outbreak to the omission of meat from the dietary. There still remains a possible explanation of the event to which the researches of the late Dr. Baly lend an air of probability. In the "London "Medical Gazette," February 10th, 1843, Dr. Baly published a short paper "On the Prevention of Scurvy in Prisons, Pauper Lunatic "Asylums, &c.," in which, after citing Sir Gilbert Blane and M. Julia Fontenelle, in favour of the anti-scorbutic virtue of the potato, whether raw or cooked, he proceeds to make the following important statement:—"In the spring of 1840, I found that scurvy "was a disease of rather frequent occurrence amongst one class of "prisoners in the Millbank Penitentiary, the military offenders "sentenced by court martial; whilst amongst the other more numer-"ous class of inmates, the convicts, it was never seen." This led Dr. Baly to a comparison of dietaries, of which I append the particulars in a tabular form, the arrangement only being altered from his own tables. I omit the column showing the dietary for women, as this paper must be understood to deal throughout with the dietaries of adult males only:—

	Military Offenders.			Convicts.
	First Three Months.	Second Three Months.	Over Six Months.	
	ozs.	ozs.	ozs.	ozs.
Bread	168	168	168	176
Meat	12	18	24	20
Potatoes	Nil	Nil	8	80
Cheese	Nil	Nil	Nil	4
Onion	Nil	Nil	Nil	One
Total solid food	180	186	192	284
	pints.	pints.	pints.	pints.
Rice-soup without vegetables	2	2	2	—
Pea-soup with vegetables	—	1	1	$1\frac{1}{2}$
Gruel	17	15	14	11
Broth	—	—	—	3
Total liquid food	19	18	17	$15\frac{1}{2}$

The following is an abbreviation of Dr. Baly's valuable commentary on these facts:—

Nearly all the cases of scurvy, he says, occurred in soldiers who were passing through the second three months of their confinement in the penitentiary, during which period not only had they very nearly as ample a supply of animal food as the convicts, male and

female, but they had as much soup seasoned with vegetables, as the female convicts, who, although undergoing far longer terms of imprisonment, yet were free from scurvy. This exemption of the convicts from the disease, could, therefore, only be attributed to their weekly diet containing 5 lbs. of potatoes and an onion. In order to afford to the soldier a larger supply of vegetable food, Dr. Baly suggested the substitution for the rice-soup, which contained no fresh vegetables, of pea-soup with vegetables. The quantity of soup containing succulent vegetables was thus made to exceed the quantity given to the convict, and yet scurvy continued to appear among the soldiers. It prevailed to nearly, if not quite, the same extent after the change of diet as before; and it was evident that the quantity of vegetables usually contained in two or three pints of pea-soup given weekly was inadequate to prevent the occurrence of scurvy. Dr. Baly accordingly recommended that the soldiers, as well as the convicts, should have 1 lb. of potatoes with each dinner of meat. The soldiers thus came to have 2 lbs., or 32 ounces of potatoes every week during the first three months of their imprisonment, 3 lbs. during the second three months, and 4 lbs. after the expiration of six months. This addition to the dietary of the military prisoners was made in January, 1842, and not a single case of scurvy occurred up to February 10th, 1843, the date of Dr. Baly's paper. Dr. Baly then proceeds to give a short sketch of the outbreak of scurvy and dysentery at Millbank in 1823; and, after stating that he deems it "unnecessary to argue that the want of animal food could not "have produced the scurvy," and showing that the reduced dietary "was not deficient in vegetable constituents, except as regarded the "potatoes," gives it as his opinion, "that the withdrawal of the "supply of potatoes was, in all probability, the cause of that part of "the epidemic which was constituted by the scurvy;" and this inference he strengthens by the remarkable statement, that, since the date of the outbreak of scurvy and dysentery, the diet of the convicts "has contained an abundant supply of potatoes, and scurvy has "never again attacked them; although other forms of disease, which "were described as parts of the epidemic of 1823, namely, the fever, "dysentery, and nervous affections, have frequently re-appeared."

Dr. Baly then fortifies his opinion thus expressed by citing the case of the Oxford County Gaol, in which a diet, consisting of bread 168 ounces, meat 4 to 12 ounces, and 14 pints of gruel per week, but with no regular allowance of vegetables, "potatoes or "green vegetables being given only occasionally on Sundays, when "the prison garden would furnish them," issued in the production of scurvy; and the case of the Northampton County Gaol, in which scurvy, having arisen under a dietary of bread, soup, and gruel, disappeared after the addition to it of 4 lbs. of potatoes weekly. Other

analogous facts are cited, and especially the striking case of the Stafford County Gaol, which I have already noticed, where, under a liberal allowance of bread, potatoes, and gruel, but no meat, no soup, and no milk, scurvy did not show itself.

It is worthy of remark, that the diet of military offenders for the first three months approximates very closely to the reduced dietary at Millbank. The quantity of bread is exactly the same, the 12 ounces of meat is little more than the equivalent, in the solid form, of the 10 ounces of meat in the soup at Millbank, while the two pints of rice-soup, without vegetables, and the 17 pints of gruel would probably contain less than the 14 pints of gruel and the 7 pints of soup after the supposed removal from it of the 10 ounces of meat.

The scurvy, which was a new disease at Millbank in 1822, occurred therefore under the long-continued use of a diet differing little from the military diet of the first three months, and not falling greatly short of that of the second three months. The condition of the prisoners in Millbank, in 1822, resembled that of the soldiers in 1840, in the total omission of the potato, the site of the prison, the season of the year, and the scurvy.

It is probable, therefore, that the epidemic scurvy which associated itself with the epidemic dysentery of Millbank as a mixed epidemic, in 1823, was not due to the mere reduction in the quantity of food, nor to the omission of solid meat from the dietary, but to the total exclusion of the potato element.

In this outbreak of disease, therefore, we have no clue to the solution of the question of sufficient or insufficient dietaries. It is obviously quite possible that the reduction of the quantity of bread from 168 ounces a week, or a pound and a half per diem, to 112 ounces a week, or a pound per diem, and the substitution for the half-pound of bread of the same quantity of potatoes, would have saved the prisoners from the scurvy, and the Government from the anxiety, trouble, and cost which the sad and perplexing epidemic of 1823 entailed upon it.

III.—*Existing Prison Dietaries.*

I must preface what I have to say on the subject of existing prison dietaries by reminding the Society that there are two distinct classes of prisoners to be provided for—the prisoners in our county gaols who are sentenced for periods varying from a few days to less than three years, and the convicts in our Government establishments whose sentences exceed three years. For the first class, it was necessary not only to prescribe dietaries for sentences of different length, but also to distinguish between sentences with and sentences without hard labour. In respect of the second class, a distinction was required to be made between that first and shorter part of the

sentence which is spent at Millbank, Pentonville, Leicester, or Wakefield, in separation, or in separation followed by association, and that larger part which is spent at public works (at Portland, Chatham, and Portsmouth, or at Dartmoor) in associated labour. I shall present these several dietaries in separate tables, and make such observations upon them as may throw light upon the curious varieties and anomalies which they present.

The existing dietaries for the county prisons date from the year 1843, when Sir James Graham, then Her Majesty's Secretary of State for the Home Department, addressed a letter to the Chairmen of Quarter Sessions, in which he adopts the recommendations of the Inspectors of Prisons. These recommendations, it should be stated were not unanimous, for one of their number, Mr. F. Hill, emphatically dissents from the received doctrine that the depressing effect of imprisonment on health could be counteracted by a liberal allowance of food; and he expressed his opinion on the contrary, "that a depressed state of the mind weakens the digestive powers, "and makes them incapable of receiving even so much food as when "the mind is cheerful." It was under the influence of an opposite feeling, and after consultation not only with the Prison Inspectors, but with medical men of the greatest eminence, possessing the advantage of long experience, that these dietaries were framed.*

The dietaries recommended for the use of county prisons, as given in the Return for 1857, are shown in the following table:—

County Gaols and Prisons.

Per Week.	Without Hard Labour.				With Hard Labour.			
	Class 1. Less than 7 Days.	Class 2. More than 7 Days, and not more than 21 Days.	Class 3. More than 21 Days, and not more than 4 Months.	Class 4. More than 4 Months.	Class 2. More than 7 Days, and not more than 21 Days.	Class 3. More than 21 Days, and not more than 6 Weeks.	Class 4. More than 6 Weeks, and not more than 4 Months.	Class 5. More than 4 Months.
	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.
Bread	112	168	140	168	168	140	168	154
Potatoes	—	—	64	32	—	64	32	112
Meat	—	—	6	12	—	6	12	16
Total solid food	112	168	210	212	168	210	212	282
	Pints.	Pints.	Pints.	Pints.	Pints.	Pints.	Pints.	Pints.
Soup	—	—	2	3	1	2	3	3
Gruel	14	14	14	14	14	14	14	11
Cocoa	—	—	—	—	—	—	—	3
Total liquid food	14	14	16	17	15	16	17	17

* For the report of the inspectors, with the letter of Sir James Graham, see "Pereira on Diet," p. 491, and for voluminous details of the dietaries of prisoners and convicts, see Parliamentary Report, No. 154, 1857.

It is not easy to discover the principles on which this table was constructed; for though the quantities of meat and soup, and the aggregates of solid and of liquid food, increase with the length of the sentences, the bread and potatoes display very curious fluctuations. And though the transition from a sentence of less than four months, to one of more than four months, is marked in the case of prisoners not sentenced to hard labour by an increase of 2 ounces of solid, and 1 pint of liquid food per week, the transition from the shorter to the longer period, in the case of prisoners sentenced to hard labour, is marked by an increase of 70 ounces of solid food, and a substitution of 3 pints of cocoa for 3 of gruel; so that the alleged depressing effect of prolonged imprisonment without hard work, may be said to be represented by 2 ounces of solid and 1 pint of liquid food per week, while the wear and tear of hard labour is supplied by 70 ounces of solid food. It is also worthy of remark that while prisoners not sentenced to hard labour have only half the quantity of potatoes after four months, those sentenced to hard labour have, after the same period, upwards of three times the quantity of this wholesome vegetable. I have some further observations to make on the figures in the last column of this table, but I reserve them till I shall have presented the remainder of the dietary tables.*

The table which follows, exhibits the ordinary diets of the convict prisons for Pentonville, Wakefield, and Millbank, in which the separate system of imprisonment prevails during the whole of the prisoners' sojourn in them, or during some months at the commencement, the remainder being passed in association; for Portland, Chatham, and Portsmouth, at which the men are employed in outdoor labour at such work as is required in our dockyards and arsenals; and for Dartmoor, at which a portion only of the prisoners are engaged in farming and gardening operations, admitting of comparison, in point of exertion, with the labour required at Portland, Portsmouth, and Chatham, most of the prisoners when first sent to Dartmoor being disabled or deformed in body, weak in health, or of feeble intellect.

* It may be well, in this place, to show to what extent the county gaols and prisons have followed the suggestions of the Home Office, made to them in 1843. Between forty and fifty of the whole number have conformed to the prescribed dietaries, but a still larger number have adopted dietaries of their own, and these display every possible difference in the proportion of the elements of which they consist. In the element of bread for instance, the quantity varies between a minimum of 30 and a maximum of 224 ounces; in that of meat, between nil and 25 ounces; in that of potatoes, between 24 and 112; and in the total of solid food, between 100 and 340 ounces. But where the quantity of these articles of food is smallest, the dietary is enriched by such additions as milk porridge, Indian meal pudding made with milk, and suet pudding.

Convict Establishments—(Ordinary Diet).

Per Week.	Pentonville.	Wakefield.	Millbank.	Portland.	Portsmouth and Chatham.	Dartmoor.
	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.
Bread	140	140	154	150	189	165
Potatoes	112	112	112	112	112	112
Meat	28	28	35	39	39	39
Suet pudding	—	—	—	30	—	32
Total solid food	280	280	301	331	340	348
	Pints	Pints.	Pints.	Pints.	Pints.	Pints.
Soup	3½	3½	3½	3	3	3
Gruel	7	7	7	7	7	4
Cocoa	5¼	—	5¼	3	7	10
Milk	—	5¼	—	—	—	—
Tea	—	—	—	4	—	—
Molasses	—	—	—	3	—	—
Total liquid food	15¾	15¾	15¾	20	17	17

This table, too, is full of anomalies and inconsistencies, some of which must remain even after the explanations now to be given.

The Pentonville dietary, as already explained, was adopted as the direct result of experiments not free from objection. The dietary at Wakefield is the same dietary with a single exception. The history of the Millbank dietary is less perfectly known. All that I have been able to ascertain with certainty is, that in the year 1840, the dietary consisted of bread, meat, potatoes, and cheese, with one onion, pea-soup, broth, and gruel, in the quantities stated in the last column of the table at p. 270; but that at some period previous to 1854, the cheese was omitted, the meat and potatoes increased, and the bread diminished, that prior to the outbreak of cholera in 1854, meat was given five times a-week and soup twice, but that during the prevalence of the cholera Dr. Baly recommended the substitution of meat for soup on the remaining two days in the week, and that, on its subsidence, he still caused the same altered diet to be retained; and further, that he objected to the reduction of the 154 ounces of bread to the 140 ounces of Pentonville, alleging as his reason the unhealthy site of Millbank. But in comparing these two dietaries with each other it ought to be understood that the soup of Pentonville is the meat-liquor strengthened by additions of meat and vegetables, while the soup of Millbank is little better than the liquor in which the meat is boiled.

Of the three dietaries of Portland, Portsmouth and Chatham, and Dartmoor, it is impossible to give any rational account. The

strongest and most robust prisoners are sent to Portland; those who are less vigorous and robust to Portsmouth and Chatham; and those who are fit only for light labour to Dartmoor, to which place also are sent the maimed, crippled, and deformed, the scrofulous and the consumptive, and men of weak minds. And yet the dietaries of these three prisons, all largely in excess of Pentonville and even of Millbank, seem to be framed in a spirit of contradiction. The robust prisoner at Portland gets less food than the less vigorous inmate of Portsmouth or Chatham, and this last gets less than the most effective of the invalids of Dartmoor. But ample as the ordinary diet at these convict establishments is, it has not been deemed sufficient for the whole period of confinement; for the tables of 1857, add an "increased" diet in the case of Portland, and in all the prisons additions to the dietaries for men in the third and fourth stages. The particulars of these several dietaries are shown as accurately as possible, consistent with brevity, in the subjoined table:—

Convict Establishments—(Ordinary and Increased Diets, with Additions).

Per Week.	Portland.				Portsmouth and Chatham.			Dartmoor.		
	Ordinary.	Increased.	Third Stage.	Fourth Stage.	First and Second Stages.	Third Stage.	Fourth Stage.	Ordinary (Hard Labour).	Invalid (Light Labour).	Third and Fourth Stage.
	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.
Bread	150	201	204	204	189	192	192	165	168	169
Potatoes	112	112	112	112	112	112	112	112	112	112
Meat	39	39	39	39	39	39	39	39	24½	39
Suet pudding	30	30	30	35	—	—	8	32	—	32
Cheese	—	—	2	2	—	2	2	—	—	2
Total solid food	331	382	387	392	340	345	353	348	304½	354
	Pints.	Pints.	Pints.	Pints.	Pints.	Pints.	Pints.	Pints.	Pints.	Pints.
Soup	3	7	7	7	7	7	7	3	7	3
Gruel (or tea*)	7	7*	7*	7*	7	7*	7*	4	7	—
Tea	—	4	4	4	—	—	—	—	—	4
Cocoa	7	3	3	3	7	7	7	10	7	10
Beer or porter	—	—	½	½	—	½	½	—	—	½
Total liquid food	17	21	21½	21½	21	21½	21½	17	21	17½

In order to give a complete view of these dietaries it would be necessary to enter into details inconsistent with the narrow limits of this paper. I must, therefore, content myself with remarking that as much anxiety seems to have been shown to provide the convicts with variety as with abundance of food. The undue monotony of the Millbank dietary, with its five ounces of boiled beef every day,

is exchanged for the opposite extreme of variety, and beef alternates with mutton, and baked meat with boiled, while tea takes the place of gruel, and one pudding of another. Even the "invalid diet" of Dartmoor, for convicts employed at "light labour," is more liberal than the ordinary diets of Millbank and Pentonville. Dietaries so ample, so varied, and so different, are only to be accounted for on the supposition that additions made to meet occasional and transitory emergencies, or to silence the importunities of prisoners, have been retained through forgetfulness, or from aversion to change. That such causes are in operation, the facts already stated with reference to Millbank Prison will show.

There is also reason to believe that the example of Millbank has been brought to bear on the county prisons; for the dietary recommended by the Home Office in 1843, for prisoners sentenced to hard labour for periods exceeding four months (Class 5), is in many respects identical with the ordinary diet at Millbank. The quantities of bread and potatoes, and the distribution of the bread over the three meals, are the same in both dietaries, and in both meat is given on certain days in the week and soup on others.*

It will be seen that, throughout this communication, I have attached great importance to the dietary history of Millbank Prison. I have done so, not merely because the physician who holds the appointment of medical superintendent is usually consulted by the Government, on matters relating to the health of its officers and of the convicts generally, and particularly respecting dietaries, but because the epidemic of 1823, and the formerly unhealthy state of the prison, co-operating with the opinion entertained by John Howard, that the depression caused by imprisonment necessitates a liberal diet, have exercised a marked influence on the selection of all our prison dietaries. Millbank Prison has thus become the centre of a cautious and timid policy in matters of diet, and the cause of an unnecessary expenditure, of which the amount may be guessed at by the aid of an assertion which I believe I am justified in making, that

* It will be seen that in 1840, when scurvy prevailed among the military prisoners at Millbank, the ordinary diet of the convicts consisted of 176 ounces of bread, 20 ounces of meat, and 80 ounces of potatoes, with 4 ounces of cheese and an onion. Now it appears highly probable that, impressed as he was with the value of the potato as an anti-scorbutic, Dr. Baly, soon after this date, recommended an increase of the potatoes to 112 ounces, and of the meat to 25 ounces, reducing the bread from 176 to 154 ounces, and suppressing the 4 ounces of cheese and the onion, so as to establish the dietary in use at the advent of the cholera in 1854. If this conjecture be well founded—if the allowance of bread and potatoes recommended for the county prisons was really copied from the Millbank dietary, the quantity of meat being somewhat reduced—then it follows that an allowance of bread exceeding that in use at Pentonville by 14 ounces a-week, and justified only by the alleged unhealthiness of Millbank, has been extended to such of the county prisons as have adopted the recommendations of the Home Office.

the extra supply of bread retained in consequence of the alleged unhealthiness of the site, and the changes made in 1854, during the prevalence of the cholera, and solely on account of the cholera, have not cost the Government, on an average of cheap and dear years, less than 1,000*l.* per annum.

As Millbank Prison is now, and has been for the four years that I have held office in it, free from every malady which can be traced to a local cause, one of the reasons for an excessive dietary no longer exists; another reason passed away with the epidemic cholera of 1854; and the only one that now remains is the theory which attributes to imprisonment itself, and especially to solitary confinement, a depressing influence, for which a liberal diet is in some sense a remedy.

Now this theory is based upon the two distinct assumptions that imprisonment exercises a depressing effect upon the mind, and through it, upon the body, and that this depressed and enervated condition necessitates a liberal diet.

The first of these assumptions is justified by observation, but the mental depression and consequent loss of strength are, according to my own observation, much less considerable than is usually supposed. They are certainly not such as must have existed in the days of John Howard. Perhaps one prisoner in a thousand will exhibit great grief and continued depression, and one or two others a marked loss of spirits; but the great majority, including even men of education, who have lived previous to their imprisonment in luxury and refinement, adapt themselves to their new circumstances in a very remarkable manner. The favourable rate of mortality among the convicts, the absence of diseases usually ascribed to mental anxiety and depression, and the small number of cases of unsoundness of mind which can be traced with any show of probability to the influence of imprisonment, concur, with the appearance of the prisoners themselves, to cast a doubt on the soundness of the popular belief, which ascribes to imprisonment a highly depressing effect. But, though not depressing to the degree which is usually supposed, imprisonment must affect the mind with a certain listlessness which in and out of prison is inseparable from the want of those stirring occupations to which the necessities of some and the ambition of others give rise. But as for the *ennui* which afflicts the rich man, destitute of a fitting occupation, no sensible physician would prescribe a highly nutritious diet, so in the case of the prisoner, afflicted with the same want of spontaneous occupation, it may admit of doubt whether a like prescription would be reasonable or right. At any rate, it may be safely affirmed that the theory under consideration is little better than a prevalent opinion, not undeserving of respect, but quite open to discussion. And even if we assume that mental

depression and bodily lassitude demand a nutritious diet, we ought not to forget that all the other circumstances which surround the prisoner are exactly such as every well-informed physician, and every man of sense must admit as reasons for reducing the supply of food. The prisoner spends more time in bed than the working man does; he is warmly clad, lives and sleeps in a warm atmosphere, and is protected from the weather; he is not worked beyond his strength, he has time for his meals, he has no pressing anxieties, or urgent claims. His wear and tear of body and mind are reduced to the lowest point. These, then, are reasons for a moderate dietary scale, which must, in any case, be set off against the one solitary argument in favour of a liberal dietary. It is a very curious circumstance that Dr. Copland Hutchison, the Medical Superintendent of Millbank Prison in 1822, believed that the then ordinary diet of the prisoners, which is somewhat less nutritious than that now in use, was excessive, and injurious to the convicts, and that he founded his opinion on the prevalence among them of plethora and the diseases arising out of fulness of habit; and yet neither my predecessor, Dr. Baly, nor I myself, have had any experience of those diseases, nor any such reason to condemn the diet of the present day as excessive. Now, as the convicts of 1822 were confined in a prison at that time certainly unhealthy, for much longer terms than the convicts of the present day in a very healthy prison, there is a fair presumption that the depressing effects of imprisonment, even when reinforced by an unhealthy site, are rather exaggerated than otherwise by a liberal dietary. The liberal dietary of 1822 was thought to have produced disease in convicts confined for long periods in an unhealthy prison; the equally liberal diet of 1863 seems to preserve in health the convicts shut up for shorter periods in a healthy one. Might not a reduced diet have improved the health of the inmates of Millbank in 1822? and might not the like reduction be consistent with the maintenance of health and vigour in the same class in 1863?

I shall now bring this communication to a close by stating, as distinct propositions, the results to which the foregoing inquiry has led me:—

1. That though the elementary constituents of a wholesome and nutritious diet, and the articles of food which yield them, are ascertained with sufficient accuracy, the quantity of food required to support any given body of men in health and efficiency, is not, and cannot be, precisely determined.

2. That the difficulties which attach to the selection of dietaries adapted to the peculiar conditions and circumstances of different bodies of men, make themselves felt to an extreme degree in the case of prisoners.

3. That the very circumstance of large bodies of men differing

widely from each other in age, constitution, and occupation, being supported in apparent health and vigour on the same dietary, proves conclusively that food may be taken in excess of the real wants of the frame without producing effects which shall attract the notice even of the most careful and watchful observer.

4. That we possess no conclusive tests of sufficient or insufficient dietaries; and that the test of weight, which is the most precise, cannot be safely applied till we shall have obtained more accurate information than we now possess respecting the causes, other than food, which affect the weight of the body.

5. That the value of the experiments made at Pentonville Prison in 1842 is impaired partly by the want of this information, and partly by the want of scientific exactness.

6. That we possess conclusive evidence of the sufficiency of a diet from which meat is wholly excluded, and even of a diet consisting entirely of vegetable matter; that such a diet would probably suffice for able-bodied paupers, and even for prisoners sentenced to hard labour, and for convicts employed at public works; and that this is true of men previously accustomed to animal food.

7. That the potato is an important element in our dietaries, and that its omission has probably been the true cause of outbreaks of scurvy which have been attributed to a mere reduction in the quantity of food.

8. That the existing prison dietaries present many curious anomalies very difficult of explanation, except on the supposition that additions made for temporary reasons, such as a wish to satisfy the importunities of prisoners, or a transitory departure from health or outbreak of disease in a small section of the prisoners, have become permanent through inadvertence, or from an aversion to change.

9. That the dietaries of our county prisons, for periods exceeding four months, and all the dietaries of our convict establishments, are greatly in excess of the dietaries of able-bodied paupers, and probably in excess of the requirements of the prisoners themselves.

10. That our prison dietaries have been framed under the influence of an exaggerated estimate of the depressing effect of imprisonment, and of an opinion, probably ill-founded, that the physical effects of such depression can be counteracted by increased supplies of food.

11. That our prison dietaries have also been framed under the influence of a timid feeling, originating in misconceptions as to the true cause of the epidemic of Millbank Prison, but especially in the belief that it was due to a reduction in the quantity of food.

12. That some reduction in the dietaries of our convict establishments might be made with safety and economy; and that further reductions would probably be justified by well-devised experiments.

Recent Financial *and* Taxation Statistics *of the* United States. *By* Cornelius Walford, *Barrister-at-Law, and Member of the Council of the Statistical Society.*

[Read before the Statistical Society, 17th March, 1863.]

Part the Second.

[Continued from p. 167.]

CONTENTS:

The first section of this paper was chiefly confined to an outline of the material progress of the United States during the first eighty years of its history. The present section will deal with the revenue, expenditure, and public debt during the same period; and the concluding section will trace the influence of the present disastrous war upon the finances and development of the country.

I.—*United States' Revenue.*

The first distinct traces of the United States' revenue occurs at the close of 1791, or eight years after the termination of the War of Independence. It appears there had been received into the Treasury between the 4th March, 1789, and the 31st December in the year named, a total of 2,042,005*l.*; but as 1,158,222*l.*, or rather more than half the amount, is stated to have been raised on loans and Treasury notes, we have really in the shape of revenue only 883,783*l.*, of which 879,894*l.* was drawn from customs, and the balance, 3,889*l.*, was from miscellaneous sources.

It has been the practice, from the formation of the Federal Government down to the present time, to provide for any excess of expenditure over ordinary revenue by means of loans and Treasury notes, authorised by specific Acts of Congress, and to include the amounts received from these sources in the receipts of the year; therefore, "income" and "revenue" do not mean the same thing, as the above figures serve to show.

The following is the decennial progress of both income and revenue:—

Decennial Periods.	Total Income.	Of which was Revenue.
	£	£
1792	1,748,153	733,992
1800	2,490,256	2,169,769
'10	2,428,841	1,876,842
'20	4,176,298	3,568,133
'30	4,968,823	4,968,823
'40	5,006,438	3,888,529
'50	9,529,877	8,718,577
'60	15,368,281	11,212,921

The only period in the table, at which the figures correspond, is 1830. Between the years 1826 and 1836, the United States' Government not only contracted no loans, but paid off its former debt.

The sources of revenue for the 72 years from 1789 down to 1861 have been classed as follows:—

1. Customs.
2. Sale of Public Lands.
3. Miscellaneous.

And I propose to examine each of these sources separately. The fourth—loan and Treasury notes—are not dealt with here for reasons stated.

II.—*Customs.*

The first tariff under which customs' duties were to be collected, appears to have come into operation on the 4th July, 1789, followed by others, either in the way of amendment or substitution, in 1790 and 1791, since which constant, special, and amended tariffs have been adopted.

The chief articles upon which the more recent customs' duties have been levied are woollen, cotton, and hempen goods; iron and iron manufactures; sugar, hemp unmanufactured, salt, and coals. From these eight articles, the sums collected in 1860 amounted to 5,224,075*l.*, or rather more than half the entire customs' duties of that year.

The revenue from customs has advanced from 688,614*l.* in 1792, to upwards of *ten millions* in 1860; the highest figures ever reached being 12,844,818*l.* in the financial year ending 30th June, 1854.

The following table shows the decennial progress, the intermediate fluctuations having been very considerable:—

		£
In 1800	the customs realised	1,816,186
,, '10	,, ...	1,716,661
,, '20	,, ...	3,001,122
,, '30	,, ...	4,384,478
,, '40	,, ...	2,699,900
,, '50	,, ...	7,933,537
,, '60	,, ...	10,637,502

The total receipts from customs since the establishment of the Federal Government down to the 1st of July, 1862, have been 315,030,515*l.*, or about *four millions and a-half* per annum.

It is now a matter of history that one of the chief causes of the present rupture between the two great parties in the United States, known here as "North" and "South," arose out of the adoption by the Northern party of a new scale of customs' duties, designated the "Morrill Tariff." The avowed object of that measure was the encouragement of home manufactures, by taxing those imported from other countries. The South, having no manufactures to foster, advocated the policy of Free Trade, and protested against the restrictions of this measure, as pernicious and intolerable.

I cannot here follow the disagreement and its consequences, but I will give one instance of the operation of this new tariff. The South want railway iron in large quantities to make railways for bringing down cotton from the interior; the duty upon this one article, under the Morrill tariff, is 70 per cent. upon the cost of manufacture here.

III.—*Sale of Public Lands.*

There is an interest attaching to this branch of the United States' revenue which reaches very much beyond mere financial results.

In Europe, and in England especially, where every acre of land has had an ownership almost from the date of the Norman Conquest, it is very difficult to realise the idea of any considerable portion of the state revenue being raised by the sale of public lands; although it is true that our Government has had, and used, such a power in Australia, New Zealand, and Canada, and, I trust, will soon exercise it in India. But the power to sell lands can only be of extensive advantage in conjunction with the collateral circumstances which induce people in large numbers to seek to purchase it; and in this latter respect the United States have long stood pre-eminent.

It appears that the value of this element, as a means of aiding the revenue, was foreseen very early after the formation of the Union; for, by an Act, passed 20th May, 1785, the price of public lands was fixed at one dollar (4*s.* 2*d.*) per acre.

We find no trace of any proceeds in the Treasury until the year 1796, when the former act was superseded, and the price fixed at two dollars per acre; but this price is not, I believe, strictly adhered to.

The receipts in the year last named was only 967*l.*; but in the next year, 1797, they reach 16,708*l.*; they again relapse, but in 1801 recover, and produce 33,545*l.*, and from that date go on progressively as follow:—

Decennial Periods.	Annual Receipts.	Totals up to the Year 1800, afterwards for Decades.
	£	£
1800	88	20,156
'10	139,309	913,577
'20	327,174	3,167,263
'30	465,871	2,777,609
'40	658,457	14,104,232
'50	371,978	3,561,301
'60	355,711	9,165,312
'61	174,131	174,131

The total revenue credited in the Treasury accounts from this source, during the sixty-six years ended with 1861, is 35,163,592*l.*, being at the rate of more than *half a million* per annum.

The fluctuations in the annual land sales have been so extreme that the last table, which in its total results includes them, yet fails to convey an adequate idea of their extent, and, of course, leaves their causes unrecorded. The following are the aggregate sales for the four last decennial periods:—

Ten Years terminating	Sales of Land, reckoned in Acres.
1830	9,627,666
'40	62,599,871
'50	16,269,421
'60	52,385,782

The decade terminating 1840 embraces six memorable years in the history of the United States, when not only were no *new loans required, but a debt, which at one time* (1816) *had reached twenty-five millions, was entirely paid off.*

The statistics of the period afford a remarkable instance of cause and effect.

Years.	Public Debt.	Land Sales in Acres.
	£	
1830	9,713,081	1,880,019
'31	7,824,638	2,804,745
'32	4,864,447	2,411,952
'33	1,400,207	3,856,227
'34	952,016	4,658,218
'35	70,257	12,564,478
'36	58,217	20,074,870

From this date the public debt steadily increases, and the land sales steadily decrease.

The conclusion, which I think may be deduced in reference to the land sales, is that they will only increase in a rapid ratio under the prospect of light burdens in the shape of taxes; remove that inducement, and the sales will rapidly subside.

The first real impetus to immigration to the United States is coincident with these facts, and therefore confirms this view:—

	Immigrants.
10 years ending 1830	120,117
10 ,, '40	530,878
10 ,, '50	1,427,337
9 ,, '59	2,814,604

Other influences than those I have named are no doubt at work, but I believe that the true secret of progress lies where we have indicated, as the events of the next few years will develop even more fully than the past.

The more immediate causes of the extensive land sales in the decade ending with 1860, I believe to have been the rapid extension of the railway system and the discovery of gold in California; but I cannot stay to elucidate them at this point. Latterly the largest sales occurred in 1845, being no less than 15,729,524 acres; the highest figures since 1836.

	Acres.
We have shown the total land sales down to 1860 to have been	153,928,547
In addition to which the Government has made the following free grants, viz.:—	
To schools	67,736,572
,, internal improvements	10,897,313
,, individuals	279,972
,, seats of government	50,060
,, military services	44,109,979
,, salaries to States	432,325
,, Indian reserves	3,400,725
,, private claims	8,923,908
,, swamp lands granted to States	21,948,916
,, railroads	25,463,993
Making a total of	337,152,310

And there remained unsold, at the close of 1860, upwards of 1,088 *million acres* (or more than eighteen times the surface of Great Britain), being threefold greater than all the sales and grants already made.

IV.—*Miscellaneous Revenue.*

The revenue from miscellaneous sources has amounted during 73 years to 19,061,064*l.*, being something less than a quarter of a million per annum; but as I have no details of the way in which it is made up, I can offer no special comment upon it, beyond the fact that it appears to fluctuate very considerably.

The following table will show the amount annually at progressive decennial periods, and it also shows the total receipts of each decade:—

Decennial Periods.	Annual Amounts.	Total Receipts to 1800, and afterwards during Decades.
	£	£
1792	45,377	—
1800	353,474	1,629,472
'10	20,871	1,106,207
'20	239,837	6,035,674
'30	118,473	1,363,896
'40	530,171	5,056,474
'50	412,861	1,199,155
'60	219,707	2,295,582

V.—*General Expenditure.*

The public expenditure in the United States, as in most other countries, has had of late years a very decided tendency to increase.

In the official documents issued by the Government it is classified under the following heads:—

1. Civil List, including Executive, Diplomatic, Consular, and Miscellaneous.
2. Department of the Interior, relating to Indians and Pensioners.
3. War Department.
4. Navy Department.
5. The Public Debt:—
   - (1.) Interest.
   - (2.) Redemption.

I shall first deal with the expenditure, exclusive of that relating to the public debt, as this last-named expenditure will be considered separately.

The entire expenditure at the commencement of the Government (excluding, as we have said, all relating to the public debt) was, for the two years and nine months between 4th March, 1789, and 31st December, 1791, 383,918*l.*, being at the rate of one hundred and thirty thousand pounds sterling per annum.

In 1792, it was 375,580*l.* By 1795 it had increased to 870,131*l.*, and it has since progressed decennially as follows:—

Decennial Periods.	Annual Amounts.	Total previous to 1800, and afterwards Receipts during Decades.
	£	£
1800.....	1,482,274	7,447,811
'10.....	1,062,216	10,965,312
'20.....	2,626,906	38,131,455
'30.....	2,645,906	24,411,471
'40.....	4,827,984	48,326,469
'50.....	7,433,198	61,380,868
'60.....	12,002,022	111,993,465
'61.....	12,071,390	12,071,390
Total	—	314,728,241

The total expenditure being nearly 315 *millions*, or about 4½ *millions* per annum; 1861 *shows a larger expenditure than any previous year.*

VI.—*The Civil List.*

The returns at command do not discriminate the heads of expenditure, until the later years.

	£
In 1841 the expenditure was	1,298,176
„ '50 „	2,967,945
„ '60 „	6,385,111
„ '61 „	4,637,440

I have analysed the expenditure for the last-named year and find the following details:—

	£	£
Civil list proper, including—		
Expenses of Congress	563,986	
Salaries and expenses of president and officers of state	376,471	
The judges' courts, &c.	136,964	
Together	—	1,231,239
Foreign intercourse, including—		
Salaries of ministers	59,068	
„ consuls, &c.	51,026	
Together	—	228,594
And under the head of miscellaneous	—	3,177,606
Giving the total	—	4,637,439

These miscellaneous items give an insight into what may be termed the *inner official life*, not altogether unworthy of notice.

Thus, amongst expenses of "Foreign Intercourse," there is this charge:—"For expenses relative to suitable acknowledgments to be "made to British naval authorities in Jamaica, 600*l.*;" and another —"Compensation to commissioner to run and mark the boundary "between the United States and British Possessions, bounding on "Washington territory, 22,000*l.*"

One of the drawbacks, incident to a large and unsettled country, is noticeable in the charges incident to the surveys. In the year now under review (1861) the total charge for inland and coast surveys is no less than 155,683*l.*

Then there is a charge of 182,322*l.* for taking the eighth census, in 1860, and two other items of curious interest, viz., "For suppres- "sion of the slave trade, 34,208*l.*," and "For removing to the coast "of Africa the captured Africans, 29,900*l.*"

The fund applied to the encouragement of patents amounted to 55,572*l.*, to which must be added 2,520*l.* for increasing the Patent Office (one of the finest buildings in America); and "for the relief of "sundry individuals, 74,917*l.*"

VII.—*Department of the Interior.*

There is no especial interest about this department, except that it appears to furnish comfortable pensions to a great number of persons.

The total expenditure of the department, for the financial year ending 30th June, 1861, was 752,004*l.*, the items being as follows:—

	£	£
Indian department	—	539,985
Pensions, military	175,293	
,, naval	32,280	
		207,573
And relief of sundry individuals	—	4,439
Making together the total named....	—	752,004

I have no means of knowing whether the expenditure in this department has shown signs of variation. It is, however, all included in the general expenditure of the Government, which has been already dealt with.

VIII.—*War Department.*

The War Department of the United States is charged, not simply with the costs of actual warfare, but also with the expenditure upon various public works, which are placed under the direction of that department.

I can find in none of the American public documents any early

records of the expenditure under this head,—nothing earlier than 1841. The results decennially from that date are:—

Periods.	Annual Amounts.	Total Expenditure during Decades.
	£	£
1841	2,740,976	—
'50	2,560,352	31,518,030
'60	3,281,953	39,068,156
'61	4,596,230	—

The details of the expenditure for the year ending 30th June, 1861, are as follows:—

For the army proper, 3,595,801*l.*; for military academy, 35,631*l.*; for army and equipping militia, 37,917*l.*; for armouries, arsenals, &c., 332,462*l.*; for fortifications and other works of defence, 201,976*l.*; for construction of roads and bridges, 15,375*l.*; for improvement of river harbours, &c., 33,431*l.* Then there is brought into this account a charge for extension of the capitol of the United States, 86,869*l.*; and for dome of said capitol, 32,999*l.*; for extension of general post office building, 17,200*l.*; for Washington aqueduct, 50,294*l.*; and for relief of sundry individuals and miscellaneous, 168,536*l.*; making up (after several deductions, by way of credits) the *four millions and a-half* with which we started.

I will here introduce another arrangement of the expenditure of the War Department, which may prove suggestive at the present moment. It is a table showing the actual expenditure during each of the five presidential terms, and the first two years of the present period, viz.:—

Presidential Periods.	Presidents.	Years in Office.	Actual Expenditure.
			£
1841–44	Harrison and Tyler	3½*	7,056,610
'45–48	Polk	4	18,442,880
'49–52	Taylor and Fillmore	4	11,065,713
'53–56	Pierce	4	13,908,219
'57–60	Buchanan	4	20,112,783
'61–63	Lincoln	2	228,345,646

IX.—*Navy Department.*

With respect to the Navy Department, the records of exact expenditure, prior to 1841, are wanting. From that date it has progressed—keeping up the decennial arrangements as far as possible—as follows:—

Periods.	Annual Amounts.	Total during Decades.
	£	£
1841	1,200,215	—
'50	1,584,663	14,575,806
'60	2,302,630	23,972,795
'61	2,485,715	—

The details of the expenditure for the year ending 30th June, 1862, are as follows:—

For pay and subsistence, 1,286,918*l.*; for increase, repairs, armament, and equipment, 511,897*l.*; for ordnance, 94,475*l.*; for navy yards, 24,299*l.*; for naval academy, 11,118*l.* Then, after omitting sundry ordinary details, come some very instructive items, viz., for six steam frigates, 38,558*l.* (being 6,426*l.* each!); for five sloops of war, 25,649*l.* (or 5,129*l.* each!); for seven steam sloops and one side-wheel steamer, 12,602*l.* (or 1,575*l.* each); and for seven steam sloops of war, "second class," is added, by way of explanation, 5,116*l.* (or 730*l.* each). If these items may be taken as a fair sample of what the American navy was made of, no wonder need be expressed that, whenever an expedition went to sea, a considerable percentage of the vessels foundered. The schedule closes with the now familiar item, "relief of sundry individuals, and miscellaneous, 31,022*l.*"

I also add the "Presidential" table, corresponding to the one prepared for the War Department, as follows:—

Expenditure of the Navy Department during each of the last Five Presidential Periods, with Two Years of the present Period added.

Presidential Periods.	Presidents.	Years in Office.	Actual Expenditure.
			£
1841–44	Harrison and Tyler	3½*	4,913,605
'45–48	Polk	4	6,003,574
'49–52	Taylor and Fillmore	4	7,141,835
'53–56	Pierce	4	9,403,644
'57–60	Buchanan	4	10,585,723
'61–63	Lincoln	2	24,970,419

* In consequence of a change which took place in 1843, of making up the public accounts to 30th June, instead of 31st December in each year, this period embraces only 3½ years' expenditure.

X.—*The Public Debt.*

In dealing with the revenue of the United States, I have been careful to exclude all such moneys as were brought into the Treasury

returns, as loans and Treasury notes; and in analysing the expenditure, I have been equally careful to exclude all those sums which had been applied either to payment of interest or liquidation of debt.

It has been the custom from the establishment of the Federal Government, as already stated, to provide for extraordinary expenditure, or to make up deficiencies in the revenue, in part by the issue of Treasury notes redeemable at short dates; or by loans at fixed rates of interest, 5, 6, or even 7 per cent., according to circumstances repayable in one, five, ten, or twenty years; some date for redemption and payment being, as far as I can gather, always fixed,—the funding system not having yet become part and parcel of American finance.

One effect of the present system is that the re-payment of the loan nearly always falls due at some distance from the date when the money was actually expended; and another effect is that very constantly money borrowed in any given year, is not for defraying any extraordinary charge incident on that year, but simply to repay money borrowed for the extraordinary purposes of previous years.

Under these circumstances, and for other sufficient reasons, I have determined to treat the public debt as entirely distinct from the other branches of finance.

The circumstances attending the establishment of the Federal Government involved it in debt; and the first financial records show the debt so incurred to have been by the 1st January, 1791, 15,092,695*l.*, and its amount at each subsequent decennial period has been as follows:—

Decennial Periods.	Amount of Public Debt.
	£
1791	15,092,695
1800	16,595,258
'10	10,634,643
'20	18,203,113
'30	9,713,081
'36	58,217
'40	1,025,013
'50	12,845,647
'60	12,953,940
'61	18,173,565

In June, 1861, the debt was about the same in amount as it was in 1820. Its highest point was in 1816, when the amount was 25,466,986*l.*, from which point it gradually declined down to 1836, since which year it has been steadily increasing.

The precise operations in regard to increasing and extinguishing the former debt, and building up the new one, will be shown in the following tables:—

Decennial Periods.	Created Loans and Treasury Notes.	£	Redeemed Principal and Interest. £
1791		1,158,695	—
—	Previously.....	15,092,695	—
1800	*Annual*	320,487	915,673
—	Ten years	4,294,312	11,010,180
1810	*Annual*	551,998	1,601,780
—	Ten years	592,967	15,729,570
1820	*Annual*	608,164	1,725,698
—	Ten years	22,198,746	26,403,826
1830	*Annual*	—	2,271,149
—	Ten years	3,000,064	21,471,519
1836	*Annual*	—	—
—	Six years	—	8,358,597

The result which this table establishes is that in respect of 46,337,479*l.* raised in loans and Treasury notes, prior to 1836, the Government had paid in principal and interest 83,973,692*l.*

I now propose to tabulate the transactions incident to the present public debt in a similar manner:—

Decennial Periods.	Created Loans and Treasury Notes.	£	Redeemed Principal and Interest. £
1840	*Annual*	1,117,909	817,322
—	Four years.....	5,031,324	4,166,428
1850	*Annual*	811,300	1,487,745
—	Ten years	25,244,833	16,776,001
1860	*Annual*	4,155,360	3,409,002
—	Ten years	14,555,100	23,646,644
1861	*One year*	8,462,898	4,444,376

The maximum rate of interest allowed by law is in New York State, South Carolina, Michigan, Wisconsin, and Iowa 7 per cent. In Georgia, Alabama, Mississippi, Louisiana, and Florida (all Southern states) 8 per cent. And, in the remainder of the States, 6 per cent.

I find it impossible to ascertain what has been the average rate of interest paid upon the public debt of the United States, from such materials as are in my possession.

The transactions in respect to the present public debt since

1836 are as follows:—53,294,155*l.* has been borrowed in twenty-five years, and 49,033,449*l.* has been paid in principal and interest in respect of the same, during that period, while the balance of the debt remains at 18,173,561*l.*

Perhaps the whole progress of the debt may be more clearly traced in this form:—

Decennial Periods.	Fresh Debt Created.	Debt Redeemed and Interest during Decades.	Debt Existing.
	£	£	£
1791.....	—	—	15,092,695
1800.....	5,453,007	11,010,180	16,595,258
'10.....	592,967	15,729,570	10,634,643
'20.....	22,198,746	26,403,826	18,203,113
'30.....	3,000,064	21,471,519	9,713,081
1836.....	—	8,358,597	58,217
'40.....	5,031,324	4,166,428	1,025,013
'50.....	25,244,833	16,776,001	12,845,647
'60.....	14,553,100	23,646,644	12,953,940
'61.....	8,462,898	4,444,376	18,173,565

The difficulty in making all the transactions absolutely clear at each stage, is the impossibility at the early period of the debt of discriminating between payment for interest, and payments in redemption of principal.

Taking the entire results as given in the last table, it appears that the United States have been borrowing for 70 years about *one million and a half* per annum, and have been paying in return, during the like period, about *two millions* per annum, having still *eighteen millions* unpaid.

The largest amount raised in any one year of the periods of which I have been speaking occurred in 1815, the amount then being 7,052,864*l.* Large amounts were also raised in the two preceding years, the United States being at the time at war with this country. In 1847-8-9, large sums were also raised for the war in Texas.

At this point I must dismiss the subject of the public debt, to return to it hereafter in its new proportions.

XI.—*Retrospect.*

The *first* section of this paper was devoted almost entirely to a record of the growth and development of the material resources of the United States;—the wonderful increase of her population; the extent of her manufactures; the amount of her shipping; the growing magnitude of her imports and exports, and of what they

chiefly consist; the resources of her banks, and the extent of her currency;—indeed, of all those elements which, in process of time, have come to be admitted as evidence of the growth and wealth of nations,—their strength and their pride. The facts presented admit of but one conclusion.

In this, the *second* section, I have traced the gradual expansion of the revenue from its several sources, and the concurrent enlargement of the expenditure, defining its objects.

And what is the obvious conclusion to be drawn from these two sections, read in the light of each other, as they are designed and intended to be? *It is, that for the last half century at least, America has been the most progressive nation in the world, and that during the same period Americans have been more lightly taxed than any other civilised people.*

This is a short inference deduced from many a data; but I believe the conclusion is obvious, and therefore do not dwell upon it.

For the purpose simply of determining the extent to which this proposition is true, I invite attention to the following table, giving the national expenditure per head of the population in all the leading European countries based upon the budgets of 1862, and estimated on the population of each country at its last census. In the case of the United States, I take the census of 1860, and the expenditure for 1861.

Country.	Population.	Expenditure (1862).	Sum per Head on Population.
		£	£ s. d.
United Kingdom	29,307,199	67,509,268	2 6 –
France	37,382,225	78,769,031	2 2 –
Russia	74,139,394	49,181,458	– 13 4
Prussia	18,500,446	20,986,261	1 2 –
Austria	35,019,058	51,035,985	1 9 –
Italy	21,920,269	38,955,382	1 15 –
Spain	15,454,514	12,720,159	– 16 5
Portugal	3,908,861	3,411,314	– 17 6
Netherlands	3,569,456	6,317,334	1 15 –
Belgium	4,731,957	5,807,055	1 4 6
	1860.	1861.	
United States	31,429,891	16,923,451	– 11 –

In this statement, the interest upon the public debt is included in the expenditure. The following table shows the amount of this interest, during the year 1862, for each country, and the sum per head on the population. In the case of the United States, the figures for 1861 are again taken.

Country.	Interest of Debt (1862).	Sum per Head on Population.
	£	s. d.
United Kingdom	26,172,606	17 –
France	23,751,289	12 7
Russia	8,596,898	2 4
Prussia	2,439,602	2 –
Austria	14,365,123	8 –
Italy	7,193,765	7 –
Spain	1,833,259	3 5
Portugal	1,572,314	8 –
Netherlands	1,733,334	9 –
Belgium	1,616,880	6 –
United States	800,034	– 6

Note.—In the materials upon which this and the preceding table is based, I am indebted to the writer of an able paper in the "Daily Telegraph."

In whichever aspect the case is viewed, but one conclusion presents itself. The United States of the past has been the most favoured amongst nations; its people the most prosperous amongst people.

Expenses *of* University Education *at* Cambridge; Past *and* Present.

By the Rev. William Emery, B.D., *Senior Fellow and Tutor of Corpus Christi College, Cambridge, late Senior Proctor, and one of Her Majesty's Preachers at Whitehall.*

[Read before Section (F) of British Association, in October, 1862.]

In early times, before any colleges were founded at Cambridge, large numbers of students frequented the University for instruction. They lived at their own charges with the townsfolk or in houses presided over by a principal, and attended the lectures of professors and teachers who came from time to time amongst them.

It is said that the university was founded about A.D. 631, by Sigibert, King of the East Angles, was revived in part by Edward the Elder, after the Danish ravages, but only became a place of systematized instruction A.D. 1109, when Joffrid, the Abbot of Croyland, sent to his Manor of Cottenham Gilbert, his fellow-monk, and professor of divinity, who, with three other monks, repaired daily to Cambridge, where, having hired a public barn, they made open profession of their sciences. The number of scholars so rapidly increased, it appears, that in the second year one building would not suffice. Therefore in different quarters of the town, and at different hours, the various teachers gave their instruction, which consisted of grammar, logic, and rhetoric; with divinity on Sundays and Holy Days.

It was not till A.D. 1257, that the first college, St. Peter's, was founded by Hugh de Balsham, who in the year 1280, when Bishop of Ely, endowed the college with revenues for the support of a master, fourteen fellows, two Bible-clerks, and eight poor scholars.

According to the survey of this and other colleges in 1545 and 1546, by the commissioners, Drs. Parker, Redman, and May, each Bible-clerk was then allowed for commons and diet 2*l.* 4*s.* 4*d.*, and we may fairly consider the expense of an ordinary student at that time to range from 2*l.* to 2*l.* 10*s.* a-year.

In A.D. 1550, a Mr. Thomas Lever, when preaching at St. Paul's Cross against the covetousness and injustice of courtiers and others who had, as he declared, contrary to the king's intentions, filched the revenues which had formerly supported students, gives an interesting view of the state of the university and mode of life at this time:—"For before that you did begin to be disposers of the king's

"liberality towards learning and poverty, there was," he declares, "in houses belonging to the University of Cambridge, two hundred "students of divinity, many very well learned: which be now all "clean gone, house and man, young toward scholars, and old "fatherly doctors, not one of them left: one hundred also of another "sort, that having rich friends, or being beneficed men, did live of "themselves in ostries and inns, be either gone away or else fain to "creep into colleges and put poor men from bare livings. Those "both be all gone, and a small number of poor, godly, diligent "students now remaining only in colleges, be not able to tarry and "continue their study for lack of exhibition and help. There be "divers there which rise daily betwixt four and five of the clock in "the morning, and from five until six of the clock use common "prayer, with an exhortation of God's word, in a common chapel, "and from six unto ten of the clock use either private study or "common lectures. At ten of the clock they go to dinner, where "as they be content with a penny piece of beef amongst four, having "a few porage made of the broth of the same beef, with salt and "oatmeal, and nothing else.

"After this slender dinner, they be either teaching or learning, "until five of the clock in the evening, when as they have a supper "not much better than their dinner. Immediately after the which "they go either to reasoning in problems or unto some other study, "until it be nine or ten of the clock, and there being without fire, "are fain to walk or run up and down half-an-hour to get a heat "on their feet when they go to bed."

Passing on a century, there is a letter of Strype, when an undergraduate at Jesus College, written to his mother in 1662, which gives an idea of student life and expenses at that period.

Strype first of all explains that he paid 1 per cent. more for taking up his things than towns-people. "Dr. Pearson paid so," he writes, "and several other lads in this college, and my tutor told me "they would expect so much of me, being a scholar, and I found it "so. Do not wonder," he continues, "so much at our commons; "they are more than many colleges have. Trinity itself, which is the "famousest college in the university, have but three-halfpence.

"We have roast meat, dinner and supper, throughout the week: "and such meat as you know I had not use to care for: and that is "veal: but now I have learned to eat it. Sometimes, nevertheless, "we have boiled meat with pottage: and beef and mutton, which I "am glad of, except Fridays and Saturdays, and sometimes "Wednesdays, which days we have fish at dinner and tansy or "pudding for supper. Our parts are slender enough. But there "is this remedy: we may retire into the butteries and there take a "halfpenny loaf and butter or cheese: or else to the kitchen, and

"take there what the cook hath. But, for my part, I am sure, I "never visited the kitchen yet since I have been here, and the "butteries but seldom after meals, unless for a ciza, that is a farthing-"worth of small beer: so that less than a penny in beer doth serve "me a whole day.

"I have thoughts of a chamber which is a very handsome one, "and one pair of stairs high, and that looketh into the Master's "garden. The price is but 20*s.* per annum, ten whereof a knight's "son doth pay, so that I shall have but 10*s.* to pay a-year, besides "my income, which may be about 40*s.* or thereabouts. At my first "coming I laid alone, but since, my tutor desired me to let a very "clean lad lay with me, and an alderman's son, of Colchester, which I "could not deny, being newly come: he hath laid with me now for "almost a fortnight, and will do till he can provide himself a chamber.

"We go twice a-day to chapel, in the morning about seven, and "in the evening about five. After we come from chapel in the "morning, which is towards eight, we go to the butteries for our "breakfast, which usually is five farthings—an halfpenny loaf and "butter, and a ciza of beer. But sometimes I go to an honest house "near the college, and have a pint of milk boiled for my breakfast."

Strype, it seems, went to London on horseback, which cost 10*s.*

Passing over another century, the expenditure in 1768 is found to have much increased. Tutorial fees were larger, and private tutors were employed at the rate of 20*l.* per annum. Attempts were also made by the vice-chancellor to build an amphitheatre for music and lectures, which were severely condemned by many on the ground that "the dissipation of the students needed no such public "encouragement."

About this time efforts were made by Dr. Jebb and others to increase and extend university examinations, which finally were successful, and may be considered to have led to the present system of competition for classes and prizes.

Fifty years later it is evident that a different class took advantage of the university, at least in larger numbers, from the numerous entries of noblemen and fellow-commoners at the various colleges, especially at St. John's. As a consequence, more expensive habits were introduced amongst the students generally. The evidence of trustworthy witnesses affords no doubt that extravagance, intemperance, immorality, and lax discipline reached their height thirty or forty years ago.

Of late years there has been a manifest improvement in these and other respects. This is due to several causes, amongst which may be mentioned the improved condition of the examinations, the extra reading required for the professor's certificate from the pollmen, the more regular attendance at lectures, the shortening of

the term of residence for the ordinary degree to two years and three-quarters, or nine terms of actual residence, the more frequent celebration of Holy Communion in the chapels, the introduction of college sermons, and, perhaps more than all, the increased interest which the men, year by year, take in religious work and healthful athletic sports.

A larger proportion of sober-minded, thoughtful, religious men come yearly into residence, and the riotous, careless, spendthrift set is much reduced in consequence.

The expense which students of different classes now necessarily incur during three terms of residence each year and long vacation is as follows. The estimates do *not* include private tuition, but *do* include college bills for instruction, commons, terminal payments, grocers' and booksellers' bills, travelling expenses to and from Cambridge, pocket money, and generally tradesmen's bills for personal expenditure and entertainments. For a very economical student, 125*l.*; for one whose friends do not wish him to be separated from any reasonable enjoyment whilst avoiding extravagance, 250*l.* The average annual outlay may be put down at 180*l.*

Many men do, however, by very great economy pass through for 100*l.* a-year, and if resident with friends in the town for much less.

If the student is to obtain prizes, scholarships, or fellowship, or in many cases even to pass with credit, he must have a private tutor, whose fee for a term is 8*l.*, and for a long vacation 12*l.* The employment of a private tutor will therefore add 24*l.* or 36*l.* to the average annual expense.

For deserving students considerable aid is afforded by exhibitions, sizarships, and scholarships, which in almost all cases will suffice for a private tutor, and in some provide more than sufficient for the whole expense of the education.

The estimates which have been given agree with the evidence tendered to Her Majesty's Commissioners in 1850 and 1851.

In the report then published, it was stated that the necessary college expenses are already so small as to be incapable of reduction, and that other expenses can only, or chiefly, be checked by judicious parents and guardians, and by careful oversight of tutors and others.

The evidence of the Master of Trinity College is well worthy of attention. "The expensiveness of students at the university is in a "great measure the act of the students themselves, not in con-"sequence of, but in spite of the measures taken by the university "and by colleges. The necessary college bills are everywhere small. "The additional expenses incurred by students, for dress, luxuries, "entertainments, and amusements, may be very large, and are very "difficult to control.

"The amount of such expenses depends very much upon the "previous habits of the students, as formed in their own families, "and at the schools where they have been, and upon the conduct of "their parents and friends. When a student has been accustomed "to expensive habits at home and at school, as is very often the case, "it is very difficult to prevent such habits at college, where he is "necessarily less closely and constantly subjected to control. Nor "can it be proper to conceal the fact that the conduct of parents "and friends very often greatly increases the difficulty of controlling "the expenses of students disposed to be extravagant. Such "guardians of our young men, often though loud in their complaints "of their extravagance and of the college and university authorities "for not preventing it, are not ready to aid the authorities in "enforcing measures really effectual for that purpose, either by "making the payments of tradesmen's bills dependent upon there "being a proper reserve in the credit given, or by removing from the "university a student when he shows a disposition to be extra-"vagant, or by pleading his minority in cases where this may be "reasonable, or by assisting the authorities in other measures for "controlling extravagant expense."

There is no doubt that expensive habits are frequently brought by students from the public schools, and form a serious obstacle to the growth of carefulness and frugality among the undergraduates. "If boys cost 200*l.* or 300*l.* a-year at Eton or Harrow, they are not "likely to live on less at Cambridge."

A mass of evidence, touching the expenses of the undergraduate course, was presented to the Cambridge University Commission, and as might be supposed, the estimates given differed widely. It was agreed by all that the necessary expenses of a university education, about 90*l.* a-year, cannot be materially diminished, and that the other expenses must depend upon the vigilance of tutors, parents, and guardians.

What is economy in one man is extravagance in another, and therefore the total justifiable expenditure must be regulated by the private circumstances and means of the student.

The difficulty of giving even an approximate estimate of the actual expenses of a student from the tutor's accounts merely was well illustrated by a return to the Commissioners of the expenditure of 104 students of Christ's College, so far as known to the college authorities. The net returns for these 104 from time of entry till the B. A. Degree, including eleven terms (3½ years) of actual residence, and one, two, or three long vacations, may be tabulated thus:—16 were under 200*l.*, 12 under 300*l.*, 23 under 400*l.*, 18 under 500*l.*, 11 under 600*l.*, and 24 over 600*l.* One return was only 155*l.* 11*s.* 6*d.*, another 1,015*l.* 12*s.* 6*d.* Probably in the one the

student paid for many things which in the other were defrayed through the tutor.

The late master of St. John's wrote thus:—"The necessary "expenses of the general classes of students, from the time of "entrance to that of taking the First Degree, may be estimated as "follows:—nobleman 650*l.*, fellow commoner 485*l.*, pensioner 355*l.*, "sizar 220*l.*" "It is difficult," he adds, "to give an accurate answer "respecting the *actual* expenses. These for a diligent and prudent "student in each of the same classes, need not exceed the following "estimates:—

"Nobleman 1,400*l.*, fellow commoner 1,050*l.*, pensioner 630*l.*, "sizar 180*l.* The actual expenses of many persons in each of these "classes fall considerably below this estimate. No allowance for "private tuition is included."

There can be no doubt that an allowance of from 200*l.* to 300*l.* a-year will enable a student to pass most comfortably through the university with the assistance of a private tutor, and without other aid as exhibitions, scholarships, &c.

No doubt this sum will prevent many from taking advantage of the benefits of an university education, but it certainly seems to point conclusively to this important fact—important for the nation as well as for individuals—that *an university education is within reach of large numbers who at present neglect to profit by it.*

The object of this paper is not to discuss the reason of this neglect, or to explain why the number of students at the ancient universities of Cambridge and Oxford do not increase proportionally to the increase of wealth and population in the empire.

But a few words in conclusion on this topic will be, perhaps, pardoned.

It is possible the old universities do not yet meet the varied educational wishes of the public. Many changes, however, have of late been introduced for this purpose, and new sciences and studies have obtained more consideration than formerly. Much, doubtless, remains to be done. Even the old schools of divinity, law, and physic (especially the two former) are not so flourishing as they ought to be, and certainly demand very careful attention from the professors to render them worthy of modern requirements.

The social advantages of an university education cannot be denied or over-estimated.

The meeting on the common ground of studentship by the various ranks of social life has a most beneficial effect upon society generally, and helps to weld class with class whilst opening up honourable positions and emoluments for the deserving, whether rich or poor.

The expense of an university education might possibly after all

be somewhat diminished and perhaps will be by the late re-adjustment of college revenues. But be this as it may, much might be done to increase the number of students, if the wealthier portion of the public would imitate more often the liberality of their forefathers who, in days past, charitably bestowed of their goods to provide for poor scholars; and for the encouragement of sound learning and religious education at the colleges.

It appears granted on all sides that an unlearned non-university clergy would be a frightful calamity for the country; and if so, active measures should be taken to provide means for sending to our ancient universities, from the public and private schools of the kingdom, a sufficient supply of able young men at least for the wants of the Church.

The objection to increase of numbers of resident students in the colleges from moral considerations; or, from fear of encouraging expensive thoughtless habits is, in the main, void of solid foundation.

Residence in Cambridge for twenty years as student and tutor, and two years experience of proctorial duties, once in 1851 as pro-proctor, and last year (1861-62) as senior proctor, enables the writer to assert with something like authority, that the dangers of an university life are greatly exaggerated. Amongst 1,600 or 1,700 young men drawn from the upper and middle ranks, there will always, of course, be found some who abuse their gifts and opportunities; but, as a rule, rioting, dissipation, and undue expenditure are restricted to comparatively few, and rather brought into Cambridge from some of our public schools, than produced during residence in the university.

A learned principal of one of our collegiate establishments in the West of England has but stated the truth that the conduct and whole bearing of Cambridge students contrasts favourably with that of an equal number of young men in London, Liverpool, and elsewhere.

It is impossible to test the moral condition of the students by statistical reference to recorded punishment, for as a fact discipline is exercised rather in private than public. Severe punishments are seldom inflicted by formal sentence. If a student is considered to deserve dismissal from college, his friends are generally requested to remove him permanently, or for a limited period. Such removals or rustications are, however, very rare. Without doubt the discipline in most of the colleges might be advantageously increased, especially in the case of Trinity College, where half the men, for want of sufficient college accommodation, are obliged to live in lodgings in various parts of the town.

The lodging-house system is in principle and practice bad, and no regulations can wholly prevent the evils which must ever, to some

extent, follow from it. It would be well if colleges did not take more students than they could accommodate. They might raise new buildings, or establish halls or hostels. At least they might agree to mass together as much as possible the lodgings, and put them under efficient supervision.

Both the proctorial and the lodging-house system are capable of manifest improvement, and there are indications that the authorities are more willing than formerly to consider this. All such improvement of internal administration will have a beneficial effect upon the men, and tend to lessen still more the temptations to idleness, sin, and extravagance, which, even at present, are small compared with other places and youths similarly circumstanced.

Note.—The present system of independent colleges, with their separate establishments of cook, butler, combination-man, gyps, waiters, and bedmakers, is a serious difficulty in the way of reduction of expenses.

The principal servants expect, even in the small colleges, 200*l.* and 300*l.* a-year, so that in a college of sixty members the cost of service to the students is not less than 1,500*l.*

If the expense of an university education is to be much reduced it can only be by the introduction of hostels conducted on principles of economy and discipline, like the College of St. Augustine's, Canterbury, and other similar places. Such hostels would be a great novelty and meet with much opposition from those who are unwilling to see amongst the students more marked social disparity than at present. The advantages of an university education could, however, be thus put within reach of larger numbers of students ready, for learning's sake and future usefulness, to live after the self-denying fashion of those mentioned by the preacher, Thomas Lever, A.D. 1550.

The new order of men thus introduced might help to supply the felt want of a well educated but very moderately recompensed clergy, and might also correct the present tendency to immoderate pleasure and feastings which helps to increased expenditure and threatens mischief to sound learning and religious education.

APPENDIX A.

The following statistics of revenues, incomes, &c., gleaned from the Reports of Royal Commissioners, concerning St. Peter's College, the first college founded in the university, are not without interest. Like changes have taken place in the other colleges.

A.D. 1545-46.	£	s.	d.	
Master's stipend, commons, and livery.....	7	3	4	per annum.
14 fellows' „	5	3	4	„ each.
2 bible clerks	2	4	4	„ „

(There were also 11 poor scholars.)

The clear revenues were 138*l.* 3*s.* –¾*d.* per annum, being less than the expenses by 49*l.* 15*s.* 5*d.*

The following is a statement of the particular sum received by the master in each of the seven years ending at Michaelmas last (1851), out of the net income before estimated. This statement does not include the income arising from a living attached to his office by an Act of Parliament or the proceeds of certain property, which has been bequeathed by various benefactors, and of which, in practice, he has the exclusive management.

	£	s.	d.
1851	419	11	5
'50	471	3	2
'49	536	9	11
'48	416	10	2
'47	451	10	–
'46	361	10	10
'45	356	9	6½
Total.....	3,013	5	–½
Average	430	9	3

The following is a statement of the sum received by a foundation fellow, in each of the seven years before mentioned.

	£	s.	d.
1851	252	6	11
'50	304	1	2
'49	368	5	4
'48	245	4	6
'47	260	15	4
'46	189	–	7
'45	186	9	6
Total	1,806	3	4
Average	258	–	5

In these two statements income tax is supposed to be deducted. Each of the eight senior foundation fellows received a small additional sum, varying, in their respective cases, from 2*l.* to 7*l.* –*s.* 3*d.*; or, if income tax be deducted, from 1*l.* 18*s.* 10*d.* to 6*l.* 16*s.* 2*d.* In the statement of a fellow's income, the rent of his rooms has been included, but not commons in hall.

There are no foundation scholars. There were, however, sixty-eight scholarships on sixteen different foundations, two exhibitions, and four sizarships, of varying values from 30*l.* downwards.

The total aggregate of gross income is about 7,317*l.* 3*s.* –*d.*, that of net income about 5,923*l.* 14*s.* 4*d.*

This statement includes not only the income of the foundation estates and property, but also the income arising from benefactions, and from the estates and property of all supplemental or bye-foundations; and that arising from or belonging to the Domus fund, and the chapel, library, lecture-room, graduates' composition, building, and advowson funds.

APPENDIX B.

The following table, drawn from the Report of the Royal Commissioners, concerning the expenses of 104 students at Christ's College mentioned in this paper, as given by the master, will afford the best possible illustration of the various kinds of students which frequent the university, as well as of the aids which deserving students can obtain.

This aid has been largely increased in most of the colleges by late adjustments, and a second table of scholarships, exhibitions, &c., as at present arranged, is appended.

This second table, with other matter of an useful and necessary kind for parents and guardians who wish to obtain the best and most recent information, will be found in "The Students Guide," published by Deighton and Bell, Cambridge.

The writers of the papers contained in this excellent work are some of the leading residents at Cambridge, actively engaged in tutorial and professional duties.

In addition to college help, a large number of students bring with them school exhibitions, grants from societies and companies, &c., so that many, especially sizars, actually pass through at no private expense, and in some cases make a profit by residence.

A third table of such assistances is appended, by R. Potts, Esq., M.A., of Trinity College, which, with other valuable matter, will be found in his "Liber Cantabrigiensis," parts 1 and 2.

The second of the succeeding columns gives, in each case, the total of all the bills charged to the student, &c.

Total Expenses of 104 *Students of Christ's College, Cambridge, who proceeded regularly to their First Degree in the Years* 1843-49 *inclusive; so far as those Expenses came under the knowledge of the College Tutors.*

*** All the Students in the following list proceeded to the Degree of B.A., except No. 87 and No. 101, both of whom proceeded to the Degree LL.B.

No.	Total Bills charged to each Student.	Scholarships, Exhibitions, &c., allowed.	Actual Net Expense of each Student.	Residence.		No.	Total Bills charged to each Student.	Scholarships, Exhibitions, &c., allowed.	Actual Net Expense of each Student	Residence.	
				Number of Terms.	Long Vacations.					Number of Terms.	Long Vacations.
	£	£	£				£	£	£		
1	575	164	410	11	1	41	377	—	377	11	—
2	464	69	384	11	1	42	410	39	371	11	1
3	988	—	988	13	—	43	330	171	159	11	—
4	366	185	181	11	1	44	322	—	322	12	—
5	494	1	493	11	1	45	478	62	416	11	—
6	397	66	331	11	2	46	544	—	544	11	—
7	442	—	442	11	—	47	434	105	329	11	—
8	458	45	412	11	2	48	535	80	454	11	3
9	553	91	461	11	2	49	672	—	672	11	—
10	242	—	242	11	—	50	438	74	364	11	1
11	1,015	—	1,015	11	—	51	226	84	141	11	2
12	383	1	382	11	—	52	323	62	261	11	—
13	742	382	360	11	2	53	436	226	209	11	2
14	700	—	700	11	—	54	495	163	332	11	3
15	492	79	412	11	2	55	516	103	413	11	1
16	368	129	239	11	2	56	784	365	418	12	1
17	465	85	380	11	—	57	470	—	470	11	—
18	707	429	277	13	1	58	193	—	193	11	—
19	624	81	542	11	2	59	509	—	509	11	—
20	393	—	393	11	—	60	513	42	470	11	1
21	536	—	536	11	—	61	361	71	289	11	1
22	722	—	722	11	—	62	211	—	211	11	—
23	717	2	715	11	2	63	677	—	677	11	—
24	415	57	357	11	1	64	515	—	515	12	1
25	629	—	629	11	1	65	615	—	615	11	—
26	460	62	397	11	1	66	808	—	808	12	—
27	400	—	400	10	—	67	546	—	546	11	—
28	308	—	308	11	—	68	338	—	338	11	—
29	519	—	519	11	—	69	457	141	316	11	2
30	129	—	129	11	—	70	310	51	259	11	—
31	566	30	535	11	2	71	456	84	371	11	3
32	276	76	199	11	2	72	650	—	650	12	—
33	439	73	365	11	2	73	312	55	256	11	—
34	244	—	244	11	—	74	672	—	672	11	—
35	330	94	236	11	3	75	748	—	748	11	—
36	695	—	695	11	—	76	317	161	156	11	—
37	604	—	604	11	—	77	561	—	561	11	—
38	557	88	468	12	—	78	525	57	468	11	—
39	469	—	469	11	—	79	862	—	862	11	—
40	383	2	380	11	—	80	175	—	175	11	—

Total Expenses of 104 *Students of Christ's College Cambridge—Contd.*

No.	Total Bills charged to each Student.	Scholarships, Exhibitions, &c., allowed.	Actual Net Expense of each Student	Residence.		No.	Total Bills charged to each Student.	Scholarships, Exhibitions, &c., allowed.	Actual Net Expense of each Student	Residence.	
				Number of Terms.	Long Vacations.					Number of Terms.	Long Vacations.
	£	£	£				£	£	£		
81	300	—	300	11	—	93	201	4	197	11	—
82	188	203	*—	11	—	94	251	10	240	11	1
83	383	97	286	11	—	95	216	10	206	11	—
84	155	39	116	11	—	96	334	12	322	11	1
85	577	50	526	11	1	97	233	76	157	11	—
86	505	89	416	11	1	98	483	59	423	11	1
87	531	—	531	12	—	99	211	15	196	11	—
88	321	—	321	10	—	100	181	8	173	11	—
89	165	12	153	11	—	101	364	9	355	11	—
90	174	12	162	11	—	102	209	87	122	11	—
91	286	198	87	11	1	103	719	—	719	11	—
92	281	149	132	11	2	104	600	—	600	12	—

Note. — The students, Nos. 1 to 88, were "pensioners;" Nos. 89, 90, and 91 were "sizars;" Nos. 92 to 101 were "pensioners" about half their time and "sizars" the remainder; No. 102 was a "pensioner;" No. 103 and No. 104 were "fellow commoners."

The students, Nos. 30 and 80, resided in Cambridge, with their families; and No. 102 was permitted to reside the shortest time allowable in each term.

* No. 82. This student received the difference, 25*l.* 14*s.* 9*d.* He was scholar of the college; and twice first prizeman.

The figures above have been taken from the Report of the University Commission; to save space the fractions of a pound have been struck out, which has caused, in some instances, a discrepancy in the final unit of the net expense.

APPENDIX C.

In October of last year one of the tutors of St. John's College, Cambridge, kindly forwarded the following particulars to assist in drawing up the paper for the statistical section of the British Association.

Necessary Annual Expenses of a Pensioner at St. John's College for a year, exclusive of tradesmen's bills, private tuition, &c.

	£	*s.*	*d.*
Dinner, 175 days	12	11	6¾
Sizings, viz., bread, butter, cheese, and letters	5	16	8
Service, taxes, library, &c.	6	13	8
Bedmaker	6	6	–
Shoecleaner	1	10	–
Laundress	7	4	–
Tuition	18	–	–
Rent, from 12*l.* to 22*l.*, say	18	–	–
Coals	3	5	–
Milk, &c.	1	10	–
	80	16	10¾

The sizar's charges are smaller in the items of dinner, viz., 11¾*d.* instead of 1*s.* 5¼*d.* per diem; tutors, 6*l.* instead of 18*l.*; weekly charges, 1*s.* 3*d.* instead of 5*s.*

Actual college accounts of nine pensioners during the year 1861-62.

A accounts of *expensive* men.
B „ *ordinary* men.
C „ *economical* men.

All the accounts include such tradesmen's bills as were put in. P. T. means that the student had private tuition throughout the year; ½ P. T. for a part of the year; and where no letters are attached, the student did not avail himself of private tuition.

	£	s.	d.	
A (1)	200	–	1	P. T.
(2)	159	7	9	
(3)	165	12	1	½ P. T.
B (1)	102	15	7	½ P. T.
(2)	111	–	–	
(3)	119	4	1	P. T.
C (1)	114	2	11	P. T.
(3)	74	5	6	
(3)	119	8	11	P. T.

Actual sizars' expenses during the year 1861-62. P. T., as before, means private tuition throughout the year.

	£	s.	d.	
One	127	10	5	P. T.
Two	104	13	4	„
Three	89	–	7	„
Four*	49	10	7	
Five*	45	8	11	
Six*	39	16	2	

The following account of a first year's expenditure of an economical Oxford student, reading only for an ordinary degree, and supposed to spend in London or elsewhere twenty-eight weeks of vacation, may be interesting. The small amount for books is explained by the fact of presents and borrowings.

	£	s.
Entrance fee, including matriculation	6	8
Caution	21	–
Furniture	10	–
Tuition fees	12	12
Room, rent	10	10
Buttery (for meals)	23	10
College servants	4	–
Scout	3	15
Washing	4	–
Subscriptions	4	–
Travelling	5	–
Clothes	15	–
Books	1	–
Writing materials	2	–
Extras, wine, &c.	10	–
	132	15

* It would appear these sums must be after deductions for scholarships, &c.

For the next two years this amount would be diminished by entrance fee and caution, but other payments to the university for examinations and degree must be included. A student, a B.A. of Oxford, spent 340*l.* in three years without private tuition. Thus it may be gathered that there is little or no difference of expense at the two universities for ordinary students.

APPENDIX D.

Exhibitions in the Gift of the Chartered Companies of London, for Students at Cambridge.

(From "Lib. Cantab.," part 1, pp. 533, &c.)

Name of Company.	Number of Exhibitions.	Yearly Value. £ s. d.	Tenure.
Clothworkers'	1 or more	25 – – total	3 years
	6	20 – – each	—
Carpenters'	1	4 – –	3 years
Cordwainers'	2	4 – – each	5 „
Ironmongers'	1	2 10 –	till B.A.
	1	30 – – about	—
	2	4 – – each	3 years
Salters'	2	5 – – „	—
Skinners'	2	15 – – „	—
	1	5 – –	—
Drapers'	1	6 13 4	6 years
Grocers'	8	25 – – each	not more than 4 years
Goldsmiths'	1	5 – –	7 years
	17	30 – – each	12 terms from residence
Haberdashers'	1	10 – –	during residence
	1	5 – –	—
	1	5 – –	4 years
	3	6 13 4 each	—
	4	12 – – „	—
Mercers'	4	20 – – „	7 years, if resident
	4	30 – – „	7 „
	2	50 – – „	—
	3	14 – – „	—
Merchant Taylors'	1	12 – –	—
Cutlers'	2	20 – – each	till M.A., if resident
Bowyers'	3	10 – – „	—
Leather-sellers'	2	20 – – „	4 years
	2	65 – – „	5 „
	1	36 – –	4 „
	1	4 – –	4 „
Fishmongers'	2	4 – – each	—
	12	20 – – „	—

APPENDIX E.

Statement of the Number and Annual Value of the Open Scholarships in the Colleges of Cambridge University, in or about the Year 1863.

Names of Colleges.	Total Annual Value of Scholarships.	Number, and the Annual Value of Scholarships, &c., at each College.
	£	
St. Peter's	1,060	12 at 60*l.*; 6 at 40*l.*; 5 at 20*l.*
Clare	1,060	8 at 60*l.*; 8 at 40*l.*; 8 at 20*l.*; also 1 minor scholarship at 60*l.*, and 1 at 40*l.*
Pembroke	840	8 at 60*l.*; 6 at 40*l.*; 6 at 20*l.*
Gonville & Caius	1,320 452	9 at 60*l.*; 9 at 40*l.*; 6 at 30*l.*, and 12 at 20*l.*; and 4 studentships in medicine of 11*3l.*
Trinity Hall	—. 150 110	3 at 60*l.*, and 13 varying from 50*l.* to 13*l.*; and 3 studentships in law at the present value of 50*l.* per annum. There are also two exhibitions at 60*l.* and 50*l.* respectively
Corpus Christi	580	4 at 60*l.*; 6 at 30*l.*; 4 at 25*l.*; 2 at 20*l.*; 1 at 20*l.*, with rooms rent free
King's	3,840	24 at 80*l.*, appropriated to the scholars of Eton College; and 24 open scholarships at 80*l.*
Queen's	550	4 at 50*l.*; 5 at 40*l.*; 5 at 30*l.*
St. Catherine's	775	2 at 50*l.*; 10 at 40*l.*, with rooms rent free; 9 at 25*l.*; and 10 "master's sizarships" of the value of 50*l.* per annum
Jesus	1,055	5 at 50*l.*; 6 at 30*l.*; 4 at 20*l.*; 14 Rustal scholarships at 30*l.* to 40*l.*; 1 about 40*l.*, and 1 at 15*l.* The last 16 are for the sons of clergymen
Christ's	1,470	12 at 70*l.*; 6 at 50*l.*; 11 at 30*l.*
St. John's	about 6,200 is set apart from the revenues of the College for the maintenance of scholarships, &c. * * * * "tenable by persons *in statu pupillari*."	60 at 50*l.*; 8 (minor) at 50*l.*; 1 divinity studentship at 100*l.*, tenable for three years; a Hebrew scholarship at 32*l.*; and 910*l.*, which is given away annually to the "most deserving students;" 9 *proper* sizars at 35*l.*; the ordinary sizarship is worth 25*l.* a-year.
Magdelene	420	3 at 60*l.*; 3 at 40*l.*; 6 at 20*l.*
Trinity	4,670 960	72 at 60*l.*, with "dinner in hall;" 6 minor scholarships at 50*l.*; 1 Sheepshank's exhibition at 50*l.*; 16 sizars at 60*l.* each.
Emmanuel	1,020	12 at 60*l.*; 5 at 30*l.*, and 5 at 30*l.* (Dr. Thorpe's)
Sidney Sussex	720*	18 is to be the number of foundation scholarships* as a *minimum;* the value 40*l.* per annum each
Downing	—	"The annual value of a foundation scholarship will be 50*l.*, with the addition, in some cases, of rooms rent free and allowance for commons"

Note.—The particulars given above have been abstracted from the very serviceable little book before mentioned entitled the "Student's Guide to the "University of Cambridge," q. v., pp. 292 *et seq.* It will be seen, on reference to this manual, that there are many emoluments which the various colleges hold at their disposal for the benefit of deserving students, in addition to the "open" scholarships noted in the statement. The aggregate value of the open scholarships is over 27,000*l.* a-year; but, as will be seen on reference to the second column of the table, the total value in some cases appears not to be known.—ED. *S. J.*

Exhibitions and Scholarships attached to the Public and other Schools in England and Wales, and tenable by Students from these Schools in the University of Cambridge.

(From "Liber Cantabrigiensis," parts 1 and 2.)

County.	School.	Number of Exhibitions.	Yearly Value.	Tenure.	At what College.
			£ s. d.		
Bedfordshire	Bedford Free Grammar	8	80 – –	4 years	Unrestricted
Buckinghamshire	Eton College	24	80 – –	during residence	King's
		1	—	5 years	Unrestricted
		1	45 – –	till 24 yrs. of age	—
		2	40 – –	4 years	Unrestricted
		1	36 15 6	5 „	„
		1	42 – –	4 „	„
		1	51 10 –	till 24 yrs. of age	„
		1	42 – –	4 years	King's
		1	60 – –	4 „	Unrestricted
		1	25 (about)	3 „	„
Cambridgeshire	Wisbeach Free Gram.	3	70 – –	—	Magdalene
Cheshire	Chester Cathedral Gram.	2	5 – –	till B.A.	Unrestricted
		1	80 – –	—	„
	Macclesfield Free Gram.	2	50 – –	3 years	„
Cumberland	St. Bees „	3	28 – –	—	Pembroke
	Stockport Gram.	2	50 – –	3 or 4 yrs.	Unrestricted
Derbyshire	Ripton	2	50 – –	3 years	„
	Chesterfield Gram.	1	10 (about)	—	„
	Derby Free Gram.	1	—	—	St. John's
		2	50 – –	—	Emmanuel
Devonshire	Exeter „	6	40 – –	7 years	Unrestricted
		2	25 – –	—	St. John's
		1	40 – –	5 years	Unrestricted
	Tiverton „	3	60 – –	3 „	Sidney Sussex
		1	30 – –	—	„
	Kingsbridge Free Gram.	1	50 – –	4 years	Unrestricted
	Ashburton „	1	4 – –	4 „	„
		1	6 – –	—	„
	Crediton „	3	—	—	„
	Tavistock Gram.	1	40 – –	—	„
Dorsetshire	Sherborne King's Gram.	4	40 – –	4 years	„
	Dorchester Free Gram.	2	30 – –	3 „	„
		1	7 10 –	—	St. John's
Durham	Durham Gram.	2	10 – –	4 years	Unrestricted
		*1	16 – –	till M.A.	Emmanuel
		3	30 – –	4 years	St. John's
	Houghton-le-Spring Gram.	1	30 – –	3 „	Unrestricted
Essex	Colchester Free Gram.	1	7 – –	—	St. John's
	Dedham „	2	35 – –	5 years	„
Gloucestershire	Wootton-under-Edge Gram.	—	60 – –	4 „	Unrestricted
Hampshire	Winchester College	8 (about)	50 – –	4 „	„
		5 („)	30 – –	4 „	„
	Ringwood Gram.	1	6 – –	4 „	„
	Basingstoke	1	30 – –	—	„

* Scholars are eligible also from Newcastle-on-Tyne Grammar School.

Exhibitions and Scholarships attached to Public and other Schools—Contd.

County.	School.	Number of Exhibitions.	Yearly Value. £ s. d.	Tenure.	At what College.
Herefordshire...	Hereford Cathedral	12	50 – –	3 years	St. John's
		8	40 – –	4 „	„
	Luston Free Gram.	1	52 10 –	4 „	Unrestricted
Hertfordshire....	Aldenham „	8	40 – –	4 „	„
Kent	Canterbury King's	2	30 – –	—	Corpus Christi
		1	6 13 4	—	„
		1	10 – –	—	„
		4	6 – –	7 years	Unrestricted
		2	60 – –	4 „	„
		1	9 – –	7 „	„
		1	15 – –	1 „	„
	Rochester Cathedral Gram.	4	30 10 –	—	„
		1	5 – –	—	„
	Tunbridge Free Gram.....	16	100 – –	4 years	„
		1	36 – –	4 „	„
		6	16 – –	7 „	„
		2	50 – –	—	Jesus
		2	6 – –	—	St. John's
		1	2 13 4	—	Unrestricted
	Cranbrook Gram.	1	20 – –	—	„
	Lewisham Free Gram.....	Exhibitions suspended, 1855			
	Sevenoaks	2	65 – –	4 years	Unrestricted
	Sutton Valence Free Gram.	1	20 – –	—	„
		1	20 – –	4 years	St. John's
	Blackheath Proprietary	1	50 – –	3 „	Unrestricted
Lancashire	Manchester Free Gram.	number variable	60 – –	4 „	„
		12	50 – –	3 „	St. John's
		8	40 – –	4 „	„
	Bolton Free Gram.	2	60 – –	4 „	Unrestricted
	Blackrod Gram.	1	65 – –	4 „	Pembroke
		1	5 – –	—	„
	Bury Free Gram.	2	40 – –	—	St. John's
	Liverpool Collegiate Institution.....	3	40 – –	3½ years	Unrestricted
		1	50 – –	3½ „	„
Leicestershire	Ashby-de-la-Zouch Gram.	2	40 – –	till B.A.	„
		2	50 – –	—	Emmanuel
	Leicester Collegiate	2	25 – –	3 years	Unrestricted
	Loughborough Gram.	2	30 – –	till M.A.	Jesus
	Market Bosworth Free Gram.	2	50 – –	till B.A.	Emmanuel
		4	80 – –	4 years	Unrestricted
Lincolnshire	Grantham Free Gram.....	8	From 30 – – to 50 – –	4 „	„
		1	40 – –	3 „	St. John's
		2*	45 – –	—	Sidney Sussex

* In default of candidates from Grantham School, scholars from Oakham School are eligible.

Exhibitions and Scholarships attached to Public and other Schools—Contd.

County.	School.	Number of Exhibitions.	Yearly Value. £ s. d.	Tenure.	At what College.
Lincolnshire— *contd.*	Stamford Free Gram.	1	20 – –	till B.A.	St. John's
		1	12 – –	—	Unrestricted
		2	50 – –	4 years	„
	Louth „	1	6 8 6	—	Jesus
	Boston Gram.	2	40 – –	—	Unrestricted
	Butterwick Free Gram.	1	20 – –	4 years	„
Middlesex	Westminster	12	40 – –	till B.A.	Trinity
		4	8 – –	—	Unrestricted
		1	2 – –	—	„
		1	15 – –	—	„
		1	16 10 –	—	„
		1	61 5 –	—	„
		1	60 11 6	—	„
	London, St. Paul's	1	120 – –	4 years	„
		1 or more	50 – –	4 „	„
		4	100 – –	4 „	Trinity
		4	80 – –	4 „	„
		5	13 – –	—	„
		2	10 – –	—	St. John's
		1	30 – –	till B.A.	Corpus Christi
		1	36 – –	„	„
	London, Christ's Hospital	3	80 – –	4 years	Unrestricted
		2	30 – –	—	„
		4	50 – –	—	„
		4	6 – –	—	„
		2	12 – –	—	Emmanuel
		1	5 – –	—	Unrestricted
		2	7 – –	till M.A.	„
		1	8 – –	—	„
		1	6 13 4	—	„
	London, Charter House	number not limited	80 – –	4 years	„
		2	40 – –	—	„
	City of London.....	5	50 – –	—	„
		1	30 – –	4 years	„
		2	20 (about)	—	„
	London, Merchant Taylors'	—	50 – –	—	Pembroke
		1	80 – –	7 years	„
	London, Mercers' Gram.	2	70 – –	5 „	Unrestricted
	Islington Proprietary Gram.....	2	30 – –	4 „	„
	Highgate Gram.	4	50 – –	4 „	„
	Harrow	9	30 – –	4 „	„
		2	10 – –	4 „	Gonville & Caius
		2	52 10 –	4 „	„
	Edmonton Gram.	1	7 – –	4 „	Unrestricted
	Kensington Proprietary	3	50 – –	3 „	„
Norfolk	Norwich Free Gram.	3	50 – –	3 „	„
		1*	18 – –	—	Corpus Christi
		1†	24 – –	—	„

* Scholars from Aylsham and Wymondham Schools are eligible.
† Scholars from Aylsham School are eligible.

Exhibitions and Scholarships attached to Public and other Schools—Contd.

County.	School.	Number of Exhibitions.	Yearly Value. £ s. d.	Tenure.	At what College.
Norfolk—*contd.*	King's Lynn Gram.	1	6 – –	4 years	St. John's
		2	2 – –	—	Unrestricted
		1	3 6 8	5 years	Trinity
		2	4 – –	—	Emmanuel
	Holt Free Gram.	—	20 – –	—	Unrestricted
Northamptonshire	Peterborough Cathedral	2*	30 – –	—	St. John's
	Oundle Free Gram.	3	50 – –	3 years	Unrestricted
		2	4 – –	—	„
		2	5 – –	—	„
Northumberland	Newcastle-on-Tyne Gram.	2	10 – –	4 years	„
Nottinghamshire.....	Newark-upon-Trent Free Gram.	2	80 – –	4 „	„
Rutlandshire	Oakham Free Gram.	12	40 – –	—	„
		4†	24 – –	—	Emmanuel
		4†	32 – –	—	Sidney Susser
		4†	26 – –	—	St. John's
		4‡	20 – –	—	Clare
	Uppingham Free Gram.	12	40 – –	—	Unrestricted
Salop	Shrewsbury „	1	17 10 –	4 years	St. John's
		2	32 17 6	—	„
		4	50 – –	—	„
		4	63 – –	—	Magdalen
		2	30 – –	—	„
		1	23 – –	—	Unrestricted
	Newport Free Gram. ...	4	20 – –	4 years	„
	Ludlow „	3	50 – –	3 „	„
Somersetshire	Bristol „	2	60 – –	4 „	„
	Bruton „	4	30 – –	—	„
	Crewkerne Gram.	3	25 – –	4 years	„
Staffordshire	Walsall Free Gram.	1	25 (about)	—	„
Suffolk.....	Bury St. Edmunds Gram.	4	40 – –	4 years	„
		3	20 – –	3 „	„
	Ipswich Gram.	2	20 – –	—	„
Surrey	Southwark Free Gram.	2	50 – –	4 years	„
		1	12 – –	7 „	„
	St. Olive's „ ...	4	80 – –	3½ „	„
	Stockwell Proprietary Gram.	3	not less than 20 – – nor above 30 – –	3 „	„
Sussex	Lewes Free Gram.	1	30 (about)	—	„
	Shoreham, St. Nicholas College	number not fixed	25 – –	—	„
Warwickshire	Rugby	26	60 – –	4 years	„
	Birmingham Free Gram.	10	50 —	4 „	„
	Coventry Free Gram.	6	5 – – / 56 – –	3 „ / 4 „	„

* Scholars from Oundle School are eligible.

† Scholars from Aylsham and Wymondham Schools are eligible.

‡ Scholars from Uppingham School are entitled to compete for the sixteen exhibitions at Clare, St. John's, Sidney, and Emmanuel Colleges, as well as Scholars from Oakham School.

Exhibitions and Scholarships attached to Public and other Schools—Contd.

County.	School.	Number of Exhibitions.	Yearly Value. £ s. d.	Tenure.	At what College.
Warwickshire—*contd.*	Stratford-on-Avon Free Gram.....	1	30 (about)	—	Unrestricted
	Leamington College	1	40 – –	3 years	„
Westmorland	Houtham Free Gram.	2	45 – –	—	„
		4	70 – –	—	Magdalen
	Kirkby Lonsdale Free Gram.	2	30 – –	—	Christ's
		1	20 – –	—	„
	Kirkby Stephen Free Gram.	2	3 6 8	7 years	Unrestricted
Wiltshire	Marlborough Free Gram.	8	40 – –	4 „	St. John's
		12	50 – –	3 „	„
	Marlborough College ...	3	50 – –	3 „	Unrestricted
		3	40 – –	3 „	„
Worcestershire	Stourbridge Free Gram.	1	3 – –	5 „	„
Yorkshire	Biverley „	1	4 – –	—	St. John's
		3	6 13 4	—	Unrestricted
		1	3 – –	till M.A.	„
		1*	10 – –	—	Corpus Christi
		2	16 – –	—	St. John's
	Bowes Free Gram.	1	60 – –	—	Pembroke
	Giggleswick Free Gram.	1	40 – –	—	Unrestricted
		2	50 – –	—	Christ's
	Halepan Gram.	4†	70 – –	—	Magdalen
	Kingston-upon-Hull Free Gram.....	1	40 – –	3 years	Unrestricted
		1	50 – –	—	Clare
	Leeds Free Gram.	4	50 – –	—	Unrestricted
		4	70 – –	—	Magdalen
	Pocklington Gram.	4	40 – –	3 years	St. John's
	Richmond „	2	4 – –	till B.A.	Unrestricted
	Rishworth „	2	150 – –	—	„
	Sedbergh Free Gram. ...	6	33 6 8	3 years	St. John's
		1	20 – –	—	Christ's
		1	?	—	St. John's
	Shipton-in-Craven Gram.	1	30 – –	—	Christ's
	Thornton, Free Gram.....	5	4 – –	—	Unrestricted
	Wakefield „	3	80 – –	4 years	„
		2	50 – –	till B.A. or M.A.	Clare
	York, St. Peter's Cathedral	3	50 – –	3 years	Unrestricted
Anglesey	Beaumaris Free Gram....	2	4 10 –	—	Jesus
Carmarthenshire	Carmarthen „	1	?	—	Queen's
Carnarvonshire	Bangor „	1	40 – –	3 years	St. John's
Denbighshire ...	Ruthin Gram.	number not fixed	20 (about)	till B.A.	Unrestricted
		1	40 – –	3 years	St. John's

* This exhibition is also tenable by a student at St. John's College.

† These exhibitions are tenable also by scholars from Leeds and Haversham Schools.

Exhibitions and Scholarships attached to Public and other Schools—Contd.

County.	School.	Number of Exhibitions.	Yearly Value. £ s. d.	Tenure.	At what College.
Monmouthshire	Monmouth Free Gram.	2	30 – –	3 or 4 yrs.	Unrestricted
Isle of Man	King William College	3	30 – –	4 years	"
Jersey	L. Boudain's Exhibition.....	number not fixed	80 – –	3 "	"
Guernsey.....	Elizabeth College	1	30 – –	4 "	"
		1	15 – –	4 "	"

Note.—The list of exhibitions, &c., was collected in 1854 from the most trustworthy sources, and application was made to the Masters of Schools for correction and verification of the facts, which was not in all cases granted, so that some exhibitions are imperfectly stated, and some, perhaps, inaccurately. The alterations made by recent legislation at Cambridge have been duly noted in the proper places respecting exhibitions held at colleges. Other alterations since 1854 have doubtless been made in exhibitions at those schools which have received new schemes for their management from the Court of Chancery.

MISCELLANEA.

CONTENTS:

I.—*The Indian Budget of* 1862-63 *and* 1863-64.

FROM the *Economist* of the 6th June, 1863.

The passages of the original article which have been omitted from this reprint, in nowise qualify or change the import of the statistical facts which are retained.

"The Budget of Sir C. Trevelyan has now been received in this country, and it enables us to lay before our readers, not indeed a complete or perfect account of Indian finance, but still a far more complete and satisfactory account than any which we have as yet been able to lay before our readers. *From actual facts* we are now justified in saying, what before we never were justified in saying, that the *Indian deficit is extinguished.* Many facts may be and still are uncertain as to Indian finance, but so much as this we can now say with perfect confidence.

* * * * * *

"The last point of real certainty in Indian finance is the 30th April, 1862, and even this Sir C. Trevelyan now gives us for the first time. If we had written last week, we should have been obliged to say that the last day of real certainty was the 30th April, 1861. And it is on the data afforded by these 'actuals,' as Indian financiers call them—these ascertained and verified figures ending the 30th April, 1862—that we base our assertion that the Indian deficit is now at an end. Our readers should remember how great that deficit was. In the year 1858-59, the year before Mr. Wilson's mission to India, the figures were:—

	1858-59. £
Expenditure.....	49,642,359
Revenue	36,060,788
Excess of expenditure over income	13,581,571

Now, in the last year of ascertained information, 1861-62, the figures are changed to the following:—

	£
Expenditure.....	43,980,100
Revenue	43,829,472
Excess of expenditure only	150,628

And there is no doubt that Indian finance has improved during the past year (though, from the conjectural element contained in the accounts, details are dubious), we may say with confidence that this great deficit of thirteen millions and a half has been at last annihilated.

"Our readers will ask how this marvellous financial exploit has been achieved. It has been attained by an enormous reduction of expenditure, and a perhaps, under the circumstances, yet more remarkable augmentation of revenue. The military expenditure in India

	£
In 1858–59 was	21,080,948
„ '61–62 „	13,681,900
Being a decrease of	7,399,048

"Other branches of expenditure, as the police and education, have indeed increased, and the actual reduction of the total expenditure is only 5,700,000*l.* The remainder of the deficit of thirteen millions and a half has been filled by the augmentation of revenue, which it is not very easy to describe with precision. In English finance, we have an annual estimate of the productiveness of 'taxes imposed' and 'taxes repealed,' but Indian financiers have as yet nothing of the kind. It would be very interesting, and it ought to be very possible, to say exactly how much of this augmented revenue is due to the increased productiveness of old taxes, and how much to the yield of new taxes. The present accounts, however, do not enable us to distinguish between the two with any approach to accuracy. We can however perceive that the entire augmentation is to be unequally divided between four principal heads:—

"First. The improvement of the land revenue. Since the commencement of the Russian war the productiveness of the industry of India has augmented wonderfully. Her exports to England were—

	£
In 1854	10,672,862
„ '59	15,244,869

And the effect of the American civil war has been of the same kind, and has been equally great. The exports from India to England were—

	£
In 1860	15,106,596
„ '61	21,958,947

The enormous increase of productive power has told upon the wealth of India and upon the revenue of India. The prosperity of agriculture has augmented wonderfully, and in consequence of that prosperity there has been a great augmentation, amounting to more than 2,000,000*l.* in the land revenue.

* * * * * *

"Secondly. There has been a great augmentation in the salt revenue. This is the substitute in India for our tea and sugar duties. This is the duty which falls on the mass of the population, which in the bulk and in the main is paid by the poor; or rather, as salt is one of the greatest necessaries of life, a tax on it is a far more stringent tax on the lower classes than our tea and sugar duties, which are only *semi*-necessaries, essential by habit, and for the purposes of an accustomed life, but not necessary to the simple needs of a physical existence. The duty on salt was raised in India in 1859, and again in 1861, and the yield of the tax has augmented in both cases, but the exact amount of augmentation the figures before us do not enable us to specify with accuracy.

"Thirdly. There has been a large increase in the stamp duties, a sort of impost which seems to excite less odium and brings more money in India than almost any other.

"Lastly. There has been the produce of between 1,500,000*l.* and 2,000,000*l.* of Mr. Wilson's income tax.

* * * * * *

"We have now to speak of Sir C. Trevelyan's Budget, properly so called. We have as yet been speaking only of the period ending 30th April, 1862, where actual results also end, and where conjecture more or less begins. There are two years subsequent to this in Sir C. Trevelyan's Budget—the first of these is the year ending 30th April, 1863, the year just over. In this he tells us that, according to the 'regular estimate,' the estimate of which we have quoted the description—

	£
The revenue was or might be	45,105,700
„ expenditure	44,408,532
Surplus	697,168

"But we own, we regard these figures with little interest. They have not the interest of assured truth; they are not verified history; they are not fit data for retrospective opinion. On the other hand they are not, and are not intended to be, the basis of an immediate practical result. A Budget, properly so called—an estimate of the anticipated expense and the anticipated income of next year—is by definition uncertain, for it is an anticipation and prognostication; but it is in the highest degree practical, for, according to its figures, new taxes are imposed and old taxes are removed. A retrospect over a year really past, about which a Finance Minister cannot give ascertained figures, has neither the interest of pure truth, nor the interest of pressing importance.

"The anticipation of Sir C. Trevelyan for the year 1863-64—the year to come—is a true budget, and as such well deserves attention. He estimates—

	£
A revenue of	45,306,200
An expenditure of	44,490,425
	815,775

As last year's accounts are still in an unreliable and unverified state, we cannot be very confident as to the precise anticipations of next year's. But, as far as we can judge, and subject to this fundamental objection which attaches to the system of Indian account-keeping, we see no reason to doubt that some such sum as Sir Charles speaks of will really be at his disposal. He has dealt with it thus:—

	£
By an abolition of the import duty on iron, a reduction of the duty on beer to a nominal one, and of the duty on wine to a uniform duty, of	50,000
By a reduction of the income tax from 4 per cent. to 3 per cent., which would on the whole year amount to 380,000*l.*, but as it will commence in August next	285,000
Total surplus disposed of	335,000
Leaving an anticipated surplus for the year	480,775
	815,775

"In comparison with the vast deficit which has been cured, these small charges are so trivial that it seems scarcely needful to dwell upon them, and we are by no means insensible to the arguments derived from the circumstances of the present moment which Sir C. Trevelyan has urged."

* * * * * *

General Abstract Statement *of the* Revenues *and* Charge *of* India, *for the Years* 1861-62, 1862-63, *and* 1863-64.

Revenues and Receipts.	Actuals, 1861-62.	Budget Estimate, 1862-63.	Regular Estimate, 1862-63.	Budget Estimate, 1863-64.
	£	£	£	£
Land	19,684,670	19,242,700	19,430,000	19,708,900*
Sayer and forest	460,728	538,000	577,000	250,000†
Abkaree	1,786,157	1,807,300	1,885,000	1,839,300
Assessed taxes	2,054,696	1,583,100	1,789,800	1,306,200‡
Customs	2,876,139	2,475,000	2,387,500	2,339,600‡
Salt	4,563,081	5,054,700	5,337,500	5,402,400
Opium	6,359,269	6,300,000	7,850,000	8,000,000
Stamps	1,693,217	1,850,000	1,532,900	1,523,600
Mint	380,735	257,100	368,100	350,000
Post office	402,135	480,900	430,000	430,000
Electric telegraph	73,452	70,700	82,400	85,000
Law, and justice and police	511,513	493,000	518,400	680,200
Marine	155,723	200,000	278,600	350,000
Public works	588,858	650,000	607,500	600,000
Tributes and contributions	780,162	685,200	691,000	744,000
Miscellaneous—civil	468,500	450,000	400,000	450,000
,, military	956,219	800,000	900,000	822,000
Interest	34,218	33,500	40,000	90,000
Total revenues and receipts	43,829,472	42,971,200	45,105,700	44,971,200
Deficit	150,628	Surplus	Surplus	Surplus

	£
* Land revenue	19,384,500
Items added from sayer	324,400
Total	19,708,900

† Forest revenue only, excluding sayer, 324,400*l.* added to the land revenue.

‡ Previously to the reductions of taxation, these items stood as follows:—assessed taxes, 1,591,200*l.*; customs, 2,389,600*l.*

General Abstract Statement—*Contd.*

Expenditure.	Actuals, 1861-62.	Budget Estimate, 1862-63.	Regular Estimate, 1862-63.	Budget Estimate, 1863-64.
	£	£	£	£
Allowances, refunds, and drawbacks	341,538	230,700	371,700	270,800
Land revenue (including forest), and Abkaree	2,030,489	2,266,700	2,230,000	2,354,500
Assessed taxes	121,043	60,000	76,400	51,400
Customs	243,547	253,800	260,800	244,300
Salt	646,931	725,600	556,500	293,100
Opium	1,449,465	2,100,000	1,993,500	2,003,500
Stamps	68,268	83,000	97,500	91,000
Mint	106,688	170,700	200,000	147,500
Post office	481,328	600,000	550,000	600,000
Electric telegraph	358,223	162,600	380,000	341,200
Allowances and assignments under treaties and engagements	1,640,466	1,755,100	1,767,500	1,745,700
Allowances to district and village officers	599,682	531,900	535,000	536,200
Miscellaneous	20,742	35,300	54,500	50,800
Contingencies, special and temporary	—	8,000	25,000	8,400
Army	13,681,900	12,200,000	12,466,000	12,646,900
Marine charges	686,193	472,000	500,000	307,000
Public works	4,742,183	4,260,000	4,600,000	4,995,100
Salaries and expense of public departments	1,106,749	1,203,000	1,201,000	1,178,400
Law and justice	1,951,217	2,100,000	2,175,000	2,329,700
Police	2,163,163	2,051,100	2,100,000	2,280,000
Education, science, and art	342,593	500,000	400,000	461,600
Political agencies and other foreign services	210,670	187,300	200,000	225,200
Superannuation and retired allowances, and gratuities for charitable and other purposes	703,297	658,800	702,500	710,000
Miscellaneous	209,702	228,600	250,000	262,300
Civil contingencies, special and temporary	204,782	118,100	126,000	57,700
Interest	3,134,897	3,367,100	3,410,000	3,333,000
Expenditure in India	37,245,756	36,329,400	37,228,900	37,525,300
Net expenditure in England	5,309,264	4,961,986	5,491,432	5,347,300
Guaranteed interest on railway capital, less net traffic receipts	1,425,080	1,500,000	1,688,200	1,617,825
Total expenditure	43,980,100	42,791,386	44,408,532	44,490,425
Surplus	Deficit	179,814	697,168	480,775

II.—*Registers of Sickness and Death among the Labouring Poor.*

THE Epidemiological Society has circulated the following statement, with the view of directing public attention to the want of a systematic registration of the disease and mortality prevailing among the working population of England.

"At present there are no means of determining what are the most frequent maladies existing from time to time among the labouring classes in our towns, villages, and rural districts; nor when, or where epidemics are most prevalent, or vary much in frequency and severity in different parts of the country; nor do we know, as we ought to know, the influences of age, sex, condition, and occupation on their development and fatality. Neither can we tell what are the most frequent chronic ailments or incurable infirmities among the poor at different periods of life, which occasion permanent disablement, and life-long chargeability upon the parochial rates, with but one exception, we believe, viz., insanity and idiocy.* That the amount of sickness from fever, for example, is annually very large, the number of registered deaths abundantly testifies. On the average of the last twenty years, this number exceeds 17,000—a mortality which probably represents upwards of 170,000 persons attacked in the course of the twelve months. The victims, too, are generally among the early adults and the middle-aged, the parents often of young families; hence so many of the children in workhouses are the offspring of persons who have either died from the disease, or who, if they recovered, were reduced to beggary in consequence. The orphans and widows of working men, prematurely cut off in this way, form a considerable proportion of the permanent recipients of parochial aid in every part of the kingdom. The sad prevalence of small-pox in many districts, from the neglect of vaccination, often serves to swell the number. How much the prevalence and fatality of fever and of small-pox may be reduced by due attention to well-known sanitary and hygienic regulations, it is unnecessary in the present day to illustrate. Then again, the great excess of mortality among the children—mainly owing to the circumstance of the other erruptive fevers, and of diseases of the bowels, lungs, &c., being aggravated fourfold by domestic causes of insalubrity—attests the enormous amount of illness in infantile and early life among the poor. There are, moreover, various groups of disease which often cause much suffering and distress, but which very seldom prove fatal, and are, therefore, scarcely indicated in the Registrar-General's returns, such as maladies of the skin and of the eyes—a not unfrequent cause of protracted disablement; and as both these groups are largely dependent on unwholesomeness of the dwellings, poverty or unsuitableness of diet, neglect of personal cleanliness, &c., it is obvious that they might be easily prevented to a great extent.

"Whatever will diminish the amount of sickness among the working classes, must correspondingly diminish the amount of the parochial taxes, and *vice versâ*. That the first of those desirable objects is within our reach admits of no doubt; the results of the Common Lodging-House Act, and the low rates of sickness and death in most public institutions now, as compared with what they used to be, are sufficient proof on this head. Nor are instances wanting in several parts of the country, where a not inconsiderable abatement of the parish charges has recently been affected, by the improved health of the districts. If it be true, as has been stated on respectable authority, that three-fourths of all the actual paupers in the kingdom have become paupers, directly or indirectly, by disease, the large extent of the field for the labour of enlightened beneficence is strikingly apparent.

* "On the 1st of January, 1862, the number of insane and idiot paupers was 34,271. Of this number, 18,318 were in country or borough lunatic asylums; 1,193 in registered hospitals or licensed houses; 8,603 in union or parish workhouses; 983 in lodgings or boarded out; and 5,172 resided with relatives.

"It is scarcely possible to over-estimate the benefits to the whole community which would accrue if the attention of parochial boards and other local authorities, as well as of influential residents in a district, were regularly and systematically drawn to the current state of the general health, and to the prevalence or otherwise of epidemic disease among their out-door poor, and also to the hygienic condition of the inmates of their workhouse. In no way could this be so easily or so effectually done as through the returns—were these duly tabulated and arranged—of the medical officers who attend upon the poor in sickness; for none know so well as these gentlemen the evils which sap the health of the labourer, and which so often issue in pauperism and mendicancy. All agree that much of the illness and mortality in humble life is due to circumstances not inevitable or inseparable from mere poverty, but which are superadded to it either from ignorance or wilful neglect, or from causes over which the poor themselves have no control, however capable the evils may be of easy correction or removal.

"There are in England and Wales upwards of seven hundred workhouses, great and small, and six district schools, where pauper children are lodged and fed. The total number of inmates of recent years, has averaged about 140,000 persons, of whom 50,000 are under 16 years of age. In the infirmaries of workhouses, there are usually—besides the ordinary sick wards, the infirm wards for aged men and women, and the nurseries for infants and young children—fever wards, and infectious and foul wards; a fact which alone indicates the prevalence of these maladies throughout the country among the poor. The general death-rate in our workhouses is not known; but that it is very high may be inferred from the fact that, in some years, one in every eleven deaths in London occurs in the metropolitan workhouses. In 1861, the number was 5,755; while the total number in all the civil hospitals of the metropolis was only 3,723. 'The death of so many persons in the large workhouses demands inquiry,' remarked the Registrar-General.

"The sanitary condition and arrangements of the workhouses in different parts of the country are reputed to be far from satisfactory; the occasional severe outbreaks of epidemic disease, and the inveteracy of various chronic maladies among the inmates, can only be accounted for in this way. In a late quarterly return of the Registrar-General, the large mortality which occurred in a provincial workhouse was stated to be due 'to the crowded state of the house, and the defective drainage of the premises.'

"The want of trustworthy information at to the current amount of sickness and death among the out-door and in-door poor has been so much felt, that several efforts have recently been made to obtain the desiderated data in separate districts and localities. The metropolitan medical officers of health attach the utmost value to this subject in the prosecution of their inquiries, and have laboured hard to establish regular statistical returns of disease occurring in the metropolis. The Sanitary Association of Manchester and Salford has also applied itself with great zeal to the same object in respect of their population. At the International Statistical Congress, held in 1860, the importance of the accurate registration of diseases and of their results in hospitals throughout the kingdom was strongly urged in the Public Health Section, and steps were then taken to carry the suggestion into effect as regards these institutions. Such a measure is equally, if not still more, needed in respect of workhouse infirmaries. Among various other matters of great interest to the public health, on which useful information might be obtained from this source, the discovery of the amount of incurable blindness, deafness, and deformity among the poor may be mentioned. Every consideration thus shows how inestimable would be the value of a general and connected system of disease-registration among the pauper population over the entire country.

"The scheme proposed by the Society for this end is, that there should be a monthly return of the number of cases of illness treated by each parochial medical officer, and of the number of deaths among these cases,—arranged upon such a plan as that in the annexed schedule,* in which a few of the supposed details are

* The schedule to the original paper.

entered, and the general results given, to indicate the mode of filling it up. But the exact form best suited for the purpose will doubtless need much consideration. The great object sought for is to turn to useful account the statistical records of disease now required to be made by the medical officer, but which hitherto have been valueless and unknown; and thus to furnish a ready means for ascertaining, from month to month, the nature, the extent, and the gravity of the sickness among the poor, prevailing in different districts of the country, together with the approximate ages of the sick, and a brief notice of the local circumstances affecting the health of the people. That the parochial medical officers would very generally afford willing co-operation in the carrying out of the proposal, the Society anticipate with confidence; none of their professional brethren have shown themselves more active promoters of every reasonable measure for improving the condition of the poor, and for advancing the best aims of the healing art, than these gentlemen. What has been done by the medical officers of the metropolis and of Manchester and Salford, would doubtless be done elsewhere. The labours of each and all, by becoming instrumental to an important scientific and social end, would rise in public usefulness and therefore in public esteem; for whatever exalts a profession in character, is sure to strengthen it, in the long run, in influence and weight.

"By the monthly returns being regularly transmitted to the Poor Law Board, or to the Medical Department of the Privy Council, the current state of the public health over the country would be, to a great extent, ascertained at short intervals of time, and the springing up and threatened prevalence of zymotic diseases would be discovered early, and before the leaven had leavened the whole mass. What is now being done by the Board of Trade for meteorological inquiries might, with no less advantage to the whole community, be done by another Government department for hygienic research. An annual report, founded on these monthly returns, and embodying their chief facts and results, on the same plan as the annual reports of the health of the army and of the navy, could not fail to be of great scientific value. It would, moreover, be directly and immediately useful in various ways. The labours of local boards, for instance, would be aided and guided by the authentic information made accessible; and the results of these labours would become generally known. Thus the good example of one place would stimulate imitation in another; means and appliances, found useful here, would be copied elsewhere; and, in this manner, local experience would be made profitable to the whole community. No other country in the world possesses such facilities for the attainment of the object in view as England, for no other country has such a well organized system of pauper relief; and, when it is considered that nearly six millions sterling are annually expended for this purpose, it is but right that the working of the system should subserve, as far as practicable, the promotion of science, and the advancement of the general good."

III.—*Pensions for the Diplomatic Service.*

The following Paper as to the number of Diplomatic Servants likely to obtain Pensions eventually, and the total amount they would receive, was drawn up by Mr. Samuel Brown, for the use of the Select Committee on the Diplomatic Service, at the request of their chairman, R. Monckton Milnes, Esq., M.P.

"Guardian Assurance Office, 11, Lombard-street, E.C.,
10th July, 1861.

"In order to obtain any data for estimating the probable amount of pensions for the Diplomatic Service, if they were put on the same footing as under the Civil Service Superannuation Act, I have been obliged to classify all the existing diplomatic servants in the list with which you have favoured me, and re-arrange them under their supposed ages. This has occupied a considerable time, but I think the facts are now in a useful form for reasoning upon.

"I have assumed the mean age of entry, according to your memorandum, to be 23, although by ascertaining from the peerage some of the real ages, and comparing them, I find they are generally younger than the present ages, as assumed. It is probable that this arises, in several cases, from those who now fill the higher positions not having from the first entered as attachés, but being selected for some higher rank at a younger age than the average of that rank. I am inclined to think that the present ages would appear more nearly correct, if 20 is assumed as the average age of entry as unpaid attaché.

"Having thus classified the present members of the service under age, I have divided them into classes at each age, according to their respective ranks, with the salary enjoyed by each, so as to obtain the average numbers and the average salaries, and then combined them in groups of quinquennial ages and ranks, as follows: in this summary I have left out military and naval attachés, and added the pay of two consuls acting as chargés d'affaires to make up their full allowances. I have also taken the salaries of foreign ministers, as corrected according to your suggestions for the different classes.

NUMBERS *and* TOTAL SALARIES *of Existing* DIPLOMATIC CIVIL SERVANTS, *in* 1861, *in Quinquennial Periods of Age* (*assuming the Mean Age of Entry on the Service to be* 23).

Ages.	Unpaid Attaché.	Third Attaché.		Second Attaché.		First Attaché.		Secretary of Legation.		Ambassador, Minister, or Chargé d'Affaires.		Total.	
	No.	No.	£	No.	£	No.	£	No.	£	No.	£	No.	£
24	2	1	300	–	—	–	—	–	—	–	—	3	300
25 to 29	41	3	800	4	1,250	6	1,750	–	—	–	—	54	3,800
30 „ 34	1	2	600	6	1,650	14	4,150	1	600	1	1,500	25	8,500
35 „ 39	—	–	—	–	—	2	860	9	5,000	4	8,067	15	13,927
40 „ 44	—	–	—	–	—	1	250	11	7,750	7	18,458	19	26,458
45 „ 49	—	–	—	–	—	–	—	3	1,900	7	17,216	10	19,116
50 „ 54	—	–	—	–	—	–	—	1	500	3	4,271	4	4,771
55 „ 59	—	–	—	–	—	–	—	1	700	9	23,148	10	23,848
60 „ 64	—	–	—	–	—	–	—	–	—	4	12,200	4	12,200
65 „ 69	—	–	—	–	—	–	—	1	400	–	—	1	400
	44	6	1,700	10	2,900	23	7,010	27	16,850	35	84,860	145	113,320
								Aver. £624		Aver. £2,425			

"In your note of the 3rd instant, you suggest that as no one is likely to claim his pension (except for ill health) lower than the rank of secretary of legation, all below may be left out of the calculations; but the number likely to attain a given age, or a given number of years' service under the Superannuation Act, would bear some proportion to the total number who enter upon or remain in the service; thus, if the total number in the service was doubled, it would be reasonable, under any system continued in force, to expect eventually double the number of pensions claimed. This will account for my endeavouring to ascertain the proportion at all ages and ranks, whilst I admit the justice of your remark, as it appears fully illustrated by the above table, and the average age of obtaining a pension.

"In counting the present salaries, I have computed, as you suggested, the salaries of the ministers of the first class at one-half, of the second class at two-thirds, of the third and fourth class at three-fourths, and all the rest in full. The summary of the four classes is as follows:—

	Number.	Total full Salaries.			Average Salary.
		£		£	£
Class I	4	32,000	½ of ditto	16,000	4,000
,, II	11	50,200	⅔ ,,	33,466	3,042
,, III	13	34,200	¾ ,,	26,050	2,004
,, IV	7	12,125	¾ ,,	9,344	1,335
	35	128,525		84,860	2,425

including, in two cases, consuls' salary in full, to make up the total allowances as chargés d'affaires.

"I had some difficulty in ascertaining the ages at which pensions usually begin under the present regulations. The total number of pensions is given as 24, and the total amount at 22,500*l.* per annum, or an average of 936*l.* 10*s.* each, two being in abeyance during profitable service. In ten cases, I have found from the peerage, the ages at the date of granting the pension to be on an average 55 years, and this I think we should not be far wrong in assuming as the mean age of obtaining a pension under the present system. If all were living together at the ages which pensioners may be expected to attain by the English life table, their average present age should be nearly 66 years, but the average of the ten I have alluded to is only 63 years, which leads me to infer that the whole body of pensioners have not yet attained their greatest age, and consequent greatest mortality. In other words, that the pensions under the present system may, under ordinary circumstances, either be expected to increase, or that, as a body, the retired members of the Diplomatic Service do not show so great a longevity as annuitants in general. I am more disposed to the former opinion from observing the relative large proportion of foreign ministers existing between the ages 55 and 60.

"In considering, however, the question what increase may be expected in the total amount of diplomatic pensions if the regulations of the 'Superannuation Act, 1859,' be applied to the service, it is requisite to ascertain, first, what would be the average increase of pension to each under the Act, and secondly, how many would be entitled to claim pensions.

"The Act provides, that to persons in established Government service, for whom provision shall not otherwise be made by Act of Parliament, or who may not be specially excepted by authority of Parliament, pensions may be granted

For 10 and under 11 years' service, $\frac{10}{60}$ths of salary.
,, 11 ,, 12 ,, $\frac{11}{60}$ths ,,
,, 12 ,, 13 ,, $\frac{12}{60}$ths ,,

and so on increasing by one-sixtieth every year up to 40 years' service, which entitles to two-thirds of the salary, and no further increase. No superannuation to be granted under 60, except on medical certificate of the person being incapable, from infirmity of mind or body, to discharge the duties of his appointment.

"This Act does not interfere with the superannuation allowances granted by the 4th and 5th William IV, c. 24 (25th July, 1834), to civil servants who entered before 5th August, 1829, but inasmuch as the Act, last quoted, does not appear to affect the Diplomatic Service, the pensions for which are regulated by the 2nd and 3rd William IV, c. 116 (16th August 1832), it need not be further considered.

"But the Superannuation Act gives power to the Commissioners of the Treasury, under special circumstances, by warrant, to declare it expedient to appoint persons older than the usual age of entering office, and to add in the warrant any number of years, not exceeding twenty, to the real term of service for superannuation allowances. This would probably apply with equal or greater force to the Diplomatic Service.

"Without reference, then, to the retirement from infirmity, I assume, to be on

the safe side, that no pensions will be granted before 35 or 40 years' service, or at 55 or 60 years of age, to persons entering the service as early as 20. On reference to the table given at the beginning of this letter, it will be noticed that there are now in the service thirteen ambassadors or ministers, and two secretaries of legation at or above the former age, and four ministers and one secretary at or above the latter age, and none of any lower rank. The mean of all the salaries of ambassadors or ministers of various classes appears to be 2,425*l.*, and that of secretaries of legation 624*l.*; but as the proportion at and above 55 years of age existing is 13 of the former to 2 of the latter, the average salaries at the time of retirement may be taken as somewhat above 2,000*l.* (say 2,185*l.*). Assuming that they have completed their full term of service, the average pension, or two-thirds of the salary, would be between 1,400*l.* and 1,500*l.* a-year (1,457*l.*), instead of 937*l.* 10*s.*, as we have noticed under the list of actually existing pensions. If the present number of pensions did not increase under the new regulations, the average increase under each of the twenty-four, would be nearly 520*l.*, or the total increase of charge nearly 12,500*l.* a-year.

"Very nearly the same average increase of each pension would be obtained by comparing two-thirds of the salaries of ministers, corrected according to your suggestion, with the present rate of pensions allotted to the different classes.

	Average Salary.			Pension now Allowed.
	£		£	£
Class I, say	4,000	⅔ of ditto,	2,667	1,700
,, II, ,, ...	3,000	,,	2,000	1,300
,, III, ,, ...	2,000	,,	1,333	900
,, IV, ,, ...	1,333	,,	say 900	700
			6,900	4,600

The increase, it is perceived, would be about 50 per cent., which does not differ much from the increase I have suggested of 12,500*l.* per annum on the present pensions of 22,500*l.* per annum.

"It is probable, however, that if an increased amount of pension was given at the age of 55 or 60, or after 35 or 40 years' service, a greater number who now remain in active service would retire at those ages, and I have endeavoured to form some idea of the number who would attain those ages, out of the whole number employed in the diplomatic service. By a separate calculation for the numbers represented in my table as living between 20 and 25, between 25 and 30, &c., which differs very little from assuming the proportion living at each age to be nearly the same as in the English life table, I find that out of 130 persons living between 20 and 55, 2·84 (nearly 3) would enter upon age 55, and the total number living together at 55 and upwards, would be eventually rather more than 47 (47·37). At present the number in active service at 55 and upwards is fifteen, and receiving pensions above that age twenty-four, or about 60 per cent. of persons living above 55 are now in the receipt of pensions. I should, therefore, reckon on an increase eventually of at least four or five in the number of pensioners, or about 20 per cent. above the present existing number.

"Between 20 and 60 there appear to be 140, and 5 above 60 in active service. For 140 persons living between 20 and 60, I consider that 2·44 would attain 60, and that the proportion living at 60 and upwards would be eventually about thirty-three. As there are five in active service above 60, to twenty-four receiving pensions, the latter constitute about 80 per cent. of all above 60. This would give an increase of 2½ pensions beyond the 24 now payable, even if all who attain age 60, or 40 years' service, should not, under the new regulations, retire at that age. Should the latter be the case I consider that whilst the diplomatic service is kept at about 140 in active service between the ages of 20 and 60, there would at least be thirty-three persons receiving pensions together; and if these averaged 1,400*l.*

a-year each, the superannuation allowances would amount to 46,000*l.* a-year, instead of 22,000*l.*, now payable.

"If time had permitted, I should have preferred obtaining the ages of all the diplomatic servants, both on the active and retired list, and classified them more correctly; and in giving the opinions I have offered, I must beg for some allowance to be made an account of the imperfect materials with which I have had to work. I do not believe, however, that in broad averages the conclusions would differ much from those I have come to, nor that the retirements from infirmity of mind or body would affect to any great extent the total results."

IV.—*The Mineral Statistics of* 1861.

From the *Manchester Guardian* of 15th June, 1863:—

* * * * * * *

"Agriculture, mining, and manufactures, we may call the great productive powers which divide between them the vast and various industries of this 'western edge of Europe' wherein we dwell. To survey the realm of one of these great powers—the mineral kingdom of Great Britain and Ireland—is our present object.

"We accept as our guide through this region the 'mineral statistics' of Mr. Robert Hunt, the keeper of mining records in the Museum of Practical Geology. The figures we are about to quote relate to the year 1861, being the latest period to which the Government tables are brought down.

"The mineral produce of Great Britain and Ireland, so far as returns have been forwarded to the museum in Jermyn-street, appears, in respect of the yield of 1861, to be as shown in the following table, where the eight principal kinds are arranged according to the rank determined by the total value of each, viz:—

	Tons.	Total Value.
		£
Coals (sold and used)	83,635,214	20,908,803
Iron ore	7,215,518	2,302,371
Copper	231,487	1,427,215
Lead	90,696	1,136,249
Tin	11,640	725,560
Pyrites (sulphur ores)	125,135	79,715
Zinc ore	15,770	31,113
Arsenic	1,450	10,875
Other minerals	2,226,594	887,624
Total quantity and value	93,553,504	27,509,525

The produce coming under the head of 'other minerals' consists of three or four ores, &c., which, as native, are quite insignificant, in a commercial point of view, from the small quantities found in this country. These are silver ore, valued at 1,471*l.*; nickel, 24*l.*; wolfram, 29*l.*; antimony, 45*l.*; manganese, 2,925*l.*; gossan and ochre, 3,016*l.*; the total of these falling below 8,000*l.* Then there are several sorts of serviceable clays, the more important descriptions, amounting to 690,605 tons by weight, and to 231,801*l.* by value. The list closes with salt, of which 763,335 tons (rock, 67,563; white salt, 695,772) were 'sent down the river Weaver' in 1860. In 1861, the total exports were 702,871 tons, valued at

370,168*l.* The full quantity of salt brought to the surface, or otherwise produced, in the United Kingdom, does not appear to be known. The Worcestershire district yielded an annual average of 160,000 tons in 1858, 1859, and 1860.

"Coals stand at the top of the table, as three-fourths by value of our mineral produce annually consists of this article, so indispensable to our manufacturing and maritime supremacy. We therefore learn with something deeper than regret that 'the rate of exhaustion which is going on over our coalfields still increases. From 3,052 collieries, there was used and sold in 1861, 83,635,214 tons. Two million and a-half tons were wasted in the process of working, and burned at surface on the collieries of Durham and Northumberland alone. The total waste must, therefore, have been very large, although information thereof could not be correctly obtained.' There is, also, a large waste in the actual consumption of coal in this country for domestic purposes, not alluded to by Mr. Hunt, that is not likely to diminish so long as coals are cheap. At present, we probably burn much more fuel in warming our chimneys than our rooms; but if coals were to be permanently double the price they are now, ingenuity would soon find out the way to utilise that which we now squander.

"The year's produce from the principal coalfields is shown by the following figures:—

Tons in 1861.	
19,145,000	from Durham and Northumberland.
12,196,000	„ Lancashire.
9,375,000	„ Yorkshire.
7,254,000	„ Stafford and Worcester.
6,691,000	„ South Wales.
5,116,000	„ Derby and Notts.
11,081,000	„ all Scotland.

"It appears that in the same year Ireland only yielded 123,070 tons of coal. In one very important respect coals differ from the other minerals named in the first table—immediately they are brought to the surface they are fit for use. Not so, however, with the metallic minerals. These, as we know, have to undergo the costly processes of the metallurgist before they can be rendered subservient to man's wants. The dirt and the dross must be separated from the pure metal. One-half of the iron ore raised is waste, and more than nine-tenths of the copper ore. The percentage yield of five metals from their respective ores was as hereunder stated, viz:—

Metals produced.	Tons of Metals.		
Iron, pig	3,712,390	or 51	per cent. of the ore
Copper	15,331	„ 7	„
Lead	65,613	„ 72	„
Tin	7,450	„ 64	„
Zinc	4,415	„ 28	„

"The gain in value of the separated metal over the unwrought mineral is exhibited by the following extract from the Government tables, to which we have added the rate per cent. of augmented price:—

Metallic Product.	Value.	Addition in Money Value by Metallurgy.
	£	Pr. cnt.
Iron	9,280,975	303
Copper	1,572,430	10
Lead	1,445,255	27
Tin	910,762	26
Zinc	79,101	154

"To mark this in another manner we will bring the values of the ore in immediate juxtaposition with those of the metal, thus:—Iron, 2,302,371*l.*—9,280,975*l.*; copper, 1,427,215*l.*—1,572,480*l.*; lead, 1,136,249*l.*—1,445,255*l.*; tin, 725,560*l.*—910,762*l.*; and zinc, 31,113*l.*—79,101*l.* Here the figures respectively express the value of the ore and the metal. The aggregate value of all the metalliferous minerals separately designated by Mr. Hunt is 5,720,000*l.* These ores when reduced to the purely metallic state, are worth 13,694,000*l.* This, then, informs us that the metallurgic processes imparted a value of 7,974,000*l.* to the various substances submitted to their agencies.

"Though the precious metals are not found in any large quantities in the rocks or sands of Great Britain, or of Ireland, yet the tables show us that, in the year of which we have been speaking, very appreciable quantities of gold and of silver were extracted from our native mines. Merionethshire produced gold. The Vigea and Clogau Copper Mining Company raised during the year 'from the Clogau Mountain, St. David's lode, 2,886 ounces 3 dwts. of gold, yielding 2,784 standard ounces, value 10,816*l.* 17*s.*' But the report does not state what was the cost of obtaining this gold, and unless we know that, with some degree of exactitude, we cannot judge of the commercial advantage of the discovery. But there would appear to be some sanguine people whose hopes have been stimulated by the success of the Clogau mine; for, according to Mr. Hunt, several companies have been formed 'to work other lodes of a similar character in North Wales.'

"In 1861, the silver obtained from lead that had been raised from British mines amounted to 569,530 ounces, valued at 144,162*l.* This, unlike the gold, is a very steady, if not very large, part of our mining enterprise. We observe that the value of silver extracted in 1860 was 151,173*l.*; the quantity, 549,820 ounces.

"The hundred and odd well-filled octavo pages from which the preceding statistics have been gathered are introduced by some comparative statements of our mineral treasures in 1860 and in 1861. We will set out from this portion of Mr. Hunt's annual contribution to the mineral statistics of the kingdom a few of the principal results, following the order of arrangement employed by that gentleman. The following quantities represent, with the exception of zinc and pyrites, the pure metal produced in each year from native ores—the zinc and sulphur ores are given in their mineral condition:—

	1860.	1861.	Difference in Tons.
	Tons.	Tons.	
Tin	6,695	7,450	755 increase.
Copper (fine)	15,968	15,331	637 decrease.
Lead	63,525	65,643	2,118 increase.
Zinc (ores)	15,552	15,770	218 ,,
Pyrites (sulphur ores)	135,669	125,135	10,534 decrease.
Pig iron	3,826,752	3,712,390	114,362 ,,

"Besides the metals produced in this country from its own mines, a large smelting business is carried on here with several descriptions imported from our colonies and other places abroad. We imported of foreign and colonial tin 508 tons in 1860, and 959 tons in 1861; the value of metallic copper smelted from imported ores was 3,146,398*l.* in 1860, and 3,170,955*l.* in the following year. In 1860 we received from abroad 28,784 tons of zinc, and in 1861, 24,851 tons. The produce of our coalfields in point of money value still keeps ahead of the grand total value of every species of metal yielded by our mines after smelting. The value of the metals was 13,694,000*l.*, and of the coals, 20,909,000*l.*, the two amounts bringing the sum of the mineral harvest of 1861 up to 34,603,000*l.*"

[In addition to the aggregate value of the mineral produce of the year, as stated above, the worth of the earthy minerals is to be considered. Mr. Hunt, in his Report of 1860, has estimated the value of these products, according to the returns which he collected for the year 1858, at 7,954,075*l.* The principal articles are clay unmanufactured, 385,846*l.*; bricks, tiles, &c., estimated at the cost of production, 2,911,980*l.*; building and other stones, 4,622,924*l.*; and the interesting fossil known as "coprolites," which is used as a manure, 65,500*l.*—Ed. *S. J.*]

V.—*Separate Parliamentary Indexes.*

Since the year 1800 the House of Commons have had prepared, from time to time, separate indexes to many of the reports laid before it. These indexes relate to two classes of public documents, Reports from Select Committees of the House, appointed to inquire into special subjects, and Reports from Commissioners discharging, either temporarily or permanently, defined duties. The reports, as well as the indexes, are in several instances out of print, and can only be met with in official and other libraries, where the Parliamentary papers have been preserved from the commencement of the present century; but, in regard to most of those of a recent date they may be obtained through the usual channels. The majority of these reports contain valuable statistical records; and as the existence of the separate indexes is not generally known, it may be serviceable to the readers of this *Journal* to print here a list which, at the instance of the editor, has been obtained from Messrs. Hansard for that purpose. Some idea of the extent and utility of the indexes may be formed by observing the titles and the number of volumns of each set of reports as given in the list.

Indexes to Reports from Committees.

	Vols. Indexed.
1. Agriculture and Corn Trade (1820-34)	6
2. Brewing, Malting, and Distillation (1804-33)	4
3. Bread Assize (1804-24)	1
4. Trade and Manufactures (1802-35)	15
5. Foreign Trade (1820-24)	3
6. Fisheries (1803-33)	1
7. Salt (1801-18)	1
8. Banking, Coinage, Currency, and Exchange (1804-32)	4
9. Civil List (1801-33)	1
10. Post Office and Postage (1735-1839)	14
11. Colonies and Slavery (1804-34)	5
12. Emigration (1826-27)	2
13. Poor (1813-33)	3
14. Poor in Ireland (1819-30)	2
15. Children in Factories (1816-32)	2
16. Weights and Measures (1814-34)	1
17. Medicine and Surgery (1807-34)	4
18. State of Ireland (1824-32)	4
19. Parliament.—Privilege of Publication (1801-41)	12
Continuation (1835-58)	13
20. Debtor and Creditor (1816-34)	2
21. Ecclesiastical Subjects (1810-39)	7
22. Education (1814-34)	5
23. Finance (1807-29)	6
24. Municipal Reform (1819-33)	2
25. East India Affairs (1805-32)	16
Continuation (1835-59)	25
26. Law and Law Courts (1811-34)	6
27. Crime, Police, Punishment, and Seditious Practices (1812-34)	6
28. Annuities, Usury, &c. (1812-29)	1
29. Steam Power (1817-34)	2
30. Commerce and Shipping, and Shipwrecks (1810-34)	3
31. Arts and Literature (1805-34)	1
32. Woods, Forests, and Land Revenues (1829-34)	1
33. Public Offices (1810-34)	1
34. Highways, Wheels, and Carriages (1806-33)	3
35. Prison and Prison Discipline (1811-26)	3
36. Public Buildings (1807-33)	2
37. Local Improvements and Taxation (1809-34)	5

INDEXES TO REPORTS FROM COMMITTEES—*Contd.*

	Vols. Indexed.
38. Roads, Bridges, and Harbours (1803-30)	4
39. Local Taxation, Ireland (1815-34)	1
40. Population (1830-33)	2
41. Dignity of the Peerage (1826)	4
42. Army and Navy (1805-33)	2
43. Public Works, Ireland (1809-34)	3
44. Miscellaneous (1808-34)	4

INDEXES TO REPORTS FROM COMMISSIONERS.

	Vols. Indexed.
1. Education, Ireland (1814-44)	5
2. Law and Courts of Justice (1810-45)	25
3. Roads and Bridges (1800-46)	7
4. Accounts, Public (1800-33)	8
5. Emigration (1828-47)	8
6. West Indies and Mauritius (1832-47)	8
7. Railways (1837-46)	7
8. Public Works, Ireland (1810-46)	11
9. Colonies (1812-40)	12
10. Shannon Navigation (1832-47)	5
11. East India (1806-47)	7
12. Exchequer Bills (1811-42)	1
13. Revenue Inquiry	13
14. Excise Inquiry	5
15. Army	7
16. Naval Inquiry	4
17. Civil Affairs of the Navy	2
18. Agriculture	1
19. Handloom Weavers	4
20. Factories	4
21. Customs, Excise, Stamps, &c.	4
22. Fees, Public Offices	8
23. Cathedral and Collegiate Churches	2
24. Poor Laws, England (1835-48)	8
,, ,, (1849-57)	3
25. ,, Ireland	4
26. ,, Scotland	4
27. Lunacy	8
28. Coal Mines	8

*** *Other Subjects are in progress of Arrangement.*

Note.—Several of these indexes, and the reports to which they relate, will be found in the library of the Statistical Society.

MARRIAGES, BIRTHS, AND DEATHS IN GREAT BRITAIN.

No. I.—ENGLAND AND WALES.

MARRIAGES IN THE QUARTER ENDED 31ST MARCH, 1863; AND BIRTHS AND DEATHS IN THE QUARTER ENDED 30TH JUNE, 1863.

IN the last quarterly report it was stated that in the period to which it referred the birth-rate had been unusually well maintained. That rate was still higher last quarter; and in all the quarters of all the ten years, 1853-62, only two instances occurred in which it was as high or higher. This fact may be remarked in connexion with the generally healthy state of the population during last year. The marriages in the first quarter of the year were more numerous than in the two previous corresponding quarters, a result which the metropolis appears to have mainly helped to produce. But in taking a general survey of the returns, that which chiefly claims notice is the fact that the mortality, which was high in the first quarter of the year, continued high in the quarter that ended on June 30th.

MARRIAGES.—The marriage-rate in the first quarter of the year was 1·404 per cent., or, as it may be stated, if the same rate were in operation for a year, 1,404 persons would be married in that time out of every hundred thousand of the population. The average rate per cent. in the same quarter in ten years is 1·394. Following the Christmas quarter, in which the greatest number of marriages are

ENGLAND:—MARRIAGES, BIRTHS, *and* DEATHS, *returned in the Years* 1857-63, *and in the* QUARTERS *of those Years.*

Calendar YEARS, 1857-63:—*Numbers.*

Years	'63.	'62.	'61.	'60.	'59.	'58.	'57.
Marriages No.	—	163,991	163,706	170,156	167,723	156,070	159,097
Births ,,	—	711,691	696,406	684,048	689,881	655,481	663,071
Deaths ,,	—	436,514	435,114	422,721	440,781	449,656	419,815

QUARTERS *of each Calendar Year*, 1857-63.

(I.) MARRIAGES:—*Numbers.*

Qrs. ended last day of	'63.	'62.	'61.	'60.	'59.	'58.	'57.
March No.	35,454	33,976	33,274	35,150	35,382	29,918	33,321
June ,,	—	40,771	42,012	43,777	42,042	39,890	41,267
Septmbr. ,,	—	40,585	39,884	40,541	39,803	38,599	38,669
Decmbr. ,,	—	48,659	48,536	50,688	50,496	47,663	45,840

QUARTERS *of each Calendar Year*, 1857-63.

(II.) BIRTHS:—*Numbers.*

Qrs. ended last day of	'63.	'62.	'61.	'60.	'59.	'58.	'57.
March .....No.	186,653	182,005	172,933	183,180	175,532	170,959	170,430
June ..... ,,	189,611	185,638	184,820	174,028	175,864	169,115	170,444
Septmbr..... ,,	—	172,237	172,033	164,121	168,394	157,445	161,181
Decmbr. .... ,,	—	171,811	166,620	162,719	170,091	157,962	161,016

(III.) DEATHS:—*Numbers.*

Qrs. ended last day of	'63.	'62.	'61.	'60.	'59.	'58.	'57.
March .....No.	128,524	122,192	121,215	122,617	121,580	125,819	108,665
June ..... ,,	118,375	107,555	107,558	110,869	105,631	107,142	100,046
Septmbr..... ,,	—	92,225	101,232	86,312	104,216	98,142	100,528
Decmbr. .... ,,	—	114,542	105,109	102,923	109,354	118,553	110,576

celebrated, the period to which the present returns relate, is that in which they are always found to be fewest.

The number of marriages reported is 35,454 against 33,274 and 33,976 in two previous March quarters. In London marriages were 5,305 and 5,752 in 1861-62; in the present year they rose to 6,226. There was also an increase on both the previous corresponding quarters in the South-eastern Counties, the South-western, and the West Midland Counties, in Yorkshire, and the Northern Counties. Lancashire exhibits a revival in its marriages as compared with those in the first quarter of 1862; for in three periods taken in the order of time they were in that county 5,431, 4,887, and (this year) 5,245. The increase is very considerable in Liverpool and West Derby, which have been comparatively unharmed by the prevailing distress.

The following districts of the cotton manufacture exhibit an increase in the marriages over those of one or both previous quarters:—

March Quarter.	1861.	1862.	1863.
Prescot	113	135	145
Ormskirk.....	69	59	76
Chorlton	131	93	129
Salford	143	125	155
Manchester	951	830	1,006
Clitheroe	36	28	42
Blackburn	259	216	237

The following are the examples of decrease:—

March Quarter.	1861.	1862.	1863.
Warrington	84	99	73
Bolton	305	314	230
Bury	210	173	153
Barton-upon-Irwell	81	81	59

ENGLAND:—*Annual Rates per Cent. of* PERSONS MARRIED, BIRTHS, *and* DEATHS, *during the* YEARS 1857-63, *and the* QUARTERS *of those Years.*

Calendar YEARS, 1857-63:—*General Percentage Results.*

YEARS	'63.	Mean '53-'62.	'62.	'61.	'60.	'59.	'58.	'57.
Estmtd. Popln. of England *in thousands* in middle of each Year....	20,554	—	20,337	20,119	19,903	19,687	19,471	19,257
Persons Married Perct.	—	1·670	1·612	1·628	1·710	1·704	1·604	1·652
Births .... ,,	—	3·427	3·500	3·461	3·437	3·504	3·366	3·443
Deaths.... ,,	—	2·211	2·146	2·163	2·124	2·239	2·309	2·180

QUARTERS *of each Calendar Year*, 1857-63.

(I.) PERSONS MARRIED:—*Percentages.*

Qrs. ended last day of	'63.	Mean '53-'62.	'62.	'61.	'60.	'59.	'58.	'57.
March....Per ct.	1·404	1·394	1·360	1·346	1·422	1·464	1·252	1·410
June..... ,,	—	1·693	1·610	1·678	1·766	1·716	1·646	1·722
Septmbr. ,,	—	1·607	1·582	1·570	1·614	1·602	1·570	1·592
Decmbr. ,,	—	1·975	1·890	1·906	2·012	2·026	1·934	1·880

(II.) BIRTHS:—*Percentages.*

Qrs. ended last day of	'63.	Mean '53-'62.	'62.	'61.	'60.	'59.	'58.	'57.
March....Per ct.	3·698	3·594	3·644	3·500	3·707	3·631	3·576	3·604
June .... ,,	3·705	3·587	3·666	3·690	3·512	3·588	3·488	3·555
Septmbr. ,,	—	3·292	3·356	3·388	3·267	3·389	3·204	3·316
Decmbr. ,,	—	3·236	3·338	3·272	3·230	3·414	3·205	3·304

(III.) DEATHS:—*Percentages.*

Qrs. ended last day of	'63.	Mean '53-'62.	'62.	'61.	'60.	'59.	'58.	'57.
March....Per ct.	2·546	2·498	2·447	2·453	2·481	2·515	2·631	2·298
June..... ,,	2·313	2·191	2·124	2·147	2·237	2·155	2·210	2·087
Septmbr. ,,	—	1·982	1·797	1·994	1·718	2·097	1·997	2·068
Decmbr. ,,	—	2·178	2·226	2·064	2·043	2·195	2·406	2·269

In some of the above instances, as in many others throughout the country, fluctuations of the marriages in particular districts are probably caused by movements of the population.

Births.—The annual birth-rate in the June quarter was 3·705 per cent., against the average 3·587. It never happens that as many as thirty-six children are born to a thousand of the population in a year, and in the twenty-four years 1838-61 there occurred only one year (1859) in which there were thirty-five; and it is also a rare occurrence that children are born in a quarter at the rate of 37 to 1,000 of the population *per annum*.

The number of births in the quarter was 189,611, that in the same period of 1862 having been 185,638. Nearly 26,000 children were born in London in thirteen weeks. More than 25,000 were born in Lancashire. There was an increase in the births over those of the corresponding quarter of 1862 in all the eleven divisions, except the North-western, which comprises Cheshire and Lancashire, where a decrease would arise from a reduction of the marriages in last year, and probably from a cause of greater moment, the emigration of heads of families from those counties in quest of employment.

Increase of Population.—The births exceeded the deaths by 71,236. Therefore each day in the three months gave on an average a natural increase of 783 to the population. Immigration and emigration modify the result.

It was stated in last Report that the emigration of the March quarter, consisting of 37,806 persons of the English, Scotch, Irish, and other nations, was greater than it had been in the same season since 1854. The Return* of the Commissioners for last quarter shows that emigration had attained a magnitude that can hardly fail to surprise when the circumstances of the Western world, by which it appears to have been chiefly evoked, are taken into consideration. The number of emigrants rose to 83,290, which is more than in any June quarter since that of 1857. In the same period of 1861 it was about 38,000; in that of last year 47,000. The Australian colonies supply an increasing attraction; British North America also draws a growing number; but of the 83,290 emigrants, 56,436 (of whom at least 40,000 were Irish) chose the United States as their destination.

The English people contributed about a fourth part of the emigration to all parts.

Prices, the Weather, and Pauperism.—The lowest, and highest prices of beef at Leadenhall and Newgate were $4\frac{1}{4}d.$ and $6\frac{1}{4}d.$ per lb. sold by the carcase. In the same period of last year they were $4d.$ and $6d.$ During the last twelve months the average price of the best quality has not varied. The price of mutton fell. In the June quarter of 1862 the worst and best qualities were $5d.$ and $7d.$ per lb.; and they were near those prices in the succeeding nine months, till last quarter, when they were $4\frac{3}{4}d.$ and $6\frac{3}{4}d.$ The average price of wheat fell to 46*s.* 2*d.* per quarter; that of the best potatoes to 120*s.* per ton against 190*s.* in the same quarter of last year. Beef furnishes the only exception to the comparative cheapness of the principal articles of food.

Mr. Glaisher writes that the period of five months that began with December and ended on 30th April, was as warm as any corresponding period in meteorological annals. The first half of the last quarter, viz., from the beginning of April to the middle of May, with the exception of a few days, had a mean temperature which was on an average two degrees in excess daily. After the 17th May, for a period of nine days, it was no less than 6° under the average. Again the temperature rose, and was 3·25° in excess till 5th June, from which date till the end of the quarter the air was cold.

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* Return with which the Registrar General has been favoured by the Emigration Commissioners: the number returned as of English origin was 8,773, while the birthplace of 4,884 emigrants was not distinguished; in the above statement a proportional number of these has been added to those returned as of English origin.

The mean temperature of the air in April was 49°; that of May 52°; and that of June 58°. The mean temperature of April was higher than that of the same month in any year since 1814. Days and nights in April were warm; nights in May and days in June were cold.

Rain fell to the amount of 5·6 ins., of which 3·9 ins. fell in June. In the preceding two months of the quarter the rain-fall was scanty.

This account of the weather is derived from the observations at Greenwich.

The pauperism of the June quarter declined, as is usual, on that of the March quarter; but as regards the recipients of out-door relief it was much greater than in the June quarter of 1862. The average numbers of poor persons relieved on the last day of each week, in three corresponding quarters, were as follows:—

June quarter,	1861	In-door,	117,802	Out-door,	713,785
,,	'62	,,	127,863	,,	781,858
,,	'63	,,	127,852	,,	879,241

Deaths; and the State of the Public Health.—After a period of two years in which the public health was better than usual, the mortality rose in the last three months of 1862, was high in the first three months (the winter quarter) of the current year, and continued above the average in the quarter for which the returns are now made. In this last period the death-rate was 2·313 per cent. per annum, whilst the average was 2·191. With the present exception, a spring quarter has not occurred since the year 1853 in which the rate of mortality was as high as 2·3.

Both town and country testify to an increase of deaths in their respective populations; for the rate in the chief towns was 2·478 (against an average of 2·336), and that which prevailed in small towns and country parts was 2·102 (against 2·031). Summer-like weather in the early year, and cold days or nights striking a sudden chill into the heart of it, produce effects from which neither city nor hamlet is exempt.

That vast town population that resides within "the bills of mortality" suffered in common with the provincial populations, and in its due proportion; for though those complaints that are more directly traceable to meteorological causes, namely bronchitis and pneumonia, were little if in any degree more fatal in the metropolis than usual, both small-pox and scarlatina were very prevalent, and caused numerous deaths. Small-pox carried off 788 persons in London, or nearly 9 daily; scarlatina and diphtheria 1230. Though the former disease destroyed fewer lives than the latter, it was more powerful in inspiring the public mind with a salutary dread. It should not be overlooked that prophylatic measures are available against scarlatina as well as small-pox, and both maladies are subject to modification.

Small-pox was not confined to London; its presence, which assumed in some instances a character of virulence, is announced by Registrars in many and distant parts of the country. The following are the chief districts, parishes, or townships were the attack was of sufficient importance to procure a notice in the reports of the local officers:—In Surrrey: Croydon and Godstone. In Kent: Maidstone and Rochester. In Berkshire: Reading and Kintbury. In Bedfordshire: Wing (Leighton Buzzard). In Essex: West Ham, Orsett, Rochford, Manningtree, Colchester, and Sible Hedingham. In Suffolk: Cavendish. In Cornwall: Bodmin, Truro, Redruth, and Penzance. In Warwickshire: Kilsby. In Lincolnshire: Grantham, Market Rasen, and Misterton. In Derbyshire: Derby and Glossop. In Cheshire: Stockport. In Lancashire: West Derby, Wigan, Didsbury, Chorlton-upon-Medlock, Manchester (where it was very prevalent), Ashton, and Oldham. In Yorkshire: Barnoldswick, Ripon, Harrogate, Wetherby, Yeadon, Elland (Halifax), Shipley (Bradford), Bramley, Leeds, Dewsbury, Barnsley, Ecclesall Bierlow, Sheffield, Bramham (Tadcaster), York, Sculcoates, Hull, Whitby, and Northallerton. In the Northern Counties: Stockton, Yarm, Bishop, Auckland, and Chester-le-Street. Fear of the disease, minatory notices issued by Guardians,

or the infection of example, have given a useful stimulus to vaccination in many places where it had been opposed by prejudice or had sunk into neglect.

Not only small-pox but also measles and scarlatina attacked the industrial populations both in Lancashire and Yorkshire. Of 287 deaths in the St. Helen's sub-district of Prescot 68 were from measles; and out of 376 in Wigan 72 were from the same disease. In West Leigh a fourth part of the total number of deaths was from measles, which was also very fatal in Bolton. In the sub-district of Oldham-below-Town out of 312 deaths 15 were from small-pox, and 57 from scarlatina. In the North sub-district of Sheffield 23 cases of small-pox and 20 of scarlatina were fatal; and in Brightside (Sheffield) 27 cases of small-pox, 25 of scarlatina, and 20 of measles were attended with the same result.

The mortality of London in the quarter was 2·403 per cent., that of the North-western Division 2·569, that of Yorkshire 2·589. Cheshire and Lancashire constitute the North-western Division; and the death-rate in the latter county apart from the former, was 2·592. Liverpool, Manchester, and other large towns have long invested this county with an unfavourable distinction, which it is hoped the important measure now passed by Parliament for enabling the distressed unions to borrow money for works of public utility will be successfully employed to remove. In the present day the rate of mortality in Lancashire furnishes a striking contrast to that of the South-eastern Counties, which was 1·968 last quarter. To reduce, if not to annihilate the difference, is not an impracticable task.

The deaths in London rose from 15,230 and 15,695 in the June quarter of 1861-62 to 17,417 last quarter. Those in the North-western Counties rose from 17,576 and 18,017 to 19,467; those in Yorkshire from 11,600 and 11,916 to 13,339. The increase in Lancashire and Cheshire in last quarter on the mean mortality of the two previous seasons was 9 per cent., and less than in London and Yorkshire, where it was 13 per cent. Taking particular districts of the cotton manufacture, there was an increase in Oldham; in Manchester and Warrington of 20 per cent.; in Chorlton and Wigan of 25 and 34 per cent. Measles and other epidemics, as has been shown above, were spreading through those parts. On the other hand there was a decrease in Ashton, Preston, and Chorley, amounting in the last two districts to 20 per cent. or more. It is probable that fewer deaths have been registered in many districts in consequence of the emigration or removal of the inhabitants, for doubtless many villages besides Belmont, which the Registrar writes is "almost uninhabited, owing to the badness of trade," complain of empty houses; but in reviewing the whole facts of the present Return, they will be found to support the conclusion which former Reports tended to establish, that sickness has not been aggravated nor the mortality increased by the distress which has prevailed, and which happily to a certain extent has now been subdued. It must be regarded as a providential interposition in favour of the under-fed and half-clad workmen and their families, that the period embracing December and four succeeding months was, in the words of the Meteorological Report, distinguished by a temperature higher than in any corresponding period since 1771.

The leading facts in the financial history* of the distress may be stated in a few words:—The number of persons dependent on the parochial rates and relief funds was 500,000 before Christmas 1862, when the maximum was attained; at the end of June it was reduced to 256,230. Nearly half the burden is at the present time removed. The expenditure from both sources in December was 289,225*l.* It was reduced in June to 102,241*l.* The loss of factory wages per week, at the end of January, 1863, was 172,018*l.*; at the end of June, 132,553*l.* The decrease in weekly expenditure from the rates and relief funds (the last week in December, 1862, being compared with the last week in June, 1863) has been in six months 20,000*l.* The total expenditure in twelve months from 30th June, 1862, to the same period in 1863, was about 1,676,413*l.*, of which amount 1,054,413*l.** was derived from relief funds, and 622,000*l.*, expended on the out-door indigent only, from parochial rates.

* See Report of the Central Executive Committee (Manchester, July 20th, 1863).

ANNUAL RATE *of* MORTALITY *per Cent. in* TOWN *and* COUNTRY DISTRICTS *of* ENGLAND *in each Quarter of the Years* 1863-61.

	Area in Statute Acres.	Population Enumerated. 1851.	Population Enumerated. 1861.	Quarters ending	Annual Rate of Mortality per Cent. in each Quarter of the Years 1863.	Mean '53-62.	1862.	1861.
In 142 Districts, and 56 Sub-districts, comprising the *Chief Towns*.....	3,287,151	9,155,964	10,930,841	March	2·705	2·688	2·661	2·658
				June....	2·478	2·336	2·265	2·271
				Sept. ..	—	2·239	1·977	2·193
				Dec.....	—	2·454	2·512	2·291
				Year	—	2·429	2·354	2·353
				Year	—	1·970	1·894	1·938
In the remaining Districts and Sub-districts of England and Wales, comprising chiefly *Small Towns* and *Country Parishes*	34,037,732	8,771,645	9,135,383	March	2·343	2·287	2·184	2·210
				June...	2·102	2·031	1·949	1·999
				Sept. ..	—	1·694	1·573	1·753
				Dec.....	—	1·866	1·870	1·790

Note.—The three months January, February, March, contain 90, in leap year 91 days; the three months, April, May, June, 91 days; each of the last two quarters of the year 92 days. For this inequality a correction has been made in the calculations, also for the difference between 365 and 365·25 days, and 366 and 365·25 days in leap year.

The improvement in the cotton districts, by which forty-seven local committees have been enabled to suspend operations, has arisen from various causes: the emigration or removal of operatives, the increase of out-door work, the partial revival of industry. The Public Works Act, if adopted and carried into execution with earnestness and goodwill, is expected to provide the wages of labour to a fifth or sixth part of the population who without its aid would be in want. But, notwithstanding present encouragement, the Central Executive Committee takes a desponding view of the coming winter. Those external conditions of the cotton trade from which the ruin of the manufacture sprung, remain unchanged, and there is little prospect of that cheapness of material on which former prosperity was based. Present alleviations of the distress will, some of them, cease when summer and autumn have passed. Private savings are spent, credit exhausted, relief funds diminished. Therefore it is not unreasonable to anticipate that though the distress of the approaching winter may visit fewer hearths, its severity, where it falls, may be greater, because the means of relieving it may be less.

* A portion of this sum appears to have been expended in May and June, 1862.

ENGLAND:—MARRIAGES *Registered in Quarters ended 31st March,* 1863-61; *and* BIRTHS *and* DEATHS *in Quarters ended 30th June,* 1863-61.

1 DIVISIONS. (England and Wales.)	2 AREA in Statute Acres.	3 POPULATION, 1861. (*Persons.*)	4 MARRIAGES in Quarters ended 31st March, '63.	5 '62.	6 '61.
ENGLD. & WALES.... *Totals*	37,324,883	No. 20,066,224	No. 35,454	No. 33,976	No. 33,274
I. London	77,997	2,803,989	6,226	5,752	5,305
II. South-Eastern	4,065,935	1,847,661	2,759	2,575	2,425
III. South Midland	3,201,290	1,295,497	1,594	1,642	1,557
IV. Eastern	3,214,099	1,142,580	1,451	1,438	1,497
V. South-Western	4,993,660	1,835,714	3,171	3,072	2,988
VI. West Midland	3,865,332	2,436,568	4,129	4,016	3,820
VII. North Midland	3,540,797	1,288,928	1,816	1,805	1,810
VIII. North-Western	2,000,227	2,935,540	6,060	5,711	6,199
IX. Yorkshire	3,654,636	2,015,541	3,926	3,832	3,753
X. Northern	3,492,322	1,151,372	2,278	2,120	2,005
XI. Monmthsh. & Wales	5,218,588	1,312,834	2,044	2,013	1,915

7 DIVISIONS. (England and Wales.)	8 BIRTHS in Quarters ended 30th June, '63.	9 '62.	10 '61.	11 DEATHS in Quarters ended 30th June, '63.	12 '62.	13 '61.
ENGLD. & WALES.... *Totals*	No. 189,611	No. 185,638	No. 184,820	No. 118,375	No. 107,555	No. 107,558
I. London	25,766	24,851	24,916	17,417	15,695	15,230
II. South-Eastern	15,307	14,859	14,853	9,311	8,148	8,239
III. South Midland	11,528	11,179	11,428	6,903	6,227	6,484
IV. Eastern	10,067	9,730	9,993	6,362	5,508	6,092
V. South-Western	15,706	15,282	15,579	10,040	8,809	8,599
VI. West Midland	24,113	23,439	23,436	13,966	12,355	12,721
VII. North Midland	11,956	11,667	11,795	6,994	6,533	6,962
VIII. North-Western	30,004	30,634	29,797	19,467	18,017	17,576
IX. Yorkshire	20,450	19,772	19,609	13,339	11,916	11,600
X. Northern	12,362	12,082	11,372	7,096	6,815	6,575
XI. Monmthsh. & Wales	12,352	12,143	12,042	7,480	7,532	7,480

REMARKS ON THE WEATHER

DURING THE QUARTER ENDING 30TH JUNE, 1863.

By JAMES GLAISHER, ESQ., F.R.S., *&c., Sec. of the British Meteorological Society.*

Till May 17th, with the exception of two days at the beginning of April, and five days at the end of April and the beginning of May, the temperature of the air was in excess to the average of 2° daily. A period of 9 days followed, comprised between May 18th and May 26th, during which the average daily deficiency was no less than 6°; this was succeeded by one of like duration but of opposite character, the average daily excess being $3°\frac{1}{4}$; and from June 5th to the end of the quarter there was a deficiency amounting on the average to $2°\frac{1}{2}$ daily.

The average monthly temperature of the air, from December, 1862, to April, 1863, was 44°·1; in the years 1821 and 1[illegible] the temperature for the same period was 44°·2, being practically the same as in the present year; in no other similar period, from 1771, has the temperature been so high, so that we may fairly conclude that the temperature for the five months ending April of this year is distinguished as having been as high as any on record. The nearest approach to this high temperature was in the period ending April, 1796, when it was 43°·4; in 1854 it was 43°·6; in 1846 it was 43°·9; and in 1859 it was 43°·5.

The mean temperature of April was 49°·1, being higher than in any April since 1844.

The mean temperature of May was 52°·0, being 3°·4 lower than in 1862, and of nearly the same value as in 1861.

The mean temperature of June was 58°·1, being 1°·8 higher than in 1862, and 1° lower than in 1861.

The mean high day temperature in April was $4°\frac{1}{2}$ in excess; in May was nearly of its average value; and in June was 0°·9 in defect.

The mean low night temperature in April was $1°\frac{1}{2}$ in excess; in May was $1°\frac{1}{2}$ in defect; and of nearly its average value in June.

Therefore both the days and nights in April were warm, and the nights in May; and the days in June were cold.

The mean temperature of the air in April was $2°\frac{3}{4}$ in excess; in May 1° in defect; and in June 1° in defect.

The temperature of the dew point in April was $2°\frac{1}{2}$ in excess; in May 0°·5 in defect; and in June 0°·7 in defect.

The degree of humidity and the readings of the barometer differed but very little from their monthly average values in any of the months.

The mean temperature of the air at Greenwich in the three months ending May, constituting the three spring months, was 48°·3, being 1°·9 above the average of the preceding 92 years.

1863. Months.	Temperature of Air. Mean.	Diff. from Average of 22 Years.	Diff. from Average of 22 Years.	Evaporation. Mean.	Diff. from Average of 22 Years.	Dew Point. Mean.	Diff. from Average of 22 Years.	Air—Daily Range. Mean.	Diff. from Average of 22 Years.	Water of the Thames	Elastic Force of Vapour. Mean.	Diff. from Average of 22 Years.	Weight of Vapour in a Cubic Foot of Air. Mean.	Diff. from Average of 22 Years.
	°	°	°	°	°	°	°	°	°	°	In.	In.	Gr.	Gr.
April	49·1	+3·3	+2·8	46·0	+2·6	42·7	+2·6	21·1	+3·0	52·4	·274	+·026	3·1	+0·2
May	52·0	−0·5	−0·9	48·6	−0·6	45·2	−0·4	21·7	+1·5	55·3	·302	−·001	3·4	−0·1
June	58·1	0·0	−1·0	53·9	−0·8	50·2	−0·7	20·0	−0·8	61·8	·364	−·009	4·1	−0·1
Mean	53·0	+0·9	+0·3	49·5	+0·4	46·0	+0·5	20 9	+1·2	56·5	·313	+·005	3·5	0·0

1863. Months.	Degree of Humidity. Mean.	Diff. from Average of 22 Years.	Reading of Barometer. Mean.	Diff. from Average of 22 Years.	Weight of a Cubic Foot of Air. Mean.	Diff. from Average of 22 Years.	Rain. Amnt.	Diff. from Average of 46 Years.	Daily Horizontal Movement of the Air.	Reading of Thermometer on Grass. Number of Nights it was: At or below 30°.	Between 30° and 40°.	Above 40°.	Lowest Reading at Night.	Highest Reading at Night.
			In.	In.	Gr.	Gr.	In.	In.	Miles.				°	°
April	78	− 1	29·813	+·061	543	+ 1	0·4	−1·4	260	9	15	6	19·4	46·7
May	78	+ 1	29·857	+·090	540	+ 2	1·3	−0·8	235	6	12	13	22·4	53·4
June	75	0	29·727	−·063	531	0	3·9	+2·0	207	0	6	24	36·1	53·4
Mean	77	0	29·799	+·029	538	+ 1	Sum 5·6	Sum −0·2	Mean 234	Sum 15	Sum 33	Sum 43	Lowest 19·4	Highst 53·4

Note.—In reading this table it will be borne in mind that the sign (−) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on April 7th at Clifton, Bath, and Stonyhurst; on the 23rd at North Shields; on the 28th at York, North Shields, and Carlisle. On May 13th at Bradford, Stonyhurst, and North Shields; on the 15th at Oxford and Royston; on the 16th at Bradford, Otley, and Banbury; and on the 17th at Eccles. On June 6th at Petersfield, Bath, Camden Town, Great Berkhampstead, Hartwell, and Cardington; on the 7th at Oxford, Thelwall, Eccles, and Wisbeach; on the 8th at Clifton, Great Berkhampstead, Scarborough, and Wisbeach; on the 10th at Clifton, Cardington, Wisbeach, and Reading; on the 12th at Liverpool, Wisbeach, and Thelwall; on the 13th at Grantham; on the 18th at Guernsey and Liverpool; on the 24th throughout the greater part of the country; on the 25th at Brighton; and on the 29th at Scarborough.

Thunder was heard but lightning was not seen on April 7th and 10th at Little Bridy. On June 2nd at Cockermouth; on the 6th at Little Bridy, Oxford, and Grantham; on the 7th at Holkham, Norwich, Grantham, Bradford, Stonyhurst, and Harrogate; on the 8th at Holkham and Cockermouth; on the 9th at Stonyhurst, Scarborough, Bywell, and North Shields; on the 10th at Oxford; on the 11th at Wisbeach and Thelwall, near Warrington; on the 12th at Oxford and Stonyhurst; on the 13th at Stonyhurst; on the 16th at Bywell; on the 17th at North Shields; on the 23rd at Oxford; on the 26th and 27th at Little Bridy; on the 28th at North Shields; on the 29th at Norwich; and on the 30th at North Shields.

ENGLAND:—*Meteorological Table, Quarter ended 30th June, 1863.*

1 Names of Stations.	2 Mean Pressure of Dry Air reduced to the Level of the Sea.	3 Highest Reading of the Thermometer.	4 Lowest Reading of the Thermometer.	5 Range of Temperature in the Quarter.	6 Mean Monthly Range of Temperature.	7 Mean Daily Range of Temperature.	8 *Mean Temperature of the Air.*	9 Mean Degree of Humidity.
	in.	°	°	°	°	°	°	
Guernsey	29·684	71·0	43·5	27·5	21·8	9·4	50·7	83
Exeter	29·688	76·5	32·0	44·5	35·7	15·4	52·7	70
Ventnor	29·680	69·0	37·0	32·0	25·3	10·3	53·9	76
Barnstaple	29·660	73·5	33·5	40·0	32·5	14·9	52·1	88
Royal Observatory	29·652	84·0	28·3	55·7	43·7	21·3	53·1	77
Royston	29·647	79·0	27·3	51·7	42·8	21·3	52·0	77
Lampeter	29·644	74·6	25·0	49·6	40·8	19·1	50·4	80
Norwich	29·643	76·0	32·0	44·0	37·6	13·6	52·5	79
Derby	29·634	76·0	29·0	47·0	39·0	21·4	52·8	77
Liverpool	29·632	69·6	37·6	32·0	22·1	10·4	51·9	76
Wakefield	29·634	76·7	34·7	42·0	39·1	19·5	51·9	80
Leeds	29·631	78·0	30·0	48·0	37·3	18·4	51·6	75
Stonyhurst	29·636	69·7	33·5	36·2	28·2	15·2	49·9	80
Scarborough	29·630	69·0	33·0	36·0	27·3	11·5	50·3	82
North Shields	29·609	70·0	31·3	38·8	29·2	13·3	48·4	82

10 Names of Stations.	11 Wind. Mean estimated Strength.	Relative Proportion of N.	E.	S.	W.	16 Mean Amount of Cloud.	17 Rain. Number of Days on which it fell.	18 Amount collected.
								in.
Guernsey	1·4	10	5	6	9	3·9	27	6·5
Exeter	0·8	9	5	9	7	6·5	42	7·6
Ventnor	—	4	7	7	12	—	30	5·6
Barnstaple	1·4	6	6	8	10	4·6	39	9·2
Royal Observatory	0·4	8	6	6	10	6·7	33	5·6
Royston	—	8	3	6	13	6·0	44	4·1
Lampeter	0·6	6	5	7	12	7·1	41	8·3
Norwich	1·3	7	5	9	9	6·3	34	4·7
Derby	—	—	—	—	—	—	42	7·4
Liverpool	1·3	7	4	9	10	7·6	42	6·6
Wakefield	2·1	6	5	9	11	7·0	36	4·7
Leeds	0·2	6	3	9	13	6·2	43	5·1
Stonyhurst	0·7	4	5	6	15	7·7	54	14·5
Scarborough	2·3	6	3	7	14	—	19	3·2
North Shields	2·0	6	5	5	13	6·6	54	6·2

No. II.—SCOTLAND.

MARRIAGES, BIRTHS, AND DEATHS IN THE QUARTER ENDED 30TH JUNE, 1863.

BIRTHS.—29,651 births were registered in Scotland during the quarter ending 30th June, 1863, being the annual proportion of 383 births in every 10,000 persons of the estimated population, or 1 birth to every 25 persons. This is a very high proportion, and considerably above the mean birth-rate of the corresponding quarter during the seven previous years, which was only at the rate of 371 births in every 10,000 persons.

Of the 29,651 children whose births were registered during the quarter, 15,185 were males, 14,466 females; which is within the smallest fraction of 105 males for every 100 females, or very nearly the normal proportion of the sexes at birth over all Europe.

The usual difference in the proportion of births to the population in the town and country districts was noticed during the quarter. Thus, in the 126 town districts (which embrace almost all the towns with populations of 2,000 and upwards), 17,211 births were registered, while in the 883 country districts (embracing the remainder of the population of Scotland), 12,440 births occurred; thus indicating an annual proportion of 420 births in every 10,000 persons in the town districts, but only 340 births in a like population in the country districts.

Of the 29,651 births, 26,890 were legitimate, and 2761 illegitimate, the illegitimate being in the proportion of one to every 10·7 births, or 9·3 per cent. of the births illegitimate. As formerly the proportion of illegitimate births was higher in the country than in the town districts; for while 9·1 per cent. of the births were illegitimate in the town districts, the proportion was 9·5 per cent. in the country districts.

DEATHS.—17,947 deaths were registered in Scotland during the quarter, being in the annual proportion of 231 deaths in every 10,000 persons of the estimated population. The mean death-rate of the corresponding quarter, during the eight previous years, was only 212 deaths in every 10,000 persons; so that the mortality during the quarter was excessively high.

As usual, the deaths in the town districts were much more numerous, in proportion to the population, than those in the country districts. Thus, in the 126 town districts, 11,105 deaths were registered; while they only amounted to 6,842 in the 883 country districts; thus indicating an annual proportion of 271 deaths in the town districts in every 10,000 persons of the population, but only 186 deaths in the country districts in a like population.

Of the deaths, 6,069 occurred in April, 5,941 in May, and 5,937 in June. It thus appears that the daily deaths numbered 197 in May, but 191 in June; thus exhibiting the extreme anomaly of the *daily deaths in June being six more than during May*, a circumstance which has not previously occurred since the Registration Act came into operation nine years ago; thus proving June to have been a month more fatal to the population than May; whereas, in general, its mortality is much less.

INCREASE OF THE POPULATION.—As the births numbered 29,651, and the deaths 17,947, the natural increase of the population by the excess of births over deaths during the quarter would amount to 11,704 persons. From that number, however, has to be deducted the number of persons who emigrated during the quarter. From a return furnished to the Registrar-General by the Emigration Commissioners, it appears that 83,290 persons emigrated from the ports of Great Britain and Ireland. Of these, 5,272 were ascertained to have been of Scottish origin; but to that number 681 must be added as the proportion of persons whose origin was not distinguished. The total number of Scottish emigrants would thus amount to 5,953, which, deducted from the excess of births over deaths, would leave 5,751 as the increase of the population during the quarter.

MARRIAGES.—5,557 marriages were registered in Scotland during the quarter, being in the annual proportion of 71 marriages in every 10,000 persons of the estimated population; a proportion higher than the mean corresponding quarter of the eight previous years, which was only at the rate of 68 marriages in every 10,000 persons. The high marriage-rate, taken in connection with the fact of the marriage-rate having also been above the average during the previous quarter, speaks well for the general prosperity of the country, inasmuch as it is constantly observed that the proportion of marriages steadily fluctuates with that of the commercial prosperity and with the more or less full employment of the working classes.

Like the births and deaths, the number and proportion of marriages, were much higher in the town than in the country districts. Thus, in the 126 town districts, 3,467 marriages were contracted during the quarter, but only 2,090 in the 883 country districts; being the proportion of 84 marriages in every 10,000 persons in the town districts, but only 57 marriages in a like population in the country districts.

Of the marriages, 1,264 were contracted in April, 1,101 in May, and 3,192 in June.

HEALTH OF THE POPULATION.—The population has been far from healthy during the past quarter, and the mortality has been considerably above the average of the coresponding quarter of former years. Typhus and gastric fevers, with small-pox and bronchial affections have been prevalent among adults. A regular epidemic of measles has prevailed over all Scotland among the young, while that deadly disease diphtheria, has, in several instances, almost assumed the epidemic form, and has prevailed extensively over the country, largely increasing the deaths.

Attention has been several times directed to the apparent connection between epidemics of small-pox and of measles; deadly epidemics of measles frequently following epidemics of small-pox. Scotland, at the present moment, is exhibiting another instance of this strong connection between the two diseases, measles having followed small-pox, and in some places exhibiting quite an unusual fatality. This circumstance is another strong reason for desiring to see some effective measure carried out for securing the people from small-pox by means of vaccination; for it may happen that, by extinguishing small-pox, we may also be reducing the fatality from measles.

WEATHER.—The most noticeable feature in the weather during the second quarter was the continued greater humidity of the atmosphere, the greater number of rainy days, and the greater depth of rain which fell, than during the corresponding quarter of former years. This greater moisture was evidently due to the much greater preponderance than usual of winds from the west and south-west. These winds, coming from the Atlantic, bring with them much watery vapour, and when they form the lower or terrestrial current, as they pass over the land, they deposit a considerable portion of the vapour in the form of rain, and keep the atmosphere in a tolerably humid state. During the second quarter, however, the dry, keen easterly winds usually occur as the leading lower or terrestrial current, and when these arid easterly breezes prevail, the atmospheric humidity is low, and the deposit of rain small.

The much greater prevalence than usual of these moist westerly breezes during the quarter will be at once apparent from the fact, that during the corresponding quarter of the six previous years, winds with an easterly point blew 33 days, winds with a westerly point 34 days. But during the past quarter, the westerly breezes so preponderated, that while easterly breezes blew only on 22 days, westerly breezes blew on 50 days.

SCOTLAND:—MARRIAGES, BIRTHS, *and* DEATHS *Registered in the Quarter ended 30th June,* 1863.

1 DIVISIONS. (Scotland)	2 AREA in Statute Acres.	3 POPULATION, 1861. (*Persons.*)	4 Marriages.	5 Births.	6 Deaths.
		No.	No.	No.	No.
SCOTLAND.....*Totals*	19,639,377	3,062,294	5,557	29,651	17,947
I. Northern	2,261,622	130,422	104	825	548
II. North-Western.....	4,739,876	167,329	161	1,080	808
III. North-Eastern	2,429,594	366,783	656	3,287	1,621
IV. East Midland	2,790,492	523,822	907	4,788	2,868
V. West Midland	2,693,176	242,507	381	2,146	1,270
VI. South-Western	1,462,397	1,008,253	2,055	11,689	7,062
VII. South-Eastern	1,192,524	408,962	942	4,007	2,498
VIII. Southern	2,069,696	214,216	351	1,829	1,272

No. III.—GREAT BRITAIN.

SUMMARY *of* MARRIAGES, *in the Quarter ended* 31*st March,* 1863; *and* BIRTHS *and* DEATHS, *in the Quarter ended* 30*th June,* 1863.

COUNTRIES.	AREA in Statute Acres.	POPULATION, 1861. (*Persons.*)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
England and Wales.....	37,324,883	20,066,224	35,454	189,611	118,375
Scotland	19,639,377	3,062,294	5,090	29,651	17,947
GREAT BRITAIN.....	56,964,260	23,128,518	40,544	219,262	136,322

Trade of United Kingdom, 1863-62-61.—*Distribution of* Exports *from United Kingdom, according to the Declared Real Value of the Exports; and the Computed Real Value* (*Ex-duty*) *of* Imports *at Port of Entry, and therefore including Freight and Importer's Profit.*

Merchandize (*excluding Gold and Silver*), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	First Three Months. 1863. Imports from	1863. *Exports to*	1862. Imports from	1862. *Exports to*	1861. Imports from	1861. *Exports to*
I.—FOREIGN COUNTRIES:	£	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland	1,840	311,	1,715,	329,	1,601,	241,
Central Europe; viz., Prussia, Germany, the Hanse Towns, Holland, and Belgium	4,295,	3,932,	3,492,	4,193	3,320,	4,356,
Western Europe; viz., France, Portugal (with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries)	7,211,	3,778,	5,876,	3,764	6,068,	2,856,
Southern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	984,	1,789,	834,	1,683,	1,043,	1,876,
Levant; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	5,471,	2,181,	3,436,	1,145,	3,308,	1,308,
Northern Africa; viz., Tripoli, Tunis, Algeria, and Morocco	89,	18,	93,	35,	79,	43,
Western Africa	302,	202,	283,	249,	152,	272,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Mooria Islands	3,	16,	—	25,	—	3,
Indian Seas, Siam, Sumatra, Java, Philippines; other Islands	408,	127,	243,	287,	235,	543,
South Sea Islands	—	—	—	—	—	—
China, including Hong Kong	5,125,	755,	3,735,	777,	2,906,	1,853,
United States of America	4,360,	4,303,	5,319,	3,704,	14,046,	4,147,
Mexico and Central America	400,	394,	242,	108,	156,	206,
Foreign West Indies and Hayti	655,	624,	300,	553,	625,	563,
South America (Northern), New Granada, Venezuela, and Ecuador	188,	373,	308,	250,	212,	311,
„ (Pacific), Peru, Bolivia, Chili, and Patagonia	1,154,	486,	1,160,	301,	996,	586,
„ (Atlantic) Brazil, Uruguay, and Buenos Ayres	1,265,	1,138,	852,	1,290,	653,	1,676,
Whale Fisheries; Grnlnd., Davis' Straits, Southn. Whale Fishery, & Falkland Islands	—	5,	6,	5,	—	3,
Total.—Foreign Countries	33,750,	20,432,	27,894,	18,698,	35,400,	20,843,
II.—BRITISH POSSESSIONS:						
British India, Ceylon, and Singapore	5,379,	2,883,	3,103,	3,830,	2,267,	3,204,
Austral. Cols.—New South Wales and Victoria	778,	1,761,	378,	1,621,	286,	1,466,
„ „ So. Aus., W. Aus., Tasm., and N. Zea.	114,	605,	77,	421,	180,	375,
British North America	509,	521,	923,	268,	593,	329,
„ W. Indies with Btsh. Guiana & Honduras	953,	638,	954,	712,	793,	597,
Cape and Natal	487,	338,	204,	487,	204,	465,
Brt. W. Co. of Af., Ascension and St. Helena	16,	92,	21,	94,	17,	112,
Mauritius	779,	98,	540,	138,	1,012,	129,
Channel Islands	122,	193,	142,	155,	140,	149,
Total.—British Possessions	9,137,	7,129,	6,342,	7,726,	5,420,	6,826,
General Total.....£	42,887,	27,561,	34,236,	26,424,	40,820,	27,669,

IMPORTS. — (United Kingdom.) — First Five Months (*January — May*), 1863-62-61-60-59.—*Computed Real Value* (*Ex-duty*), *at Port of Entry* (*and therefore including Freight and Importer's Profit*), *of Articles of Foreign and Colonial Merchandize Imported into the United Kingdom.*

(First Five Months.) [000's omitted.] Foreign Articles Imported.		1863.	1862.	1861.	1860.	1859.
		£	£	£	£	£
Raw Matls.—*Textile.*	Cotton Wool	13,924,	5,702,	18,909,	18,752,	12,044,
	Wool (Sheep's)..	3,686,	3,268,	2,849,	3,308,	3,063,
	Silk	6,620,	6,162,	4,184,	4,137,	4,568,
	Flax	1,050,	1,050,	641,	769,	881,
	Hemp	874,	524,	358,	398,	567,
	Indigo	767,	734,	425,	676,	707,
		26,921,	17,440,	27,366,	28,040,	21,830,
,, ,, *Various.*	Hides	804,	814,	638,	1,218,	747,
	Oils	1,377,	1,128,	976,	1,040,	939,
	Metals	1,378,	1,490,	1,055,	1,304,	1,151,
	Tallow	392,	487,	569,	527,	330,
	Timber.....	1,858,	1,439,	1,413,	1,058,	1,096,
		5,809,	5,358,	4,651,	5,147,	4,263,
,, ,, *Agricll.*	Guano	1,167,	315,	879,	626,	339,
	Seeds	1,085,	776,	968,	947,	1,011,
		2,252,	1,091,	1,847,	1,573,	1,350,
Tropical,&c., Produce.	Tea	4,907,	4,471,	3,435,	3,811,	2,235,
	Coffee	1,200,	926,	669,	793,	419,
	Sugar & Molasses	5,066,	4,756,	4,766,	4,277,	3,900,
	Tobacco	650,	370,	465,	312,	277,
	Rice.....	416,	500,	523,	244,	147,
	Fruits	105,	127,	312,	251,	140,
	Wine	1,816,	1,494,	1,816,	1,783,	841,
	Spirits	823,	770,	649,	964,	709,
		14,983,	13,414,	12,635,	12,435,	8,668,
Food	Grain and Meal..	10,116,	12,836,	15,981,	6,402,	6,752,
	Provisions	3,011,	3,208,	2,673,	2,131,	1,155,
		13,127,	16,044,	18,654,	8,533,	7,907,
Remainder of Enumerated Articles		1,702,	1,314,	1,307,	1,369,	1,138,
Total Enumerated Imports....		64,794,	54,661,	66,460,	57,097,	45,156,
Add for Unenumerated Imports (say)		16,198,	13,665,	16,615,	14,274,	11,289,
Total Imports.....		80,992,	68,326,	83,075,	71,371,	56,445,

EXPORTS. — (United Kingdom.) — First Six Months (*January — June*), 1863-62-61-60-59.—*Declared Real Value, at Port of Shipment, of Articles of* British *and* Irish *Produce and Manufactures Exported from United Kingdom.*

(First Six Months.) [000's omitted.] British Produce, &c., Exported.		1863.	1862.	1861.	1860.	1859.
		£	£	£	£	£
Manfrs.—*Textile.*	Cotton Manufactures..	15,542,	15,431,	18,894,	18,580,	18,942,
	,, Yarn.....	2,967,	3,295,	4,458,	4,660,	4,370,
	Woollen Manufactures	6,084,	5,600,	4,961,	5,501,	5,861,
	,, Yarn	2,213,	1,573,	1,640,	1,739,	1,133,
	Silk Manufactures ...	874,	1,001,	1,024,	950,	1,022,
	,, Yarn.....	157,	161,	134,	117,	97,
	Linen Manufactures....	2,903,	2,255,	2,039,	2,001,	2,257,
	,, Yarn.....	1,114,	840,	773,	913,	787,
		31,854,	30,156,	33,923,	34,461,	34,469,
,, *Sewed.*	Apparel	1,172,	1,033,	951,	965,	1,013,
	Haberdy. and Millnry.	1,817,	1,592,	1,689,	1,856,	2,158,
		2,989,	2,625,	2,640,	2,821,	3,171,
Metals	Hardware.....	1,618,	1,475,	1,640,	1,657,	1,840,
	Machinery	1,884,	1,821,	1,905,	1,592,	1,487,
	Iron	5,917,	5,071,	5,256,	5,607,	6,331,
	Copper and Brass.....	1,963,	1,293,	1,112,	1,474,	1,197,
	Lead and Tin	1,377,	1,347,	910,	1,287,	1,355,
	Coals and Culm	1,726,	1,720,	1,727,	1,544,	1,600,
		14,485,	12,727,	12,550,	13,161,	13,810,
Ceramic Manufcts.	Earthenware and Glass	951,	825,	885,	979,	915,
Indigenous Mnfrs.	Beer and Ale	887,	814,	830,	1,252,	1,295,
	Butter	232,	150,	252,	264,	319,
	Cheese	67,	58,	62,	55,	58,
	Candles	97,	112,	135,	120,	75,
	Salt	142,	152,	209,	170,	116,
	Spirits	205,	150,	178,	145,	114,
	Soda.....	434,	411,	269,	487,	517,
		2,064,	1,847,	1,935,	2,493,	2,494,
Various Manufcts.	Books, Printed.....	198,	189,	203,	221,	215,
	Furniture.....	134,	107,	96,	103,	106,
	Leather Manufactures	1,044,	1,269,	945,	1,032,	898,
	Soap.....	120,	110,	116,	124,	92,
	Plate and Watches	224,	214,	204,	241,	235,
	Stationery.....	143,	127,	299,	373,	393,
		1,863,	2,016,	1,863,	2,094,	1,939,
Remainder of Enumerated Articles		3,798,	3,531,	1,890,	1,622,	1,546,
Unenumerated Articles		4,010,	3,588,	4,457,	4,389,	4,659,
Total Exports		62,014,	57,315,	60,143,	62,020,	63,003,

SHIPPING. — FOREIGN TRADE. — (United Kingdom.) — First Six Months (*January—June*), 1863-62-61-60.—*Vessels Entered and Cleared with Cargoes, including repeated Voyages, but excluding Government Transports.*

(First Six Months.)	1863.			1862.		1861.		1860.	
ENTERED:—	Vessels.	Tonnage (000's omitted.)	Average Tonnage	Vessels.	Tonnage (000's omitted.	Vessels.	Tonnage (000's omitted.	Vessels.	Tonnage (000's omitted.)
Vessels belonging to—	No.	Tons.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Russia	135	44,	326	149	47,	168	51,	136	42,
Sweden	458	73,	159	367	63,	437	80,	379	60,
Norway	1,416	293,	207	1,125	212,	1,066	200,	874	176,
Denmark	1,474	139,	94	1,053	103,	1,229	118,	1,341	127,
Prussia and Ger. Sts.	1,754	416,	237	1,459	366,	1,741	382,	1,527	318,
Holland and Belgium	843	117,	139	796	107,	809	107,	771	106,
France	1,417	118,	84	838	70,	1,002	79,	946	81,
Spain and Portugal	192	59,	307	184	55,	247	56,	188	50,
Italy & other Eupn. Sts.	225	68,	302	300	91,	397	112,	287	88,
United States	395	406,	1,027	561	480,	937	834,	692	689,
All other States	9	3,	333	8	3,	6	2,	10	3,
United Kingdm. & Depds.	8,318 10,170	1,736, 3,034,	209 299	6,840 9,098	1,597 2,720,	8,075 9,087	2,021, 2,714,	7,151 8,526	1,740, 2,482,
Totals Entered	18,488	4,770,	302	15,938	4,317	17,162	4,735,	15,677	4,222,
CLEARED:—									
Russia	161	53,	329	170	55,	179	54,	142	46,
Sweden	429	73,	170	372	70,	477	87,	425	75,
Norway	875	163,	163	914	171,	943	169,	762	152,
Denmark	1,541	146,	93	1,273	124,	1,471	145,	1,464	143,
Prussia and Ger. Sts.	2,394	488,	204	2,194	437,	2,255	422,	1,924	378,
Holland and Belgium	901	139,	142	1,082	164,	971	136,	908	151,
France	2,256	217,	96	2,458	243,	2,702	259,	1,764	191,
Spain and Portugal	175	59,	339	187	59,	202	52,	160	45,
Italy & other Eupn. Sts.	302	96,	319	306	94,	519	148,	360	113,
United States	348	353,	1,015	518	447,	794	722,	711	675,
All other States	11	4,	363	17	8,	12	5,	9	3,
United Kingdm. & Depds.	9,393 13,816	1,791, 3,827,	179 276	9,491 13,261	1,872, 3,612,	10,525 12,358	2,199, 3,238,	8,629 11,652	1,972, 3,147,
Totals Cleared	23,209	5,618,	242	22,752	5,484,	22,883	5,437,	20,281	5,119,

GOLD AND SILVER BULLION AND SPECIE. — IMPORTED AND EXPORTED. — (United Kingdom.) — *Computed Real Value for the* First Six Months (*January—June*), 1863-62-61.

[000's omitted.]

(First Six Months.)	1863.		1862.		1861.	
	Gold.	*Silver.*	Gold.	*Silver.*	Gold.	*Silver.*
Imported from:—	£	£	£	£	£	£
Australia	2,885,	—	3,295,	—	3,092,	—
So. Amca. and W. Indies	2,163,	3,580,	917,	3,016,	617,	2,780,
United States and Cal.	3,491,	527,	3,214,	45,	27,	26,
	8,539,	4,107,	7,426,	3,061,	3,736,	2,806,
France	179,	483,	83,	673,	1,697,	346,
Hanse Towns, Holl. & Belg.	252,	895,	386,	1,459,	401,	378,
Prtgl., Spain, and Gbrltr.	8,	43,	12,	66,	6,	94,
Mlta., Trky., and Egypt	115,	3,	3,	6,	12,	3,
China	—	—	—	1,	—	—
West Coast of Africa	38,	2,	57,	3,	40,	1,
All other Countries	605,	61,	126,	13,	82,	25,
Totals Imported	9,736,	5,594,	8,093,	5,282,	5,974,	3,653,
Exported to:—						
France	2,264,	550,	2,711,	394,	916,	556,
Hanse Towns, Holl. & Belg.	988,	535,	122,	247,	9,	454,
Prtgl., Spain, and Gbrltr.	1,438,	—	1,062,	7,	482,	3,
	4,690,	1,085,	3,895,	648,	1,407,	1,013,
Ind. and China (viâ Egypt)	956,	4,487,	629,	4,364,	451,	4,594,
Danish West Indies	—	—	65,	5,	11,	29,
United States	34,	—	29,	—	5,930,	18,
South Africa	118,	62,	—	—	75,	—
Mauritius	—	—	—	—	—	2,
Brazil	1,009,	42,	225,	10,	12,	83,
All other Countries	1,846,	51,	2,458,	591,	394,	62,
Totals Exported	8,653,	5,727,	7,301,	5,618,	8,280,	5,801,
Excess of *Imports*	1,083,	—	792,	—	—	—
,, Exports	—	133,	—	336,	2,306	2,148,

SHIPPING CASUALTIES *Reported in Lloyd's "Register of Losses," during the Months of April, May, and June, from 1854 to 1859 inclusive. (Casualties to Foreign Coasters, or to Vessels Unidentified, are not included.)*

Note.—This information, in a different form, was originally published, at intervals, in "Lloyd's List," but is now collated and tabulated by Henry Jeula, Esq., Member of Lloyd's, F.S.S.

	Wrecked.				Sunk.			Abandoned.			Missing	Stranded.				Condemned.			Touched the Ground, sustaining Trifling Damage.	Total.	
	Totally.	Part Cargo Saved.	Whole, or nearly so, of Cargo Saved.	Total.	Lost.	Raised.	Total.	Lost.	Recovered.	Total.		Subsequent Fate not Reported.*	Got Off.	Got Off with Loss of part Cargo.	Total.	After Striking, &c.	From other Causes.	Total.			
April—																					**April—**
1854	26	—	1	27	11	3	14	11	6	17	7	29	61	5	95	2	—	2	—	162	1854
'55	37	10	6	53	17	—	17	8	5	13	3	27	97	12	136	2	2	4	1	227	'55
'56	49	8	1	58	17	2	19	20	2	22	6	32	74	7	113	3	4	7	—	225	'56
'57	43	14	1	58	25	4	29	9	6	15	4	38	118	4	160	2	3	5	—	271	'57
'58	35	9	3	47	23	5	28	20	4	24	1	46	105	8	159	4	7	11	—	270	'58
'59	51	17	2	70	34	8	42	16	10	26	1	52	123	5	180	3	1	4	—	323	'59
Aver. of Six Yrs.	40·17	9·67	2·33	52·17	21·17	3·67	24·83	14·0	5·5	19·5	3·67	37·33	96·33	6·83	140·5	2·67	2·83	5·5	·17	246·33	Aver. of Six Yrs.
May—																					**May—**
1854	34	1	1	36	21	1	22	19	3	22	2	32	63	3	98	3	2	5	2	187	1854
'55	21	13	4	38	22	1	23	7	3	10	1	33	75	2	110	1	5	6	1	189	'55
'56	22	6	3	31	20	3	23	14	1	15	4	30	61	9	100	4	3	7	—	180	'56
'57	28	7	—	35	14	2	16	12	1	13	2	26	80	6	112	—	4	4	—	182	'57
'58	32	13	2	47	23	7	30	8	4	12	5	33	92	10	135	3	4	7	—	236	'58
'59	31	10	1	42	27	3	30	16	3	19	4	37	72	8	117	1	5	6	—	218	'59
Aver. of Six Yrs.	28·0	8·33	1·83	38·17	21·17	2·83	24·0	12·67	2·5	15·17	3·0	31·83	73·83	6·33	112·0	2·0	3·83	5·83	·5	198·67	Aver. of Six Yrs.
June—																					**June—**
1854	47	4	1	52	20	1	21	13	3	16	2	26	62	4	92	1	3	4	2	189	1854
'55	25	11	3	39	15	3	18	6	2	8	6	20	74	5	99	—	2	2	1	173	'55
'56	19	4	1	24	8	—	8	10	3	13	8	14	73	5	92	2	5	7	—	152	'56
'57	30	8	4	42	16	—	16	7	3	10	6	31	69	8	108	3	5	8	—	190	'57
'58	24	5	2	31	18	7	25	5	2	7	4	28	77	3	108	1	2	3	—	178	'58
'59	35	6	2	43	21	4	25	6	3	9	2	18	66	5	89	1	4	5	—	173	'59
Aver. of Six Yrs.	30·0	6·33	2·17	38·5	16·33	2·5	18·83	7·83	2·67	10·5	4·67	22·83	70·17	5·0	98·0	1·33	3·5	4·83	·5	175·83	Aver. of Six Yrs.
June Qr.—																					**June Qr.—**
1854	107	5	3	115	52	5	57	43	12	55	11	87	186	12	285	6	5	11	4	538	1854
'55	83	34	13	130	54	4	58	21	10	31	10	80	246	19	345	3	9	12	3	589	'55
'56	90	18	5	113	45	5	50	44	6	50	18	76	208	21	305	9	12	21	—	557	'56
'57	101	29	5	135	55	6	61	28	10	38	12	95	267	18	380	5	12	17	—	643	'57
'58	91	27	7	125	64	19	83	33	10	43	10	107	274	21	402	8	13	21	—	684	'58
'59	117	33	5	155	82	15	97	38	16	54	7	107	261	18	386	5	10	15	—	714	'59
Aver. of Six Yrs.	98·17	24·33	6·33	128·83	58·67	9·0	67·67	34·5	10·67	45·17	11·33	92·0	240·33	18·17	350·5	6·0	10·17	16·17	1·17	620·83	Aver. of Six Yrs.
First Hf.-Yr.																					**First Hf.-Yr.**
1854	374	21	7	402	124	16	140	138	34	172	33	356	571	26	953	23	18	41	17	1,758	1854
'55	281	62	22	365	118	13	131	73	29	102	21	227	575	31	833	11	17	28	5	1,485	'55
'56	305	45	13	363	121	12	133	105	23	128	25	263	513	34	810	18	22	40	8	1,507	'56
'57	306	77	22	405	147	15	162	98	27	125	32	322	718	40	1,080	10	24	34	7	1,845	'57
'58	286	49	11	346	143	27	170	66	24	90	22	244	597	39	880	16	32	48	—	1,556	'58
'59	278	65	15	358	164	23	187	79	27	106	25	224	610	33	867	17	37	54	—	1,597	'59
Aver. of Six Yrs.	305·0	53·17	15·0	373·17	136·17	17·67	153·83	93·17	27·33	120·5	26·33	272·67	597·33	33·83	903·83	15·83	25·0	40·83	6·17	1624·67	Aver. of Six Yrs.

* The majority of these may be considered as "*Wrecks.*"

REVENUE.—(United Kingdom.)—30th June, 1863-62-61-60.

Net Produce in Years *and* Quarters *ended* 30th June, 1863-62-61-60.

[000's omitted.]

QUARTERS, ended 30th June.	1863.	1862.	1863. Less.	1863. More.	Corresponding Quarters. 1861.	Corresponding Quarters. 1860.
	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
Customs	5,857,	5,791,	—	66,	5,820,	5,733,
Excise	4,405,	4,886,	481,	—	5,171,	5,114,
Stamps	2,394,	2,253,	—	141,	2,186,	2,068,
Taxes	1,390,	1,357,	—	33,	1,363,	1,354,
Post Office	950,	850,	—	100,	825,	825,
	14,996,	15,137,	481,	340,	15,365,	15,094,
Property Tax	2,918,	2,772,	—	146,	2,588,	1,089,
	17,914,	17,909,	481,	486,	17,953,	16,183,
Crown Lands	68,	68,	—	—	67,	66,
Miscellaneous	508,	433,	—	75,	378,	570,
Totals	18,490,	18,410,	481,	561,	18,398,	16,819,
			Net Incr. £80,300			

YEARS, ended 30th June.	1863.	1862.	1863. Less.	1863. More.	Corresponding Years. 1861.	Corresponding Years. 1860.
	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
Customs	24,100,	23,644,	—	456,	23,393,	24,085,
Excise	16,674,	18,047,	1,373,	—	19,492,	20,530,
Stamps	9,135,	8,658,	—	477,	8,466,	8,151,
Taxes	3,183,	3,154,	—	29,	3,136,	3,237,
Post Office	3,750,	3,535,	—	215,	3,400,	3,350,
	56,842,	57,038,	1,373,	1,177,	57,887,	59,353,
Property Tax	10,713,	10,549,	—	164,	12,423,	9,903,
	67,555,	67,587,	1,373,	1,341,	70,310,	69,256,
Crown Lands	301,	296,	—	5,	292,	286,
Miscellaneous	2,828,	1,803,	—	1,025,	1,260,	1,874,
Totals	70,684,	69,686,	1,373,	2,371,	71,862,	71,416,
			Net Incr. £998,072			

REVENUE.—United Kingdom.—Quarter ended 30th June, 1863.

An Account showing the Revenue *and other* Receipts *of the* Quarter *ended 30th June,* 1863; *the* Application *of the same, and the Charge of the Consolidated Fund for the said Quarter, together with the Surplus or Deficiency upon such Charge.*

Received:—

		£
Surplus Balance beyond the Charge of the *Consolidated Fund* for the Quarter ended 31st March, 1863, viz.:—		
Great Britain	£198,290	
Ireland	389,282	
		587,572
Income received in the Quarter ended 30th June, 1863, as shown on preceding page		18,490,204
Amount raised per Act 25 and 26 Victoria, cap. 78, on account of Fortifications, &c.		170,000
Amount received in the Quarter ended 30th June, 1863, in repayment of Advances for Public Works, &c.		327,034
		£19,574,810
Balance, being the Deficiency on 30th June, 1863, upon the charge of the Consolidated Fund in Great Britain, to meet the Dividends and other charges payable in the Quarter to 30th September, 1863, and for which Exchequer Bills (Deficiency) will be issued in that Quarter		1,076,065
		£20,650,875

Paid:—

		£
Amount applied out of the Income to *Supply Services* in the Quarter ended 30th June, 1863		10,999,837
Charge of the *Consolidated Fund* for the Quarter ended 30th June, 1863, viz.:—		
Interest of the Permanent Debt	£6,313,180	
Terminable Debt	347,497	
Principal of Exchequer Bills	1,020,300	
Interest of „	75,775	
„ Deficiency Bills	—	
The Civil List	102,215	
Other Charges on Consolidated Fund	523,007	
Advances for Public Works, &c.	225,058	
Sinking Fund	62,888	
		8,679,820
Surplus Balance in Ireland beyond the Charge of the Consolidated Fund in Ireland for the Quarter ended 30*th June,* 1863		971,218
		£20,650,875

CORN.—*Gazette Average Prices* (England and Wales) *Second Quarter of* 1863.

[This Table is communicated by H. F. Jadis, Esq., Comptroller of Corn Returns.]

Weeks ended on a Saturday 1863.	Weekly Average. (Per Impl. Quarter.)					
	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
April 4	45 9	36 6	21 5	30 4	36 1	35 11
„ 11	45 6	35 8	21 5	31 0	35 11	35 2
„ 18	45 6	35 4	21 6	30 5	36 6	36 2
„ 25	45 8	35 3	21 11	30 6	36 11	35 3
Average for April	45 7	35 8	21 6	30 9	36 4	35 7
May 2	45 9	34 6	21 2	29 8	37 3	35 6
„ 9	46 2	34 4	22 1	30 11	37 6	34 –
„ 16	46 9	34 5	21 11	33 7	38 3	35 8
„ 23	46 8	33 9	22 7	34 6	38 6	36 5
„ 30	46 5	33 8	22 8	40 2	38 11	35 9
Average for May	46 4	34 1	22 1	33 9	38 1	35 5
June 6	46 10	31 11	22 10	32 5	39 10	36 8
„ 13	46 11	32 4	22 10	34 10	39 8	36 11
„ 20	46 9	30 7	23 –	32 3	40 4	37 10
„ 27	46 5	31 2	22 10	35 9	39 8	36 2
Average for June	46 8	31 6	22 10	33 9	39 10	36 10
Average for the Quarter ..	46 2	33 9	22 2	32 10	38 1	35 11

RAILWAYS.—Prices, *April—June;—and* Traffic, *Jan.—June,* 1863.

Total Capital Expended Mlns.	Railway.	For the (£100). Price on 1st June.	3rd May.	1st Apl.	Miles Open. '63.	'62.	Total Traffic first 26 Weeks. (unit 000's omitted.) '63.	'62.	Traffic pr. Mile pr. Wk 26 Weeks. '63.	'62.	Dividends per Cent. for Half Years. 31 Dec. '62.	30 Jun. '62.	31 Dec. '61.
£					No.	No.	£	£	£	£	s. d.	s. d.	s. d.
47,9	Lond. & N.Westn.	103	93⅛	97⅞	1,199	1,135	2,286,	2,156,	73	58	55 –	37 6	47 6
41,6	Great Western	68½	67⅜	66⅜	992	964	1,438,	1,387,	56	55	30 –	5 –	30 -
14,9	„ Northern....	127½	125	121½	330	330	678,	646,	79	75	85 –	45 0	77 6
20,2	„ Eastern	53⅝	53¼	49⅞	663	644	720,	688,	42	41	25 –	20 –	30 -
10,7	Brighton	116½	116	114⅝	250	241	448,	428,	68	68	70 –	50 –	70 -
14,7	South-Eastern	92¾	92¾	92¼	306	306	531,	523,	67	66	60 –	42 6	50 -
14,2	„ Western	105¼	103¼	101¼	447	400	539,	488,	46	47	60 –	40 –	55 -
164,2		95¼	93	92⅛	4,187	4,020	6,640,	6,316,	61	60	55 –	34 3	51 -
22,3	Midland.....	129⅜	125½	123½	641	614	1,014,	960,	61	40	65 –	55 –	70 -
19,6	Lancsh. and York.	111½	108½	108¾	395	395	857,	811,	83	79	40 –	37 6	50 -
12,3	Sheffield and Man.	45½	44	45½	239	239	380,	350,	61	56	—	—	12 6
26,3	North-Eastern	103¼	100	98¾	894	878	1,043,	982,	44	43	50 –	42 6	50 -
80,5		97¼	94½	94⅛	2,169	2,126	3,294,	3,103.	58	56	51 8	45 –	45 6
9,1	Caledonian	118	113⅜	113	230	230	418,	392,	70	65	60 –	50 –	55 -
5,3	Gt. S. & Wn. Irlnd.	101½	102¼	103	329	329	204,	206,	24	24	50 –	50 –	50 -
259,1	*Gen. aver.*...	98⅛	95¾	95⅛	6,915	6,705	10,556,	10,017,	59	58	53 4	36 6	49 9

BANK OF ENGLAND.—Weekly Return.

Pursuant to the Act 7th and 8th Victoria, c. 32 (1844), *for Wednesday in each Week, during the* Second Quarter (*April—June*) *of* 1863.

[0,000's omitted.]

1	2	3	4	5	6	7
Issue Department.					Collateral Columns.	
Liabilities.	Dates.	Assets.				
Notes Issued.	(Wednesdays.)	Government Debt.	Other Securities.	Gold Coin and Bullion.	Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
Mlns. £	1863.	Mlns. £	Mlns. £	Mlns. £	Mlns. £	1863. Per ann.
28,94	April 1	11,02	3,63	14,29	20,37	
28,70	„ 8	11,02	3,63	14,12	20,63	
29,05	„ 15	11,02	3,63	14,40	20,71	
29,19	„ 22	11,02	3,63	14,54	20,80	23 Apl. 3½ p. ct.
29,14	„ 29	11,02	3,63	14,49	20,87	30 „ 3 „
28,94	May 6	11,02	3,63	14,29	19,77	
28,38	„ 13	11,02	3,63	13,73	20,64	16 May 3½ „
28,34	„ 20	11,02	3,63	13,69	20,68	21 „ 4 „
28,26	„ 27	11,02	3,63	13,61	20,38	
28,21	June 3	11,02	3,63	13,56	20,76	
28,33	„ 10	11,02	3,63	13,68	20,51	
28,61	„ 17	11,02	3,63	13,96	20,13	
28,78	„ 24	11,02	3,63	14,13	19,99	

Banking Department.

8	9	10	11	12	13	14	15	16	17	18
Liabilities.					Dates.	Assets.				
Capital and Rest.		Deposits.		Seven Day and other Bills.		Securities.		Reserve.		Totals of Liabilities and Assets.
Capital.	Rest.	Public.	Private.		(Wdnsdys.)	Government.	Other.	Notes.	Gold and Silver Coin.	
Mlns. £	Mlns. £	Mlns. £	Mlns. £	Mlns. £	1863.	Mlns. £	Mlns. £	Mlns. £	Mlns. £	Mlns. £
14,55	3,67	10,11	13,17	,60	April 1	11,37	21,31	8,57	,85	42,10
14,55	3,09	6,71	14,83	,58	„ 8	11,13	19,72	8,07	,84	39,76
14,55	3,09	5,77	15,01	,62	„ 15	11,13	18,75	8,34	,83	39,05
14,55	3,10	6,32	14,74	,61	„ 22	12,05	18,03	8,39	,85	39,32
14,55	3,10	7,18	13,61	,58	„ 29	12,05	17,85	8,27	,86	39,03
14,55	3,12	7,24	13,12	,60	May 6	12,15	17,47	8,17	,85	38,64
14,55	3,14	6,74	13,73	,62	„ 13	11,15	18,95	7,74	,92	38,77
14,55	3,15	7,61	13,98	,59	„ 20	11,15	20,24	7,66	,83	39,88
14,55	3,16	8,00	13,84	,54	„ 27	11,15	20,16	7,88	,89	40,09
14,55	3,13	8,78	13,90	,54	June 3	11,15	21,14	7,45	,86	40,90
14,55	3,15	9,78	13,78	,57	„ 10	11,25	21,89	7,82	,87	41,83
14,55	3,16	9,88	13,90	,52	„ 17	11,25	21,40	8,48	,89	42,02
14,55	3,17	10,28	13,81	,54	„ 24	11,25	21,41	8,79	,90	42,35

CIRCULATION.—COUNTRY BANKS.

Average amount of Promissory Notes in Circulation in ENGLAND *and* WALES, *on Saturday, in each Week during the* SECOND QUARTER (*April—June*) *of* 1863; *and in* SCOTLAND *and* IRELAND, *at the Four Dates, as under.*

	ENGLAND AND WALES.			SCOTLAND.				IRELAND.		
DATES.	Private Banks. (Fixed Issues, 4·30.)	Joint Stock Banks. (Fixed Issues, 3·30.)	TOTAL. (Fixed Issues, 7·60.)	Four Weeks, ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2·75.)	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 6·35.)
1863.	Mlns. £	Mlns. £	Mlns. £	1863.	Mlns. £	Mlns. £	Mlns. £	Mlns. £	Mlns. £	Mlns. £
April 4	3,26	3,05	6,31	April 4	1,47	2,41	3,88	2,70	2,68	5,38
„ 11	3,33	3,10	6,43							
„ 18	3,33	3,07	6,40							
„ 25	3,31	3,02	6,33							
May 2	3,28	2,98	6,26	May 2	1,51	2,44	3,95	2,86	2,62	5,48
„ 9	3,28	3,06	6,34							
„ 16	3,24	2,99	6,23							
„ 23	3,15	2,93	6,08							
„ 30	3,07	2,83	5,90	„ 30	1,75	2,72	4,47	2,87	2,50	5,37
June 6	3,04	2,79	5,83							
„ 13	2,99	2,77	5,76							
„ 20	3,01	2,80	5,81							
„ 27	3,05	2,82	6,87	June 27	1,72	2,66	4,38	2,68	2,40	5,08

FOREIGN EXCHANGES.—*Quotations as under,* LONDON *on Paris, Hamburg & Calcutta; —and New York, Calcutta, Hong Kong & Sydney, on* LONDON—*with collateral cols.*

1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Paris.				Hamburg.				Calcutta.				
DATES.	London on Paris.	Bullion as arbitrated.		Prem. or Dis. on Gold per mille	London on Hamburg.	Bullion as arbitrated.		New York.	India House.	At Calcutta on London.	Hong Kong.	Sydney.	Standard Silver in bars in London.
	3 m. d.	Agnst. Engd.	For Engd.		3 m. d.	Agnst. Engd.	For Engd.	60 d. s.	60 d. s.	6 m. s.	6 m. s.	30 d. s.	pr. oz.
1863.		pr. ct.	pr. ct.			pr. ct.	pr. ct.	pr. ct.	*d.*	*d.*	*d.*	pr. ct.	*d.*
April 4 ..	25·50	—	0·2	½ pm	13·8	—	0·5	170	23 7/8	24 7/8	57	1 p.	61¼
„ 18 ..	·52½	—	0·2	„	·8	—	0·6	„	23½	„ ½	„	„	62⅛
May 2 ..	·47½	—	0·2	„	·7 3/4	—	0·6	166	„	„ ½	„	„	61⅛
„ 16 ..	·47½	—	0·1	„	·7 3/4	—	0·6	„ ½	„	„ 3/8	„	„	61⅛
June 6 ..	·50	—	0·3	„	·8	—	0·6	165	„ 3/4	„ 3/4	„	„	61⅛
„ 20 ..	·50	—	0·1	1 pm	·8¼	—	0·1	160	„	„ ½	„	„	61⅛

Vol. XXVI.] [Part IV.

JOURNAL OF THE STATISTICAL SOCIETY,

DECEMBER, 1863.

The EXPENDITURE *of the* UNITED KINGDOM *for* COLONIAL PURPOSES. *By* FREDERICK PURDY, *Principal of the Statistical Department of the Poor Law Board, and one of the Honorary Secretaries of the Statistical Society.*

[Read before the Statistical Society, 21st April, 1863.]

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I.—*Sources of Information.*

THE charges thrown by the British colonies and dependencies upon the taxation of the mother country is a topic which has been much and recently discussed, both in Parliament and in the public press. A Select Committee of the House of Commons, over which Mr. Arthur Miles presided as Chairman, took evidence and reported in 1861 upon "Colonial Military Expenditure." Since the publication of that Report, the Colonial Office has issued several important papers relative to the expense for military and civil services, in which the Home Government is at present involved by the maintenance of its colonial empire. The statistics of the following paper are principally derived from these two sources. I have here, however, to acknowledge the great facility afforded to me in its preparation by the courtesy of Mr. T. F. Elliott, the Assistant Under Secretary of State for the Colonies, who kindly placed at my disposal an early proof of the parliamentary return, from which the first and principal table of the Appendix was compiled.