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*On the DURATION of LIFE as affected by the PURSUITS of LITERATURE, SCIENCE, and ART: with a Summary View of the Duration of Life among the Upper and Middle Classes of Society. By WILLIAM A. GUY, M.B., &c., one of the Honorary Secretaries of the Statistical Society.*

[Read before the Statistical Society, of London, 21st June, 1859.]

THE series of communications on the Duration of Human Life which the author of this paper has laid before the Society at different periods since the year 1845, have, with one exception, related to distinct and well-defined classes of society—to Sovereigns, the English aristocracy, and the English gentry, and to the members of the three learned professions, clerical, legal, and medical. The paper which forms the exception to the rule, is the one "On the Duration of Life of the several Professions," which appeared in the ninth volume of the Society's transactions. In that paper the less defined classes known as "Literary Men," or as "Literary and Scientific Men," were treated of jointly with the Army and Navy, the three learned professions, the professors of the fine arts, and persons engaged in trade and commerce. Literary and scientific men were, on that occasion, classed together, though "Chambers's English Literature" was made to furnish the materials for a distinct treatment of the literary class. I now propose, by means of materials obtained from the same sources as those used in former Essays, to consider the Duration of Life of Literary Men, of Scientific Men, and of Men engaged in the practice of the Fine Arts; and to bring this series of Essays to a close by presenting, in one summary, the Duration of Life in the upper and middle ranks of society.

The present communication, then, will consist of five parts, namely, 1. The Duration of Life of Literary Men. 2. The Duration of Life of Scientific Men. 3. The Duration of Life of the Professors of the Fine Arts. 4. A comparison of these Three Classes; and 5. A Summary View of the Duration of Life in the upper and middle ranks of Society.

## I.—The Duration of Life of Literary Men.

Between this class and those classes of which I have already treated, or shall have presently to speak, there is a difference worthy of note. The members of royal houses, of the aristocracy, and of the gentry, and the three learned professions, as well as chemists, sculptors, architects, painters, and musicians, constitute well-defined classes, separated from other classes by sufficiently distinct lines of demarcation, or devoted to their several professions as the chief business of their lives. The fine arts, for instance, in their several divisions, are, with few exceptions, practised by men who embrace them as distinct pursuits by which they hope to earn a livelihood and achieve a reputation. It is not so with literature. Our writers, both in prose and verse, are of every rank and profession. Some make of literature merely a subordinate and occasional pursuit; but with others it is as much a profession as divinity, law, or physic, as music, architecture, sculpture, or painting; and it is not practicable to draw any line between the one class and the other. They are mixed up in the nature of things, and could not have been conveniently separated in this Essay. In treating, therefore, of the duration of life of literary men, I must be understood to be speaking of a mixed class, consisting on the one hand, of those who have no one distinct and defined professional calling, but who make literature one of their pursuits, and the duration of whose life is consequently affected by the habits of composition in very various degrees; and, on the other hand, of those with whom literature is a distinct profession.

I have been able to collect from "Chalmers' Biographical Dictionary" with a supplement of facts from the "Annual Register" from 1815 to 1852, 942 ages at death of men more or less devoted to literary pursuits, and of more or less celebrity in different walks of literature. Some of the deceased persons were described as antiquaries, others as historians, others as poets, others as miscellaneous writers, and a small body of authors as schoolmasters. These distinctions I have thought it worth while to retain in the following tables; giving, at the same time, in a supplemental column, a general total for literature as the one pursuit to which all were more or less earnestly and constantly devoted.

The tables which follow are counterparts of the tables given in former communications to the Society. The first table presents the number of deaths at each age; the second table groups the deaths by periods of five years; the third by periods of ten years; while Table IV presents the average age at death of all the members of the several groups, and of the entire class who died after the ages severally specified in the table.

TABLE I.—Literature.

Age.	Antiquaries.	Historians.	School-masters.	Poets.	Miscellaneous.	Total Literature.
21 .....	....	....	....	2	....	2
22 .....	....	....	....	1	1	2
23 .....	....	....	....	....	....	....
24 .....	....	....	....	2	....	2
25 .....	1	....	....	....	....	1
26 .....	....	....	....	....	....	....
27 .....	....	....	....	1	....	1
28 .....	....	....	....	....	2	2
29 .....	....	....	....	3	1	4
30 .....	1	....	....	2	....	3
31 .....	....	....	....	1	2	3
32 .....	....	....	....	4	2	6
33 .....	....	....	....	6	1	7
34 .....	....	....	....	....	4	4
35 .....	....	1	....	....	2	3
36 .....	....	....	....	5	2	7
37 .....	....	....	1	4	1	6
38 .....	....	....	....	3	....	3
39 .....	1	....	....	....	6	7
40 .....	....	1	1	3	4	9
41 .....	1	....	....	3	1	5
42 .....	....	....	1	1	6	8
43 .....	....	....	1	3	7	11
44 .....	....	1	1	5	7	14
45 .....	2	....	1	4	7	14
46 .....	1	....	....	8	9	18
47 .....	....	....	....	4	6	10
48 .....	4	1	....	4	5	14
49 .....	....	....	....	5	2	7
50 .....	1	1	1	3	6	12
51 .....	1	....	....	5	4	10
52 .....	1	1	2	3	5	12
53 .....	3	1	....	5	6	15
54 .....	3	....	1	4	9	17
55 .....	2	....	2	3	8	15
56 .....	4	3	2	8	20	37
57 .....	1	3	1	6	6	17
58 .....	1	....	2	4	17	24
59 .....	1	1	1	2	8	13
60 .....	3	....	....	3	14	20
61 .....	3	....	1	3	9	16
62 .....	1	1	....	2	12	16
63 .....	7	3	1	4	9	24
64 .....	2	1	2	5	14	24
65 .....	5	2	....	7	9	23
66 .....	3	1	1	2	5	12
67 .....	2	1	....	3	12	18
68 .....	5	1	1	7	15	29
69 .....	4	....	....	8	10	22
70 .....	3	1	3	5	16	28
71 .....	1	....	1	3	11	16
72 .....	11	1	2	6	17	37
73 .....	3	2	1	4	17	27
74 .....	6	3	1	2	16	28
75 .....	8	....	2	2	11	23
76 .....	....	3	3	8	15	29

TABLE I.—*Literature.—Contd.*

Age.	Antiquaries.	Historians.	School-masters.	Poets.	Miscellaneous.	Total Literature.
77.....	5	1	....	4	14	24
78.....	4	2	....	4	12	22
79.....	2	1	2	2	8	15
80.....	3	2	....	4	13	22
81.....	3	2	....	2	4	11
82.....	2	....	....	1	14	17
83.....	3	2	2	1	9	17
84.....	2	....	....	4	6	12
85.....	1	1	....	5	9	16
86.....	....	....	....	2	10	12
87.....	4	1	....	1	5	11
88.....	....	....	1	....	7	8
89.....	1	....	1	....	2	4
90.....	....	1	....	1	2	4
91.....	....	....	....	....	1	1
92.....	1	....	....	....	2	3
93.....	....	....	....	....	2	2
94.....	....	....	....	....	2	2
95.....	....	....	....	....	....	....
96.....	....	....	....	....	....	....
97.....	....	....	....	....	1	1
*115.....	....	....	....	1	....	1
Total ....	127	47	43	223	502	942

\* This is the recorded age at death of T. O'Sullivan, a celebrated Irish bard and author. See "Annual Register," 1820.

TABLE II.—*Literature.—Quinquennial Ages.*

Age.	Antiquaries.	Historians.	School-masters.	Poets.	Miscellaneous.	Total Literature.
21- 25.....	1	....	....	5	1	7
26- 30.....	1	....	....	6	3	10
31- 35.....	....	1	....	11	11	23
36- 40.....	1	1	2	15	13	32
41- 45.....	3	1	4	16	28	52
46- 50.....	6	2	1	24	28	61
51- 55.....	10	2	5	20	32	69
56- 60.....	10	7	6	23	65	111
61- 65.....	18	7	4	21	53	103
66- 70.....	17	4	5	25	58	109
71- 75.....	29	6	7	17	72	131
76- 80.....	14	9	5	22	62	112
81- 85.....	11	5	2	13	42	73
86- 90.....	5	2	2	4	26	39
91- 95.....	1	....	....	....	7	8
96-100.....	....	....	....	....	1	1
and upwards..	....	....	....	1	....	1
Maximum ..	92	90	89	115	97	115

TABLE III.—*Literature.—Decennial Ages.*

Age.	Antiquaries.	Historians.	School-masters.	Poets.	Miscellaneous.	Total Literature.
{ 21- 25.....	1	....	....	5	1	7
{ 26- 30.....	1	....	....	6	3	10
31- 40.....	1	2	2	26	24	55
41- 50.....	9	3	5	40	56	113
51- 60.....	20	9	11	43	97	180
61- 70.....	35	11	9	46	111	212
71- 80.....	43	15	12	39	134	243
81- 90.....	16	7	4	17	68	112
91-100.....	1	....	....	1	8	10
and upwards..	....	....	....	....	....	....
Total ....	127	47	43	223	502	942

TABLE IV.—*Literature.—Summary.*

Age.	Antiquaries.	Historians.	School-masters.	Poets.	Miscellaneous.	Total Literature.
21 and upds. .	67·56	67·40	63·91	58·10	65·50	64·05
26 " " ..	67·90	67·40	63·91	58·92	65·58	64·36
31 " " ..	68·21	67·40	63·91	59·77	65·81	64·74
41 " " ..	68·44	68·73	65·15	63·18	67·31	66·56
51 " " ..	70·15	70·26	67·97	67·91	72·22	69·61

The figures contained in the last of these tables (Table IV), invite examination and comment. The two sections of the literary class headed "Poets" and "Schoolmasters," are found to occupy a low place in the scale, in all the horizontal lines of the table. Whether we commence the register of deaths at 21, at 26, at 31, at 41, or at 51, their average age at death is uniformly below the average for miscellaneous writers, and for antiquarians and historians. As in the case of poets, the ages at death amount to 223, the average is likely to approximate to the true number, and it may be allowable to inquire whether there is anything in the calling of the poet to account for the comparatively short duration of his life.

The first consideration that offers itself in possible explanation of the short duration of the poet's life is, that poets enter the class to which they belong at a comparatively early age, while other literary men, and especially antiquarians and historians, enter their respective classes, and commence their characteristic pursuits at a more advanced period of life. If, as seems highly probable, the class of living poets is always a young class compared with other literary men, the average age at death will be below par. But it is quite possible that the poetical temperament, as it is commonly



called, may be a phase of constitutional weakness, and a cause of early death.

That poets as a class are short-lived is rendered probable by the low recorded ages at death of the Roman poets. Thus, Tibullus died at 24, Persius at 28, Lucilius and Catullus at 46, Virgil at 52, Horace at 57, Ovid at 59, Martial at 75, and Terence at 88. The average for these nine poets is nearly 53 years. On the other hand, the Roman orators, Quintus Hortensius, and Pollio, died at 63 and 80 respectively; Cicero, was killed at 64; and the historians Sallust, Livy, Pliny, and Josephus, attained the respective ages, of 51, 76, 79, and 56. Plato, the philosopher, lived to upwards of 80. These eight died, or were killed, at an average age of about 68½ years; or nearly 16 years older than the nine poets.

Against these nine names of Roman poets, may be placed, as having been short-lived, the English poets, Kirke White, who died at 21 years of age; Collins at 36, Parnell and Robert Burns at 37, Goldsmith at 46, Thompson at 48, Cowley at 49, Shakspeare at 52, and Pope at 56. These nine English poets, selected as having been short-lived, attained an average age of about 42 years, or more than 10 years less than the nine unselected Roman poets.

These small groups of facts may perhaps be allowed to furnish a slight confirmation of the general result of the larger body of facts comprised in these tables.

That schoolmasters who devote themselves to literary pursuits should rank next above poets, but decidedly below the other classes in the Table, will not excite surprise when it is borne in mind that in addition to such influence as literary habits themselves may exercise in undermining health and shortening life, the schoolmaster is exposed to the serious drawback of confinement with his pupils during many hours of the day in an atmosphere rarely of the purest. A schoolmaster of literary habits may be expected to suffer in an unusual degree from the evils incident to a sedentary life. If the facts upon which the averages for the class of schoolmasters are founded had been more numerous, I should have attached more importance to these considerations.

On referring to the paper on the Duration of Life of the Members of the several Professions, published in the ninth volume of the Society's *Journal*, it will be seen that the duration of life of the different classes more or less exclusively devoted to the pursuits of literature, differs somewhat from that recorded in the table I am now examining, as the result of the combination of all the classes specified in the table. If we take the last horizontal line in the table, which shows the average age at death of all those persons who died after the age of 50, and compare the figures it exhibits with those of the paper just referred to, we find differences

and coincidences worth observing. In that paper the average age at death of 356 authors, whose biography is given in "Chambers's English Literature, and who survived the age of 50, is shown to amount to 69.14 years. The corresponding figures in Table IV are 69.61, or about half a year more. The 186 members of the French Institute who survived the same age of 50 years, died at an average age of 70.38, being a small fraction of a year in excess of the age at death (70.26) of the 47 historians of Table IV. The 571 members of the French Academies died at the mean age of 72.47; and the 401 persons devoted to literature and science in England (as taken from the "Annual Register") at 72.10; while the miscellaneous class of the present paper died at 72.22. In making this comparison between the duration of life of the literary class in England and that of the literary class in France, as obtained from the ages at death of members of the three French Academies and the French Institute, it must, however, be borne in mind that the French lives form a picked class entering the learned societies in question, on an average at from 41 to 46 years of age, while the English lives used in the formation of these tables are subject to no such elimination of deaths at the early ages. When the comparison is made between members of the French Academies and Institute on the one hand and English *literateurs* on the other, taking in each case the deaths of those who had survived their fiftieth year, it will have to be borne in mind that the foreign admissions to the class under examination, are by selection on the ground of eminence, while the admissions of English literary men take place by natural removal through death of all persons under 50 years of age.

The 942 deaths comprised in the tables are sufficiently numerous to make it desirable to separate them into classes according to the centuries in which they were born. The results of this separation are shown in the following table:—

TABLE V.—Centuries.

Date of Birth.	Number of Deaths.	Average Age at Death.
13th Century .....	1	78.00
14th " .....	4	74.75
15th " .....	6	66.33
16th " .....	146	63.85
17th " .....	301	62.99
18th " .....	484	61.78

Of this table it must suffice to observe that it agrees with the majority of similar tables in former essays, in showing a less favour-



able duration of life in persons born in the seventeenth century than in those born in the sixteenth, with a recovery and improvement in persons born during the eighteenth century.

The comparative duration of life of married and single persons belonging to the literary class, follows the rule already established in favour of the married in former essays, as the table will show.

TABLE VI.—*Conjugal Condition.*

	Number of Deaths.	Mean Age.	Greatest Age.
Married .....	357	64.39	97
Single .....	34	58.41	92
Difference .....	....	5.98	5

I shall revert to this subject when I have examined the duration of life of men of science and of artists.

## II.—*The Duration of Life of Scientific Men.*

Men of science constitute a comparatively small class of the community. I have, accordingly, been able to bring together from the sources which have supplied the remainder of my facts, only 188 ages at death of men belonging to this class, grouped under the three heads of 1. Mathematicians and Astronomers; 2. Chemists and Natural Philosophers; and 3. Naturalists. This last group comprises botanists, mineralogists, and geologists. There is no great difference in the duration of life of these three groups. Between the mixed group of mathematicians with astronomers, on the one hand, and naturalists, on the other, the difference amounts only to a small fraction of a year, and between the first named class and chemists with natural philosophers, to about one year and a quarter.\* The facts are given in detail in Tables I, II, III, and IV.

\* In the paper "On the Duration of Life in the Members of the several Professions," the duration of life of the single class of chemists, 41 in number, as taken from "Thomson's History of Chemistry," is 69.51, instead of 72.67 for the mixed class of chemists and natural philosophers.

TABLE I.—*Science.*

Age.	Mathematicians and Astronomers.	Chemists and Natural Philosophers.	Naturalists.	Total Science.
21 .....	....	....	....	....
22 .....	1	....	....	1
23 .....	....	....	....	....
24 .....	....	....	....	....
25 .....	....	....	....	....
26 .....	1	....	....	1
27 .....	....	....	....	....
28 .....	1	....	1	2
29 .....	....	....	....	....
30 .....	....	....	....	....
31 .....	....	....	....	....
32 .....	....	....	....	....
33 .....	....	....	....	....
34 .....	1	....	....	1
35 .....	....	....	....	....
36 .....	2	....	....	2
37 .....	1	....	1	2
38 .....	....	....	1	1
39 .....	2	....	....	2
40 .....	2	....	....	2
41 .....	....	....	....	....
42 .....	1	....	1	2
43 .....	....	....	....	....
44 .....	1	....	....	1
45 .....	1	....	2	3
46 .....	1	....	1	2
47 .....	2	....	1	3
48 .....	2	....	....	2
49 .....	1	....	1	2
50 .....	2	....	....	2
51 .....	1	....	....	1
52 .....	1	....	....	1
53 .....	....	....	1	1
54 .....	1	2	....	3
55 .....	1	2	....	3
56 .....	1	....	1	2
57 .....	4	....	....	4
58 .....	1	....	....	1
59 .....	1	....	....	1
60 .....	....	1	2	3
61 .....	2	1	2	5
62 .....	1	....	4	5
63 .....	1	1	2	4
64 .....	3	2	2	7
65 .....	2	1	....	3
66 .....	1	2	2	5
67 .....	6	3	1	10
68 .....	1	1	2	4
69 .....	1	....	4	5
70 .....	....	....	4	4
71 .....	1	3	1	5
72 .....	3	3	4	10
73 .....	....	1	2	3
74 .....	2	1	1	4
75 .....	2	1	2	5

TABLE I.—*Science.—Contd.*

Age.	Mathematicians and Astronomers.	Chemists and Natural Philosophers.	Naturalists.	Total Science.
76 .....	2	1	3	6
77 .....	1	1	1	3
78 .....	1	2	....	3
79 .....	2	2	....	4
80 .....	1	....	3	4
81 .....	5	1	3	9
82 .....	1	3	1	5
83 .....	....	....	2	2
84 .....	1	3	....	4
85 .....	2	1	....	3
86 .....	....	2	1	3
87 .....	2	1	....	3
88 .....	....	1	1	2
89 .....	....	....	....	....
90 .....	3	....	....	3
91 .....	2	....	1	3
92 .....	....	....	1	1
	82	43	63	188

TABLE II.—*Science.—Quinquennial Ages.*

Age.	Mathematicians and Astronomers.	Chemists and Natural Philosophers.	Naturalists.	Total Science.
21- 25 .....	1	....	....	1
26- 30 .....	2	....	1	3
31- 35 .....	1	....	....	1
36- 40 .....	7	....	2	9
41- 45 .....	3	....	3	6
46- 50 .....	8	....	3	11
51- 55 .....	4	4	1	9
56- 60 .....	7	1	3	11
61- 65 .....	9	5	10	24
66- 70 .....	9	6	13	28
71- 75 .....	8	9	10	27
76- 80 .....	7	6	7	20
81- 85 .....	9	8	6	23
86- 90 .....	5	4	2	11
91- 95 .....	2	....	2	4
96-100 .....	....	....	....	....
Maximum .....	91	88	92	92

TABLE III.—*Science.—Decennial Ages.*

Age.	Mathematicians and Astronomers.	Chemists and Natural Philosophers.	Naturalists.	Total Science.
21- 25 .....	1	....	....	1
26- 30 .....	2	....	1	3
31- 40 .....	8	....	2	10
41- 50 .....	11	....	6	17
51- 60 .....	11	5	4	20
61- 70 .....	18	11	23	52
71- 80 .....	15	15	17	47
81- 90 .....	14	12	8	34
91-100 .....	2	....	2	4
Total .....	82	43	63	188

TABLE IV.—*Science.—Summary.*

Age.	Mathematicians and Astronomers.	Chemists and Natural Philosophers.	Naturalists.	Total Science.
21 and upwards.....	63·13	72·67	67·33	66·72
26 " .....	63·68	72·67	67·33	66·96
31 " .....	64·57	72·67	67·97	67·61
41 " .....	67·60	72·67	68·98	69·33
51 " .....	71·40	72·67	71·58	71·81

Though the number of facts in the foregoing tables is small, I have thought it worth while to group them according to the centuries in which the several members of the class of scientific men were born. The following table shows the result of this arrangement:—

TABLE V.—*Science.—Centuries.*

Date at Birth.	Number of Deaths.	Average Age at Death.
16th century .....	15	61·66
17th " .....	64	65·37
18th " .....	102	68·25

This table, instead of presenting like the corresponding tables for other classes, a lower duration of life in scientific men born in the seventeenth century than in those born in the sixteenth century, with an improvement in those born in the eighteenth century, shows

a progressive improvement in the duration of life throughout the three centuries comprised in the table. But it will be seen that the average for the sixteenth century is based upon the inadequate number of fifteen facts.

The small number of facts will also account for the exceptional result shown in the following table, in which, as on previous occasions, the married members of the class of scientific men are compared with the single, slightly to the advantage of the single men. The greatest age shows an equally slight advantage for the married.

TABLE VI.—Science.—Conjugal Condition.

	Number of Deaths.	Mean Age.	Greatest Age.
Married .....	50	65·68	92
Single .....	12	66·25	91
Difference .....	....	0·57	1

III.—The Duration of Life of the Professors of the Fine Arts.

This class consists of several sub-classes constituting so many distinct professions, among which, though with some misgiving as to the propriety of the classification, I have admitted the class of actors and vocalists. One class (that of sculptors) consists of only 14 members, and is, therefore, too small to require separate notice. Of the remaining classes, the one which implies the most sedentary occupation, namely, the class of engravers, yields the lowest average (67·91). Painters, whose employment is less sedentary, but who are much confined within doors, have a slight advantage over engravers; and engineers, architects, and surveyors, who combine the sedentary pursuits of the draughtsman with active superintendence out of doors, have a still more favourable average. Musicians take rank with this last class; and actors and vocalists seem to have some slight advantage over the sedentary and confined classes of engravers and painters. The precise figures will be found in the following tables.

It is worthy of remark, that among literary men, as among the class now under consideration, the sub-class most devoted to sedentary pursuits (namely schoolmasters) had also an unfavourable duration of life.

TABLE I.—Art.

Age.	Engineers, Architects, and Surveyors.	Sculptors.	Painters.	Engravers.	Musicians.	Actors and Vocalists.	Total. Art.
21 .....	....	....	....	1	....	....	1
22 .....	....	....	....	....	....	....	....
23 .....	....	....	....	....	....	....	....
24 .....	....	....	....	....	....	....	....
25 .....	....	....	....	....	....	....	....
26 .....	....	....	....	....	....	....	....
27 .....	....	....	....	....	....	....	....
28 .....	....	....	....	....	....	....	....
29 .....	....	....	1	....	....	....	1
30 .....	....	....	....	....	....	....	....
31 .....	....	....	....	....	....	....	....
32 .....	....	....	....	....	....	....	....
33 .....	....	....	....	....	....	....	....
34 .....	....	....	1	....	....	....	1
35 .....	....	....	1	....	....	....	1
36 .....	....	....	....	....	....	....	....
37 .....	....	....	1	....	1	....	2
38 .....	....	....	1	....	....	1	2
39 .....	....	....	....	....	....	....	....
40 .....	1	....	4	1	....	1	7
41 .....	....	....	....	....	....	....	....
42 .....	....	....	....	1	1	....	2
43 .....	....	....	....	....	1	....	1
44 .....	2	1	1	2	....	1	7
45 .....	....	....	1	1	....	1	3
46 .....	....	....	1	1	....	1	3
47 .....	1	....	1	....	....	....	2
48 .....	1	....	2	....	....	....	3
49 .....	2	....	3	1	....	2	8
50 .....	....	1	....	1	2	....	4
51 .....	....	3	1	....	....	....	4
52 .....	....	....	2	1	....	1	4
53 .....	....	....	5	1	....	....	6
54 .....	....	....	3	2	1	....	6
55 .....	1	....	1	2	....	2	6
56 .....	2	2	3	1	....	1	9
57 .....	....	....	....	3	....	2	5
58 .....	1	....	6	1	1	....	9
59 .....	1	1	....	1	1	1	5
60 .....	3	1	6	....	2	1	13
61 .....	2	....	2	....	....	....	4
62 .....	3	2	1	3	2	1	12
63 .....	....	....	4	3	3	....	10
64 .....	1	....	5	3	....	....	9
65 .....	3	....	3	2	1	1	10
66 .....	4	....	1	3	....	2	10
67 .....	1	....	2	....	....	....	3
68 .....	1	....	5	....	2	....	8
69 .....	2	....	4	1	2	1	10
70 .....	4	1	4	2	2	4	17
71 .....	1	....	2	1	2	2	8
72 .....	1	1	1	3	1	2	9
73 .....	1	....	....	1	4	2	8
74 .....	4	....	2	3	....	1	10



TABLE I.—Art.—Contd.

Age.	Engineers, Architects, and Surveyors.	Sculptors.	Painters.	Engravers.	Musicians.	Actors and Vocalists.	Total Art.
75.....	2	....	6	....	2	1	11
76.....	2	....	1	....	3	2	8
77.....	5	....	2	....	1	1	9
78.....	3	....	4	1	....	1	9
79.....	1	....	1	2	....	1	5
80.....	4	....	1	....	2	....	7
81.....	....	....	1	....	1	....	2
82.....	2	....	3	1	....	....	6
83.....	3	....	1	....	1	1	6
84.....	3	....	1	....	1	....	5
85.....	1	....	2	3	....	....	6
86.....	2	1	1	....	1	....	5
87.....	....	....	1	1	....	....	2
88.....	....	....	1	....	1	1	3
89.....	1	....	....	1	....	....	2
90.....	1	....	1	1	1	....	4
91.....	1	....	1	....	1	1	4
92.....	1	....	....	....	....	....	1
93.....	1	....	1	....	....	....	2
94.....	....	....	....	....	....	....	...
95.....	....	....	....	....	....	....	....
96.....	....	....	1	....	1	....	2
Totals .....	76	14	111	56	45	40	342

TABLE II.—Art.—Quinquennial Ages.

Age.	Engineers, Architects, and Surveyors.	Sculptors.	Painters.	Engravers.	Musicians.	Actors and Vocalists.	Total Art.
21- 25.....	....	....	....	1	....	....	1
26- 30.....	....	....	1	....	....	....	1
31- 35.....	....	....	2	....	....	....	2
36- 40.....	1	....	6	1	1	2	11
41- 45.....	2	1	2	4	2	2	13
46- 50.....	4	1	7	3	2	3	20
51- 55.....	1	3	12	6	1	3	26
56- 60.....	7	4	15	6	4	5	41
61- 65.....	9	2	15	11	6	2	45
66- 70.....	12	1	16	6	6	7	48
71- 75.....	9	1	11	8	9	8	46
76- 80.....	15	....	9	3	6	5	38
81- 85.....	9	....	8	4	3	1	25
86- 90.....	4	1	4	3	3	1	16
91- 95.....	3	....	2	....	1	1	7
96-100.....	....	....	1	....	1	....	2
Maximum ..	93	86	96	90	96	91	96

TABLE III.—Art.—Decennial Ages.

Age.	Engineers, Architects, and Surveyors.	Sculptors.	Painters.	Engravers.	Musicians.	Actors and Vocalists.	Total Art.
21- 25.....	....	....	....	1	....	....	1
26- 30.....	....	....	1	....	....	....	1
31- 40.....	1	....	8	1	1	2	13
41- 50.....	6	2	9	7	4	5	33
51- 60.....	8	7	27	12	5	8	67
61- 70.....	21	3	31	17	12	9	93
71- 80.....	24	1	20	11	15	13	84
81- 90.....	13	1	12	7	6	2	41
91-100.....	3	....	3	....	2	1	9
Totals ....	76	14	111	56	45	40	342

TABLE IV.—Art.—Summary.

Age.	Engineers, Architects, and Surveyors.	Sculptors.	Painters.	Engravers.	Musicians.	Actors and Vocalists.	Total Art.
21 & upds.	69·95	58·57	64·20	63·80	69·44	64·97	65·90
26 " .....	69·95	58·57	64·20	64·58	69·44	64·97	66·03
31 " .....	69·95	58·57	64·52	64·58	69·44	64·97	66·14
41 " .....	70·35	58·57	66·60	65·03	70·18	66·34	67·25
51 " .....	72·39	60·50	68·47	67·91	72·57	69·33	69·56

The 342 persons comprised in these tables, when grouped according to the centuries in which they were born, were found to have attained the average ages stated in the following table.

TABLE V.—Arts.—Centuries.

Date of Birth.	Number of Deaths.	Average Age at Death.
16th century .....	5	62·60
17th " .....	39	65·51
18th " .....	298	66·42

Though the small number of deaths in the first line renders the comparison embodied in the table of little value, it may be observed in passing that the general results agree with those obtained for men of science. This group of facts makes no addition to our information on the subject of the relative duration of life of the married and

single. The abstracts do not contain any instance in which it is stated that the deceased person was unmarried. Fifty-five persons stated to have been married attained an average of 65·56 years.

#### IV.—Literature, Science, and Art compared.

The following table shows the average ages at death of the three classes which have just been separately examined, with the number of facts on which the averages are based.

Age.	Literature.	Science.	Art.
	(942 Deaths)	(188 Deaths)	(342 Deaths)
21 and upwards .....	64·05	66·72	65·90
26   "   .....	64·36	66·96	66·03
31   "   .....	64·74	67·61	66·14
41   "   .....	66·56	69·33	67·25
51   "   .....	69·61	71·81	69·56

It results from this table that whatever the age selected as the basis of the calculation, scientific men have the most favourable duration of life. The professors of the Fine Arts come next in order, when the younger members of the several professions are included in the averages; but if we exclude all deaths under 50 years of age, the resulting figures for literature and art differ very little indeed. The table, taken as a whole, seems to prove that the pursuits of literature are favourable to longevity, but destructive to life at the earlier periods.

#### V.—Summary view of the Duration of Human Life.

The several communications which I have addressed to the Society since the year 1845, on the Duration of Life, afford materials which enable me to present a larger view of this subject than has been hitherto possible. I am able to bring together a sufficient body of facts to determine:—1. The duration of life at different periods; 2. The comparative value of life in the married and single; 3. The comparative duration of life in the two sexes; and 4. The duration of life as affected by social position and by professional occupation.

1. *The Duration of Life at different periods.*—By bringing together the facts contained in my several communications to the Society, I am able to show the duration of life in the several centuries of the Christian Era by means of the ages at death of 8,499 adult males. The result, with the number of facts on which the several averages are based, is shown in the following table.

TABLE I.—Summary.—Centuries.

Date.	Number of Facts.	Average Age at Death.	Remarks.
First five Centuries.....	45	52·02	All sovereigns.
6th to 10th centuries .....	106	51·66	All sovereigns but one.
11th century .....	62	54·95	All sovereigns but three.
12th   "   .....	89	53·88	All sovereigns but four.
13th   "   .....	133	52·71	117 sovereigns.
14th   "   .....	147	53·50	121   "
15th   "   .....	249	57·16	176   "
16th   "   .....	1,331	64·23	Mixed classes.
17th   "   .....	3,464	60·36	"
18th   "   .....	2,870	63·41	"

The figures in this table are in harmony with those of the greater number of corresponding tables in former essays, in as much as they show a lower value of human life among persons born in the seventeenth century than among those born in the sixteenth century, with a marked recovery in those born during the eighteenth century. This curious and interesting feature of the table presents itself also in the tables for the Peerage and Baronetage, for the English Gentry, for Professional Persons, for the Clergy, and for Literary Men, and also for Females of the upper classes, while the tables for Sovereigns, for Medical Men, and for Artists show a progressive improvement, and the table for Lawyers a progressive deterioration. The results displayed in this summary table are not therefore, to be looked upon as the expression of the exceptional state of some one class determining by its own high numerical values the average results of the aggregate of ranks and professions. They are to be regarded as a general truth, of which, I confess that no satisfactory explanation offers itself. I may, however, observe, that of the causes of death recorded in the abstracts from which the figures in the table are taken, a third in persons born in the seventeenth century, and only a fifth in persons born in the eighteenth century, are from Ague, Fever, Dysentery, Small-pox, Plague, and Consumption, diseases which prove fatal chiefly to young and middle aged adults.

Though I do not attach great importance to the causes of death assigned in biographies, I subjoin a tabular statement of the assigned causes in the three centuries now under review. The large number of deaths attributed to Fever in persons born during the seventeenth century, and the improvement in this respect among persons born during the eighteenth century, is deserving of notice. The reform which was effected in our gaols after 1774, probably had some share in the result; for our prisons were active foci of infection to the rest of the population.

TABLE II.—Summary.—Diseases.

Fatal Diseases.	16th Century.	17th Century.	18th Century.
Plague .....	2	1	....
Ague .....	2	2	....
Fever .....	9	47	29
Small Pox .....	2	6	1
Diarrhœa and Dysentery .....	4	6	1
Consumption .....	6	19	28
Total .....	25	81	59
Total of assigned causes (including the above) .....	65	245	301
All causes (including the above).....	502	1,050	829

2. *The Duration of Life in the Married and Single.*—I am able to compare 976 instances in which the fact of marriage is stated with 83 instances in which the deceased persons are stated not to have been married. The average and extreme ages at death of the two classes are shown in the annexed table.

TABLE III.—Summary.—Conjugal Condition.

	Number of Deaths.	Mean Age.	Greatest Age.
Married .....	976	66·77	100
Single .....	83	62·06	92
Difference .....	....	4·71	8

Though the averages in this table are founded upon very unequal numbers of facts, it is probable that they represent a general truth. The difference of nearly  $4\frac{3}{4}$  years is much too considerable to be accounted for by the inequality in numbers. It may also be well to observe that the 83 cases are all instances in which the fact of celibacy is stated in the biographies, and that instances of death before the age at which marriage ordinarily takes place are not included.

3. *The Duration of Life in the Two Sexes.*—In an earlier volume of the *Journal* of the Society, tabular comparisons are made between the ages at death and expectation of life of the male and female members of the upper classes of society, from which it appears that females have a longer duration of life, and a better expectation for every age from 25 to 75. As the greater value of female life is universally known and acknowledged, I shall not enlarge further upon this topic, but content myself with referring to my paper on

the duration of life among the English Gentry and Aristocracy, which will be found at page 37, of volume ix, of the *Journal* of the Society.

4. *The Duration of Life as affected by Social Position and by Professional Occupation.*—The time has not yet arrived for presenting in one summary the duration of life of the several ranks and classes of society. Some of the materials required for this purpose are still wanting, and those which we have are not all of the best quality. Some of our averages, for instance, are deduced from too small a body of facts, while others relate to sections of the community not easily separated from the remainder by sharp and well-defined boundaries. We may imagine the subject of the duration of human life treated as a branch of science—the whole community being parcelled out into large classes, and these classes in their turn reduced to numerous subdivisions. We should have at least six leading classes—an independent class, a professional class, a trading class, a working class, a dependent class, and a criminal class; and each of these would be found to consist of many distinct elements. The figures contained in the present communication, and in former essays, will enable me to treat of the duration of life of the first two of these classes, namely, the independent and the professional class. I propose to place the facts relating to these two classes in order; but before doing so, I must revert for a moment to the sources from which the facts have been derived. They have been carefully abstracted from several works of an analogous kind; from the "Peerage and Baronetage," from County Histories, from the "Annual Register," from the "Gentleman's Magazine," from "Chalmers' Biographical Dictionary," and from the "Art de Verifier les Dates," a French work of acknowledged authority. Deaths by accident or violence have been always carefully excluded; so that the figures represent the average duration of life of those members of the several classes and sub-classes who have died natural deaths. I may further observe, that the successive papers have been arranged in the same way, and after the same plan, so that the summary view I am about to offer could be prepared without much difficulty, and with little chance of error. To make this summary view as complete as possible, I propose to append to each average a reference to the volume and page of the Society's *Journal* in which the original figures are to be found; and in order to use as few figures as possible, I shall give in every case the mean age attained by such members of each class as had survived their thirtieth year. The age thus stated will either be the simple mean of all deaths occurring after that age, or the calculated expectation of life at 30 added to 30. As I find that the average age at death thus calculated differs by a very small fraction of a year from the expecta-



tion added to the age; I shall use the one or the other indifferently, as I find convenient.

After this explanation, I proceed to present the summary view of which I have been speaking, under the two heads of—1. Persons of independent means; and 2. Professional persons.

(1.)—*The Duration of Life of the Independent Class.*

The average age at death of male Sovereigns who have borne rule within the Christian Era, founded on the deaths of so many out of 1,440 as had survived the age of 30. ( <i>Journal of Statistical Society</i> , vol. x., p. 62) is .....	57·16
The average age at death of male members of the English peerage and baronetage, similarly founded on 2,291 deaths, abstracted from "Sharpe's Peerage" and "Debrett's Baronetage." ( <i>Journal of Statistical Society</i> , vol. viii., p. 69) is .....	60·88
The average age at death of male members of the English gentry, similarly founded on 2,455 facts abstracted from certain county histories. ( <i>Journal of Statistical Society</i> , vol. ix., p. 37) is .....	61·24

The three orders of facts here presented are not strictly comparable facts, for the kings whose ages at death were abstracted from the "Art de Verifier les Dates" lived in different countries at different periods of time, while the peerage and baronetage lived and died in every part of the United Kingdom, and the gentry in certain only of our English counties. The figures 57·16, 60·88, and 61·24 can only be taken as fair representatives of the value of life in the three classes thus compared, if it shall appear that similar differences and a similar relative position obtain, when these same classes are compared for the same period of time. Such a comparison was made in the ninth volume of the Society's *Journal*, by placing side by side the average ages attained by those members of the Royal houses, the English aristocracy, and the English gentry, whose deaths are recorded in the obituaries of the "Annual Register" during the years from 1758 to 1813 inclusive.

The male members of Royal Houses dying upwards of 30 years of age, 97 in number ( <i>Statistical Journal</i> , vol. ix., p. 46), attained on an average the age of .....	64·04
The male members of the English aristocracy, 1,179 in number, attained an average of .....	67·31
The male members of the families of the English gentry, 1,682 in number, attained an average of .....	70·22

It will be seen, then, that when the ages at death of the three classes of male members of Royal Houses, male members of the English aristocracy, and male members of the families of the English gentry are abstracted from the same source, for the same period of

time, and with the same principle of selection, the average durations of their lives follow the same order as when all the members of the respective classes are included. The figures are worth repeating.

	Whole Class.	Part of Class.
Sovereigns and royal houses .....	57·16	64·04
English aristocracy .....	60·88	67·31
English gentry .....	61·24	70·22

These two groups of figures certainly confirm each other, and seem to justify the statement that the value of life among the independent class decreases as the social rank approaches the highest. It is reasonable to suppose that luxury increases, and the motives to wholesome exertion of mind and body are lessened as we ascend from the English gentry, through the English aristocracy to the more mixed class of Sovereigns or members of Royal Houses; while the families of the English gentry comprise a very considerable body of persons who have been more or less dependent, at some period or other of their lives, on professional exertions for their support. The families of the English gentry may be said, indeed, to form, in this respect, a link between the aristocracy and the professions, sharing the luxury of the one and the intellectual labours of the other, and receiving into its ranks the children of those who have achieved wealth and social position by the pursuits of commerce, manufacture, and trade.

The inference which the figures drawn from the "Annual Register" suggest in favour of mental and bodily employment, and against luxury and want of occupation, is certainly strengthened by facts drawn from the same source, and given at p. 349 of vol. ix. of the *Journal of the Society*.

The learned professions, with 1,483 recorded deaths, give an average duration of life of .....	68·86
Trade and commerce, with 513 deaths, yield .....	68·74
Officers of the army and navy, with 935 deaths .....	67·59
English literature and Science, with 395 deaths .....	67·55
The fine arts, with 239 deaths .....	65·96

Of these five leading classes, one only, the Professors of the Fine Arts, show a less favourable duration of life than the English aristocracy, and even the professors of the fine arts are more favourably circumstanced than the members of Royal Houses.

Nor is the inference against luxury and want of employment weakened when the five classes just compared are resolved into their constituent sub-classes.

The clergy, 945 in number, attain an average age of .....	69.49
Trade and commerce, 513 in number .....	68.74
Officers of the royal navy, 366 in number .....	68.40
Lawyers, 294 in number .....	68.14
English literature and science, 395 in number .....	67.55
Members of the medical profession, 244 in number .....	67.31
Officers of the army, 569 in number .....	67.07
The fine arts, 239 in number .....	65.96

All the members of this larger list have a more favourable duration of life than the members of Royal Houses, and five out of the eight, present a more favourable figure than the English aristocracy. For the aristocracy and the members of the medical profession, the figures are precisely the same; but the aristocracy has a slight advantage over officers of the army who are recruited largely from its ranks, and a still greater advantage over the professors of the fine arts.

The figures which represent the value of life in the independent class would seem to warrant the inference that the duration of life is greatly curtailed by luxury and inadequate occupation. The class which comprises the largest number of persons who may be presumed to have had occasion to exert themselves, and which receives the largest number of recruits from the ranks of the industrious portion of the community (I mean the English gentry), has also the most favourable duration of life. The question, then, naturally suggests itself—Is the duration of life favourably affected in those members of the English aristocracy who may be said to have a profession demanding full occupation of the mind? Diplomacy is such a profession, and the duration of life of diplomatists and statesmen affords an answer to this question. I have at hand the duration of life of 79 diplomatists and statesmen, taken from the pages of "Chalmers' Biographical Dictionary." With rare exceptions they are members of the English aristocracy, and their average age at death, calculated in the same way as the other averages now under consideration (that is to say, the average age of all who had survived their thirtieth year), is no less than 73.65, an average in excess of the corresponding figures for the English aristocracy by more than 6 years.

As, however, the admission into the class of English statesmen does not take place till a much more advanced period of life than 30 years, the just comparison between statesmen and the aristocracy, of which they form the most active section, will consist in such members of the two bodies as have passed their fiftieth year. The figures for this age in the classes now under consideration are as follows:—

Members of Royal Houses .....	68.54
Aristocracy .....	71.69
Gentry .....	74.00
Statesmen .....	77.71

This very favourable duration of life of statesmen and diplomatists, when compared even with the English gentry, affords some ground for believing that a life of active mental occupation may completely counteract the injurious effects of luxury, and its frequent concomitant, want of occupation and object.

(2.)—*The Duration of Life of the Professional Class.*

Under this title I propose to treat of the duration of life of the three learned professions, and of persons devoted more or less exclusively to the pursuits of literature, science, and art. The facts for both these leading divisions are obtained from "Chalmers' Biographical Dictionary," supplemented by the "Annual Register."

The clergy, 902 in number ( <i>Journal of the Statistical Society</i> , vol. xiv., p. 289), attained the average age of.....	66.42
Lawyers, 137 in number, ( <i>Journal of the Statistical Society</i> , vol. xx., p. 65), of.....	66.51
Medical men, 174 in number ( <i>Journal of the Statistical Society</i> , vol. xvii., p. 16), of .....	67.04

According, then, to these facts, obtained in the same manner from the same sources, the members of the three professions take rank, in point of longevity, as follows:—

Medical men 67.04; Lawyers 66.51; Clergy 66.42.

Such is the order assigned to the three learned professions when their more eminent members are brought together from the pages of a biographical dictionary, with some additions from the obituaries of the "Annual Register;" but when all the facts relating to the three learned professions are extracted from the obituaries of the "Annual Register," from the earliest issue of that work to a comparatively recent period, the relative position of the three professions is changed, and the average duration of life is as follows:—

Clergy 69.49; Lawyers 68.14; Medical men 67.31.

The less select classes taken from the obituaries of the "Annual Register" differ, therefore, more from each other than the more select classes, who find a place in the pages of a Biographical Dictionary. It may be well to place the two orders of averages side by side.

	More Distinguished Members.	Less Distinguished Members.
Clergy .....	66.42	69.49
Lawyers .....	66.51	68.14
Medical men.....	67.04	67.31

The comparison here instituted would seem to lead to the inference, that high professional distinction is only to be attained by a sacrifice of health and vigour, leading to some curtailment of life.

The duration of life of persons devoted to the several pursuits of science, literature, and art, has already been examined in this essay. The three pursuits were found to take rank as follows:—

Science 67·61; Art 66·14; Literature 64·74.

The less select classes, whose ages at death are recorded in the "Annual Register," attained the following average ages:—

Literature and Science jointly 67·55; Art 65·96.

If we combine into one class the persons devoted to literature and science, whose ages at death were taken from Chalmers' Biography, supplemented by the "Annual Register," we obtain as the average duration of life of this more select mixed class 65·22; and we are able to compare the more distinguished with the less distinguished members of the two classes, literature and science, and art.

	More Distinguished Members.	Less Distinguished Members.
Literature and science .....	65·22	67·55
Art .....	64·74	65·96

So that here also it would seem that the higher distinctions of literature, science, and art are purchased by a sacrifice of health and vigour leading to a curtailment of life.

It now only remains that I should compare the two classes of independent and professional persons with each other, so as, if possible, to arrive at some general principles of practical application to the business of life. For this purpose it will be convenient to consider the English gentry as an intermediate class between the aristocracy and the professions, leaving kings and members of Royal Houses out of the comparison. The following figures represent the average age at death of all members of these classes who have passed their thirtieth year; all the figures being taken from the "Annual Register" for the same period of time.

English aristocracy .....	67·31
English gentry .....	70·22
Learned professions .....	68·86
Trade and commerce .....	68·74
Officers of the army and navy .....	67·59
English literature and science .....	67·55
The fine arts .....	65·96

The mixed class of the English gentry, occupying, as they do, an intermediate position between the aristocracy and the professions,

largely devoted to healthy rural pursuits and manly English sports, recruited from the most energetic and successful of the professional and industrial classes, more occupied than the aristocracy, less anxious than the professions, less ambitious than the votaries of literature, science, and art, is distinguished from the classes above and below it by a more favourable duration of life. The aristocracy, more luxurious and less generally occupied, pays for its perilous advantages of social position with some few years of life, occupying an intermediate place between the mixed cultivators of literature and science and the short-lived devotees of art. This unfavourable position of the aristocracy would seem to be dependent, not on any inherent weakness of constitution (for statesmen, who are for the most part members of that class, attain to a very favourable duration of life), but to that cause which Celsus, nearly 2,000 years ago, pointed out as the parent of a large family of diseases unknown to less artificial modes of existence—luxury. This serious evil, which it is not less the interest of the aristocracy itself than of the nation at large to see abated, can only be counteracted by maintaining, and, if possible, increasing the avenues to suitable occupation which the political constitution and social habits of this country provide. The curtailment, in the case of so important and influential a class, of existing opportunities of employment, and of existing stimulants to an honourable ambition, would be an evil for which the most promising theoretical improvements in the constitution of the country might prove but a sorry compensation.



PROPOSITIONS and INFERENCES, with STATISTICAL NOTES, touching the provision of COUNTRY DWELLINGS for TOWN LABOURERS—and in particular for those of the TOWN of LIVERPOOL. By J. T. DANSON.

[Read before the Statistical Society, 19th April, 1859.]

AFTER carefully considering the facts brought together in this paper, with reference to the most intelligible mode of presenting them to the Society, I have adopted the form of a series of Propositions, each sustained by notes of the Statistical evidence on which it is founded, and a subsequent, but logically connected, series of Inferences, similarly sustained. In some instances, in order to bring the Paper within the compass of an evening's reading, a Proposition or Inference already proved elsewhere, is noted rather for illustration than for proof.

*First Proposition.*—That nearly all our large Towns have been formed, and are maintained, by the demand for Town labour, bringing, and keeping, there the labourers who supply that demand, together with their families.

Liverpool may be taken as a prominent instance. It appears from the census of 1851 that of the 213,767 persons, of 20 years of age and upwards, who slept within the limits of the Borough on the night of the 30th of March in that year, only 48,298, or about two out of every nine, were natives of the Town. Of the remainder, being immigrants, and 165,469 in number, no less than 61,089 were born in Ireland. It should here be observed, for it bears directly on the purpose of this paper, that, as a result of the migrant character of the labouring population of our large towns, they are very seldom under the influence of any local attachment; and that where any such attachment exists with them, it almost invariably has reference to a rural, and not to an urban locality. Hence the gradual removal of a portion of them to dwellings in the country would, in all probability, meet no obstacle from that source.

*Second Proposition.*—That of the whole number of persons thus brought into, and retained in, such towns, only a small proportion, say not more than one in five, or at the utmost one in four, is there required, or there employed, in the capacity of an effective labourer.

The average number of the family, in England, being about five,

it is computed that, allowing for women engaged only in domestic duties,—or in such occupations as might be equally well or better performed in the country—for children, and for the sick and aged, not more than one in five of the labouring population will be found actually engaged in those occupations for which residence in the Town is now really required. And, with reference to any suggestion of country dwellings for town labourers, this proportion may be deemed considerably less: seeing that many artificers and dealers, who serve the labouring classes, are now located solely by, and would follow, the dwellings of their customers. Assuming that every five families of what is commonly called the labouring class do, by living in a town, alone, give town-employment to one other family of the same class, the removal (even the nightly removal) of every five labouring men would have the effect of taking at least six families from the town.

*Third Proposition.*—That, as a rule, the men are wanted for town work, and their wives, female relations, and children are not; and the men, when sick or otherwise disabled, would, in general, be better in the country than in the town.

In or about the port of Liverpool there is but little demand for the services of women or children. In this respect—that is to say in the paucity of regular and profitable employment for women or children—the town may be deemed, in some degree exceptional. The manual labour in demand is almost wholly for the carriage, shipping, and storage of goods: operations of a rude nature, generally requiring considerable strength, and not admitting of the introduction of much light labour. But, even where this is otherwise, it forms no real obstruction to what I am about to propose, unless the employment whatever it may be, available for women or children, be such (as for instance connected with fixed machinery, or requiring to be done by workers collected in one building) as to preclude its being taken home.

*Fourth Proposition.*—That thus, for every effective labourer retained and maintained in such towns, several (probably four) other persons are now also kept there, and have to be provided with fit habitations, including air, water, and sewage.

This proposition may be deemed a corollary to the second. But it goes further: opening to view the whole of the sad and extensive field in which our sanitary reformers are now hardest at work, and in which they are, undoubtedly, much less successful than they commonly suppose they are: the house-accommodation of the poor in our large towns. There the habits previously formed, and too often fixed for life, in cottages by lane sides in the open country, or on

breezy heaths, and in open air occupations, are found very effective indeed to promote, by habitual disregard of ventilation, the least economical use of such breathing-space, and also such means of cleanliness, as can be had in towns, by those who can pay only for a little of either. They could not, however they valued space, have much of it, there. But they don't know its value; and thus often pay very dearly for *not* having even what they might.

*Fifth Proposition.*—That repeated efforts concur in revealing great practical obstacles to the provision of fit habitations for the greater part of the population of such towns, within the towns themselves.

Trustworthy evidence, in detail, of any want of success in the philanthropic efforts recently made to improve the town dwellings of the poor, is, as yet, only to be had from those who are, or have been, engaged in such efforts. Time enough has hardly elapsed to discourage those who began these efforts with confident hope of success; and it is not to be expected that, until thoroughly convinced, gentlemen so engaged will afford willing evidence of their own failure. Nor indeed can it yet be said that the term "failure" is fairly applicable; though it certainly cannot be said that, in Liverpool, any remarkable degree of success has yet been achieved. Two distinct experiments have been made here. As to the first, I am enabled, by Mr. Charles Melly, who has been intimately connected with it, to state the following facts:—

Some six years ago, two blocks of building, in Frederick Street, termed the "Prince Albert Cottages," were erected, containing 23 separate dwellings, and costing, in round figures, for land 1,120*l.*, and for building 3,080*l.* total 4,200*l.* Three of these dwellings are now let at 5*s.* 9*d.* per week; 14 at 5*s.* 6*d.* and 6 at 4*s.*—all paid in advance. The rental, for the first five years, lately expired, has yielded from 5 to 5½ per cent. on the capital; and the net dividend realised by the owners, after putting aside ½ per cent. for a sinking fund, has been 4½ per cent.: not enough I fear to draw much more capital in the same direction. In comparing this with other investments in house-property, it will be borne in mind that a good deal of labour and attention is given, in these cases, on behalf of the landlords, for which no charge is made; and that permanent and effective success in such, or any similar undertakings—as a means of social reform—cannot be looked for, until they can be shown to afford a good investment for capital, in a purely monetary point of view.

The other experiment is yet in its infancy. It is that of "the Liverpool Labourers' Dwellings Company." The Secretary to the Company, Mr. T. M. Myers, informs me that the 41 dwellings erected by them cost 6,350*l.*; and that the net rental for about three

quarters of the year 1857 (for which, alone, the accounts are yet complete) yielded a dividend of 3½ per cent. on the capital paid up.\*

*Sixth Proposition.*—That excepting for the purpose of securing a due provision of food during the day, the labouring man does not need to communicate with his family from the morning till the evening of any working day.

*Seventh Proposition.*—That due provision of food could be readily made without any such communication.

In Liverpool, the principal field of labour is along, and in the immediate vicinity of, the dock quays. Here the labourer earning less than 25*s.* or 30*s.* a week, if he live near his work, must pay what is to him a high price for any dwelling, and cannot have one fit to rear a family in. And to live elsewhere renders it necessary (1) that he shall walk the distance, whatever it may be, between his house and his work four times a day, or (2) that some member of his family shall share this fatigue and exposure, and bring him his dinner, or (3) that he shall take his dinner with him in the morning.

The course first mentioned involves an addition, not desirable, to the muscular labour of the day, and also implies exposure to the weather, whence (with the slight provision persons so situated can make against such casualties) inevitably results some amount of disease, premature debility, and death. And either of the two other courses must give the man a cold dinner; and, for the winter half of the year, may be said almost to compel, and certainly to excuse, a resort to some public-house at mid-day. Now it is conceived—and it is one of the suggestions intended to be made by this paper—that the discomfort and liability to disease, waste of food, defective nutrition, needless labour, and temptation to drink, here referred to, might all, to a great extent, be got rid of, were properly warmed and well-regulated mess-rooms, with stoves and attendants for the warming or cooking of the victuals brought by the men, provided in our large towns, wherever a sufficient number of men could be conveniently brought together to use them.

It is probable that order might, in most cases, be maintained by putting the place in charge of persons elected by the frequenters from among themselves; and it has been ascertained that a very moderate subscription, from a large number, would amply defray the cost. The proof is, that such mess-rooms are, and have been for some years past, in successful operation in several places: in par-

\* In 1858 the gross return was 326*l.*, and the net 120*l.*: again equal to 3½ per cent. per annum on the capital.

ticular at the factories of Price's Patent Candle Company, in London, and near Liverpool. These appear to have answered their purpose admirably; and I understand the Company find their share of the advantage a sufficient remuneration for the cost; which, accordingly, they defray, without aid from their workpeople. The mess-room at Bromborough (on the Mersey), is used daily by upwards of 200 men and boys: in other words, by nearly all who are not resident in the adjoining cottages belonging to the Company, and so have not ready access to their own houses. One material advantage, in this instance, and it is equally applicable to almost every instance of the employment of such labour, is found in the deposit with the mess-room cook, in the morning, of all bags and baskets. Such articles if carried to, and kept in, the places where the men work, obviously afford facilities for, and thence temptation to, petty pilfering. Whence, to take charge of them, is also, in one sense, to take charge of the bearer's honesty. The workpeople employed at Bromborough, as the superintendent informs me, "find the room a great comfort: as they get their meals well and cleanly cooked; and, in wet or cold weather, have a dry warm room to eat them in."

I am informed that Messrs. Robert Scott and Co., of Castle Dykes, near Dumfries, have carried the system further: having found it advantageous (to both parties) also to provide food for their workpeople. Nor do I see any reason, in view of the advantages of co-operation in all such matters, to doubt that, with due care, the mid-day meal might thus be provided both better and cheaper than by the family.

*Eighth Proposition.*—That ready access to a rural district on Sundays, would, in all probability, beneficially affect the condition of all working men to whom it is not now available.

Let it be remembered that a Town Sunday is now no longer what it used to be. This fact is not only very significant. It is also less perceptible to, and thence is less considered by, many of us, than it should be. I believe that its full importance is not yet recognized even by many of those who have given special attention to such topics. In our great manufacturing and commercial towns, the streets are no longer filled several times in the day, as in the last and preceding generations, with the richer and better educated classes going to and returning from places of worship. All who under present arrangements have learned to value, and can afford, a suburban or country residence, now have it; and thus, on Sunday, the town is almost entirely abandoned to the smaller shopkeepers, the publicans, the labourers, the "dangerous classes," and the police. Whence evil example and weak imitation, leisure, and the absence of most

of those whose very presence would be a check, combine to make its social aspect far worse than on any other day. Whoever doubts this may readily convince himself by spending a few hours in the streets of any of our larger manufacturing or seaport towns on any Sunday in the year fair enough to allow the people to show themselves out of doors; but especially in the summer. How desirable it is that the labouring classes, and before all others the young persons, giddy and ill-guided, who are so numerous in our large towns, should, when not under the discipline of labour, profit by the social example of, rather than be estranged from, those higher in station—and that the day of rest should (for as many of them as possible) be one of tranquillity and innocent gratification in the country, rather than of riot and vice in a town, is sufficiently obvious. I do not forget the invariable grossness of the uneducated, as a body, wherever they are. But having often personally compared large towns with small villages, even in this respect, I cannot but deem the latter preferable on all points.

*Ninth Proposition.*—That women and children, resident in densely-peopled towns, endure at least an equal share (with men) of the evils now incident to excessive density of population; and that the greater part of what is suffered from this cause, by male labourers in towns, is caused by their remaining in the town at night.

Evil companionship and example, which a town life more or less forces upon the wives and children of the poor, have undoubtedly a worse effect upon the young and the idle than upon the well-employed and the mature. And it is even well that it is so. Were it not—were the young and the unemployed not easily led by the example of those around them—we should want one of the most effective means of promoting good conduct. And experience seems to justify the conjecture, to say the least, that the causes of disease are, in like manner, most effective upon children and unemployed persons. This, however, being a point on which there is yet some difference of opinion, I do not urge it.

*Tenth Proposition.*—That cheap and rapid means of communication, by railway, for passengers between all such towns and the neighbouring country, within a radius of (say) 20 miles, are now, or might speedily be made, available.

Here I cannot do better than take Liverpool as an example. It is computed, by those best acquainted with the subject, that the number of labourers of the lowest class employed on and about the dock quays of Liverpool, alone, exceeds 15,000. And this agrees



with the last census. In March, 1851 (since which time the town has largely increased both its commerce and its population) the number of persons sleeping within the borough, and returned under the single head of "labourers, branch undefined," was 11,788; and the "carters and porters" were 5,163. Four lines of railway now have termini in Liverpool; and a fifth is likely to be added shortly. The country traversed by each of these lines is more or less favourable for the formation of groups of labourers' dwellings, at distances varying from 5 to 20 miles from the town. If each line accommodated 2,000 men, and ran two trains in the morning, and two out in the evening, to suit the hours of labour (which are not very various), the cottages being erected either by the Company or by parties under contract with it, so that the price of a railway ticket for each house, might (but only as a matter of convenience to both parties) be charged in the rent, and that be taken in advance weekly; and a similar weekly accommodation were given to the women to come to town once a week, say on Saturday, for marketing, &c., the arrangement contemplated would be complete, and might be safely left to expand its dimensions, as the interests and the conveniences of all parties (thus placed in communication with each other) should dictate.

All that can at present be affirmed is that the arrangement seems feasible, not only to the writer of this paper, but to every one to whom he has proposed it for consideration in this neighbourhood; and this description includes some workmen of long experience, as well as persons whose lives have been spent in close communication with that class.

*Eleventh Proposition.*—That some of the most effective obstacles to providing fit habitations for labourers of the lower classes in towns, exist in a much less degree, or might be altogether removed, in the country.

First, as to the cost of land. I have stated that the ground for the "Prince Albert Cottages" erected in Frederick Street, Liverpool, cost 1,120*l.*; and the buildings 3,080*l.* I need not tell those who are acquainted with these matters that, in or near the centres of our large towns, land is often worth more per square yard, than it is per acre at a distance of 10 or 12 miles. In the instance now referred to, it formed more than one fourth of the total cost of the dwellings. In the country an acre of land, suited for such dwellings, may very commonly be had for 40*l.* Cutting out four lots of 1,100 square yards each—say 100 yards for the house and 1,000 for the garden—there would be left, of an acre, 440 square yards, for a drying ground, a common play-ground, or any similar purpose. Paying 5 per cent. on the cost, the ground-rent would be 40*s.*—or

10*s.* per house per annum. But the ground-rent on one of the "Prince Albert Cottages," let at 5*s.* 6*d.* per week, or 18*l.* 4*s.* per annum cannot be taken at much less than one-fourth of the rent, or (say) 4*l.* 10*s.* per annum. Here the difference of ground-rent, alone, would cover about four-fifths of the estimated railway-fare to and from the country [for which see notes to Inferences 2 and 3 pp. 371, 372, post]. And, be it remembered, the larger amount is now paid for a house in a closely-built town, and without a garden; while the smaller amount would cover not only the site of a commodious cottage, but also a garden yielding some food, besides healthy amusement and fresh air.

I am told that, on an average, the cost of building a cottage is quite as great in the country as in a town. And, strictly speaking, I believe this to be true. It accords with my own experience. But some of the accessories of the building, which are essential in a town, are less needed, or may be dispensed with, in the country. A rain-water tank to each house, and a well and pump to each group of houses, would in many instances cost less, and in very few would cost more, than a good town supply of water. Sewage would be cheaper; and watching and lighting might be dispensed with.

On the other hand owners and occupiers of land in the country very often object to the building of cottages, as likely to increase the poor rate of the district. But the proposed dwellings would all be within easy walking distance of a railway station, and would add proportionately to its traffic, and would, properly speaking, belong to it—and so would be entitled to share the credit of an effect due to every railway station—that of raising the value of land in its vicinity. The objection cannot be ignored: but I am convinced that, if fairly examined, it will, in most instances, be found to be wholly without foundation. And any comprehensive legislation on the "settlement" question must tend wholly to remove the ground of this objection. Finally, I may observe that, in practice, the difficulty of making the building of town dwellings for labourers a profitable investment arises, mainly, from the unwillingness of the tenants to pay for adequate ventilation, water supply, &c. the price these must cost in a town. In the country they might have them—so to speak—at their own price: at a price they are all able and willing to pay.

*Twelfth Proposition.*—That light and healthy occupations for women and children, not inconsistent, as to the women, with the duties of a mother, or as to the children, with school education, already offer themselves, and are increasing in extent, in the country districts immediately surrounding all our large towns; and that, in particular, the increased application of capital and machinery to agriculture is, by making clean

land in spring and large crops in autumn, at once more desirable and more attainable, and by increasing the demand for, and the profits from, well-kept market gardens, materially increasing the demand for light labour in weeding and other similar processes, and so is offering out-door employment of the healthiest description, at intermittent periods, but in the finest seasons, to increasing numbers of women and children.

Here I may rely, in some degree, upon my own experience in farming; and that of others, which I had occasion to observe when, for several years, I took an active part in the proceedings of an Agricultural Society including among its members nearly all the principal farmers in a district of some 60,000 acres near Liverpool. And, indeed, I think I may appeal, with confidence, to the observation of all who have been engaged in farming, near any large town, during the last ten years.

One result—and a result to which I know no exception—of the means recently adopted for economising rude labour in agriculture (as by improved machinery, and by the use of steam power) has been a steady and rapid increase of the demand for a lighter description of labour. In short, it is in agriculture as in manufactures; these improved methods, while superseding some rude labour, render it profitable, and to a great extent necessary, to employ more of a lighter description. I allude especially to the labour of hand-hoeing, gathering stones and weeds, driving cattle, carrying messages, &c., and assisting at harvest.

Assuming these Propositions to be established, I would suggest to the Society the following inferences from them:—

#### INFERENCES.

1. That the retention of a large portion of our present town population in the towns (even during the day) is not only undesirable, but is rapidly becoming no more necessary than would be the retention of an equal proportion of non-combatants in a military camp; and that a further portion might be removed at night.

I say only a large portion. And here let me forestal the objection—imminent in any discussion of this paper—that what I propose is novel and untried. Already many men employed in our large towns, if unmarried, with (say) 25s. per week, sleep out of the town, if they please. With 35s. per week, and some determination,

even the married man, with a family, may do it too. And these, and those above them in means, are actually doing so, to a great extent; I might say doing so in proportion to their intelligence. All I have to urge is the expediency, if it be now practicable, or as soon as it shall become so, of extending the facilities now existing to this end, so that a *still lower* class may be able to use them. Not that I would have aught in this direction done without regard, or even with any diminution of the usual and legitimate regard, to profit. Quite otherwise. What has been done in the service of the classes who now have these facilities, has been done with no very general perception of the accruing *social* advantages; though these are now apparent enough. What I propose is, that a more intelligent advance should now (or as soon as may be) be made in the same direction, to the profit of all concerned, by extending similar facilities to a still lower class of town workers. Looking at the future by the light of the past, and of what is around us, in this north-western district of the kingdom, I see, that way, if I am not mistaken, a practicable mode of escape from the growing evils of excessive aggregation in Towns.

2. That this part of the population would be induced, by a judicious display of the requisite facilities, gradually to migrate to suburban villages, properly constructed in the vicinity of railway stations, existing or to be formed for the purpose, and readily accessible from the neighbouring towns.

I have said that there are four lines of railway out of Liverpool. But there are only two railway stations in the town: one at its northern end, and near the Exchange; and the other (the London and North-Western) on the eastern side of the town, but not far from its centre. It is probable that there will shortly be a third station formed at the south end of the town, in connection with the Great Northern Railway. The Exchange station, which is well situated for taking up and setting down persons employed at or near the principal docks, and the chief groups of warehouses, forms the common entrance and exit of three several lines of railway, which take different directions shortly after leaving the town. The most westerly of these runs only to Southport, a quiet little town, and bathing place, on the coast, distant about twenty miles. This line skirts, the whole way, a broad sandy shore, facing westward, and backed by open sandy land, yet thinly inhabited, but admirably adapted for the sites of cottages. On this line there are, already, seven stations, more than five miles from Liverpool. Another of these three lines—the “East Lancashire”—runs through a country more highly cultivated, and in which land is dearer; but which is also well adapted to the purpose in view; and it has now eight

stations, more than five, and less than twenty miles from Liverpool. And the third—the “Lancashire and Yorkshire”—running through an equally eligible country, has seven stations within these limits. The two last-mentioned lines enter, at a distance of some ten miles from the town, a district more elevated and picturesque than the flat country skirting the western coast, and lying immediately north of the town. The fourth or North-Western line, running direct to Manchester, has twelve stations within the same limits.

If a circle be drawn on the Ordnance Map, with its centre at the Exchange, and with a radius of ten miles, intersecting these four diverging lines of railway, it will be observed that at that distance they lie from five to seven miles apart from each other, and thus afford ample space for the freest development of the proposed scheme along each. And the total number of stations within the prescribed limits being thirty-four, if there were erected—gradually, and in the course of such a term of years as might afford time for a perfectly safe establishment of the system—an average of one hundred dwellings, at or near each station, accommodating as many workmen, and also, (say) four times as many women and children, healthy habitations would thus be provided for some 17,000 of the present labouring population of Liverpool. Add only 3,000 more for the families subservient to, and living by serving, these; and we have an addition of four thousand to the number of regular daily passengers on these lines; to say nothing of the attendant traffic inseparable from the altered location of so large a number of persons, all consumers of produce to be carried from Liverpool. Let the amount paid by each family, in all ways, for conveyance, be taken at only 5*l.* a year, and an addition would be made to the gross earnings of less than eighty miles of railway of 20,000*l.*, or more than 250*l.* per mile. This, too, would be only a beginning. And as the plan, if found agreeable and profitable—and I venture to think it could hardly be found otherwise to purchase better health, with all its attendant power and enjoyment, and increased length of life, with any moderate amount of money—might be expanded to a much greater extent from Liverpool,—and would be more or less applicable to every twenty miles of railway terminating in a large town,—the entire railway interest might, in some degree, share and profit by the new source of income. But, as the subject, where it touches existing facilities of conveyance, is one peculiarly of local detail, I here confine myself to Liverpool.

3. That—independently of the saving in medical attendance, loss of time by sickness, funeral expenses, and other forms of suffering and expense incidental (or on strong evidence assumed to be incidental) to certain violations of the sanitary laws now

in some sort forced upon the poor dwelling in large towns, but avoidable (and to a great extent actually avoided) by the same class in the country—the additional cost of conveyance to and fro for the working members of such families would probably be covered, in great part, by the additional earnings of the women and children.

If the money saved in sick time, in medical expenses, and in funeral expenses, and the pecuniary gain in the longer duration of active life (or in any, or some only, of these items) for a family of five persons be set down at 3*l.* per annum, and if we add only 1*s.* per week for additional earnings of the family, as in washing (which, in town, is costly and ill-done for themselves, and impracticable for others), in gardening, and light farm work, we have a total of 5*l.* 12*s.* per annum, added to the effective means of the family: which would probably be more than equivalent to the travelling expenses incurred under the proposed system, were it duly organized.

If the deaths among the removed population were reduced only by five per thousand per year, and the average cost of their funerals is only 3*l.*, the gain on this single item, to 20,000 persons, would be 300*l.* a year: the interest of 7,500*l.* sunk at 4 per cent.: which, taking land at 40*l.* per acre, would give a quarter of an acre of land to each of 750 families.

4. That a large proportion of the crime committed in towns may be traced to the presence of a dense labouring and poor population at other hours than those commonly employed in labour; and, as all municipal expenditure is more or less increased by the same cause, it is probable that the burden of local taxation (considered generally) would be rather diminished than increased by any such redistribution of the town population.

The chief of the Liverpool police (Major Greig), in his report to the Town Council for the year ending at Michaelmas, 1858, draws attention to the fact that “the various classes of larceny constituting “the great bulk of the offences, were of more frequent occurrence “in the winter than during the summer months;” and accounts for it, by stating that “the long dark nights are favourable for the “commission of” these offences. On turning to the quarterly lists of offences accompanying this report, I find that of a total of 5,012 offences committed and made known to the police during the year, and distributed under 42 technical descriptions, no less than 3,195 fall into three classes of larceny; and that of these 1,729 were committed in the six winter months, from October to March, and 1,466 in the other half of the year.



Another evil effect of the close packing of the families—and especially the young females—of our growing labouring population in the lowest and worst-built parts of our great towns, is seen in the rapid increase, of late years, in the number of female criminals, and also the increased gravity of the offences with which they are charged.

Especially is this observable in Liverpool, where the constant presence of a large and fluctuating body of seamen, and probably as many more persons of a similar class, and in a more or less migratory condition, with money to spare and no immediate occupation, tends strongly to demoralize, at an early age, and for life, the females of the lower classes. In the year ending at Michaelmas, 1857, the number of persons charged with criminal offences in Liverpool, and dealt with summarily, being 21,080, no less than 8,235, or nearly 40 per cent., were females; and only 26 per cent. of the whole number (of 21,080) were natives of Liverpool. In 1857-8 the females were 7,393 out of 19,021, or 38 per cent. of the whole, and only 24 per cent. were natives of the town. But in the same two years the proportion of females among the criminals charged with offences of a *graver character*, and committed for trial, was still higher, being in 1856-7 42 per cent., and in 1857-8 44 per cent. of the whole number. This has been traced to an apparent inveteracy of the criminal tendency in females, when once developed, arising in part probably from the greater difficulty a woman once marked as a criminal finds, not only in returning to a station of respectability, but in finding any other than a criminal occupation. Residence in the country might often prevent this hopeless degradation; and, relying on my own observation, I am persuaded that it would.

In agricultural districts, the proportion of female criminals does not usually, exceed 12 to 15 per cent.; or about one-third of that prevalent in Liverpool.

As to the diminution of expense to the country likely to attend any diminution of crime, I find, on referring to the "Judicial Statistics, 1857," that the average cost of each prosecution (so far only as it is paid out of the public revenue) is, in a summary proceeding before a magistrate, 1*l.* 11*s.* 5*d.*; and by indictment 9*l.* 2*s.* 3*d.* The maintenance of each prisoner while in gaol (and when his cost to the country, all things considered, is probably at a minimum) was at the rate, averaging the last five years, of 27*l.* 4*s.* 7*d.* per annum. Add, when not in gaol, the extra cost of living by depredation, with the destruction and waste of property necessarily incident to a life of crime, and it will not be deemed an immoderate estimate which puts down 150*l.* a year as the average current cost, in money, of each person falling into and remaining in this class. One hundred withdrawn, or withheld, from the present

list in Liverpool, would, on this estimate, afford a gain to the town of 15,000*l.* a year—enough to pay ample interest on 300,000*l.*, were that sum invested in any means whatever for bringing about such a result.

It also appears, by the "Judicial Statistics, 1857," that of the whole body of criminals in that year, upwards of 40 per cent. were "*labourers*," upwards of 18 per cent. "*mechanics and skilled workers*," and 22 per cent. "*persons of no occupation*;" and as a large majority under this last head were *females*, it may be inferred that nearly all these—or about 80 per cent. of the whole body of criminals—were of the very class now compelled (in many instances most unwillingly, while not yet criminal) to spend their leisure hours in the bad moral and physical atmosphere of our overcrowded towns.

5. That, in particular, juvenile crime might thus be largely prevented: the criminal tendency, where existing, being, in the country, far less fostered, either by temptation or by evil example.

The returns of commitments show that juvenile crime is more common in towns than in the country. Petty larceny—the chief crime of towns—is peculiarly adapted to the powers of children. Almost every natural vent for the inherent activity and curiosity of boys is there closed; while all their faculties are preternaturally sharpened; and acquisitiveness is cultivated by the example of all whom they are taught to look up to. Whence crime becomes, to many of them, inevitable.\*

\* I find that of 960 "youthful offenders" who were sent to Reformatory Schools in England and Wales in the year ending 30th September, 1857, as many as 756 had been convicted of various forms of larceny, 44 of vagrancy, 43 of attempts to steal, 26 of housebreaking, 23 of unlawful possession of goods, and the remaining 68 of other offences: and 633 of them had been previously in prison—373 of them more than once.

The number of males under sixteen years of age committed in the same year to the different prisons of the kingdom, displays in almost every instance a larger proportion for the borough than for the county gaols; though it is well known that many of the depredations committed, and punished, in agricultural districts are traceable to criminals bred in towns, and usually resident there. For instance, for the Aylesbury county gaol we find, under sixteen years of age 38 males out of a total of 591; in Exeter county gaol, 50 out of 771; in Springfield (the largest county gaol in Essex), 76 out of 964; in Hereford, 12 out of 312; in Warwick county gaol, 7 out of 329; in Worcester county gaol, 48 out of 1,005; in Wakefield county gaol, 223 out of 3,450; in Preston county gaol, 100 out of 1,476.

Turning to the borough gaols, we find for that of Liverpool 502 males out of a total of 4,811; in Manchester, 463 out of 2,305; in Birmingham, 244 out of 1,515; in Hull, 161 out of 847.

The statistics we yet have on this subject are very imperfect; but, such as they are, they undoubtedly tend to confirm the opinion that a town life, for the children of the labouring classes, is promotive of juvenile crime.

In the year 1857-8, the number of criminals taken into custody in Liverpool, who were under sixteen years of age, was 922, a number below the average of past years. Many of these now annually pass into Reformatories, where they remain for a term of years; and in most instances are thus permanently withdrawn from the criminal population. Of course it were better they had not entered that class. As it is, the supply of juvenile criminals is kept up with considerable regularity; and the numbers apprehended indicate the constant existence in the town of a large number of criminally-trained children.

6. That the "Health of Towns Question" being thus reduced within a compass more nearly commensurate with existing means, might be the sooner and the more satisfactorily solved.
7. That agriculture would be served by an increased and well distributed supply of labour, and by the conservation, in cottage middens, of a large quantity of the best manure, now sacrificed in the effort, hitherto vain, to maintain effectually the sewage of our densely-peopled towns.

Objections are very justly urged to cesspools, middens, and all other accumulations of refuse matter in the neighbourhood of dwellings; but, for the dwellings of the poor, I conceive these to be, in the present state of our knowledge, unavoidable in some shape. Quick removal is the only practicable remedy. To that, in the country, would be added a rapid and effectual dilution of all dangerous emanations, in an abundance of free and fresh air; and, in the country, manure being in demand in the immediate neighbourhood, if not on the very spot, rapid removal would involve little or no expense.

8. That the Railway interest might thus be served by the gradual opening of a new and permanent and an ever increasing source of traffic.

This is a point for the consideration of the Railway interest; and it is presented to that interest for consideration solely on the ground that the scheme proposed affords a feasible prospect of profit to railway proprietors. It were unjust to expect that it should be entertained on any other ground.

9. And lastly, that the rapid growth of our town populations, which is already involving us in social problems of the most painful and perplexing character, might thus be turned into a new channel, in which many of these problems would immediately find a natural and complete solution.

I am aware that these Propositions and Inferences have little or no claim to originality. On several occasions, and by several persons, proposals more or less similar have been made public. This, like those, may fail to attract attention. I hope not: but, even if so, events are now moving too rapidly to admit of our much longer neglecting the basis of the Health of Towns Question; and all earnest discussion of the subject, however excited, will probably aid in bringing us at length to sound conclusions.

It is well known that most of the town labourers, *who can afford it*, are already making, or have made, for themselves the very change here suggested for those who cannot. Cannot, I mean, at present. But it is by no means certain that this want of power on the part of the town labourers who earn (say) from 15s. to 25s. per week, is more than apparent; or if real, is not dependent very much upon the will of the classes employing these labourers.\*

Show these men cottages in the country, such as I have supposed, readily accessible, and combined with an increase, not a diminution, of the other necessities and comforts of life, and I am persuaded they would take advantage of them. Imitation and expediency have effected far greater social changes. Of course the change would be gradual, as all such changes, to be permanent and beneficial, must be; but once begun, this would be no subject of regret. Existing interests would have the more time to accommodate themselves to the effect; and as all parties would be left free to act upon a sense of their own interests, none would have, at any stage of the process, a right to complain.

\* Mr. Newmarch, one of the ablest of those who took part in the discussion with which this Paper was honoured when read before the Society, objected to my proposal, "that the density of town populations has been and is in course of being relieved by carrying to the outer circles not the poor, but the rich and middle classes. The larger houses thus vacated become available for poorer tenants. Witness Bloomsbury, New Road, Finsbury, &c. The object is therefore to multiply railways as much as possible, but not under the expectation that you will carry first the poor into the country, but first the rich and then the poor. Towns are unhealthy, not so much because they are towns, as because the houses in them are over full." So much the objector himself has since been good enough to state to me in writing. Had I been present, I should have desired to reply thus:—The rich are gone [from Liverpool], the middle classes are going. I should like to see the better part of the poor following (not preceding) these. Here I have been misapprehended. Again—large houses when vacated by the rich, are, so far as I have observed, more densely filled, precisely in proportion as their occupants approach the class of "poor;" and when filled by the poor, are filled as densely as their own proper dwellings. This alike in London and in Liverpool; so this change really affords no relief; but it accounts in part for the *fact*, apparent on the face of our censuses, that our large towns are now increasing the number of their inhabitants faster, in proportion, than they increase the area they cover.

I may also observe that the benefits of the proposed system would be equally real whether it were adopted so far as to diminish the resident population of our large towns, or to keep it stationary, or only to reduce its present rate of increase.

*A BRIEF REVIEW of the OPERATIONS of the BANK of ENGLAND in 1857. By RICHARD VALPY, ESQ.*

[Read before Section (F), Economic Science and Statistics, of the British Association for the Advancement of Science, at Leeds, 28th September, 1858.]

SOME interesting Statistics of the operations of the Bank of England in 1857, especially in the latter months of the year, are contained in the volume of "Miscellaneous Statistics of the United Kingdom," recently published by the Statistical Department of the Board of Trade. The stock of Bullion in the Bank, which amounted to nearly eleven millions in the first week of the months of July, August, and September, fell to below eight millions in the first week of November, and seven in December. There was a difference of nearly four millions in the months of December and September. The bullion had not fallen so low in any year since 1841, when it was under five millions. The Notes issued, but held in reserve by the Bank, amounted to but little more than two millions in the first week of the months of November and December, against six millions in September. In the Banking Department of the Bank, the stock of Cash, in notes and coin, which was nearly seven millions in the first week in September, was barely above two and a half millions in the first week of November and December. This is the comparison for the first week in each month, the period stated in the accounts; but it has been stated by the Bank Directors that at the eighth of the panic, the cash left in the Bank amounted at night on November 12th, to only 581,000*l.* The securities, other than Government Securities, forming part of the Assets of the Banking Department, were in December nearly thirteen millions more than in September, the relative amounts being 31,191,386*l.* in the first week of December, and 18,351,990*l.* in the first week of September.

The loans and discounts by the Bank were, as might be expected, very large in 1857. The amount of money advanced in loans in 1857 did not much exceed the amount for 1856, but the discount of commercial paper was much larger in 1857. Nearly eighty millions were advanced by the Bank in 1857 on loans and discount, against sixty millions in 1856, and thirty millions in 1855. In the three years 1855-6-7, the amount of loans and discount were:—

Years.	Loans.	Discounts.	Total.
1855... ..	£ 7,736,375	£ 22,136,590	£ 29,872,965
1856.....	29,454,767	30,924,699	60,379,466
1857.....	30,372,805	49,145,679	79,518,484

Although the total amount of loans is nearly the same in 1857 and 1856, they differed by being principally on "Government Securities" in 1856, and on "Other Securities" in 1857. During the first ten months of 1857, the total advances by the Bank on loans and discounts, varied in amount from four to seven millions; but in the one month of November, no less than fifteen millions were advanced by the Bank. These figures represent the actual advances made by the Bank during the several periods. The amount of money that the Bank had out upon advances at a particular date, is stated in the Report of the Committee upon the Bank Acts in July, 1858, to have amounted on the 21st of November 1857, to no less a sum than 21,600,000*l.*, a sum, in the words of the Report, "exceeding the whole amount of their deposits, both public and private; a sum nearly three-fold the amount of their advances in July, when the rate was reduced to 5½ per cent., and more than double what they had advanced on the 27th of October when the first bank failed."

The following were the extremes of the Rates of Interest charged by the Bank in 1855-6-7:—

Years.	Loans.				Discount of Commercial Paper.	
	On Public Securities.		On Other Securities.		Lowest. Highest.	
	Lowest.	Highest.	Lowest.	Highest.		
1855 .....	Per cent. 3	Per cent. 6	Per cent. 3	Per cent. 7	Per cent. 3½	Per cent. 7½
1856 .....	4	7	4½	7	4½	8
1857 .....	5½	10	4¾	11	5½	12

In 1857, about twenty-five millions were advanced on loans at and above the rate of 6 per cent. against seventeen millions in 1856, and three millions in 1855. Of the Discounts in 1857 about forty millions were at and above 6 per cent., against twenty-one millions in 1856, and six millions in 1855. In 1857, the whole of the advances of the Bank may be said to have been made at rates above 5 per cent.; fourteen millions were advanced at rates above 5 and under 6; forty millions at 6 and under 7; three millions at 7 and under 8; four millions at 8 and under 9; one million at 9 and under 10; and seventeen millions at and above 10 per cent.

As regards the alterations of the rate of interest by the Bank in the latter part of the year 1857, it is stated in the Report of the Bank Committee, that on the 16th of July, the rate was reduced



from 6 to  $5\frac{1}{2}$  per cent. This continued to be the minimum rate of discount at the Bank until the 8th of October, when it was raised again to 6 per cent. Four days later, on the 12th of October, the rate was raised to 7 per cent. In seven days, on the 19th of October, the rate was fixed at 8 per cent., and it was afterwards raised to 9 per cent. on the 5th of November, and to 10 per cent. on the 9th of November. Thus in the course of only one month, between the 8th of October and the 9th of November, the rate was advanced from  $5\frac{1}{2}$  to 10 per cent.

The Government letter authorizing an extension of the circulation, was issued on the 12th of November. An issue of notes to the extent of two millions beyond the legal issue, was made to the Banking Department of the Bank of England, but not more than 928,000*l.* of notes were issued to the public beyond the statutory limit. That additional amount was reached on the 20th of November, after which date the excess rapidly declined until the end of the month, when it was discontinued. The legal circulation was only exceeded for a period of eighteen days.

The Transfers of Stock in the public funds, although not part of the operations of the Bank itself, may be shortly referred to.

An account of the amount transferred at the Bank of England, is published in the volume of "Miscellaneous Statistics," under the title of "National Debt and Public Funds." The total amount of stock transferred annually is very large. In 1855 it was 162,708,760*l.*; in 1856 232,296,542*l.*; and in 1857 224,191,119*l.*

It appears, therefore, that the transfers were less for the year in 1857 than in 1856. In the month of November, 1857, however, the amount transferred was, perhaps, unprecedented.

The Committee on the Bank Acts observe in their Report, referring to the beginning of November, 1857, "At this time (as was 'natural') the purchases and sales of stock in the funds were 'enormous. The transfers were much beyond what they had ever 'been before.' According to the published account, no less than 34,685,833*l.* of stock was transferred at the Bank in the month of November, 1857; an amount just double that for the previous month of October, and ten millions above the highest monthly amount in 1856.

RESULTS of DIFFERENT PRINCIPLES of LEGISLATION and ADMINISTRATION in EUROPE; of COMPETITION FOR the FIELD, as compared with COMPETITION WITHIN the Field, of Service. By EDWIN CHADWICK, Esq., C.B.

[Read before the Statistical Society of London, 18th January, 1859.]

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I SOLICIT the attention of the Fellows of the Society to the following statistical table:—

1	2	3	4	5
COUNTRY.	Population per Statute Square Mile.	Average Cost of Railways per Mile.	Average Working Expenses per Mile.	Average Earnings per Mile.
England, 1857 ....	304	£ 39,275	£ 1,564	£ 3,161
France, 1854 ...	168	25,668	1,191	2,706
Belgium 1856 ...	337	16,391	1,259	2,158
Prussia, 1857 ....	138	14,486	1,248	1,983
Austria, 1857 ...	143	18,465	1,239	2,686
Germany, 1857 ....	....	13,232	898	1,417*

\* The average cost of coke per mile travelled is, in Germany 4*s.* 8*d.*; in England it is 2*s.* 9*d.*

COUNTRY.	Average Fares per Mile.			Average Payment per Cent. to Original Shareholders.	Proportion of Accidents and Injuries to Persons Carried.	Number of Times Less Dangerous than England.
	1st Class.	2nd Class.	3rd Class.			
England, 1857 ....	d. 2·01	d. 1·41	d. ·87	{ 3·88* } 4·26‡	1 in 183,903†	....
France, 1854 ....	1·55	1·16	·84	6·58‡	1 ,, 1,375,092	7 times.
Belgium, 1856 ...	1·33	1·0	·65	5·48‡	1 ,, 1,611,237	9 ,,
Prussia, 1857 ...	1·4§	1·15	·77	7·44‡	1 ,, 3,294,075	16 ,,
Austria, 1857 ....	1·4	1·1	·83	6·75‡	....	....
Germany, 1857 ....	....	....	....	5·52‡	....	....

\* Proportion per Cent. of Net Receipts, less interest, on Preference Shares and on Loans, to the ordinary Share Capital; but other returns give it as 3·12.

† Out of 405 cases of so-called Accidents, inquired into from 1853 to 1857, only 43, or 1 out of 10, was reported upon as having arisen apparently from causes beyond control. The great bulk of Accidents were reported to have arisen, not from the neglect of the inferior officers, but from the insufficient regulations, or want of discipline, or misplaced parsimony of the Directors and superior officers.

‡ Proportions per Cent. of Net Receipts to the total Capital Expended; Governmental and private, but the returns to the private Companies in France is at 9 per cent.

§ In Prussia and the rest of Germany the proportion of passengers is, of the 1st class, 1·7 per cent.; 2nd class, 23 per cent.; 3rd class, 75·3 per cent. In England it is, 1st class, 13·5 per cent.; 2nd class, 31·6 per cent.; 3rd class, 54·9 per cent. "But it is to be recollected," says Captain Douglas Galton, "that in Germany the 2nd class is as comfortable as our 1st class." The same may be said of most of the continental 2nd class carriages.

#### I.—Examples of Statistical Indications of Fundamental Errors in Legislation, and of Aids derivable from Economic Science for the advancement of Statistical Science.

I will, in the first place, ask them to consider what the figures in this table,—which I submit, as a statistical and administrative study,—separately or connectedly, denote? what conclusions may be deduced from the figures of the chief columns as they are presented alone and without verbal explanations, to those who are unaccustomed to statistical studies? I ask this because the answer may, as I conceive, lead to the consideration of the additional operations, which are requisite for the public information, namely, the analyses of the facts, denoted by the items or units of figures of which statistics are composed—the economical analyses of the elementary

facts which those units partially represent;—in short, the application of economical science, to guide their accumulation and to render them profitable to the public. I might fill a whole number of the Society's publication with the tables of figures of which I here give only the totals. But laboriously prepared statistical tables are too often presented without any totals, much less any reduction, to determinate elementary standards, often indeed without reference to any economical principles whatsoever. Some years ago, before our mortuary registration was got into operation in England, I obtained the mortuary statistics of the chief States of Continental Europe,—France, Prussia, Austria, Russia. I found that the whole accumulations had gone on for years untotaled. In that condition I need not say that they were, for mental vision, only so many fogs. No one Government then knew the positive or relative sanitary and physical condition of the population which it governed. I had, I believe for the first time, the mortuary returns of several of these States, of which Russia was one, totaled and referred to the commonest elementary standard.

In the celebrated conversation reported with Sir Hamilton Seymour, wherein the late Emperor Nicholas expressed his concern for the "sick man" the Turk, he avowed as an undeniable fact and a ground for his neighbourly interest, that within his own dominions, in the general condition of his own subjects, there was every reason for contentment, for they were most happily situated. We statisticians knew that the death rate denotes a sum of moral as well as the general sum of the physical conditions of a nation. One groans at the tremendous delusion under which the destinies of populations are governed, but which would be removed by an understanding of the statistical standard and a reference to it, which would have shown the Emperor that the general condition of his own subjects, with which he was so well satisfied, needed his first care, before seeking dominion over others,—that condition being the lowest and most wretched of all Europe,—the chief European death-rate in Russia, being—to use later confirmatory totals got out by Dr. Farr—3·590 per cent., Austria 2·985, Prussia 2·658, France 2·397, England 2·207; and England itself I have shown to be a case of positive wretchedness, of an average loss of ten or twelve years of life to all born; and a slaughter of upwards of 160,000 per annum, beyond practically attained sanitary standards. Now, the getting out of the death rates and enquiries into the causes of the differences of the rates between district and district, nation and nation, and between class and class, will no doubt tend to elicit elementary facts of sanitary science;—but I might show that for the further progress of the mortuary branch of statistics the light of sanitary science and analysis will be requisite.

In respect to another branch of statistics and of economic science, to which the table now under consideration belongs, it may be averred that the results imply bad conditions of legislation and administration, of which, however well Fellows of this Society, or others who have paid special attention to the branch of statistics, may be aware, manufacturing and populous constituencies particularly, and even their representatives, are commonly as little sensible as was the Emperor of all the Russias of the general physical condition of his own subjects, and of the real value, statistically determined, of his own Government. The statistical table of comparative results of railway legislation and administration in Europe which I submit to you, may serve to indicate questions elicitive of elementary facts, for legislative, administrative, and economical sciences:—but the further advance of the branch of statistics must, I apprehend, be under the guidance of those other sciences.

The first question which naturally arises on the consideration of this table is, what are the causes of the difference of results against England which it presents? To this question several answers may be given;—as defective legislative principles;—defective administrative principles. But I shall endeavour to show that the master defect, from which the two others arise, is defective economic science and principle; or, in other words, public ignorance that there are different conditions of competition—sound and unsound; that whilst there are conditions of competition which ensure to the public the most responsible, the cheapest and best service, and which are requisite to improvements of the greatest magnitude, there are conditions of competition which create inevitable waste and insecurity of property, which raise prices and check improvement, which engender fraud and violence, and subject the public to irresponsible monopolies of the worst sort.

II.—*Economic Principle of regulated Competition for a Field, as opposed to Competition within a Field of Service, defined and exemplified in Legislation on the Railway Service of England and the Continent.*

I may, perhaps, best expound the principle by which the differences in result presented in this one table, and others from different branches of service are governed, if I relate the circumstances under which that principle was presented to me.

From 1838 to 1841, whilst examining the sanitary conditions of town populations, I found urban districts in England, where there are two or three sets of water-pipes carried through streets which might be as well or better supplied under one establishment, and competitions ending in strict monopolies, bad and deficient supplies at high charges to the public, with low dividends to the shareholders, and

an almost impracticability of improvement in their separate condition without augmenting the already excessive charges of the ratepayers or further reducing the low returns to the capitalists. These competitions are what I then designated as competitions "within the field of service." As opposed to that form of competition, I proposed, as an administrative principle, competition "*for* the field," that is to say, that the whole field of service should be put up on behalf of the public for competition,—on the only condition on which efficiency, as well as the utmost cheapness, was practicable, namely, the possession, by one capital or by one establishment, of the entire field, which could be most efficiently and economically administered by one, with full securities towards the public for the performance of the requisite service during a given period. The principle was, upon due consideration, extensively adopted and advocated by permanent public officers, commissioners and disinterested public investigators for the regulation of enterprises in railways, then at their commencement;\* but the views chiefly advocated by speculators and persons who profit by multiplied conflicts—who gain whosoever else lose—were adopted by Parliament. The principle was, however, upon independent consideration, adopted by the continental administrators and legislators, and the results stand out in wide and undeniable contrast of legislative and administrative ability and integrity;—in France, for example, in a much more responsible and more regular service for the public at lower fares, with higher-priced materials, with dearer fuel, poorer, thinner, and less active population, and lower elements of traffic; and yet, with an average return of from seven to nine per cent. to the original shareholders of the lines worked by Companies. In England we have a clashing, immensely more dangerous, unsatisfactory, and generally less responsible service to the public, fares, as contrasted with the continental fares, generally one-third higher, with fuel, iron, and machinery cheaper, and population and traffic more active; yet with only an average return of 3·60 per cent. to the original shareholders, with extensive ruin to them—with gigantic fortunes to the promoters of conflicts. In France, the original shareholders have, moreover, the elements of security and further improvement to their property, whilst the French public have in reversion, on the termination of the present concessions, the prospect of further reductions of fares and increased facilities for intercommunication, or a new source of revenue, derivable from past economy in reduction of the general taxation of the country. In England, the greater mass of original shareholders have before them elements of further depreciation, and loss, and even ruin, by the bounty afforded by the practicability of

\* *Vide*, amongst other expositions, that contained in the admirable report of Messrs. Drummond and Barlow, Commissioners for Railways in Ireland.



cheaper constructions and by competitive extensions, that are not to be averted by the patchings of quarrels or by any combinations of their respective directories,—whilst the public have the main arteries of communication—which ought with sound legislation to be as cheap and free as any in the world—clogged with inconveniences and even with delays as well with high charges, amounting to between six and seven millions per annum in excess at the present time, of what a sound administrative principle would have insured. The maladministration which has incurred the excessive outlays—which maintains nearly a hundred separate chief and independent establishments, at the expense of the shareholders, and to the inconvenience and loss of the public in working,—seeks to impose these excessive charges upon the public by high fares, and does so in defiance of the experience thus enunciated by an observer of railway administration, that “There is hardly an exception to the rule, that a high fare “produces a low amount of traffic and stunts its growth, while a low “or moderate fare collects a larger amount of traffic and fosters “growth.”\*

### III.—*Legislation on the service of the Supply of Water in London and of Gas at Paris.*

To the matter of these statements, the answers I usually meet with are, first, that but for the unregulated competition and the original expenses of English Railways, we should have had none at all; and secondly and impatiently, that what has been done cannot now be undone;—to which I reply that I do not admit the charge implied in the first answer, that a large and corrupt expenditure for obtaining Parliamentary sanction, is an essential and unavoidable condition of representative institutions; and as to the second objection, I have now to refer to the evidence of some experience proving that much of the existing evil may be undone, and much further impending mischief to such properties, as well as to the public, may be averted, by means of the administrative principle

\* “Herepath’s Railway Journal” of 1st of January, 1859, cited with illustrations in Mr. Samuel Brown’s paper, printed in the Society’s *Journal* for June last. *The Engineer* states some of the admitted loss thus:—“But for the frightful waste of capital in the construction of our railways, the consequences of which are entailed perpetually on the people in the shape of high fares, moderate speed, and very inferior accommodation, we might, with the aid of proper improvements, be able to make the run from London to Liverpool regularly in three and a-half hours, and from London to Edinburgh as regularly in seven hours, and at a fare no greater, if as great, as that now charged. Under such circumstances there would, of course be separate lines for passengers and goods, and with a system of road-police, or signal-men, throughout the length of the lines, there would be even less danger of accident than at present.” On some of the public evils of separate railway establishments, *vide* report published by the Society of Arts on “a Parcel Post,” July 9, 1858.

which I have proposed. In analogous cases of the mischievous operation, to the public as well as to capitalists, of competitions permitted or encouraged “within the field of supply,” my colleagues on several commissions could find no other remedy. For example, London in itself we found the field of service for a supply of Water, to which I have already adverted, divided amongst seven separate companies and establishments, of which six were originally competing within the field of supply, with two and three sets of pipes down many of the same streets, but which had become multiform monopolies, doling out supplies of water of inferior and often unwholesome quality, insufficient in quantity, although positively nearly three-fifths of it ran to waste during the intermittent periods of service. We found, although the fact was attempted to be denied, that fully 100,000*l.* per annum might be saved by a consolidation of establishments, which sum, capitalised, would have formed a fund for procuring a superior supply from entirely new sources, soft and pure, instead of hard and impure. It was our duty in this and similar instances, to submit what in the matters referred to us appeared to be the efficient remedies, whatsoever might be the interests opposed to their being carried, of which we could not be unaware. The administrative principle appeared to be beyond the time; and the loud reclamations chiefly of persons interested in separate establishments prevailed against the principle. Since then, as much money as would have sufficed to have obtained supplies of soft water of the highest purity has been expended by the separate companies in the partial improvement of a supply which is hard, essentially inferior in quality, consisting to a great extent, in times of rain, of ditch-delivered water, the surface washing of lands under increasing cultivation and high manuring; unsatisfactory in the mode of delivery, and at heavy charges to the consumers, with unsafe returns to the shareholders. Whilst I was in Paris in 1855, serving as one of the international jurors at the Great Exhibition, I was requested by the Society of Arts to act as one of a special committee appointed on the occasion of the visit at the instance of the president, his Royal Highness the Prince Consort, for the purpose of testing the principles upon which the acknowledged vast improvements lately made in the French metropolis have been carried on, and of considering how far they may with advantage be applied to our circumstances at home. My special attention was directed by the other Englishmen, as well as by my own interests, from the circumstances I have stated, to the principles of the administrative means by which the improvements had been effected in Paris. I found that the attention of the municipality had been directed to a case closely analogous to the water supply of London, namely, of the supplies of gas by seven independent

gas companies, when, upon competent and disinterested examination, directed by the Government in behalf of the people, the supplies were found to be bad, and the charges upon the actual cost of production of a really good gas to the consumers excessive. A consolidation had been effected precisely on the principle we had recommended for the improvement of the water supply for London; the service had been, in effect, as far as circumstances permitted, put up to competition for the whole field, and the consolidation of all the establishments had been effected under the best available direction, with the result of a considerable improvement of the quality of the gas supplied, a reduction of 30 per cent. upon the previous cost to the private consumers, of 40 per cent. to the public consumers, arising from reductions of establishment charges, and an improvement of 24 per cent. in the value of the shareholders' property.

In respect to one case of a competition of two Gas companies within a field of supply in the North of England, I had evidence that, whereas the prime cost of the manufacture of gas by those separate companies was more than 3s. per 1,000 cubic feet, the result of a competition for the whole field of supply by one establishment instead of two, was its being made at a prime cost of about 1s. 9d. per 1,000 cubic feet. It was out of the saving of a like difference that the results described at Paris were achieved.

#### IV.—*Legislation on the Continent and in England, for the Interment of the Dead.*

I had been previously aware that another example of the application of the principle of competition for the field has long been in operation in Paris for the service of Interring the dead. In London there are between 600 and 700 undertakers to perform about 120 funerals daily, being at the rate of upwards of six undertakers available as competitors for each funeral; and yet, under the circumstance of the occurrence of deaths, there being no time to seek about or to make inquiries to enable the parties to make a selection upon any comparison of charges, the service is practically a monopoly. The expense to the survivors of all classes above the class of paupers, and in particular to the most respectable class of mechanics, forms a grievous addition to the evils and inflictions of bereavement by death; and although the charges made are exorbitant, the character of the service rendered is in every respect of a low and objectionable character, and befitting an inferior religious, and social condition.\* In the more densely peopled districts of London nearly 60 per cent. of the population die in the same room in which the survivors live and sleep. When a father of a family dies the body

\* *Vide*, for full exemplifications, my "Report on the Practice of Interment in Towns," 1843.

remains in the living and sleeping room of the survivors, commonly including children, whilst the widow is abroad seeking aid, or raising the money to defray the exorbitant expenses for what is called a respectable funeral, for days often after decomposition has commenced. On the consideration of the measure for extra-mural interment, the difficulty was presented to us of the probable aggravation of this evil of the retention of the body in the living or sleeping room of the survivors by the increased expense of the conveyance of the corpse and attendants to the distant place of extra-mural sepulture. On the continent, at Munich, at Frankfort, at Berlin, at Paris, we found these evils, at all events, mitigated, and often absolutely prevented by superior legislative and administrative measures, which were in accordance with the principle which had been independently suggested by a consideration of the facts; and my colleagues agreed with me, in the adoption of the principle in question, of competition for the field, instead of multiplied competition within the field of service, as presenting the only means of solving the chief difficulties by which we were met. But we could not get it even considered by Parliament, and the evils of the prolonged retention of the body in the living and sleeping rooms of the poorer classes remain and are often grievously aggravated by the delays consequent on the increased distances and unregulated charges of extra-mural interment.

The allowance made in burial clubs in England is from 5*l.* to 10*l.* for the funeral of an adult member. Some funerals are effected for 3*l.*; but 5*l.* may be taken as the general average expense of funerals to that class of the community. The range of expense, exclusive of the case of paupers, may be said to be from 3*l.* up to 100*l.* for persons in affluent circumstances; and from 300*l.* to 500*l.* for persons of rank; that is to say, under circumstances often of most indecent competition within the field, and competing fees or bribes, for influence to procure orders for the service.

In Paris, and also in some other cities of the continent, at intervals of terms of years sufficient for the renewal of carriages, establishments, &c., the entire field of service for the interment of the dead is put up to competition, for contracts to render the funeral service at scales of material, decoration and attendance, conformable to the habits and wishes of different classes of society, divided into nine classes, and the range of expense is from 15*s.* to 145*l.* English money; but these charges include a payment, as a tax, of upwards of 60 per cent. for the support of public worship. The expense of funeral in Paris, of the class generally used by respectable people, is in English money 14*l.* 4*s.* 5*d.*, for a description of funeral and service, which here, under the system of competition within the field, would incur more than double that amount of charge. I prefer our own

more simple Protestant funeral rites, and yet I beg to guard myself from the supposition that I advert slightly to the rites of the Roman Catholic Church. I am not dealing with a religious, but simply an economical question, and in that sense it may be complained that the common principle of competition within the field, in spite of express provisions of wills, augments the cost of our most simple rites, to persons of rank, to three, four, and five hundred pounds. Competition for the field ensures to the first-class Roman Catholics of Paris, the grandest service of their Church, including bearers of crosses, plumes, eighteen mourning coaches and attendants, the attendance of two vicars, besides the curé, and twenty-six priests, six singers and ten chorister boys, two instrumental performers, grand mass at church, and 120 lbs. of wax tapers, besides an anniversary service, and material of mourning cloth, at a cost of 145*l.* out of which, be it observed, the competitor for the service, the undertaker, pays more than one-half as tax. The absolute cost of 28,000 interments at Paris was 80,000*l.*, tax included. The estimated cost of the 45,000 interments in London, under the system of competition within the field, was 626,000*l.*, which was certainly an under estimate.\* At the same rate as in Paris it would have been 166,000*l.* On an estimate of the expenses of a consolidation of the whole of the service, buying up existing cemetery companies, improving the character of the service at every point, I found that the whole might be accomplished at a charge of 250,000*l.*, for the annual number of interments at that time,—1843.

Under this system of competition for the field where it prevails on the Continent, the public have a superior service, and a wider range of choice, as well as much protection to survivors not afforded in this country. If there were time to describe all the incidents of this particular class of service, they would be found to present, in the strongest contrast, the characteristics of the two principles in question, and would show on our side, instead of the freedom, which unregulated competition is generally supposed to produce,—multiform monopolies, extortions, and corruption of the most foul description.

V.—*Legislation on Internal Communication by Omnibuses in Paris and in London.*

I found at Paris that the attention of the Municipality had also been turned to the service of Public Conveyance, which was in a state analogous to that in London, of vehicles provided by numerous conflicting small capitalists giving inconvenient, and, in every way inferior, service to the public. By authoritative intervention an

\* *Vide* my "Report on the Practice of Interment," 1843, p. 70.

improvement was effected on the same principle as that effected in respect to the supplies of gas, and with the like results. A liberal value was put upon the stock of carriages and horses, and a liberal compensation made for "times," "way-leaves" of the nature of "good-wills for the positions acquired by the Omnibus Proprietors. The separate Proprietors were allowed either to take money awarded as compensation, or shares to the amount in the one new Company, which had made the best offer for the whole field of service. Some fifth of the proprietors preferred shares, and those who were deemed fit were preferentially employed under the new General Company. The immediate gain to the public was increased convenience, regularity, and freedom of communication, and a general system of correspondence and increased responsibility. Instead of, as in London, streets encumbered and disturbed by nearly empty, or only partially filled inferior vehicles, sometimes crawling with a few passengers, annoyed by detentions for a full load, at other times racing, and dangerously overladen, the circulation throughout Paris was made regular from regularly appointed stations, at fixed charges, which precluded extortionate variations. But I was particularly struck with the necessary effect of the change in the social relations of the men engaged in the reformed service, in the immediate suppression of that antagonistic relation, and its consequences, which we see most fully developed in London, in perpetual wolfish conflict, engendering habits of ruffianism, with extortionate yet precarious earnings spent in dissipation and without reserves for sickness and old age. The new arrangement in Paris presented the example of a number men brought from antagonism into a peaceable relation, regular action under a common interest and order, and which secured retired allowances and assured means of improved domestic conditions.\*

\* Having when in Paris expressed my approval of the principles involved in this consolidation, I was challenged to give my support to a measure for applying them in London by voluntary agreement. The times and good-wills of 600 out of 800 Omnibuses had been purchased at an expense of nearly one quarter of a million (to avoid oppositions) with the calculation that with the savings derivable from consolidation, the service could be greatly improved and made more popular. The improvement implied putting two thousand men in a better social position. I deemed it right to accept the position of a Member of the Council of Surveillance, which is substantially the same as that of an auditor of an English Company, with the same irresponsibility for the management. The French Company were improving the vehicles, extending accommodation, and reducing fares, getting better stabling for 6,000 horses, trying to get up a system of correspondence, which should include an improved conveyance on the river. They were endeavouring to introduce suburban tramways, which are in successful use at Paris and New York, by which the expense of conveyance in larger and more convenient carriages would be reduced one-third and the speed increased one-half; and were systematising the machinery for the internal communication of the Metropolis, in a manner, which if they had been supported, would have made it a superior work of adminis-



All these improvements, private and public, social and administrative, might be effected, and horses as well as men, capitalists and passengers, put into an improved position out of the savings from a part of the waste incurred by the competitions of small capital within the field of service. In London, the waste incident to management on a small scale by small owners, is full 10 per cent. By improved feeding, by machine-crushed oats, and other means practicable on the large scale, the saving in horse keep is proved to be about 2s. per horse per week. Out of this source of waste alone, on a competition for the entire field of service, it appeared that the British Metropolis might, under ordinary circumstances, be provided with systematised internal communication, improved beyond the present public conception or desires.\* I am not prepared to state

tration;—when they were opposed by all the parochial authorities; opposition omnibuses were started against them in every quarter, on the cry that they were a monopoly—and a *French* monopoly. The opposition of the new omnibuses, intruded on the purchased good-wills, was met much in the old way—in the way of the English railway companies (and against which I myself had, as it happens, remonstrated) by the old English district managers; when an outcry was raised in the press and the police courts against the proceedings of the French Company as being un-English, and a prosecution was instituted against them for conspiring to oppose one set of the oppositionists, by the practice of nursing their omnibuses. When my name appeared as an auditor of the French Company, I gave public notice that I had no share and could have no share in the management, whether good or bad, which was by gerants. I was, however, selected for prosecution as a chief of the conspiracy against the oppositionists. Their case has concluded without even an allusion to my name. The French capitalists were compelled, after much loss and at a considerable sacrifice, and after having effected more improvements in two years than had been effected in the preceding twenty, to convert the Company into an English one, by which, it is to be hoped, the principle of consolidated management will be prosecuted against a grossly ignorant opposition, by which, if successful, extensive public improvements must be frustrated.

\* The new Company by paying about a quarter of a million for "good-wills," and liberally for the old vehicles and horse stock, got about 600, or three-fourths of the omnibuses of London. Those in their hands are worked by 6,000 horses, managed by a body of 2,000 men, drivers, conductors, horse keepers, &c. The working expenses of an omnibus, with its stud of ten horses, appeared to be 2l. 12s. 5d. per diem, driving fifty-five miles, at a prime cost of 11½d. per mile, at a profit of a little more than a penny farthing per mile, or 6s. per diem in ordinary times and when there was no opposition. The profit is dependent on outside passengers and fine weather. Of the daily expenses, 66 per cent. is for provender, 9 per cent. for horse care, 20 per cent. for coachman and conductor, 6 per cent. for mileage duty, 5 per cent. for the repairs of vehicles, and 2 per cent. for tolls, and the rest general charges. The total mileage worked by these three-fourths of the London omnibuses, averages 31,000 miles per diem. Comparing London and Paris as fields of service, London has a population of two million and a quarter, living in 300,000 houses, with about 1,500 miles of street and road communication, over six times the area of Paris, which has a million of population, living dreadfully over-crowded in 32,000 cesspool-tainted houses, and having less than 400 miles of street and road communication. The number of omnibuses in Paris is less than one-half the number of London, and they go about one-sixth slower, or little more than five miles an hour including stoppages.

that even in Paris the full advantages of consolidated management were secured to the public.

VI.—*Unregulated Competition in minor Conveyance: Cabs. Distinction between Regulated Payments for Services, and Free Exactions on Necessities.*

Whilst I was in Paris, some proceedings were initiated for applying to the service of Cabriolets the principle of administrative consolidation, which had been applied to the service of conveyance by omnibuses; but I then expressed my apprehension that obstacles would be presented in the difficulty of disposing of the surplus hands, whose labour would be saved by consolidation. The difficulty of dealing with the water carriers, whose labour would be superseded, has long impeded the improvement of the distribution of water into the houses of Paris by means of pipes and engine power. In truth the labour market of Paris is by no means so powerfully absorbent as that of London. An attempt to introduce an improved system of street cleansing, which would have interfered with the labour of chiffonniers, or rubbish collectors, was once made the occasion of riots which were attempted to be turned to party political account.

No material improvement has yet, however, been effected in the service of the smaller means of public conveyance in Paris. But the present condition of the Cab service of London is one which appears to me to be so prominently illustrative of the evils of the competition of multiplied capitals within the field of supply, against which the opposite principle is the only effective preventive, that I beg leave to advert to them. The number of cabs now licensed in London is 4,500. Each common cab and the two horses, with the appointments requisite to work it, is estimated to cost not more than 60l., so that the capital engaged is in round numbers upwards of 270,000l., provided by upwards of 1,800 small owners.

The waste of the capital committed by this competition within the field of supply is visible to the eye at all times and all weathers,—in full stands or long files, waiting hour after hour, and in the numbers crawling about the streets looking out for fares. The cost of the keep of each horse is estimated at 16s. 4d. per week: the depreciation of horse stock is put down at 2s. 6d. per week each, and of the vehicle at 8s. per week. The market value of the labour of such a man as the driver of a cab may be set down in London at 4s. per diem. The stable rent is at least 5s. per week per cab and horse, and with other minor items the capital invested for man, horse, and vehicle may be set down at about 1s. per hour lost during every hour, during which the cabs are kept unemployed. On every cab stand where in foul weather, as well as fair, a dozen cabs are seen constantly unemployed, the administrative economist, may see

capital evaporating in worse than waste, at a rate of 12s. per hour, 7l. 4s. per diem,—or at a rate of between two and three thousand pounds per annum, to be charged on some one, *i. e.*, the public. If all were employed, as the usual rate of driving is six miles per hour, they must be each employed at least four hours per diem to pay for their keep. If, however, the cabs were constantly employed daily;—at least, three horses must be employed, which would augment the charge by that of an additional horse at the rate of 4d. per hour. A large proportion of the cabs are employed during the whole 24 hours, but there are then two men, “a night man” and “a day man,” and three horses.

It is probably a statement greatly below the fact, that at least one-third of the cabs are, the week through, unemployed; that is to say, one-third of the invested capital is wasted;—a service for two capitals being competed for by three, to the inevitable destruction of one. As in other cases of competition within the field, efforts are made by violent manifestations of discontent at the legal fare, by mendacity and by various modes of extortion, to charge upon the public the expense of the wasted capital. Sometimes it is in the form of a piteous appeal, that the driver or the competitor has been out all day and has not before had “one single blessed fare.” And yet the legal charge for the commonly wretched service of the man, horse, and vehicle is, when taken by the hour, nearly double, and by the mile nearly treble (when only two horses per diem are used) its actual prime cost, which when driving, is at little more than six miles an hour, 2d. or 3d. per mile, and when waiting 1s. 4d. per hour. But there is now a cry from the cab proprietors that this charge of double the prime cost does not pay, as it probably does not under such a ruinous system. An appeal is proposed to Parliament for an augmentation of the fares; but such augmentations under this principle of competition within the field would only aggravate the evil, for it would lead to an increased number of competitors, and instead of there being a competition of three to do the work of two, there would be a competition of two or more to do the work of one, *i. e.*, a greater waste of capital to be paid for by some one.

Since the reduction of the Fares in 1852, the number of cabs in the metropolis, instead of being reduced has been increased from 3,297 to 4,507 in 1857.

If there were no legislative restraints, the extortion under the system of competition within the field would reach such a height as to go far to extinguish the service altogether, or confine it to cases of extreme necessity and very large means of payment. My friend, Mr. Henry Ashworth, of Bolton, in an account of his travels in America, gives an illustration of this state of things. Speaking of New York, he says, “They have their coach stand—coaches with

“two horses each, such as we formerly kept on hire, and the fares appear to be discretionary, or according to bargain. Upon a rainy day the sum of two dollars, or 8s. 4d., was demanded as the fare for half an hour. I offered one-half the sum, and it was declined. I then pointed the attention of the driver to the string of twenty other carriages, all waiting to be employed, and remarked upon the uncertainty of his making any money at all within the next half hour. He very coolly replied, ‘The rain is falling very fast, and ‘I guess I’ll spec it.’ He preferred to speculate upon the chances which might offer, and so I left him.”

Examples of perfectly unrestricted competitions within the field are presented amongst the Boatmen on the coast, when a belated traveller hurries from London, and presents himself to half a dozen or a dozen, say, of Deal boatmen, to be put on board a vessel just out of hail and on the point of starting. They see that unless the “fare” is put on board he will lose his passage-money and his voyage, and instances have occurred where not one boat was to be hired for less than five pounds or more, to put him on board, or perform a service for which, at the rate of wages of men in regular employment of the class of the boatmen, as many shillings would be most liberal, not to say exorbitant remuneration. At Liverpool, where emigrant passengers are frequently belated, ships being delayed so long beyond their time that it is believed they will not start for days, when they suddenly do start, and a passenger on shore who has his wife and children on board, sees the ship turning past the rock, there the boatman’s charges have arisen to such a height as to bring into competition steam-tugs, as being more economical as well as more certain.

The execution of the laws for the regulation of the fares of watermen having been relaxed or fallen into desuetude, and the charges of the watermen have so augmented beyond the legal rate as almost to extinguish the habitual use of boats on those parts of the River Thames little occupied by steam-boats or the larger craft, where conveyance by boats would be convenient or pleasurable,—if the charges were reasonable.

At Richmond the boatmen require 2s. and 2s. 6d. per hour (sometimes, however, accepting 1s. 6d. for the second hour) which, at full work of ten or twelve hours, would give a remuneration of 15s. or 18s. per diem, to labourers of a class to whom 5s. or 6s. would, for regular employment, be high wages. Double and treble the legal fares do not, however, satisfy the competitors, who charge their anxieties and discontents, as well as their losses, upon the public, for with all these extortions upon the public the condition of those engaged in such service is a wretched one. In the conflict of three men for the service of two, or of two for the service of one, anti-

social feelings of the most malignant character are engendered, and in the necessity under which such people consider themselves to be placed of compensating themselves for the waste of their time and the risks of the competition, feelings are maintained of what I have characterised as a wolfish rapacity, to prey upon the necessities of all of the public who are exposed to them.

The criminal returns afford melancholy indications of their moral condition, to those conversant with penal statistics. Thus, in the police returns, we find, under the head of "coach and cabmen," but it is stated by the police to be mostly of cabmen, a very heavy list of offenders. In the year 1854 it was 682, in the year before that 777. The recurring crimes are thus denoted:—

Apprehensions for	1853.	1854.
Offences against the Hackney Carriage Act .....	369	335
Simple Larcenies .....	29	36
Other Larcenies .....	10	12
Common Assaults .....	51	42
"    on the Police .....	24	11
Cruelty to Animals .....	57	27
Disorderly Characters .....	15	21
Drunk and Disorderly Characters .....	66	62
Drunkenness .....	82	73
Furious Driving .....	24	18

In respect to this service of cabs—the analysed charges and statistics show that by a properly-conducted competition by adequate capital for the whole field—for which, in my view, the chief police or local administrative authorities ought, as servants of the public, to be made responsible—service equal to the present might be obtained at 4*d.* per mile; or at the present legal fare of 6*d.* per mile, a service approaching in condition to that of private carriages, might be insured out of the mere waste which now occurs. Machines have been invented, which are stated to be convenient and not expensive, which, I am assured, measure time and distance, and determine for the passenger the fares to be paid, and register the earnings due to the proprietors. Under a system of competition for the field, such securities might be introduced. Isolated attempts to introduce such machinery into cabs, have hitherto even in Paris, been uniformly defeated by conspiracies of the whole body of the drivers. The machinery has been maliciously broken or spoiled by the drivers of other vehicles than those in which it was introduced. There are elements involved in the question, which may be referred to the moralist, who will agree that the waste commonly involves sin, malignity, demoralisation, as well as suffering. In this instance, the suffering is extended to the animals who minister to our convenience.

The cab horses are driven mercilessly, and then returned heated to their stand, there to remain for hours exposed to cold and wet, and indeed they often have only variations of suffering, when taken to the foul, confined stables of the small owners, which I well know are the seats of disease, and commonly the inhabitants of the mews, the first victims of the outburst of epidemics. The wretched existence of the cab horses is soon worn out. The lodgings of the men are commonly of a piece with those of their horses. It is my deep conviction, from observation, that whilst waste is sinful, sin, by the infliction of animal as well as human suffering, is wasteful. Hence economical science will be found to be a more powerful aid of beneficence than is commonly supposed. Mr. Bianconi, the great manager of horses in Ireland, received much applause from religious communities for only permitting those animals under his charge to work six days, that they might rest on the seventh day, but at our section on economic science, at the meeting of the British Association held at Dublin, he frankly disclaimed any other motive than his own interest, which was answered by a saving from the improved practice of 11 per cent. of his outlay for horses. My friend Mr. Whitworth, who has paid much attention to horses, declares that it is more economical to use up two light vehicles (as gigs), and one horse, than two horses and one vehicle. There can be no doubt that good, well ventilated, and warm stabling for the horses, and better shelter and care during the day, would be economical of capital, as good sanitary dwellings would be to the men. Besides the economical, there are æsthetical considerations connected with this branch of administration; for until the people, high as well as low, have become less apathetic to the constant spectacle in the streets of animal decrepitude and suffering, as well as of human squalor, filth, and wretchedness—until they have become impatient of them and insisted upon their prevention, and upon having in their stead spectacles of wholesome, painless, and pleasant life and action, they are not in a proper state of mind for the reception of due impressions of the beautiful, or of external decoration which the votaries of high art desire to promote. For the achievement of these improved æsthetical and economical conditions, large capital, as well as a more intelligent and superior public administration is requisite. On a competition for a large field under the guidance of such an administration, I should expect that the public thoroughfares would be cleared of the cab stands, and the spectacle of the continued waiting of men and horses during inclement weather prevented, and that this would be done by the practice as respects the *voitures de remise*, which prevails in Paris, where in some of the streets only the head of one horse appears from a doorway to a shelter under which it stands ready harnessed, whilst others are in proper stables



behind ready to be harnessed as fast as the demand arises. The consideration of the traffic of a populous district, and of the condition of those engaged in it, would render it desirable to encourage locomotion by steam and the use of tramways through the streets. But judging from experience in Paris and elsewhere, there appears to be no probability of much diminution of the demand for horse-power for the minor traffic of conveyance in populous districts.

There are large elementary distinctions, which I will mention here, but which I must avail myself on some other opportunity of displaying fully, between charges and payments as for *services*, and charges on and payments proportioned to the pressure of *necessities*. Payments as for service imply responsibilities to render that service in a proper manner, and those responsibilities are best brought about, as I may show more fully, by the principle of competition for the field; whilst charges made on necessities, and on estimates of the pressures and means of paying them, are sustained by monopolies, which are incident, and almost essential to the practice of what is called free competition within the field of service. In the case of the New York hackney coachman mentioned by Mr. Ashworth, the coachman, by the agreement with his fellows on the stand, had virtually an irresponsible monopoly of the service, giving him the power to exact payment according to his estimate of the travellers' necessities and means. In the case of a water supply, the actual cost of water for the supply of a water-closet, would be 6*d.* per annum if paid for as a service; but as a charge upon necessities or convenience, the companies levy 10*s.* each per annum, which forms a serious obstruction to the sanitary improvement of towns. And so with the Deal boatmen; and the character of the monopoly is similar, whether it be by the three cabs or the three omnibuses, to do what, under competition for the field, might be the service of conveyance of passengers by two;—or by two or three competing lines of railway, to perform a service which might be more responsibly rendered by one,—or by the seven originally competing establishments for the distribution of water, a service which might be best rendered by one on either side of the river, if not by one for the entire field;—or by numerous establishments of undertakers for the conveyance of the dead, a service which might best and most economically and responsibly be rendered by one;—the results in these and other branches of service which will be subsequently adverted to, are common efforts and almost common necessities to charge the waste of capital upon the public, to create virtual multiform monopolies, and to impose, for the bad service, high charges exacted on private necessities.

One effect of the new division of fields of service by numerous small competing capitalists, is to weaken, or in proportion to the

division, to dissipate the means of that responsibility, for the consequences of want of skill or of misuse which ought always to be enforced upon them. For serious injuries committed by such persons as cab drivers, there is rarely any available pecuniary responsibility. Even as respects the small proprietors of omnibuses, when a serious injury has been occasioned to any one, the answer to a demand for compensation is usually of this sort, "I am very sorry for what has been done, but I have no means of making the reparation required. I am in debt to the corn dealer, who holds my omnibus and stock in security. I have eight children, and my wife is going on with her ninth. You may send me to prison and them to the workhouse, but I can give you no money." The attorney sees no chance of costs, and advises that there is no personal remedy. The sufferers will not, in the great majority of cases, add to their own losses by prosecuting for the public remedy, however it may be needed. But the means of responsibility augment with establishments. No such answer is available to large capitals, especially to public companies. I have long ago advocated the adoption of the superior policy of the legislation and jurisprudence of France,\* which concentrates responsibility even for what are called "pure accidents," upon those who may best foresee and provide against them, namely, those who own and employ the machinery or provide the service, on which it may be most eligibly imposed as an insurance charge. The new London Omnibus Company has already paid compensations in sums of considerable and unprecedented amount, for injuries inflicted by the old omnibus servants whom they continued in their service. It is a fact illustrative of the popular error as to the means of imposing responsibility, that the company had a contract for the purchase of 200 more omnibuses, or 800 in all, which would have given them a virtual monopoly of that mode of conveyance in London, but the completion of the contract was avoided at a considerable expense, in consequence of the refusal of the English managers—former coach proprietors—to undertake the direction of a monopoly. The chief manager declared that such was the ignorance, the caprice, and the tyranny of the public, that he for one would not undertake the responsibility of a monopoly—he could not bear it!

\* *Vide* the exposition of the grounds of this view, the evidence given by me before the Committee of the House of Commons appointed to inquire into the condition of labourers employed in the construction of railways and other public works, and into the means of remedying the peculiar evils of that condition, 1846, published by Charles Knight. The Committee adopted my view of the principle—of responsibility for accidents, in respect to which Lord Campbell's Act, subsequently adopted, falls short. See also an exposition of the principle in the report of my colleagues and myself, the Commissioners, for the employment of young persons in factories, cited in the "Sanitary Report," 1842, p. 443.

VII.—*On ill-regulated Competitions in Sanitary Works of House and Town Drainage and Water Supply: Competitions for the attainments of results.*

The primary measure of sanitary improvement, the relief of the houses occupied by the great mass of the poorer population from the poison pit—the cesspool and from cesspool emanations—and the machinery for carrying into those houses improved supplies of water, are largely dependant on the application of the principle of competition *for* the field, as opposed to the practice of competition *within* the field.

Most even of those medical men who have the best knowledge of the antecedents of disease, and who have attained to distinct conceptions of the larger species of antecedents which are avoidable or preventible, have yet to be made aware of the special requirements of Sanitary Engineering, by which those same larger species of antecedents must be removed. Most of the special sanitary engineers, or others, who have attained distinct conceptions of the works required, have yet fully to comprehend the administrative principles and the economical arrangements for raising the money requisite to pay for them. I have found supplies of water brought into every street of a city, and yet as far as concern the large masses of the wage class, who most need it, those supplies might have remained outside the town, for they are not carried into their houses. In some districts water was carried into the houses, but with little sanitary gain, for there being no corresponding arrangements to carry away the waste water, the subsoil was made a swamp, and the evils of the cesspool aggravated. In other districts sewers were provided uselessly as regarded the poorer houses, there being no house drains to communicate with the sewers. It has yet to be perceived, by railway and general engineers, that an arterial system, either of water supply or of town drainage, is useless without capillaries, and that to act properly, or to act at all, the arteries must be adjusted systematically in subordination to the capillaries, and that these capillaries commence within the houses. It is, however, shouted out that house owners ought to be "compelled" to provide the capillaries. But what does this sort of compulsion mean? Commonly that each house owner should be compelled to provide the requisite works by the method of competition within the field of supply, house by house; that is to say, that all the bricklayers or plumbers of a town should, within that field, compete for the works for each house,—the result of which was, that the middle class house owner would be put to the expense of a twenty pound water-closet (and house drains to correspond in excessive expense) to be rid of a cesspool:—that the owner of the description class

of house occupied by the wage class, would be put to the expense of a ten or twelve pounds apparatus, and to heavy immediate outlays which would absorb two or three years of rent without any prospect of return. As so put, in the common modes of local legislation for the largest towns, as well as in the previous general legislation, sanitary improvements are everywhere resisted to the utmost by the owners of the most numerous classes of houses. As so put, the competition within the field of the common bricklayers and plumbers, instead of being a competition of knowledge, efficiency, and economy—is in reality a competition of every variety of ignorance, and blundering, and inefficiency, as well as of expense;—with water taps which ran to waste and defeat the economy derivable from the system of constant supply;—expensive apparatus with house drains, which detain what ought to be removed. The measures for overcoming these obstacles which stand in the way of the most important public improvement, were first to simplify, improve, and cheapen the works,—which those who are acquainted with any labourers will admit has been so far accomplished, that three houses and towns may now be drained and improved well, at the cost heretofore incurred for doing one ill; and next, to ensure the efficiency, as well as the economy of the new work, by means of the principle of competition for the field, by putting up as a field all the houses of one whole street;—or better, of one district; or better still, of a whole town,—to competition for the execution of the house works required. Where it is the good fortune of the wage class\* of a town that their houses have belonged to one landlord, and that landlord an intelligent and beneficent one, as is the case with Alnwick under the Duke of Northumberland, the application of the principle has been easy, and its success complete. In other places, rare zeal and energy have withstood sinister interests against the principle, and against the public, and made the interests of the latter prevail, chiefly, however, by the aid of an improved administrative principle, embodied in private improvement rates, for the distribution of the charges of works over periods of time.†

\* I adopt the term "wage class" from my friend and colleague on the Metropolitan Sanitary Commission, Professor Owen, and I do so because I consider it more free from misleading ambiguity and misrepresentation, than the common terms "labouring classes,—industrial classes," &c.;—as if he who drives a pen ten or twelve hours a day did not labour, and labour manually, as well as he who drives a shuttle during as many hours;—as if those who labour mentally, and traders, and professional persons were idlers! The terms "mental labourers" and "manual labourers," would make somewhat more correct distinctions, but the most advanced labourers of those whose labour is chiefly manual, such as skilled artisans, have also to exercise their mental faculties; and it would be unjust to them to designate their labour as exclusively manual. The term "wage class," I think, makes a more clear and eligible distinction.

† *Vide* the exposition of the mode of applying this principle in the "Sanitary Report," 1842, p. 319, 453.



By these improvements, the cost of the machinery for carrying water into the houses of the wage class is reduced below the cost of constructing and maintaining in repair a common pump, and costs of the machinery for the constant discharge of all waste water and excreta from beneath the sites of houses, the water-closet, sinks, and self-cleansing house drains, are reduced from one-half to two-thirds below the cost of constructing and maintaining in repair and cleansing the common cesspool. Such improved combined works of water supply and cleansing the houses as have, even when imperfectly executed, almost banished typhus from such towns as Croydon and Ely, and have reduced the death rate more than one-third, might now be executed and maintained at a charge of a penny per week per head of the population. Even now, however, and in the face of wide and varied demonstrations, we have eminent special engineers, who cling to the cesspool and to large man-sized sewers of deposit, as against small and economical self-cleansing tubular channels;\*—and but that the new venous and arterial system for the sanitary improvement of towns, is proved by their resistance to be so far beyond the common engineering and structural art and practice, and the common brick and mortar conceptions, as would be the construction of any sort of watch by a common blacksmith;—it would be the most economical course to comprise in one field of competition, the combined works of water supply and drainage, the arteries and the capillaries, the mains as well as the branches, and put up that entire field to competition, to maintain as well as to execute the works in good working condition for a term of years, which would create an interest in good work at the outset. Beyond this, however, where the objects to be attained admit of clear definition, as the chief sanitary objects now do, it would, according to my experience, be a method of applying the principle of competition for the field, peculiarly eligible for public administrative bodies, instead of prescribing the means, to prescribe the attainment of the ends;—instead of troubling themselves with any particular means or plan on which they as men necessarily ignorant, and therefore peculiarly liable to imposture and to unwitting honest but expensive error and disastrous failure,—to put up the encumbered field to competition, for the most efficient as well as the cheapest mode of obtaining the relief required. For example, to take the case of the British Metropolis. The great mass of the excreta of its two millions and a half of population, is, in the average, only removed from beneath its site yearly. In about 60 per cent. of the houses, chiefly those occupied by the lower, middle, and the wage class, it is detained in cesspools, which at the

\* *Vide* communications from the General Board of Health, and reports from the superintending inspectors of the Boards, in respect to the operation of pipe sewers, laid before Parliament, 1855.

best are only emptied yearly; whilst there is in house drains of deposit, in sewers of deposit, an extent of noxious evaporating surface, in which the whole population might lie down, the emanations from which we have clearly ascertained are the cause of one-third of the death-rate of 50,000 lives annually. This great field of service might be put up to competition to contractors or companies of competing contractors on this question. "At what rate will you undertake to abolish the cesspools of all sorts—in sewers and drains of deposit, as well as in pits,—and ensure the constant removal of all excreta before it can enter into noxious stages of decomposition, and execute, and maintain in efficient action; for the whole of the Metropolis works like those which at Ely and Croydon and other districts have already reduced the death-rates by one-third?" The answer of efficient competitors, for the whole field, founded upon the experience of smaller and really more expensive fields, might probably be,—assuming water to be already laid on to the house:—"We will do it for twopence per week per house, one with another, and at that rate we will undertake to prevent any stagnation of excretory matter, beneath the site of the Metropolis;—for we will cause the whole to be removed inoffensively, at the rate of two or three miles an hour, in suspension in water;—nothing shall remain within even the limits of the suburb for a longer time than half a day, whilst the noxious stages of decomposition commence ordinarily in about four days. We will, in fact, guarantee those results for the whole of the field, at less than one-half the contract price of cleansing and mitigating the poison pit—the cesspool,—which is 1*l.* per house per annum, or 4½*d.* per week." And I will add, that if the whole field of the Metropolis were clear of water companies and were put up for competition upon this question, "At what rate per house will you undertake to provide a supply of pure soft fresh and well aerated spring water for each house?"\* The answer, on ascertained data, might be—"We will do it, at a less than the average cost of keeping in repair the butts and tanks kept up under the intermittent system of storage of water for houses which we will supersede; we will do it and keep the distributary apparatus in good working order for little more than 2*d.* per week, one house with another; and for that sum we will maintain a constant supply at high pressure, night as well as day, and afford the means of reducing,—certainly more than one-half, the destruction of life and property by fire."

These are no rash or unauthorized guesses, but are founded on the assumption, that what has been done in small fields may be as

\* *Vide* the "Report of the General Board of Health, in the Supply of Water to the Metropolis," 1850, p. 281.



well or much better done in large ones. For example, Mr. Rawlinson, the pre-eminent sanitary engineer,\* at the meeting of the Association for the advancement of Social Science, showed that the objects stated in respect to the interior of houses, had been accomplished for the poorer class of houses at an outlay of 1*l.* 10*s.* each; and for middle class, self houses, at about 6*l.* each. At such rates private works have been elsewhere provided on competitions for the field of hundreds of houses, as against the common practice of a number of bricklayers or plumbers competing for a single house. Self-cleansing sewers had been provided for nine towns, outfalls and all, at an average expense of 3*l.* 18*s.* 4*d.* per house, implying an annual charge, for the repayment of principal and interest in thirty years, of 4*s.* 6½*d.* per house, so that, if there were not an available self-cleansing sewer in the Metropolis, the whole of the three hundred and forty thousand houses which, with its suburbs, it comprises, might be served with self-cleansing sewers, outfalls included, for 1,336,000*l.* The public works of water supply had, with some exceptional rates been provided for those same nine towns, at 2*d.* and a fraction per house per week. If the attainment of the object of the interception of the sewerage, and its discharge at a given point, as at Barking Creek, were put up for competition, I have the warranty of estimates made by Mr. Austin and Mr. John Roe, pre-eminent engineers, for the assertion, that a Mr. Brassey would see his interest in undertaking the attainment of the object at about one-third the expense authorized by the present Government at the instance of their Chief Minister of Works, Lord John Manners, to be levied upon the Metropolis, for about one million instead of three. Mr. Austin estimated the cost of intercepting sewers over much the same lines, only on a smaller scale, but terminating at Barking Creek, at 710,000*l.*, and Mr. Roe did not materially differ from him in his lines and the scales of sizes, only he extended the works at the termini, which somewhat increased the expense; but under the present auspices, the three millions will, before the works are completed, become five. A competition for the attainment of the object, would check reckless deviations by irresponsible local bodies—such, for example, as one displayed in connection with metropolitan works. Twenty-one miles of self-cleansing sewers were designed for the sewerage of the whole of Westminster proper at a rate and a scale similar to that accomplished in nine towns by Mr. Rawlinson, for one thousand pounds per mile; but the authorities to whom the work was confided, chose to adopt a man-sized scale instead, for about one mile of sewer in that same district, at an estimated expense of between 14,000*l.* and 15,000*l.*; but which

\* I distinguish those as pre-eminent engineers whose works have been executed within their estimates.

being in ground known to be dangerous for that description of sewer, has already cost 70,000*l.*, and is an extended cesspool, and will cost probably 100,000*l.* before it is completed,—or double the amount for which the whole of the houses, as well as the streets in that wretchedly ill-governed city, might have been put in a superior sanitary condition.

Actual working examples on a small scale, show that under a competition for the field, fertilising matter, which Professor Hoffman values at one million per annum for the Metropolis, and which matter it is proposed to throw into the sea, might be utilised on an area of land 10 miles square, comprising 60,000 acres, but all of which will now be wasted in consequence of the sheer incapacity of the administrative body, to judge of conflicting testimony, or to master the subject. Under the past and present system of administration, the charges of the London ratepayer, in money as well as in excessive sickness and mortality, are certainly grievously heavy.

On a house to house inquiry, made at my instance, in three average London parishes, it was reported that 60 per cent. of the houses had cesspools; that the average annual charge of cleansing these cesspools was 1*l.* 0*s.* 4*d.* per annum, or 4¼*d.* per week, apart from the original cost of making these poison pits; that the original cost of making the old brick house-drains of deposit involved an annual charge of 2*l.* 0*s.* 2*d.* per annum, or 9¼*d.* per week; that the cost of cleansing and mending these drains was 19*s.* 8¼*d.* per annum, or 4¼*d.* per week; that the cost of repairing the water-butts and cisterns necessary on the intermittent system of supply was 19*s.* 2*d.* per annum, or 4½*d.* per week; that the cost of the intermittent supply of sewer and land manure-tainted water itself averaged 2*l.* 1*s.* 9*d.* per annum or 9¾*d.* per week for works such as the drain of deposit and the cesspool, which had a most noxious influence upon his health, beside the sewer of deposit, which for cleansing and repair incurred a charge of not less than 1*l.* per annum more, making the average aggregate taxation of the house owner, for this class of works, about 3*s.* per week, or 8*l.* per annum; that is to say, that the cost of the ignorance and disregard of economic principle, and of corresponding correct legislation, is for noxious works, three and four times greater than that at which good works are obtainable. For works which may be proved to be of the like objectionable character to those already executed, there is an impending new burthen of ten millions of estimated outlay when they are completed. Beyond existing money taxes, however, there are the taxes for excessive sickness, excessive death-rates and funerals, and premature disablement and lost labour, all of which is under estimated for the Metropolis at between one and two millions per

annum. The life-tax upon the ratepayers, the middle classes and shopkeepers, averages from one-fourth to one-third of the duration of life, and of the insurable period of working ability. (*Vide* "Supplement, 1843, to Sanitary Report on Interments and Death-rates of Different Classes of Society in the Metropolis," Appendix No. II., also the Society's *Journal* for January, 1843.) The increasing experience of less insalubrious suburban residence is occasioning much house property to be deserted and lowered in value by the removal to the suburbs of persons who have means, thus injuring trade as well as the social position of neighbourhoods, leaving those who have increased taxation of the character I have described with reduced means to bear it.

I am assured that at Ely, persons who were wont, for their health, to seek relief at Yarmouth, have discovered that sanitary works have given their own homes the superiority. In the portion of Hamburg rebuilt after the great fire—and rebuilt professedly by Mr. William Lindley upon the principles, as to the works of drainage and water supply, laid down in my sanitary report—retired tradesmen who had gone to live in suburban residences now find the improved urban dwellings the most eligible for salubrity as well as comfort, and are returning to them. Other evidence might be adduced to prove the practicability of giving the town the advantage over the country as it now is.

The ends attainable by good sanitary works have been advanced beyond the points I have described. An able mechanic in Paris contracts, on a large scale and successfully, for the attainment of *results* in warming and ventilation, and contracts to warm cheaper in Paris, where coal is 46s. per ton, than it is done for manufacturers in Manchester, where coal is, I believe, less than 9s. per ton. He contracts to warm and ventilate the Madeline, which has 60,000 cubic metres of space, night as well as day, for 14 francs per diem. This Contractor—Mons. Leon Duvoy—contracts to keep the Hospital La Ribosière warmed up to 62°, night as well as day, and to change the air every hour. Each bed has 56 metres of space, and the contract price of performing this service is at the rate of two sous per diem per bed; and he does more than his contract—he changes the air every three quarters of an hour, and furnishes eight gallons of warm water per diem per bed in the bargain.\* The contracting

\* For a plan of this method of warming and ventilation, see the "Compte Rendu of the Congress on Hygiene," held at Brussels, 1852, Appendix IX., plate xv., description p. 154; also, "Etudes sur la Chauffage, la Réfrigération et la Ventilation des Edifices Publiques," par J. Ch. Boudin, Paris, J. B. Baillière, 1853; also by the same author, "De la Circulation de l'eau considérée comme moyen de Chauffage et Ventilation," Baillière, 1852. In contracting for the attainment of results, it was necessary that the contracting mechanist or engineer should have exclusive control over the means, the machinery

administrators concern themselves only with these results, leaving the contractor to his own devices as to the means and their management by his own servants. By this change hospital gangrene is banished and the recovery of patients is expedited. I am happy to state that the sanitary works of house and town drainage and of water supply have been so far advanced in despite of ignorant, sinister, and malignant oppositions, as to afford data for contracting as "a matter of business" for the attainment of ends beyond those of definite works to the attainment of the definite results of works. Thus such a contractor might safely contract, for the attainment of some chief sanitary ends, such as the banishment of hospital gangrene. In like manner, experience under varied circumstances has already been derived, to afford data, for a competitor for the whole field of the service of a town to contract to reduce its death-rate below a given average. Thus, from the banishment of typhus from old common lodging houses, the reduction of the average of a death-rate amongst the inmates of model dwellings, from one-third above to one-third below the general average of London, actuaries would verify the data as safe as a matter of business for competitors for the field to undertake the contract with appropriate powers, for the reduction of the death-rate in the Metropolis from 23 in 1,000 to 17 in 1,000. For this, the million of annual expenses from excessive sickness and death-rates would form an ample fund. An easier competition for the field of service would be the attainment of results or the reduction of the death-rates of the guards kept in barracks to one-half the present average as also the prevalent sickness-rate of 40 in 1,000 constantly in the hospital, and a death-rate of 20 in 1,000.\*

which it was found could not be worked by indifferent, unskilled, and irresponsible persons, and that it was therefore necessary to have it kept in action under the superintendence of his own servants. This was found applicable to private as well as public establishments. The attainment of definite sanitary and other results, such as of acoustics in public edifices, should be specified and required in architectural competitions. Until these results are in the bond, they will be little attended to.

\* The principle of a contract for the attainment of results has, in effect, been applied in public administration, and has been found to work admirably. (For an account of its working, *vide* the report of my colleagues and myself on "Quarantines," 1849, p. 115 *et seq.*) Formerly in the commencement of the system of transportation, it appeared to be a natural state of things that there should be an immense loss of life during the passage. At first, instances occurred of one-half those embarked dying and being thrown overboard during the passage; then one-third; then it was thought a great improvement was effected when only 10 per cent. were lost, and so it went on until a simple alteration was made in the contract, from the payment per head on the number *embarked*, to a payment per head on the number *landed alive*. This opened the eyes of shippers to the advantages of sanitary science, and they of their own accord, engaged medical men as ship surgeons, and gave them means and an interest in its rudimentary applications. The early result was a reduction of the mortality on shipboard to little more than 2 per cent., and lastly to 1½ per cent. on extremely bad lives. Now the death of



For the application of the principle of competition for the field, to recognised subject matters of administration such as I have described, I presuppose, qualifications of high administrative intelligence and integrity and public zeal, to plot out the most advantageous fields for competition, to conduct with judicial impartiality the competitions for their occupation, and to enforce the rigid performance of the contracts in behalf of the public. I presuppose also the ability to analyse closely the cost of service, so as to guard against concealed emoluments, which are sources of corruption, and firmness to withstand the imputations of vulgar competitors, and to make those direct liberal allowances of due market rates of profits which are preservatives against the use of surreptitious means to obtain them. Our postal department, under its present auspices, as being to a great extent a contracting department, may be cited, as possessing such conditions, for preventing the acknowledged evils of unrestricted monopolies, and of maintaining that responsibility towards the public for efficient service, which is thought to be only obtainable by unregulated competition within the field. The political economists to whom I have submitted cases such as I have described, have expressed concurrent opinions upon them, that the earlier politico-economical doctrines as to competition must now receive considerable modifications. The waste and possible saving of capital, indeed, admit of as little dispute as do cases of the waste of mechanical power, or the direction of the means of economy. To the questions sometimes put me, where I would stop in the application of my principle, I am at present only prepared to answer, "where waste stops;" which must be a matter of inquiry in each case involving the question where the application of the principle needs authoritative intervention, or where it must be left to voluntary means guided by an advanced

each soldier means a loss to the public of upwards of 100*l.*, and the country at least twice as much for the value of another labourer to take his place, and a reduction of the death-rate to 10 in 1,000 (6 in 1,000 being obtained with good lives on shipboard) would be a saving of at least 1,000*l.* per annum on the guards, and a reduction of the sickness rate would be equivalent to a gain of the money value of an augmentation of price to the number kept out of the hospital. The 1,000*l.* capitalised at 5 per cent., would be 20,000*l.* But by a competent sanitary engineer, the structural improvements requisite for the reduction of both the sickness and death-rates, might be effected generally for a third or a quarter of the capitalised amount; and sanitary arrangements might be kept in action at a considerable profit on the sickness-rate. The contract for results would of course oblige the contractor to make good the loss from every death beyond the stipulated death-rate. By such a contract the work of benevolence and patriotism would be done without either, and far more effectually, and in a manner that would gladden the heart of Miss Nightingale. By it at least one sincere mourner would be ensured for every soldier who died, and an active sympathiser in case of sickness, determined to know the reason why, and to prevent its recurrence wheresoever prevention was practicable.

intelligence. The economical question I have raised, will be found to be in reality not one for the restriction, but one for the enlargement of the freedom of competition; the present practice of competition within the field, being like what might be called "the freedom of racing," with small and poor horses, necessarily as it were doubly weighted with establishment charges, whilst the principle of competition for the field may be said to be one of the most free competitions possible, by horses of the greatest power, with the lightest proportion of weight for the attainment of the object of competition,—the maximum of speed, or the best service at the lowest charge. For the better understanding of the requisite modifications of economic doctrine in these respects, as well as for a better appreciation of the large moral and social bearings of the question, it appears to me to be requisite that I should describe the condition of two other fields of service, the one for the supply of bread, the other for the supply of beer.

VIII.—*On the conditions of Competition in respect to the Manufacture and Distribution of Bread in London and Paris;—Co-operation for the Distribution of Flour.*

I recognise as a fact of common experience, that where a single tradesman is permitted to have the entire and unconditional possession of a field of service, as in remote rural districts, he generally becomes indolent, slow, unaccommodating, and too often insolent, reckless of public inconvenience, and unprogressive. To check these evils, competition of a second is no doubt requisite; and where the two combine, the intrusion of a third. But experience should be consulted, and the public intelligence must be exercised against hounding on a competition, which consideration would show involves palpable waste,—as where two or three capitals may suffice for the performance of a service moderately well, the intrusion of a fourth, fifth, or sixth competing capital eventually leads to its being performed immoderately ill.

In the service of the Baker, for example, in London, the profit in the production, and distribution of bread is, under ordinary circumstances, about twelve shillings per sack of flour, making 94 four-pound loaves, being nearly one penny three farthings per loaf. A field of supply or sale of twelve or fourteen sacks a week, according to local circumstances, may be assumed to be a "living profit" for a respectable baker in a moderate way of business in London, to pay the rent and taxes of a 60*l.* or 80*l.* house and shop, with its bakehouse. With the same bakehouse and shop, and nearly the same fixed establishment charges, he might produce and distribute double the quantity; but from this he is generally precluded by a competitor. Upon fields of supply so occupied with double



capitals other competitors break in, until the share of the field is reduced, often to the distribution of six sacks a week, and sometimes to four sacks each, or to an occupation by four capitals of a field in which competition would be better maintained by two. The sanitary condition of the small bakers and competitors in towns, whether masters or journeymen, is most wretched. The bakehouses are confined, miserable and unwholesome. The little master to pay his rent, lets off the upper portions of the house, and crowds himself and family in the lower apartments. The small capitalist who enters into this sort of competition is frequently a man of small understanding, and of the smallest skill in working of his material, except when, under the pressure of his necessities, his ingenuity is excited in adulterating it. He is obliged to obtain his flour on credit, and is supplied with that of the worst quality.

Under the ordinary circumstances of the competitor, within the reduced fields, he is almost compelled to extort from the public his excessive establishment charges by cheating, by adulterations, by short weights, by bribing servants, and by overcharges as to the quantities. Fines may be inflicted, but the necessities being pressing and continued, the frauds and evasions are continued. The only chance of relief for the public will, I apprehend, be found to be in removal of the producer's necessities and temptations by creating widened fields of supply and corresponding production on a larger scale.

It must be admitted, however, that experience of the contracts for the supply of poor law unions and for large public establishments in England, show that the enlargement of the field of service does not alone suffice as a complete security at the least, under the existing conditions. So difficult was it found to obtain good biscuit for the Navy, that it became absolutely necessary to establish governmental bakeries, a measure which was attended with entire success, both in the purity and economy of the product; and the experience of the Army contracts for provisions, shows that resort must be had to original production as a security. At Birmingham the quality of the bread supplied under the highest competition of numerous small capitals had become so bad that a private company was set up, on small shares, for baking bread, and having the good fortune, for a joint stock company, of getting a good practical management, pure bread was made and sold at a penny a loaf cheaper than by the numerous small bakers; and the company gaining a wide field of supply, a good profit was divided amongst the shareholders. In time, the principle of unity of management on a large scale prevailed, the shares of the company were bought up by one manufacturer, who had another large manufacturer as a competitor within the field. The result of this modified competition for the larger field was, that

Birmingham was supplied much cheaper and better with bread than any of the adjacent towns.

From the difficulty of obtaining unadulterated bread in London and elsewhere, private families are driven, much to their inconvenience, to bake for themselves; but their object is extensively defeated by the difficulty of obtaining unadulterated flour. At the meeting at Birmingham of the Association for the Advancement of Social Science, a paper containing highly important, economical and social facts, was read by Mr. John Holmes, of Leeds, on "The Moral and Economic advantages of co-operation in the Provision of Food." To meet the difficulty of obtaining unadulterated flour, co-operative associations, which were in reality joint stock companies, were formed, in 17. shares, first and most successfully at Rochdale, in 1844, and then at Leeds, in 1847, by the more intelligent persons of the wage class. At Rochdale the capital of one association amounts to 14,000*l.*, inclusive of a mill, and the business done by them, with a good profit, amounts to 90,000*l.* per annum. Their profit is gained chiefly by the saving of establishment charges of numerous small capitalists, of whom it is calculated that eighty have been superseded by the one society, having less than half the number of places of subdistribution conducted by salaried servants, and by performing the service of distribution at little more than one and a quarter per cent. at the central or wholesale establishment, and two and a-half per cent. at the retail branches;—whilst private trades do not effect the chief distribution at less than 5 per cent., and the subdistribution at less than 15 or 20 per cent. or even more. They have, from their complete success, been led to extend the operations of joint stock stores, to meat and groceries with the like success. In speaking of the results of the Leeds Flour Mill Society, Mr. Holmes says, "if 20,000 people will agree at once to give their orders for flour, and will find the requisite capital, then all expense of catering for a business is saved and all risk avoided. Capital can be adapted to requirement, and the machinery can be exactly fitted to supply. No power need be wasted, and no disadvantage accrue from the want of means. No traveller need be paid to seek orders, no cost of law in recovering bad debts, and above all, no loss from debts being incurred." "In one district near the Leeds mill it has been shewn that the shops for provisions have no relation to the number of the consumers, and it has followed that of twenty persons beginning in these shops, fifteen have lost their all and more, for five who have succeeded to live. All failure is loss to the public as well as to the private trader." \*

\* A proportion of these operative joint stock companies appear to have failed, from causes such as occasion the frequent failure of the middle class joint stock

But the Birmingham example of the manufacture and distribution of bread on a large scale and other instances which may be cited appear to be in advance of those of extended distributions of flour, because in the large scale, the saving out of the waste incidental to the home baking, is sufficient to allow the bread to be made and distributed to them for nothing beyond the prime cost of the materials. M. de Fawtier shews that in France the public bread making is really eleven per cent. cheaper than the domestic bread making, allowing 4 per cent. as the value of the domestic labour, but not allowing for the domestic mischances of burned bread, ill-fermented, sodden, and spoiled bread; yet in France, the art of domestic bread making is commonly in advance of England. In France, too, there have been late improvements in the construction of the larger ovens, which further reduce the cost of fuel one-third. In the common practice of baking, in the kneading of the dough in England, the journeymen are stripped to the waist, and in consequence of the severity of the labour, and the excessive heat of the bakery, profuse perspiration is induced, and this is unavoidably mixed up with the material. Moreover the journeyman baker is afflicted with a skin disease peculiar to his occupation. In the government bakeries 450 pounds of dough is mixed up in four minutes, and kneaded in six minutes by machinery, and the improved machine labour performs at 5*d.* per cwt., including wages, with wear and tear of utensils, what previously cost 1*s.* 5*d.* I am assured that at Carlisle, where some bakeries on a large scale have been long carried on, and the work is enabled by the scale to be performed by machinery, the workmen are better paid than in the common bakeries, and are put in a good sanitary condition, and the product is superior in quality, as well as cheaper.

In France the principle of competition for the field, and a considerably improved production is effected by the authoritative extension of the field of competition and supply. In Paris the total number of Bakers in proportion to the population is restricted to nearly one-third that of London; the establishments are consequently on a larger scale; the art of baking is in advance, and the rate of production of better bread is on the average one penny a loaf cheaper than in London, which it may well be with reduced establishment charges and really more powerful competition. Dr. Ure states—it is proved, indeed, that in Paris the baker's charge on the four-pound loaf is a halfpenny, whilst in London it is about a penny three farthings. M. de Payen, a Member of the Institute, has examined the practice of bread making in England, as compared with that in France, and reports, that the proceeding on the same basis companies—such as insufficient capital, defective accounts, insufficient audit, and want of business skill.

as to the price of flour, the price of bread, which is pure in Paris, is as 6 against 7 in London, for bread which, on analysis, he found to be generally adulterated. Mr. F. O. Ward has examined the system of bread making in France, as compared with that in England, and concurs with M. Payen as to the public advantage of the principle of regulated competition for the field. The bakers with whom I have spoken in England on the economy of their trade are unanimous in their declaration that the public might be better and cheaper supplied by one-half their present number.

Mr. F. O. Ward informs me that, in Paris, the bakers of the *banlieue*, or suburbs, who have never been under the regulation as to number by which the bakers of Paris within the walls are governed, have multiplied to about three times the number (relatively to the population they supply) of their Parisian brethren:—the increase bringing them up, curiously enough, to about the same excessive proportion as prevails in London; thus showing how in economical statistics the same laws in operation bring about everywhere the same results. The suburban bakers of Paris, Mr. Ward states, petitioned some years ago, as well in their own interest as in that of the public, to have their numbers reduced and placed under permanent restriction. In this singular document these bakers show the disadvantage under which they labour in consequence of this freedom to multiply at random. They set forth for a period of years the annual excess of bankruptcies among the bakers of the *banlieue*, above the average occurring among their Parisian brethren; and on other tables contrasted columns show how much more frequently shops change hands in the suburbs than in the city from the ruin of their proprietors. They further establish that the average quality of the suburban bread, made under free competition, is inferior to that of the bread made under regulated competition in Paris—the struggling bakers of the *banlieue* being driven to eke out their scanty profit by using inferior flour, and too often by having recourse to adulteration. They show how the poverty of a majority of the suburban bakers place them at the mercy of the great millers, who first get the poorer bakers a little into their debt, and then oblige them to accept inferior flour at a price beyond its value; an extortion of which the baker is only the first victim, and by which the consumers of the deteriorated bread, *i. e.*, the suburban population, are the ultimate sufferers. They offer to find among themselves the money required to buy up and close the redundant establishments, and they declare themselves ready to submit to the restriction of price imposed on their Parisian brethren, provided they can be secured against the intolerable evils of excessive multiplication, so injurious to the consumer as well as to the producer. It is rare, as Mr. Ward observes, to see two economical systems at work in

such close proximity, and with such sharply contrasted results; and it is probably rarer still to find the victims of unregulated economical freedom conscious of its pernicious influence on their own usefulness and happiness, and petitioning for regulated freedom as the only true remedy for their misfortunes. Bread in Brussels with unregulated competition was dearer and worse in quality than in Paris. In the poorer quarters of Brussels the small shops for retailing bread literally swarmed. To meet the evil a manufactory of bread on a large scale was established, which produced better bread at a lower price than the petty bakers could turn out, and it is stated to be prospering well. In France there are fiscal and other regulations requiring the bakers to keep reserves of flour, &c., to which economical objections may attach, but they are quite beside the principle propounded in the regulation of competition. Experience everywhere shews, that whilst the extension of the field of production, reduces the temptations and the means to falsification, and inferior production, the unlimited reduction of the field augments and almost necessitates them, so much so, that it has become a popular aphorism applicable to the particular branch of industry, that "an empty sack can never stand upright," whilst a full one may. By breaking the service in question into fragments, the large moral and legislative error is committed of putting sinister interest against duty, under conditions, which it will be shewn, also, in respect to another branch of service, make such interests too strong for private morals, for the law, and public administration. To give a conception of the extent of the bearing of the economical question, I may state that some years ago I had occasion to make what I term an economic analysis of a four-pound loaf—that is to say, how much of the cost of production, of transport, of distribution, there was in it, when I found, that at the prices, and the rents of the time,—averaging in England 25s. per acre,—the rent in the four-pound loaf was about three farthings, whilst the cost of distribution was more than three-halfpence. On the like economical analysis of the cost of a pound of meat to the consumer the charge to him for distribution appeared to bear the like proportion, *i.e.*, double the rent in the price of the commodity to the consumer. It appeared, generally, that the cost of distributing the produce of the soil was double the rental of the soil. It appeared that, by the extension of the field of the service, and the saving of the charges of unnecessary establishments and labour, the service of distribution might be greatly improved, and the expense reduced to less than one-half; or, in other words, the result was indicated of a possible aggregate saving to the community equal to the whole rental of the land—equal to the whole of the general taxation of the country.

IX.—*On the Moral and Social Evils from Competition within the Field exemplified in the Distribution of Beer.*

In no branch of production and trade will the effects of false principles of economy be found, on competent examination, to be more strikingly manifest than in the production and distribution of Beer. In respect to its production, it will be found that, on the scale of the great public breweries, by superior art and scientific appliances,—in getting out a greater quantity of extractive matter, in the avoidance of waste,—a saving is achieved which may be estimated as high as 16 per cent. on the raw material as against the home brewer. By the powerful competition of large capitals only a part of the saving so derived is obtained as profit by the manufacturing capitalist. The householder who buys his beer direct from the large brewers, at the large brewers' wholesale prices, may be said to get his brewing done for him for less than nothing—for less than the saving from the previous waste in his home brewing. But in the present grossly neglected condition, of the great bulk of the wage class,—neglected as to education and training, they are unfit to be entrusted with the commodity in bulk. Nor is this unfitness confined to beer. There is with ill-trained classes so much waste, even of bread and groceries when they get them in bulk, as to make the charge of retailing them a charge for a service of economy. It would often be destructive to give to such classes a week's rations at once. The respectable publican, who performs the service of distribution over a fair field, and doles the beer out, pint by pint, amongst a population of such habits, as against their free access to the barrel of beer in the house, prevents large pernicious waste, and renders the service of an economist; and when he does not allow scores to be run up, but requires immediate payment, he administers a moral check which is entitled to consideration. The respectable licensed *victualler*, the hosteler, the innkeeper, with his "tap" for the wage class, may not be interested in any innovation upon the old-accustomed habits of the population, or in rigid temperance movements, according to our notions;—but with a fair trade he is in no need to labour to stimulate consumption, and he has a decided interest against intemperance,—for the drunkard annoys the bulk of his regular customers, disturbs his business, by quarrels, brings in the police, keeps the house open until late, abridges the family's rest, and is really a nuisance. The most desirable and practicable advance for the promotion of temperance would appear to be the consolidation of the business of the coffee-shop keeper with that of the publican, to make him more of the ancient hosteler and victualler, that he may withdraw custom from the modern gin-shop keeper. With the more full sale for beverages, there is the less temptation for their adulteration. When, however,



the field of service, which may be occupied in fair competition by two establishments, is by an increased competition occupied by three, four, five, or six competitors within the field, then the conditions are wholly and injuriously altered. As in the competitions within the field for the supply of bread, the ordinary profits will not suffice to bear the disproportionate establishment charges on limited areas or restricted custom, and those charges are extorted from the customer by frauds,—less by short measures than by reducing the quality of the beverage, and giving fictitious strength and intoxicating power, by adulterations.\* (*Vide* Report of the Commons Committee on Public-houses.) The lower class of competitors frequently compete in depraved stimuli to consumption, to riot and intoxication. "I recollect the time," says a respectable witness, Mr. Stinton, the Chairman of the United Towns Licensed Victuallers' Association, "when the licensed victualler was master of his house. I know "when he used to say to a working man, 'Now, you have had "enough, you go to work;' but he dare not say so now. There "are, perhaps, two beer-houses, one on each side of him, and if he "said that, the man would say, 'What does it matter to you, "if you are paid? if you do not serve me or trust me I can "go next door.' The licensed victualler is bound to do this, and "sacrifice the working man's family, from no other cause than the "beer trade; it has brought gin palaces into existence again." "I "recollect a case in which I said 'I will not allow cards in my tap- "room,' and the consequence was that the men said, 'Well, there "is a beer-house very near, and if you do not allow it, we will go to "that house.' Bad language was being used, and my house was "cleared. I lost all my custom for a time, and I was obliged to "allow cards to regain it, in spite of the law." The statements which were brought before me as a Commissioner of Inquiry, as to the frequent depravity of this competition would appear almost incredible. "It's odd," said one of these competitors, a beer-shop keeper in an agricultural district, "if I don't beat, for I "provide my customers with a girl and a fiddle." But this fellow was shamed by another competitor, who had girls dancing naked

\* A witness, Mr. Ridley, who has offices for the analyzation of alcoholic liquors, states to the Committee on Public-houses (who report the existence of an almost universal practice of imposition on the public), that the net price of the brewer's beer is 31s. 6d. the 36 gallons, which quantity is increased to 48 gallons by the addition of water and sugar and then sold at 3d. per pot, which yields a profit, whilst in the genuine state, the profit would be about 4s. To bring a head up, a little vitriol, coculus indicus, and a variety of drugs are added. The brewer's beer was, according to another witness, invariably of the standard of 10½ gallons of proof spirit to every 100 gallons of beer, whilst the samples from the retailers dealing at the same breweries did not exceed 6½ gallons, and there was not one of them within 20 per cent. of the brewery standard. The fraud upon the revenue was estimated at one-fourth of the malt tax.

for his customers.\* The customers of the licensed victualler's tap, or of the inn, were under the possible check of "master," or of "master's friends," the parlour customers; but in the common level of the beer-shop, in the bye-lanes, or hedgerows, where the poorer competitors get cheap tenements, every restraint is thrown off, and vice revels, with no effectual check, against the full operation of the maleficent interests which a false political economy and empirical legislation allows to be created. I apprehend that the respectable publicans would themselves concur in conclusions similar to those adopted by the competing bakers of the suburbs of Paris.

Ignorant legislation, upon false principles of economy, has in this great branch of service as in others, grievously aggravated all the evils sought to be remedied. Intending to improve the quality of the chief beverage of the wage classes, it has made it worse for them. Intending to increase their domestic comforts, it has diminished them, and occasioned destitution and pauperism. An army of active workers for their improvement, consisting of benevolent country gentlemen, magistrates, parochial clergymen, educationists, and social reformers, were making strong head against the peculiar vice and failing of the ill-trained Anglo-Saxon population—an unregulated and excessive appetite for intoxicating beverage which makes high and fluctuating wages almost synonymous with ruinous excess,—and were getting them into habits of temperance, thrift, and domestic comfort, when their labours were frustrated by that most unhappy measure, the Beer Act, which is justly pronounced by the Committee of the House of Lords (of 1850) to be "in itself an evil

\* Instances of systematic competitions in depravity by the competitors within the field are given in the evidence appended to the Report of the Commons Committee on Public-houses, 1854. Thus the Superintendent of the police of Leeds, states (3363-69) it to be a practice which he detected and brought before the magistrates, for a number of boys from 16 to 18 years of age, and also young girls of corresponding ages, to assemble on an evening at the beershop after they left the factories, and "they were in the habit, twelve of them, of putting down a penny a piece and then throwing dice in a basin or a milk bowl, and the one that "threw the highest number was the winner of the prize—and that prize was that "he could select any of those girls and take her up stairs for prostitution!" In spite of convictions, such practices continued to prevail. The competition is often carried on in the receipt of stolen goods; in rural districts, in farmyard produce; in towns, manufacturing produce. The police Superintendent of Leeds states (3,255) that "many are receivers of stolen property. I have found stolen property "in their houses. Even in an extensive robbery, I found a great portion of the "cloth in his beer barrels. I went down into the cellar, and the beerseller said, "These barrels contain bitter beer." I said 'Give me a pot, I am very fond of "bitter beer: let me taste it.' I found that the heads against the wall were out, "and that they were filled with stolen cloth. The result was that the man was "apprehended and he was transported for ten years," after having been previously convicted several times for harbouring notoriously bad characters. The great bulk of the convictions for every species of offence was in the lower class of houses.

"of the first magnitude, not only by increasing the temptations to excess which are thus presented at every step, but by driving houses, even those under the direct control of magistrates, as well as others originally respectable, to practices for the purposes of attracting custom which are degrading to their own character and most injurious to morality and order."

The perceptions of the bakers of the *banlieue* of Paris, as to the means of preventing the sinister exercise of the power of large dealers or producers, stand out in marked contrast to those of the Committee of the House of Commons on public-houses. That Committee, disregarding the evil effects everywhere manifest from competitions within the field, actually proposed to extend them still further, to all persons of good character, *i.e.*, to all persons not convicted of any offence,—as if the Committee had not had widely displayed in the evidence the working of such competitions in subjecting the competitors to degrading influences, destructive of any good characters exposed to them! as if it were not proved that that sort of competition, by subdividing the field of supply, and by making and keeping the half of the competitors poor, drives them into debt and makes them more dependant on the large producers or the great brewers, whilst it impairs the just and salutary powers of those same large brewers to protect the commodity from adulteration for the sake of their own character, if not for the sake of the consumers!

The pressure of taxation on the Englishman has been described, and that is heavy enough, in so far as relates to those taxes which are taken without a due return of service; yet when they are taken there is an end. But there is no end to the excess of charges to which, in the absence of regulation he is subjected,—charges exceeding, as already indicated, all governmental taxation whatsoever, and accompanied by restrictions and interferences with his private life and daily business,—frequently more vexatious and degrading than any but the most barbarous misgovernment. We hear boasts that he is opposed to monopolies, and has the highest amount of freedom, in the face of the fact, that practically he is everywhere in large cities subjected to restrictions and to multiform monopolies of an imperious character, confining him to inferior service at high prices;—in the face of the fact that his freedom of choice, where he really has any, between several competing means, is commonly as a free choice of several rotten oranges. If he be of the lower, middle, or of the wage class, he is Restricted to a residence within the district of his calling and there of new houses he has only a choice of those which are "scamped" by the competition of small jobbing builders;—ill-drained, cesspool-tainted, with spongy and damp walls, ill-warmed, ill-ventilated, disease-engendering, frequently smoky, and highly-rented as compared with the price at which good habitations might

be produced. In his Food he has little choice, but of the dear, and adulterated, "distressful" bread of the competing small bakers. All this time, dripping, and inferior commodities are exported to Holland, there to be manufactured with little more than one-third of genuine butter, expressly for the English market, to meet the demands of the competing small butter sellers of the poorer neighbourhoods, where it is sold as full-priced Dutch butter. His animal food may not admit of adulteration, but diseased cattle,—which if attempted to be sent to the public abattoirs of Paris would be confiscated and killed to feed the vultures or the wild beasts, the consumers of carrion at the menageries,—may be exported for what is proved to be a second market in London for sale to him by the competing butchers of the poorer districts on the Saturday night.\* If he would avoid drugged Beer he has frequently only the alternative of adulterated tea, or the coffee of competing grocers. If, being temperate, he would drink Water, he has commonly the alternative of the clear, but most dangerously cesspool-tainted water of the wells, or the water of monopolist companies, originally competing of five or six-fold the impurity beyond a correct standard available as a service at a lower rate. If Wine be prescribed to him medicinally, he has great difficulty in obtaining it pure from the competing dealers of the poorer neighbourhoods, to meet whose demands there are in France large manufactories of sophisticated wine expressly for consumption—at high prices—in England, but from the sale of which the population of France is protected. If when the constitution of the Englishman, or that of any of his children, who are nourished on adulterated or innutritious Milk, and of whom one-half are in their graves before their sixth year,—breaks down under these noxious influences, he seeks medical relief and obtains the prescription of a physician; to get it made up he has the choice, not now of one poor "caitiff wretch" of an apothecary, but of two or three made "caitiff," and "wretched," and rapacious by competing within the field, from whom the odds are that he will receive, if not a poison, a vile counterfeit at an exorbitant price. (*Vide* the evidence of Dr. A. H. Hassell and Dr. Challice, and others, given before the Committee of the House of Commons, on adulterations.) The Englishman is everywhere surrounded with snares, from which it is scarcely possible, even for persons of professional knowledge, and with appliances, to escape without a degree of labour, of investigation, and verification, at every step, which in itself is an intolerable tax. A late editor of the "Medico-Chirurgical Review," a man of extensive knowledge, fell a victim to a fever,

\* *Vide* the evidence of Dr. Challice on the sale of diseased meat in the poorer districts of London, given before the Committee on Adulteration of Food. He mentions an instance of one of the poorer butchers, "who never eats a morsel of meat out of his own shop, but always sends to another butcher for it."



caught in a cesspool-tainted house at Brighton, where he had gone for a change of air. If the Englishman be of a condition of life to remove from noxious influences, and would travel by railway in carriages of the first class, he is, under the guise of free competition, subjected to a fare of nearly double the amount at which his Continental neighbours are free to travel with their families in second class carriages, giving as good accommodation under more responsible and safe direction. At the termination of his mortal career his remains fall into the hands of Undertakers, competing within the field, for the interment of the dead, who exact from his survivors double charges for wretched services.

On a subject on which so much dense ignorance and so much of sinister interest and moral, social, and political evils prevail, I shall be found deficient, rather than redundant in proof and illustration. I might extend the illustration to large branches of production and distribution, in which it admits of demonstration that the distributors can only pay themselves or subsist—by cheating. I might comprise in the exemplification, the important service of Insurance, and show the very serious extent to which the object sought—security for the future—is frustrated by the unregulated competition of establishments within the field, and the need of consolidation as the remedy. Many highly sensitive persons who are afflicted by the character of the evils displayed in the conflicts of small capitals, have passionately advocated as a great social desideratum, the entire prevention of competition. I hope to give such minds relief, by showing that those evils may be almost entirely prevented, and large economic advantages achieved, by its Regulation. In other branches than those adverted to, it may be shown that the mere economy of waste will afford the means of a vastly improved service. A first step, however, to voluntary improvement, would be the exercise of an intelligent public opinion, to resist as a common injury the subdivision of fields of supply, unless upon a manifestly adequate case of improvement made out, and then to support consolidations.

It remains to be described on some future opportunity, how much bad morality, anti-social feelings, and painful sense of individual insecurity, pervading and corrupting all society, and extending to the Commons House itself, have their remedies in the advance of correct economic science and sound legislative and administrative principle; the facts cited may serve to show that the advance of economic science will not be by hypothetical assumptions, as to what will be done—in the face of experience of what is not done,—but by well examined and complete collections of facts as to past experience on which to found safe practical rules for future guidance.

## MISCELLANEA.

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## I.—Course of Trade and Prices in Melbourne (Australia), 1852-9.

THE *Melbourne Argus* has lately given the following interesting review of an important class of commercial facts in that colonial Capital.

"Some six or seven years ago it would have been a strikingly novel, and perhaps very useful, subject for discussion if any one had furnished a list of the Wholesale and Retail Prices of the articles of necessary consumption in this colony; and comparing these with the cost of importation, had displayed the ludicrous enormities of the percentage obtained by the Retail dealers. Had the thought of doing this occurred, the list would no doubt have been followed up and revised from time to time as great changes occurred. The period, however, for this almost equally amusing, instructive, and alarming series has nearly passed. Many articles have now found their natural level, and the profits on the sale are a fair balance on these cost prices. Some articles have certainly fallen below their natural level, others are in a transition state; still a tolerably wide field remains, and it is not quite too late to exhibit a few of the anomalies of our trading condition. Those who purchased *Books* some six years ago, especially the superior classes of books, have reason to remember the enormous advance upon the cost price which they were compelled to pay. These prices have been gradually lowered during the last two or three years, but not much in some cases. It is certainly not six months ago that French Works, marked at *one franc* per volume, were sold at two shillings the volume; and even upon *Lett's Diaries*, with the London prices staring at us from the outside, there was an advance charge of fifty, and sometimes one hundred per cent. Very recently we have seen the public announcement that books will be sold at English Prices. We may therefore infer, that the English and Australian booksellers, and the shipowners, agreeing on an amicable arrangement as to the freight, our colonies will derive the benefit of these concessions, while all parties derive the benefit of the increased trade in books.

"Something very like this seems to have occurred in the *Boot and Shoe trade*. It was a great personal favour, six years and a-half ago, for a working bootmaker to make a pair of enamelled leather thigh boots at the small charge of Seven Guineas, because the shops in Collin's Street, and some other places, were charging eight and nine guineas for the same. But about four years ago the market became overstocked, and the same articles could be purchased at two pounds, which soon fell to thirty and five-and-twenty shillings. It was at last discovered that these thigh boots were too hot and heavy; and now they have disappeared almost entirely.

"The mistake, however, of wearing glazed or enamelled boots in this climate, particularly in summer, is gradually being found out; and during the present summer, for the first time, a large number of canvas, doe, and buckskin, kangaroo, kid, and other boots and shoes of light materials have been imported, at, we believe,



something like the London prices. In the matter of soft and fine leather summer Boots, those imported from Berlin and some parts of Germany are cheaper than similar articles of English workmanship would be in London, though they are not quite as durable.

"Ready-made Clothing has now come down to English prices; and it is even possible to get clothes made to measure, if not to "fit," at no very exorbitant prices. The charges, however, for workmanship, though small in comparison with the outrageous prices of six years ago, are still much too high.

"Hosiery and Silks are in a curious condition, the prices for similar goods varying with different localities, and sometimes with shops in the same street and almost opposite each other. Common goods are cheap enough, but the superior are in many cases fifty per cent. dearer than they ought to be. With regard to made-up articles of *Lace*, *Velvet*, and *Silk*, we must except those French goods which have been thrown into the market through cases of insolvency, because when they are really, or supposed to be, out of fashion, or when the material and workmanship are not understood and appreciated, they are sold at a great loss to the original owners, who were advised to export them by the "enterprising" colonial rogue who has become insolvent. *Furniture* and *Upholstery* generally, used to be absurdly expensive, but have come down of late, the high prices being now maintained only in the most expensive streets. *Groceries* have for some time past become reasonable, but if the charge for a pound of black tea in Collins Street be the same as for tea of the same quality in Little Collins Street, the advantage is obviously very great in favour of the latter. *Ironmongery* is now very nearly at London prices, and their prices do not vary in different streets. The percentage charged upon the finest articles of *Jewellery* manufactured in Switzerland, Germany, and France, is very large, varying from twenty-five to seventy-five per cent., and this applies not only to the workmanship in fine gold and precious stones, but to finely plated articles, and glass, paste and other imitation gems.

"The prices of similar articles also vary in different shops, generally according to the rent of the house. This latter consideration, however, touches upon another field of inquiry.

"A manifest revolution has been effected this summer in the *Fruit* and *Vegetable* trade. This seems attributable, not so much to the increased quantities as to the increased means of distribution and moderate prices. The street-stalls and barrows have done more for the public than any number of "public meetings" would have done, or any amount of sense the regular trade were likely to exercise upon the question. The combination, tacit or otherwise, which has existed not to sell fruit cheaply has probably received this summer its death blow. The amount of regular waste, and throwing away rather than lower the prices, was a part of the system of those who considered themselves the only legitimate dealers. Still, there must have been something extremely vexatious in beholding good fruit rotting before their eyes from morning to morning, and something peculiarly tending to affect the temper, as we may infer from the insolence, either of word or behaviour, and sometimes of both, which are the well-known characteristics of several of those dealers, who appear to be the last remaining scions of that bygone time when you dared not to ask the price of a second article without purchasing the first, and when your change was flung down to you with scorn at your meanness in expecting such a thing.

"The profits and losses of the *Wholesale Wine and Spirit* trade are a mystery to the uninitiated. With the exception of *Brandy*, *Ale*, and *Porter*, we should think the largest profits are made upon articles of second and third-rate quality; those of the finest quality, especially wines, not being understood, and very often proving a great loss.

"But with respect to the retail trade, i.e., the "bar," of the hotels and public houses, the immense percentage made on many articles must be obvious to anybody who considers the subject.

"In the time of the gold mania Brandy was sold at the public houses on the road, or rather the bog-way to the diggings, at thirty-shillings a bottle (good, bad,

or palpably hocussed) and a bottle of Ale cost fifteen shillings. Those days are passed, but the publicans are still doing a flourishing stroke of business. Indifferent or bad *Port* and *Sherry*, which they have purchased, all expenses included, at six and thirty shillings per dozen, or say, at the very utmost three and sixpence per bottle, are retailed at one shilling per glass. As each bottle contains about eleven or twelve of such glasses as they hand you, the enormity of the percentage gained is apparent.

"But if the charge of about one hundred shillings for what cost them six and thirty shillings be considered outrageous, what are we to think of those who, by diluting and "doctoring" their wines and spirits, contrive with impunity to realize a still larger profit. Then there is a thriving trade carried on in the hot weather in "minor drinks," such as cider, lemonade, soda-water, and ginger-beer. For the first and second you pay the flash young gentleman or lady at the bar between one and two hundred per cent. upon the wholesale price (besides paying dearly for it in certain aches and twinges), for the second you pay a yet higher rate, since the contents of the bottle are seldom anything more than fixed air and water, whilst the more costly article of ginger-beer obviously realizes some two hundred per cent. The bottle not being taken away, we have only to consider the value of the water, sugar, and ginger flavour, the cork and the corking, and string, the whole costing three-halfpence or twopence; and the invariable and unblushing charge is sixpence.

"We do not wish to be hard upon the retail dealer. We are well aware that high rents, losses, sudden gluts in the market, bad debts, and the pressure of creditors, render it extremely difficult for a great number of shopkeepers to realize an adequate annual profit upon the whole of their transactions so as to live comfortably and "pay their way." We only wish to call attention to those exactions, whether caused by the high rents of greedy landlords or the greediness of the tenants, which are an injustice to the community."

## II.—The Proposals as regards a New Land Policy in the Colony of Victoria.

WE obtain from a recent number of the *Melbourne Argus*, the following lucid and interesting statement of the plan proposed by the Victoria Cabinet for the settlement of the long-disputed and vital question of Land Policy.

"Mr. O'Shanassy's proposal consists of two parts, and will probably require two separate bills. One part is the *Land policy* proper; the other part is an extension of the system of *Local Self-Government*, consequent upon that policy. The scheme provides as well for the kind of lands which may be sold as for the mode in which the sale is to be effected. All lands known to be Auriferous, and all Water frontages are to be excepted from sale. In the case of the *saleable lands*, two modes of sale are recognised. One is sale by auction, the other is sale at the Upset price, without auction. The Auction system is the rule; the free selection is the exception. Certain special Areas of agricultural land will be surveyed. Within these areas lots of varying size, but not exceeding 320 acres, will be marked out. These lots will be open to *bonâ fide* cultivators, without auction, at the usual upset price. No alteration is proposed, either in the amount of the upset price or in the manner of its payment. The terms still are 1*l.* per acre cash. The unsold portion of these especial Areas will, until they are taken up, be available to the purchasers for Grazing purposes. No charge will be made by the State for the occupation of these unsold lands, and the settlers themselves will be allowed to make the necessary regulations for the exercise of their privilege. A similar right of Common Pasturage

will be allowed upon Crown Lands, when any such exist, to the inhabitants of Towns and of Gold fields. The exact nature of this commonage is not clear. It does not appear whether certain lands in the vicinity of these towns or diggings are to be excepted from sale in the same manner as water frontages, and to be subject to rights of common in perpetuity, or whether such reservations are to continue, like those in the special areas, only until the land is required for sale. Such are the limits of free selection and free pasturage.

"In all other cases in all lands of peculiar value, and not included in these Special Areas, and in all Towns and suburban lands the system of sale by Auction is to continue. Provision is also to be made for *bonâ fide* settlers who may require larger allotments than those contained in the agricultural areas. In what manner, or to what extent this provision is to be made we are not told. On this point, in particular, some further explanation seems desirable. The great question of the Occupancy of the Unsold lands still remains. On this subject Mr. O'Shanassy seems sufficiently explicit. He proposes that, after a certain date, which of course the Legislature must determine, all preferable occupancy of the public lands by the pastoral tenants (or squatters) shall cease, and that, in the meantime, they shall continue to hold their runs under an annual license. The effect of this proposal is to give to the pastoral tenants notice to quit after a certain date. What that date may be the Legislature must settle; but we presume that the natural date would be the period at which the fourteen years' leases contemplated in the Orders in Council will expire—that is, in 1862. The complications produced by these orders will thus be removed, and the country and its pastoral tenants may then make new arrangements.

"Proceeding, then, in an inverse order to that which we have followed, we may thus briefly describe the Ministerial Policy. The *Squatters* are to receive a reasonable notice to quit, and in the meantime to remain as at present. The *Auction* system is to continue in all lands which, from whatever cause, possess a peculiar value. Within certain specified districts, *free selection*, without auction, is admitted. In the districts where free selection prevails, the purchase of the land will also imply a right of free pasturage. *Commonage* is also to be provided for populous localities, and certain descriptions of land are to be excepted from sale. Of the second part of Mr. O'Shanassy's scheme we have little definite information. He proposes to construct an enlarged municipal system, comprising not only Towns, but Country Districts. The Municipalities, as we have before seen, are to make regulations for the common pasturage in their respective districts, and are also to have the direction of all local improvements. To enable them to carry out these objects they are to receive an endowment from the Public estate—a word, we suppose, designedly ambiguous—and are to possess powers of local taxation. But beyond this point we cannot at present go. We can only say generally, that districts, as they become settled, are to possess large powers of self-government.

"We have thus attempted to describe, so far as, in the absence of the necessary details, we can understand it, the Ministerial Land Policy. There are many questions to which it as yet furnishes no answer. It tells us nothing of the constitution of these municipalities. It is doubtful as to the manner of their endowment. It is silent as to the proof of *bonâ fide* cultivation. It does not convey the slightest intimation of the mode in which provision is to be made for the wants of *bonâ fide* purchasers of more than half a section.

"All these are details which need not be filled in until the bill is actually prepared; and yet they are details of the utmost importance. But as far as, in the absence of such particulars, we can judge of the scheme, it has much in its favour. It is at once liberal and moderate. It is liberal, for it provides for the settlement of masses of our population on easy terms. It is moderate, for it avoids any violent change upon the existing system, and any depreciation in the value of purchased land. It recognises great principles, and it applies these principles with caution. It recognises free selection. It recognises the right of the purchaser to the use of the adjacent waste land. It extinguishes the difficulties that have arisen under the Orders in Council. It provides for Local self-government, and for its extension as

settlement extends. It demands, therefore, even from those who dissent from it, respectful attention.

"But in this, mere dissent is insufficient. We cannot afford any longer to indulge in the cheap amusement of finding fault. A tangible system is now before the public. Let any one who can do so amend it wherever it may need amendment; but no objection should be entertained if the objector is not prepared to bring forward a distinct and positive proposal."

### III.—*Important Improvements in the Rapidity and Cost of Brickmaking.*

MR. THOMAS CHRISTY attended a Meeting of the Royal Institute of British Architects, held in London on Monday, 30th May, 1859, and exhibited Bricks made by the Brick Making machine of Messrs. *Platt, Brothers, and Co.*, Oldham, Lancashire, now at work at Oldham. This machine was illustrated by large diagrams; and the extraordinary power of production of two machines may be estimated by the following, based upon the present actual working, viz., 60 per minute, 3,600 per hour, 36,000 in 10 hours; in 10 hours 36,000 total perfectly formed bricks ready for burning.

The process may be thus described:—Having cleared off the grass and top-soil, and come to the natural clay bed, you lay down slight rails with tip waggons, the loads of clay are delivered to the cylindrical sieve formed with strong bars of iron, the stones are thus sifted out, and the pulverized semi-dry dust is carried up by a rapidly-worked bucketed strap (Jacob's ladder) to a receiver communicating with the forming machine; this has attached to it a motion by which the moulds are charged; the powerful press now comes down from the top, giving a pressure of about 50 tons, and simultaneously, by a powerful eccentric motion there is given an upward pressure of from 40 to 50 tons. Another motion lifts the thus formed brick up, and slides it forward to the men, who carry it away to the clamp; thus in five minutes, or ten minutes, the clay is removed from the hill, pulverized, the brick formed and is on the clamp or kiln ready for burning. It may be objected that no pressure can be given sufficient to insure solidity; this experience has proved to be a mistake. In the great buildings erected on Messrs. Platt's works at Oldham with these bricks, care has been used not to overburn them, that a fine cherry-red colour may be obtained; but for all foundation work, where great strength is required, it is needful to burn them more, regardless of colour. The vast superiority of these bricks for sewer work, for docks, and foundations, consists in their extreme hardness, after burning sufficiently, and their strength. One engine of 20-horse power will turn two machines, and the cost of producing said bricks is as follows:—

	£	s.
Getting clay from the field, 200,000, 3s. ....	15	—
Feeding the Machine, 6 men, 18s. ....	5	8
Removing bricks from machines, 4 boys, 10s. ....	2	—
Wheeling bricks to kiln, 4 men, 18s. ....	3	12
Setting the bricks in kiln, 4 men, 24s. ....	4	16
Burning bricks, 6 men, 27s. ....	8	2
Engine-driver, and attending machinery ....	3	—
Coals for burning bricks, 70 tons, 10s. ....	35	—
„ for steam-engine boiler, 6d. ....	5	—
Interest of outlay, wear and tear, 2s. ....	10	—
Quarterage, or rent of the field material, 2s. ....	10	—
Total for 200,000 bricks, or 10s. 3d. per 1,000.....	101	18

This price of 10s. 3d. per 1,000 would be equal to about *one-third* of the present cost of bricks.

Mr. Christy remarked that Minton's Tiles were made on exactly the same principle as Messrs. Platt's bricks.

The preceding Report is taken from the *Building News* of 3rd June, 1859.

The next extract is from the *Times* of 14th July, 1859, and occurs in the report of the Special Correspondent attending the Warwick Meeting of the Royal Agricultural Society. It relates, apparently, to a second machine patented by other parties.

"THERE is here (in the Implement Yard at the Royal Agricultural Society's Show at Warwick), a machine for making Bricks from *dry clay*, patented by Messrs. *Bradly and Craven*, of Wakefield, and exhibited by Mr. Chamberlain of Kempsey. It will be a complete surprise to those who consider that clay must be cast in winter, tempered in heap, and wrought in the pug before it can be moulded. I saw clay taken from the hill side, ground to powder, and transformed into the densest bricks possible, fit at once for the kiln, in the short space of one minute and thirty seconds. The mill is formed of a pan, in which revolve two heavy rollers, running on an ordinary cross shaft, carried by two side cheeks with slotted guides, allowing the rollers to ride over the material when the charge is excessive.

"Beyond the solid metal of this pan on which the rollers run is a grating, through which the ground clay drops to a pan below, whence it is raised by elevators to the hopper above the revolving mould table, when it is subject to enormous pressure from beneath and above to expel the air. The table is turned by a tappet wheel, and moves the length of one mould each time. This action delivers two empty moulds under the hoppers to receive clay, delivers two bricks to the attendant, and gives a powerful upward pressure to the clay received in the moulds that have just left the hoppers. The table is then stationary while the two eccentrics give the final strain upon two bricks from above. The moulding part of this machine weighs 25 tons. With six moulds, and driven by a six-horse engine, at four strokes to deliver 24 bricks per minute, it is capable of giving 330 tons pressure on the six bricks. There were dense bricks exhibited made from pure dry silica, which would, of course, require great pressure; ordinary clays require a pressure varying from 20 to 30 tons on each brick."

#### IV.—Income of London Charities in 1859.

IN March last the following statement appeared in the *City Press*, a newspaper of remarkable intelligence.

WHEN the *Times* made its noble appeal in behalf of the destitute poor, it was asserted that money was expended in sending the Gospel to the shores of Africa when it was wanted to feed the poor at home. Regarding this as the thoughtless assumption of a writer not familiar with the statistics of charitable institutions, we have since been endeavouring to collect materials for a truthful statement of the amounts severally expended at home and abroad in charitable and religious objects, and present the following table as the result. Mr. Low's excellent work on London charities might be allowed to settle the point raised by the able writer in the *Times*, but as many charities have risen since that work was compiled, and others have undergone material changes as to income and operations, we have endeavoured to obtain later and more complete information where necessary. In some instances our figures will be found to differ but little from those of Mr. Low, published six years since.

There are in London twelve Hospitals for general purposes; forty-six for special purposes; thirty-four dispensaries; giving relief to 365,956 persons every year.

92 Hospitals ( <i>Income</i> ) .....	£300,000
12 Societies for the preservation of life and health, benefiting 39,000 .....	40,000
17 Penitentiaries and reformatories .....	2,500
15 Charities for relief of the destitute, benefiting 150,000 .....	25,000
14 Charities for debtors, widows, strangers, &c. ....	30,000
4 Jewish charities, (exclusive of twenty minor Jewish charities) .....	10,000
19 Provident societies .....	9,000
27 Pension societies, benefiting 1,600 .....	58,968
33 Trade societies of a purely charitable nature, exclusive of self-supporting societies .....	113,467
126 Asylums for the aged, benefiting 3,000.....	87,630
9 Charities for deaf, dumb, and blind .....	25,000
21 Educational societies .....	72,247
13 Educational asylums, exclusive of schools supported by Government, 1,777 persons .....	45,465
60 Home missions, many of which extend their operations beyond the metropolis.....	400,000
5 Miscellaneous, not admitting classification .....	3,252
7 Church of England Foreign Missions .....	248,533
7 Dissenting Foreign Missions.....	211,135
	<hr/> £1,682,197

The above represent a total Yearly Income of 1,678,945*l*. We add five other societies included by Mr. Low in his summary, as not being susceptible of classification, and we have an income of 1,682,197*l*. If we separate the societies of a purely Domestic character from those whose operations are wholly or in part conducted in foreign lands, the result will be as follows:—

Home Charities.....	£1,222,529
Foreign Missions .....	459,668

The amount spent in Foreign Missions, therefore, is just one-third of that devoted to the relief, instruction, and reformation of the poor, the ignorant, the unfortunate, and the vicious in London alone; showing how wide may be the discrepancy between generalities and particulars.

#### V.—Emigration in 1858, and from 1843 to 1858.

ALTHOUGH the Emigration movement greatly abated in intensity in 1858, the falling off was mainly in the direction of the United States. The total Emigration for the year was 113,972 (9,704 to the North American Colonies, 59,716 to the United States, 39,295 to Australia and New Zealand, and 5,257 to other places), against—

212,875 in 1857	329,937 in 1853	299,498 in 1849	93,501 in 1845
176,551 „ 1856	368,764 „ 1852	248,089 „ 1848	70,686 „ 1844
176,807 „ 1855	335,966 „ 1851	258,270 „ 1847	
223,429 „ 1854	290,849 „ 1850	129,851 „ 1846	57,512 „ 1843



The following table, which exhibits the route taken by every 100 Emigrants since 1843, shows that Australia has virtually superseded the Canadas as an Emigration field:—

Year.	North American Colonies.	United States.	Australia and New Zealand.	Other Places.	Year.	North American Colonies.	United States.	Australia and New Zealand.	Other Places.
1843....	41	49	7	3	1851....	13	80	6	1
'44....	32	62	3	3	'52....	9	66	24	1
'45....	34	62	1	3	1853....	10	70	19	1
'46....	34	63	2	1	'54....	14	60	25	1
'47....	42	55	2	1	'55....	10	59	29	2
1848....	13	76	9	2	'56....	9	63	26	2
'49....	14	73	11	2	'57....	10	60	29	1
'50....	12	79	6	3	'58....	5	52	34	5

The collapse in *Canadian* Emigration is the more remarkable, as during the last few years strenuous efforts have been made to advance the Canadas in popular estimation. Another curious feature in the foregoing analysis is, that not even the gold discoveries in Australia have prevented the United States from obtaining the lion's share of the surplus population of these islands, a circumstance, no doubt, to be explained by the tendency of the Irish to emigrate in whole families to the Great Republic, and the readiness with which the unoccupied land in the States has been rendered available for purchase and cultivation.

#### VI.—*British Herring Fisheries, 1858.*

THE Report of the Commissioners of British Fisheries for the year 1858 has been published. The herring fishery for the year 1858 proved about an average catch. The quantity of fish *cured* was 636,124 barrels, being upwards of 55,000 barrels more than were cured in 1857. The quantity *branded* was 233,374 barrels, or above one-third of the total cured; the quantity *exported* was 350,201 barrels, whereof 269,819 barrels were sent to the Continent, 79,054 barrels to Ireland, and 1,331 barrels to the Colonies, showing, in comparison with the previous year, a decrease of 37,546 barrels in the quantity sent to the Continent, an increase of 20,520 in the quantity sent to Ireland, and a difference of only a few barrels in the quantity sent to the Colonies.

From the Fishery Statistic Accounts it appears that in the year 1858 there were 12,516 *boats*, manned by 43,072 *fishermen and boys* employed in the herring and cod and ling fisheries; and that the total estimated value of the boats, nets, and lines employed in these fisheries, during the same period, was 725,556*l.*; being an increase over the preceding year of 179 boats and 58 fishermen, and of 22,841*l.* in the value of the boats, &c.

#### VII.—*The Royal Agricultural Society of England, 1844-59.*

THE exhibition of the Royal Agricultural Society, at Warwick, in July, 1859, was the largest as regards the entries of stock and implements which the association has ever held, but the receipts from visitors' payments fell off slightly as compared with the Chester meeting. The following table exhibits the progress made by the society since 1844:—

Year.	Place of Meeting.	Receipts from Visitors.	Cattle Shown.	Implement Exhibitors.
		£		
1844	Southampton.....	2,432	716	99
'45	Shrewsbury .....	1,682	527	93
'46	Newcastle .....	2,168	775	110
'47	Northampton .....	2,473	580	142
'48	York .....	2,514	866	146
1849	Norwich .....	2,360	799	145
'50	Exeter .....	2,493	769	118
'51	Windsor.....	3,397	1,226	....
'52	Lewes .....	1,184	828	105
'53	Gloucester .....	2,734	931	128
1854	Lincoln .....	3,378	939	130
'55	Carlisle .....	3,260	1,076	121
'56	Chelmsford .....	2,988	906	151
'57	Salisbury .....	3,447	1,462	156
'58	Chester .....	6,187	1,444	197
'59	Warwick .....	5,459	1,601	246

These figures exhibit an astonishing progress during the last four or five years, and since the adoption of the free trade system. It is somewhat strange that in the face of this increasing success some of the members of the society should recommend a discontinuance of the system of country meetings, and a concentration of the society's operations in the metropolis.

#### VIII.—*The Coalwhippers of the Port of London.*

CONSIDERABLE attention has been devoted during the last few years to the condition of this class of labourers; and from the proceedings of a large meeting of them held on 9th August, 1859, at the Phoenix Tavern, Ratcliff Cross, it appears that already some good has been effected. At that meeting it was unanimously resolved, that the whole of the men who are now employed at the full price scale of 9*d.* per ton for whipping coals should have printed cards issued to them. It was stated by one of the speakers that the men were now in a better condition than they had been for many years, through the recent regulations that had been passed at their meeting place, before a number of gentlemen of celebrity, who had kindly interested themselves in their behalf. The men were formerly divided into two classes, namely, those who worked through the medium of the model office, and those who worked outside. Latterly, they are all united, and have formed themselves into a union, which is managed by a committee duly appointed.

IX.—*Post Office Packet Service, 1858-9.*

The following is a classified Abstract of the Votes in 1858 and '59:—

Route.	Company.	1859.	1858.
(I.)—BRITISH SEAS.			
Liverpool and Isle of Man .....	.....	£ 850	£ 850
Holyhead and Kingstown .....	City of Dublin	25,000	25,000
Aberdeen and Lerwick .....	.....	1,200	1,200
Thurso and Stromness .....	.....	1,300	1,300
Southampton and Channel Islands .....	So.-Wn. Railway	4,000	4,000
Dover and Calais, and Dover and Ostend....	Dover Mail	15,500	15,500
		47,850	47,850
(II.)—PENINSULAR.			
Southampton, Vigo, Oporto, Lisbon, } Cadiz, Gibraltar .....	Peninsular and } Oriental	20,500	20,500
(III.)—AMERICA, NORTH AND SOUTH.			
Liverpool and Halifax, and Boston, Liver- pool and New York, and New York and Nassau .....	Cunard	176,340	172,810
Halifax, Bermuda, and St. Thomas' and Halifax, and St. John's, Newfoundland }	Ditto	14,700	14,700
Southampton and West Indies .....	Royal Mail	238,500	244,000
Ditto and Brazils and Buenos Ayres .....	Ditto	30,000	30,000
Panama, Callao, and Valparaiso .....	Pacific	25,000	25,000
		484,540	486,540
(IV.)—AFRICAN LINES.			
England and West Coast of Africa .....	African	30,000	20,500
Ditto and Cape of Good Hope .....	....	32,400	33,000
		62,400	53,500
(V.)—AUSTRALIA.			
Australia and New Zealand .....	.....	14,000	....
Southampton and Sydney, and Branch from Marseilles to Alexandria .....	Peninsular and } Oriental	180,000	185,000
		194,000	185,000
(VI.)—INDIA.			
England and Alexandria, Ceylon and Calcutta, with Branch from Marseilles to Malta .....	Ditto	124,414	139,414
Aden and Bombay .....	Ditto	21,675	24,700
Additional Mails to India by alternate weekly communication to Bombay and Calcutta .....	Ditto	22,000	20,000
		168,089	184,114
(VII.)—EXPENSE OF STATIONS.			
Packet Establishments, Dover, Holyhead, } Liverpool, and Southampton .....	....	4,862	5,629
Allowance, if Government Agents on board the Contract Packets .....	....	9,355	9,355
		14,217	14,984
General Total .....	....	991,596	992,488

## ABSTRACT OF THE REGISTRAR-GENERAL'S RETURN

OF THE

MARRIAGES IN ENGLAND AND WALES DURING THE FIRST QUARTER  
(JANUARY—MARCH), AND OF THE BIRTHS AND DEATHS DURING  
THE SECOND QUARTER (APRIL—JUNE), OF 1859.

THIS Return comprises the BIRTHS and DEATHS registered by 2,197 Registrars in all the districts of England during the Spring Quarter that ended on June 30th, 1859; and the MARRIAGES in 12,359 churches or chapels, about 4,100 registered places of worship unconnected with the Established Church, and 631 Superintendent Registrars' offices, in the quarter that ended on March 31st, 1859.

The returns are altogether of a satisfactory character; the mortality is below the average, the births are more numerous than usual, and the people, taking a cheerful view of their prospects in life, have married in unusual numbers.

MARRIAGES.—70,858 persons married in the first three months of the present year; and the marriages in the quarter were at the rate of 1.462 per cent. per annum. The average rate of the corresponding quarter was 1.403; and in the winter of 1858 it was only 1.251. 10,790 persons married who would have remained unmarried had the marriages amounted to the same number as in the previous winter quarter.

The increase of marriages took place in every division, and was most considerable in the manufacturing districts. In Lancashire 8,310 persons married in the winter quarter of the past year, 10,692 in the winter quarter of the present year.

ENGLAND:—MARRIAGES, BIRTHS, and DEATHS, returned in the Years  
1853-59, and in the QUARTERS of those Years.

Calendar YEARS, 1853-59:—Numbers.

Years .....	'59.	'58.	'57.	'56.	'55.	'54.	'53.
Marriages No. ....	....	156,297	159,097	159,337	152,113	159,727	164,520
Births..... „	....	655,627	663,071	657,453	635,043	634,405	612,391
Deaths..... „	....	450,018	419,815	390,506	425,703	437,905	421,097

QUARTERS of each Calendar Year 1853-59.

(I.) MARRIAGES:—Numbers.

Qrs. ended last day of	'59.	'58.	'57.	'56.	'55.	'54.	'53.
March .....No.	35,429	30,034	33,321	33,427	29,186	33,234	35,149
June ..... „	....	39,909	41,267	38,820	38,549	40,518	40,446
Septmbr..... „	....	38,628	38,669	39,089	37,308	38,182	39,899
Decmbr. .... „	....	47,726	45,840	48,001	47,070	47,793	49,026

## QUARTERS of each Calendar Year, 1853-59.

## (II.) BIRTHS:—Numbers.

Qrs. ended last day of	'59.	'58.	'57.	'56.	'55.	'54.	'53.
March .....No.	175,429	171,001	170,430	169,250	166,225	160,785	161,729
June ..... "	175,727	169,170	170,444	173,263	165,277	172,457	158,697
Septmbr. .... "	....	157,449	161,181	157,462	154,700	154,724	147,602
Decmbr. .... "	....	158,007	161,106	157,478	148,841	146,439	144,363

## (III.) DEATHS:—Numbers.

Qrs. ended last day of	'59.	'58.	'57.	'56.	'55.	'54.	'53.
March .....No.	121,682	125,902	108,665	103,014	134,542	111,843	118,119
June ..... "	105,778	107,193	100,046	100,099	106,493	102,586	107,647
Septmbr. .... "	....	98,260	100,528	91,155	87,646	113,843	92,201
Decmbr. .... "	....	118,663	110,576	96,238	97,022	109,633	103,130

BIRTHS.—175,727 Births were registered in the three months that ended on June 30th; and the rate of births was 3·577 per cent. per annum. This is somewhat above the average rate.

INCREASE OF POPULATION.—As the Births amounted to 175,727, and the Deaths to 105,778, the natural increase of the population of England and Wales was 69,949; or, on an average, 769 daily.

The natural increase of population was unusually great; and in the United Kingdom probably exceeded 1,153 daily.

42,939 Emigrants, or 472 daily, sailed from the ports of the United Kingdom, at which there are Emigration Officers; and 10,332 of the number, or after correcting for those undistinguished, probably 11,387 were of English origin. 4,390 sailed to the Australian colonies, 385 to the North American colonies, 5,707 to the United States, and 905 to other places.

## ENGLAND:—Annual Rate Per Cent. of PERSONS MARRIED, BIRTHS, and DEATHS, during the YEARS 1853-59, and the QUARTERS of those Years.

## Calendar YEARS, 1853-59:—General Per Centage Results.

YEARS .....	'59.	Mean '49-'58.	'58.	'57.	'56.	'55.	'54.	'53.
Estmd. Popln. of England in thousands in middle of Year.....	19,745	....	19,523	19,305	19,045	18,787	18,619	18,403
Persons Married Per cent.	....	1·684	1·602	1·648	1·674	1·620	1·716	1·788
Births .... "	....	3·385	3·358	3·435	3·452	3·380	3·407	3·328
Deaths .... "	....	2·246	2·305	2·175	2·050	2·266	2·352	2·288

## QUARTERS of each Calendar Year, 1853-59.

## (I.) PERSONS MARRIED:—Per Centages.

Qrs. ended last day of	'59.	Mean '49-'58.	'58.	'57.	'56.	'55.	'54.	'53.
March....Per ct.	1·462	1·403	1·254	1·408	1·416	1·266	1·456	1·556
June..... "	....	1·698	1·642	1·714	1·638	1·648	1·750	1·766
Septmbr. "	....	1·623	1·568	1·592	1·626	1·574	1·626	1·718
Decmbr. "	....	1·996	1·932	1·876	1·990	1·978	2·030	2·106

## (II.) BIRTHS:—Per Centages.

Qrs. ended last day of	'59.	Mean '49-'58.	'58.	'57.	'56.	'55.	'54.	'53.
March....Per ct.	3·621	3·550	3·568	3·600	3·585	3·603	3·520	3·578
June .... "	3·577	3·553	3·492	3·548	3·656	3·534	3·722	3·464
Septmbr. "	....	3·246	3·195	3·303	3·275	3·261	3·294	3·177
Decmbr. "	....	3·197	3·198	3·295	3·264	3·128	3·111	3·100

## (III.) DEATHS:—Per Centages.

Qrs. ended last day of	'59.	Mean '49-'58.	'58.	'57.	'56.	'55.	'54.	'53.
March....Per ct.	2·512	2·455	2·627	2·295	2·182	2·916	2·449	2·613
June..... "	2·153	2·214	2·206	2·083	2·112	2·277	2·214	2·355
Septmbr. "	....	2·138	1·994	2·063	1·896	1·848	2·423	1·985
Decmbr. "	....	2·183	2·402	2·263	1·995	2·039	2·329	2·214

PRICES, THE WEATHER, AND PAUPERISM.—The price of Food, the state of Employment, and the Weather, influence the population to a great extent.

The average price of Wheat has risen from 40s. 8d. a quarter to 47s. 3d., which is 7 per cent. above the price of the corresponding spring quarter of the previous year. The prices of Beef and of Mutton by the carcase have gone up to 5½d. and 6d. a pound at the Leadenhall and Newgate Markets; they are 10 and 9 per cent. higher than the spring prices of the previous year. Potatoes were 97s. 6d. a ton at the Southwark Market, or nearly a halfpenny a pound; and 40 per cent. cheaper than they were in the same months of last year.

The Weather in the months of April and May was rather warmer than usual; during June the temperature was almost always high, the average daily excess having been 3° nearly. For six weeks (from April 11th to May 23rd) the wind, as is usual at this period of the year, was mostly from the N.E., travelling at the rate of nearly 100 miles daily; during the quarter the average daily horizontal movement of the air was 88 miles. The humidity of the air was of nearly the average amount in April and May; it was somewhat more humid in June. The rain-fall of the quarter was slightly above the average. It would seem, however, that the annual fall is diminishing, and it is stated that the deficiency in the last five years



is equal to the average fall of one year, viz., 25 inches. The meteorology of the different parts of the country is shown in Mr. Glaisher's Tables.

The average number of poor claiming relief, fell from 871,512 in the Spring quarter of last year to 819,560 in the Spring quarter of the present year; or pauperism declined 6 per cent.

STATE OF THE PUBLIC HEALTH.—About 105,778 persons died in the three months which ended on June 30th, for that number appears on the registers of the

*The Average Prices of CONSOLS, of WHEAT, MEAT, and POTATOES; also the Average Number of Paupers relieved on the last day of each Week; and the Mean Temperature, in each of the nine QUARTERS ending June 30th, 1859.*

Quarters ending	1 Average Price of Consols (for Money).	2 Average Price of Wheat per Quarter in England and Wales.	3 Average Prices of Meat per lb. at Leadenhall and Newgate Markets (by the Carcase), with the Mean Prices.		6 Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.	7 Pauperism. Quarterly Average of the Number of Paupers relieved on the last day of each week.		9 Mean Temperature.
			4 Beef.	5 Mutton.		In-door.	Out-door.	
1857	£	s. d.	d. d. d.	d. d. d.	s. s. s.			
30 June	93 $\frac{3}{8}$	56 9	4 $\frac{1}{4}$ —6 $\frac{1}{2}$ 5 $\frac{3}{8}$	4 $\frac{1}{4}$ —6 $\frac{3}{4}$ 5 $\frac{3}{4}$	105—150 127	119,241	732,264	53° 8
30 Sept.	90 $\frac{1}{8}$	59 11	4 $\frac{1}{4}$ —6 $\frac{1}{2}$ 5 $\frac{3}{8}$	4 $\frac{1}{2}$ —7 5 $\frac{3}{4}$	95—115 105	102,371	702,614	63° 3
31 Dec.	89 $\frac{1}{2}$	52 0	4 $\frac{1}{4}$ —6 $\frac{1}{2}$ 5 $\frac{3}{8}$	4 $\frac{1}{2}$ —7 5 $\frac{3}{4}$	130—150 140	122,942	736,814	47° 9
1858								
31 Mar.	96 $\frac{1}{8}$	46 5	4 $\frac{1}{4}$ —6 $\frac{1}{2}$ 5 $\frac{3}{4}$	4 $\frac{3}{4}$ —7 5 $\frac{7}{8}$	130—175 152	138,376	835,641	37° 8
30 June	97 $\frac{1}{8}$	44 1	4 $\frac{1}{4}$ —6 5 $\frac{1}{8}$	4 $\frac{1}{2}$ —6 $\frac{1}{2}$ 5 $\frac{1}{2}$	140—185 162	119,234	752,278	54° 3
30 Sept.	96 $\frac{1}{8}$	44 7	4 $\frac{1}{4}$ —6 $\frac{1}{2}$ 5 $\frac{1}{4}$	4 $\frac{1}{2}$ —6 $\frac{1}{2}$ 5 $\frac{1}{2}$	65—90 77	107,197	705,301	61° 0
31 Dec.	98 $\frac{1}{4}$	41 9	4—6 $\frac{1}{2}$ 5 $\frac{1}{4}$	4 $\frac{1}{4}$ —6 $\frac{1}{2}$ 5 $\frac{1}{2}$	80—95 87	115,751	710,904	43° 8
1859								
31 Mar.	95 $\frac{5}{8}$	40 8	4 $\frac{1}{4}$ —6 $\frac{3}{4}$ 5 $\frac{3}{4}$	4 $\frac{1}{4}$ —7 5 $\frac{2}{8}$	80—100 90	122,854	742,964	43° 3
30 June	92 $\frac{7}{8}$	47 3	4 $\frac{1}{4}$ —6 $\frac{1}{2}$ 5 $\frac{5}{8}$	5—7 6	85—110 97	109,150	710,410	53° 7

Col. 6 is deduced from the Weekly Tables published in the *Economist*. The average of the highest and of the lowest prices is here shown in cols. 4, 5, and 6, and not the absolute highest or lowest price quoted at any period of the quarter.

Cols. 7 and 8 are deduced from the Returns of the Poor Law Board. The Returns relate to 644 Unions, &c., comprising a population of 17,652,540 (in 1851), and do not include the paupers of parishes, &c., incorporated under Gilbert's Act, or still under the 43rd Elizabeth; Lunatic Paupers in Asylums and Vagrants relieved in the above Unions are also excluded. They amounted on January 1st, 1858, to—Insane Persons, 19,487; Vagrants, 2,265. The rest of the paupers on that day amounted to 880,280.

quarter; and the rate of mortality was 2·153 per cent. or less, by '001 than the average rate of the season. In the *Chief Towns* the mortality was at the rate of 2·238 per cent. less by '140 than the average of 2·378 per cent. In the districts of the *Country* and of the *Small Towns* the mortality was lower (2·061) than it was in the denser districts; but instead of improvement there is deterioration. Indeed the sanitary condition of the country districts around the large towns now demands strict attention.

The mortality of all England, if the same as in the 63 *Healthy districts*, would be at the rate of 17 in 1000, or exactly 81,207. These may for the present be held to be natural deaths; the excess of 21,571 over this number are undoubtedly unnatural deaths, and may be ascribed to the unfavourable sanitary conditions in which a large portion of the population still lives.

The 105,778 deaths in the quarter, although less than the usual number, imply, according to the most reliable returns of *Sickness*, that about a million and a quarter of a million of people of all ages were on an average infirm or constantly sick during the season. The quarter of a million *Sick* would be healed by effective sanitary arrangements. Thus, much labour that is now lost would be productive, and lives of great value would be saved. The whole community would acquire fresh strength and vigour. Money which is expended on real sanitary measures, such as have been carried out in Ely and a few other places, is the most profitable of all national investments; for it is an augmentation of the power and of the productive life of the population.

As at this season of the year many families leave the towns and go abroad to recruit their health, it may be here remarked that, generally, the United Kingdom is the healthiest country in Europe, and that France, Norway, Sweden, and Switzerland stand next in rank. Of the European *Watering Places* few are known to be so salubrious as those of England. They differ in health in different years through the recurrence of epidemics, from which, owing to existing sanitary defects, they are still imperfectly defended.

The mortality of some of the districts which are resorted to, it will be seen, was higher in the last three months than 20 in 1000; and of these are Bangor (24), Aberystwith (24), Whitby (26). The aggregate mortality of the three districts Ashborne, Bakewell, and Chapel-en-le-Frith, including Buxton, Matlock, and the country round, was at the rate of 23 in 1000. Of 10 districts which are resorted to for health, the mortality was at the annual rates ranging from 13 to 17 in 1000.

The Epidemics of the season chiefly to be dreaded are diphtheria, which breaks out occasionally in unexpected places; and diarrhoea of a severe form, most to be apprehended in localities with water impure and defective drainage. Of the past prevalence of these epidemics, and of others, information will be found usually in the Registrars' notes; their progress through the summer can only be learnt by personal inquiries on the spot.

Kent and Surrey in the South Eastern Division were generally healthy, and the rates of mortality were low. Lewes\* and Brighton in Sussex, still experience high rates of mortality. Southampton and all the surrounding districts have been unhealthy; small-pox, measles, whooping-cough, and scarlatina, have prevailed to an extent which must attract the attention of the local authorities. The Wantage district of Berkshire experienced a heavy rate of mortality.

The South Midland Counties are generally below the average degree of salubrity; but in several of the districts of Hertfordshire and Bedfordshire the mortality was low. Northampton, where there has recently been a strike, continued to suffer heavily at the hands of death; 317 persons died in three months out of a population of less than 34,000 in 1851; measles and small-pox prevailed. The Nene drainage has been carried out, and continued floods have not covered the valley. Wisbeach, once so unhealthy, lost only 141 persons by death out of a population

\* The Superintendent Registrar's District is in all cases referred to, except where otherwise stated.



## REMARKS ON THE WEATHER,

DURING THE QUARTER ENDING JUNE 30TH, 1859.

By JAMES GLAISHER, Esq., F.R.S., &amp;c., Sec. of the British Meteorological Society.

Till the 11th of April the air was warm, being  $7^{\circ}$  above the average. The excesses on the 6th and 7th were as large as  $16^{\circ}$  and  $17\frac{1}{2}^{\circ}$  respectively; from April 8th till May 23rd the air was for the most part cold, and the average daily defect was  $2\frac{1}{2}^{\circ}$  nearly; and from May 24th to the end of the quarter it was almost always warm; the average daily excess of temperature was  $3^{\circ}$  nearly.

Till April 11th the wind was from the S.W., passing at the rate of 170 miles daily; from April 11th to May 23rd it was mostly N.E., with a daily horizontal movement of nearly 100 miles; from May 24th till June 20th it was N.E. and S.E., and S.W. from June 21st till the end of the quarter. The average daily movement for these last 37 days was 55 miles.

The mean temperatures of April was  $0^{\circ}1$ , of May  $0^{\circ}3$ , and that of June  $2^{\circ}3$  above, their averages for the last 18 years. The high day temperatures in April were  $0^{\circ}1$  below, in May  $0^{\circ}6$  above, and in June  $2^{\circ}5$  above, their averages. The low night temperature in April were  $0^{\circ}3$  above, in May  $0^{\circ}2$  below, and in June  $2^{\circ}9$  above, their averages. Therefore both night and day temperatures in the months of April and May were very nearly those of their average values; and both these elements were high in June, and therefore the days and nights in this month were warm.

The mean temperature of May exceeded that in April at Guernsey by  $2\frac{1}{4}^{\circ}$ , which was the smallest value; at Southern and Midland stations it was from  $5^{\circ}$  to  $7^{\circ}$ ; at Northern stations the excess was from  $7^{\circ}$  to  $10^{\circ}$ ; and at Stonyhurst it was  $11\frac{1}{2}^{\circ}$ , which was the largest increase.

The mean temperature of June exceeded that of May by quantities varying from  $5^{\circ}$  to  $8^{\circ}$  at most stations; but by somewhat less amounts at extreme Northern stations than elsewhere.

The mean Temperature of the dew-point was below its average value in April, and above it in May and June. The mean degree of humidity of the air in April and May was very nearly of its average values, and was in excess in June. The air, therefore, in June, was somewhat humid.

The reading of the Barometer was below the average in April and June, and somewhat above it in May. It increased from April to May at all places; by about 0.1 inch at Guernsey, increasing to 0.2 inch in the Midland Counties, and to nearly 0.3 inch at Northern stations. It slightly increased from May to June at extreme Southern stations, and diminished in the Mid-Counties, gradually increasing in amount to 0.1 inch at Northern stations. The results at Apsley and Harwarden are exceptional, both places indicating an increase.

The fall of Rain in the quarter was nearly that of its average. The deficiency from the beginning of the year is  $1\frac{1}{4}$  inch. The deficiency in the years 1851, 1855, 1856, 1857, and 1858, amounts to the average fall of one year; viz., 25 inches.

From a careful examination of the fall of rain from the year 1815, it would seem that the annual fall is becoming smaller, and that there is but little probability that this large deficiency will be made up by excesses in future years.

The mean temperature of the air at Greenwich for the three months ending May, constituting the three Spring months, was  $48^{\circ}7$ , being  $2^{\circ}3$  above the average of 88 years.

Snow fell on April 1st, 9th, 11th, 12th, 13th, 14th, 15th, (very general), 16th, (general), 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 25th and 27th at different stations. Also on the 4th of May at Allenheads.

Solar Halos were seen on 18 days in April, on 10 days in May, and on 8 days in June.

Lunar Halos were seen on 6 nights in April, 5 nights in May, and 2 nights in June.

Auroræ were seen on April 1st, 21st, 22nd, 28th; and on May 1st and 5th.

Temperature of											Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
1859.		Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.				
Months.	Mean.	Diff. from Average of 88 Years.	Diff. from Average of 18 Years.	Mean.	Diff. from Average of 18 Years.	Mean.	Diff. from Average of 18 Years.	Mean.	Diff. from Average of 18 Years.		Mean.	Diff. from Average of 18 Years.	Mean.	Diff. from Average of 18 Years.
Aprl.....	46.6	+0.8	+0.1	43.4	-0.1	38.9	-1.2	17.8	-0.4	49.4	In. .237	In. .012	Gr. 2.8	Gr. -0.1
May.....	53.1	+0.6	+0.3	49.6	+0.5	45.9	+0.5	21.0	+0.8	54.0	.312	+0.013	3.6	+0.2
June.....	61.4	+3.3	+2.3	57.3	+2.5	53.8	+3.0	20.9	-0.4	65.0	.415	+0.043	4.6	+0.5
Mean.....	53.7	+1.6	+0.9	50.1	+1.0	46.2	+0.8	19.9	0.0	56.1	.321	+0.015	3.7	+0.2

1859.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal Movement of the Air.	Reading of Thermometer on Grass.			
Months.	Mean.	Diff. from Average of 18 Years.	Mean.	Diff. from Average of 18 Years.	Mean.	Diff. from Average of 18 Years.	Amnt.	Diff. from Average of 44 Years.	At or below 30°.		Between 30° and 40°.	Above 40°.	Lowest Reading at Night.	Highest Reading at Night.
April.....	78	- 1	In. 29.614	-1.25	542	- 2	In. 2.2	+0.4	10	9	13	18.0	48.0	
May.....	77	+ 1	29.789	+0.28	538	0	2.4	+0.3	3	14	14	26.0	50.5	
June.....	77	+ 4	29.766	-0.30	523	- 3	1.4	-0.5	0	0	30	40.0	55.7	
Mean.....	77.3	+ 1	29.723	-0.15	536	- 2	Sum 6.0	Sum +0.2	Mean 13	Sum 23	Sum 57	Lowest 18.0	Highest 55.7	

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.



ENGLAND.—Meteorological Table, Quarter ending 30th June, 1859.

NAMES OF STATIONS.	Mean Pressure of Dry Air reduced to the Level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Degree of Humidity.	WIND.				Mean Amount of Cloud.	RAIN.	
									Mean estimated Strength.	Relative Proportion of				Number of Days on which it fell.	Amount collected.
										N.	E.	S.			
Guernsey .....	29.668	73.0	36.0	37.0	25.3	9.7	51.9	81	1.9	31	22	15	23	43	8.4
Helston .....	29.572	79.0	32.0	47.0	38.3	14.1	55.0	83	2.1	24	28	15	24	...	...
Exeter .....	29.595	80.3	28.2	52.1	48.6	17.3	53.8	73	1.4	32	24	16	19	39	5.6
Ventnor .....	29.544	72.0	32.0	40.0	30.0	11.3	54.6	85	...	11	34	16	30	22	5.7
Worthing .....	29.524	74.9	31.5	43.4	30.1	13.5	56.8	78	2.1	29	23	22	17	33	6.6
Barnstable .....	29.567	80.0	30.0	50.0	40.7	18.0	55.0	78	1.6	26	28	14	23	37	6.2
Clifton .....	29.515	78.8	25.4	53.4	39.5	18.1	52.5	78	0.5	25	34	9	23	40	7.3
Royal Observatory .....	29.570	81.3	25.3	56.0	45.1	19.9	53.7	77	...	33	24	18	16	30	6.0
St. Thomas's Hos. ....	29.536	82.3	31.2	51.1	37.2	16.0	54.7	75	...	21	34	8	28	41	6.7
Rose Hill .....	29.562	78.6	26.2	52.4	42.1	19.7	52.8	79	1.9	22	34	14	21	42	7.3
Hartwell Rectory .....	29.535	78.2	23.5	54.7	44.0	18.8	53.2	80	0.9	21	34	14	22	37	4.4
Royston .....	29.618	84.3	24.3	60.0	47.3	21.4	53.1	76	...	44	15	11	20	48	5.7
Lampeter .....	29.562	85.8	23.6	62.2	50.9	23.3	52.1	84	1.9	21	27	17	26	33	6.0
Norwich .....	29.565	82.0	25.0	57.0	44.7	17.2	52.7	82	1.5	30	19	20	22	26	6.1
Grantham .....	29.616	78.3	25.7	52.6	43.6	15.3	51.2	77	0.2	24	23	14	20	43	6.7
Holkham .....	29.616	82.0	24.4	57.6	46.9	13.7	49.7	83	1.1	36	27	8	20	37	7.3
Nottingham .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Liverpool .....	29.652	75.5	35.1	40.4	31.2	12.5	52.6	79	1.1	...	...	...	...	32	5.6
Wakefield .....	29.626	82.3	22.3	60.0	52.6	20.6	51.8	76	3.1	29	25	10	27	39	8.0
Stonyhurst .....	29.576	76.2	25.4	50.8	41.9	17.2	50.6	82	0.9	23	31	13	24	42	8.2
Scarborough .....	29.550	76.0	27.3	48.7	33.2	10.6	49.2	88	...	20	35	18	18	17	3.9
Isle of Man .....	29.619	77.9	28.8	49.1	35.5	16.4	50.4	84	1.4	18	31	15	27	29	4.9
North Shields .....	29.638	75.2	26.2	49.0	37.2	14.8	47.7	88	1.8	29	28	18	16	41	6.6
St. Paul's Parage .....	29.692	79.2	24.1	55.1	42.6	18.9	50.8	76	1.6	8	44	6	33	23	5.7

POOR RELIEF.—YEARS ended Lady-day, 1856-7-8, England and Wales.  
—RECEIPTS and EXPENDITURE.

THE following Tables are compiled from the elaborate series of Returns (marked D) contained in Parl. Paper, 98/59, in continuation of former periodical returns relating to the Poor Law issued by the Statistical Department of the Poor Law Board. The (D) series relates chiefly to the Financial details of the Receipts and Expenditure of Poor Rate in the Year 1857-8.

(1.)—Number of PARISHES in England and Wales maintaining, or liable to maintain, their own Poor, in the Parochial Year ended Lady-day, 1858.

Acting under the Authority of	Unions.		Single Parishes.
	Number.	Parishes in Unions.	
Poor Law Amendment Act .....	585	13,964	20
Local Acts (various) .....	21	320	15
Gilberts' Act (22 Geo. III, c. 83) .....	12	200	2
43rd Elizabeth, c. 2 .....	...	...	94
	618	14,484	131

(2.)—Results as regards England and Wales in relation to the Poor Rate Return.

	No. of Parishes.	Population in 1851.
Parishes returned .....	14,608	17,901,000
Parishes unreturned .....	6	4,000
Extra-parochial places .....	...	22,000
	14,614	17,927,000

The "Extra-parochial" places were not, heretofore, liable to maintain their own poor; but they are now becoming Parishes, under the operation of 20 Vict., c. 19 (Extra-parochial Places Act). The ultimate addition, however, which this will make to the existing Parishes, is not at present known.

(3.)—NET ANNUAL VALUE of Property Assessed to the Poor Rate in the three Parochial Years, 1840-41, 1846-7, 1849-50.

Years.	Net Annual Value.	Rate in the £ of Levy.	Amount Levied.
	£	s. d.	£
1840-41 .....	62,540,000	2 0.4	6,352,000
1846-47 .....	67,320,000	2 0.8	6,965,000
1849-50 .....	67,700,000	2 1.8	7,270,000

(4.)—*Poor Relief, 1856-7-8.—Collection and Expenditure.*

1	2	3	4	5	6	7	8	9	10
Years ended at Lady-day.	Total Receipts.	Expenditure.					Rate per Head.		Average Price of Wheat per Imperial Quarter.
		In Relief of the Poor.				Expended for all Other Purposes	Total Levy.	Of which was applied to Relief to the Poor.	
		In-Maintenance.	Out-Relief.	Workhouse Loans Repaid, Interest, Salaries, and other Expenses.	Total of 3, 4, 5.				
	£	£	£	£	£	£	s. d.	s. d.	s. d.
1856 ..	8,496,	1,140,	3,239,	1,625,	6,004,	2,208,	8 7½	6 3¾	75 4
1857...	8,441,	1,088,	3,152,	1,658,	5,899,	2,440,	8 5½	6 1¾	65 3
1858...	8,492,	1,068,	3,117,	1,693,	5,878,	2,571,	8 5½	6 -¾	53 9½

(5.)—*Poor Relief.—Year ended Lady-day, 1858.—England and Wales.*  
—*Details of EXPENDITURE in Leading Classes.*

1	2	3	4	5	6	7	8	9
Territorial Divisions (England and Wales).	Estimated Population, 1858.	Rate per Head of Population Expended in Relief to the Poor.	Proportion per Cent. to Total Relief of					
			(a)	(b)	(c)	(d)	(e)	(f)
			In-Maintenance.	Out-Relief.	Maintenance of Lunatics in Asylums.	Workhouse Loans and Interest.	Salaries and Rations of Officers.	Other Expenses of Relief.
	No.	s. d.	Pr. cent.	Pr. cent.	Pr. cent.	Pr. cent.	Pr. cent.	Pr. cent.
1. The Metropolis .....	2,672,000	6 5¼	34.2	26.8	10.3	5.8	10.1	12.8
2. South-Eastern .....	1,729,000	8 4.1	21.5	48.9	6.4	2.6	12.4	8.1
3. South-Midland .....	1,295,000	8 8.8	15.1	59.6	6.5	1.5	11.1	6.2
4. Eastern.....	1,162,000	8 8.8	15.4	58.3	5.2	2.3	12.1	6.8
5. South-Western.....	1,838,000	7 1.2	12.3	63.0	5.8	2.9	11.2	4.9
6. West Midland .....	2,291,000	5 1.1	16.5	52.9	8.1	3.1	12.5	6.9
7. North Midland.....	1,288,000	5 7.9	14.4	60.6	6.7	2.3	10.4	5.5
8. North-Western .....	2,813,000	4 3.3	18.3	46.6	6.2	6.4	11.0	11.6
9. York.....	1,932,000	4 3.3	14.0	61.8	5.9	3.0	8.9	6.4
10. Northern .....	1,071,000	4 5.4	14.0	61.0	5.1	3.4	10.1	6.3
11. Welsh .....	1,270,000	6 2.3	7.0	74.8	4.5	2.2	7.8	3.8
England and Wales	19,361,000	6 0.9	18.2	53.0	6.8	3.4	10.9	7.7

The amount expended under the head of *Medical Relief*, which comprises the salaries of Medical Officers, the extra fees paid to them under the General Consolidated Order, and the cost of medical and surgical appliances and drugs, was 231,872*l.* in 1855-6; 231,623*l.* in 1856-7; and 230,597*l.* in 1857-8. Twenty-six Unions and single Parishes, chiefly Metropolitan, are combined into *School Districts*. The contribution which each Union makes to the Treasurer of its District, are included in the other items of relief, and, as such, are entered in the proper columns of the Poor Rate Return. The total Receipts of the School Districts for the year ended Lady-day, 1858, mounted to 62,000*l.*; and their total Expenditure during the same period was 56,700*l.*

Trade of United Kingdom, 1857-8.—*Distribution of Exports from, and Imports into, the 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 of Imports.*

Exports to, and Imports from, the following Foreign Countries, &c.	Whole of Year.			
	Exports to		Imports from	
	1858.	'57.	1858.	'57.
	£	£	£	£
<b>I.—FOREIGN COUNTRIES:</b>				
Northern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland	4,415,000	4,987,000	16,317,000	not given
Central Europe; viz., Prussia, Mecklenburg, Oldenburg, Hanover, the Hanse Towns, Holland, and Belgium	20,023,	21,210,	17,879,	....
Western Europe; viz., France, Portugal (with the Azores, Madeira, and Cape Verde Islands), and Spain (with Gibraltar and Canaries)	9,457,	10,575,	17,525,	....
Southern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	6,408,	5,590,	4,099,	....
Levant; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	7,179,	5,911,	9,786,	....
Northern Africa; viz., Tripoli, Tunis, Algeria, and Morocco	109,	171,	329,	....
Western Africa	691,	787,	1,572,	....
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, and Bourbon ..	52,	45,	117,	....
Indian Seas, Siam, Singapore, Sumatra, Java, and Philippines	2,336,	2,178,	1,680,	....
China, including Hong Kong	2,877,	2,450,	7,043,	....
South Sea Islands	67,	92,	6,	....
United States, including California	14,511,	18,986,	34,281,	....
Mexico and Central America	808,	881,	415,	....
Indian West Indies	2,590,	3,079,	4,064,	....
South America, (Northern,) New Granada, Venezuela, and Ecuador	849,	952,	465,	....
" (Atlantic,) Brazil, Uruguay, and Buenos Ayres	5,508,	7,345,	3,971,	....
" (Pacific,) Peru, Bolivia, Chili, and Patagonia	2,277,	2,692,	6,838,	....
Whale Fisheries; Grnld., Davis's Straits, Southn. Whale Fishery, Falkland Islands....	....	4,	234,	....
<b>Total.—Foreign Countries</b>	<b>80,157,000</b>	<b>87,935,000</b>	<b>126,621,000</b>	<b>....</b>
<b>II.—BRITISH POSSESSIONS:</b>				
British India and Ceylon	17,323,	12,183,	16,662,	....
Australian Colonies.—New S. Wales & Victoria	8,339,	9,780,	4,004,	....
" South Australia, West Australia, Tasmania, and New Zealand	2,125,	1,852,	1,252,	....
British North America	3,159,	4,329,	4,654,	....
" W. Indies with Btsh. Guiana & Honduras	2,390,	2,506,	6,672,	....
Cape and Natal	1,703,	1,861,	1,714,	....
St. W. Co. of Af., with St. Helena & Ascension	305,	413,	270,	....
Channel Islands	508,	540,	442,	....
Mauritius	602,	663,	1,503,	....
<b>Total.—British Possessions</b>	<b>36,454,000</b>	<b>34,127,000</b>	<b>37,173,000</b>	<b>....</b>
<b>General Total</b>	<b>£ 116,611,000</b>	<b>122,062,000</b>	<b>163,794,000</b>	<b>....</b>

IMPORTS.—(United Kingdom.)—First Five Months (Jan.—May)  
1859-8-7.—Computed Real Value of Articles of Foreign and Colonial  
Merchandise Imported into the United Kingdom.

(First Five Months.) FOREIGN ARTICLES IMPORTED.		1859.	1858.	1857.
		£	£	£
RAW MATLS.—Textile.	Cotton Wool ..	12,044,000	13,173,000	13,369,000
	Wool (Sheep's) ..	3,063,	2,479,	3,299,
	Silk .....	4,568,	2,279,	6,226,
	Flax .....	881,	445,	719,
	Hemp .....	567,	282,	360,
	Indigo .....	707,	490,	695,
		21,830,000	19,148,000	24,668,000
" " Various.	Hides .....	747,000	540,000	1,304,000
	Oils .....	939,	979,	1,016,
	Metals .....	1,151,	1,119,	1,142,
	Tallow .....	330,	466,	683,
	Timber .....	1,096,	638,	1,157,
		4,263,000	3,742,000	5,302,000
" " Agricltl.	Guano .....	339,000	1,930,000	504,000
	Seeds .....	1,011,	560,	638,
		1,350,000	2,490,000	1,142,000
TROPICAL, &C., PRODUCE.	Tea .....	2,235,000	1,905,000	2,313,000
	Coffee .....	419,	524,	390,
	Sugar & Molasses ..	3,900,	4,108,	5,112,
	Tobacco .....	277,	407,	583,
	Rice .....	147,	595,	417,
	Fruits .....	140,	140,	356,
	Wine .....	841,	729,	1,526,
	Spirits .....	709,	389,	1,150,
		8,668,000	8,797,000	11,858,000
FOOD .....	Grain and Meal ..	6,752,000	7,879,000	6,798,000
	Provisions .....	1,155,	1,330,	1,850,
		7,907,000	9,209,000	8,648,000
Remainder of Enumerated Articles .....		1,138,000	1,042,000	1,508,000
TOTAL ENUMERATED IMPORTS .....		45,156,000	44,428,000	53,126,000
Add for UNENUMERATED IMPORTS (say) ..		11,289,	11,107,	13,282,
TOTAL IMPORTS .....		56,445,000	55,535,000	66,408,000

EXPORTS.—(United Kingdom.)—First Six Months (Jan.—June)  
1859-8-7.—Declared Real Value of Articles of British and Irish  
Produce and Manufactures Exported from United Kingdom.

(First Six Months.) BRITISH PRODUCE, &C., EXPORTED.		1859.	1858.	1857.
		£	£	£
MANFRS.—Textile.	Cotton Manufactures ..	18,942,000	15,385,000	15,373,000
	„ Yarn .....	4,370,	4,478,	4,004,
	Woollen Manufactures ..	5,861,	4,148,	5,531,
	„ Yarn .....	1,133,	1,132,	1,323,
	Silk Manufactures ..	1,022,	768,	1,457,
	„ Yarn .....	97,	80,	183,
	Linen Manufactures ..	2,257,	1,922,	2,390,
	„ Yarn .....	787,	761,	836,
		34,469,000	28,674,000	31,097,000
" Sewed.	Apparel .....	1,013,000	851,000	948,000
	Haberdy. and Millnry ..	2,158,	1,557,	2,055,
		3,171,000	2,408,000	3,003,000
METALS .....	Hardware and Cutlery ..	1,840,000	1,502,000	1,901,000
	Machinery .....	1,487,	1,791,	1,680,
	Iron .....	6,331,	5,393,	7,114,
	Copper and Brass .....	1,197,	1,327,	1,355,
	Lead and Tin .....	1,355,	1,040,	1,361,
	Coals and Culm .....	1,600,	1,522,	1,486,
		13,810,000	12,578,000	14,897,000
Ceramic Manufcts. Earthenware and Glass ..		915,000	830,000	1,093,000
Indigenous Mnfrs.	Beer and Ale .....	1,295,000	1,093,000	872,000
	Butter .....	319,	221,	275,
	Cheese .....	58,	36,	59,
	Candles .....	75,	70,	151,
	Salt .....	116,	143,	190,
	Spirits .....	114,	97,	490,
	Soda .....	517,	347,	375,
		2,494,000	2,007,000	2,412,000
Various Manufcts.	Books, Printed .....	215,000	183,000	206,000
	Furniture .....	106,	130,	131,
	Leather Manufactures ..	898,	932,	1,133,
	Soap .....	92,	98,	131,
	Plate and Watches ..	235,	219,	255,
	Stationery .....	393,	360,	358,
		1,939,000	1,922,000	2,214,000
Remainder of Enumerated Articles .....		1,546,000	1,308,000	1,630,000
Unenumerated Articles .....		4,659,	3,741,	4,480,
TOTAL EXPORTS .....		63,003,000	53,468,000	60,826,000



SHIPPING.—FOREIGN TRADE.—(United Kingdom.)—First Six Months (Jan.—June), 1859-8-7.—Vessels Entered and Cleared with Cargoes, including repeated Voyages, but excluding Government Transports.

(First Six Months.)	1859.			1858.		1857.	
	Vessels.	Total Tonnage	Average Tonnage	Vessels.	Total Tonnage.	Vessels.	Total Tonnage.
ENTERED:—							
Vessels belonging to—	No.	Tons.	Tons.	No.	Tons.	No.	Tons.
United Kingdom and Dependencies .....	8,505	2,287,000	269	8,312	2,204,000	7,556	2,147,000
Russia .....	129	38,	292	51	14,	42	9,
Sweden .....	333	56,	169	300	48,	180	31,
Norway .....	892	193,	215	791	156,	722	133,
Denmark .....	1,111	108,	97	1,149	111,	1,208	113,
Prussia and other German States .....	1,417	314,	221	1,315	286,	1,628	282,
Holland and Belgium..	760	107,	140	562	86,	721	119,
France .....	1,466	120,	82	1,405	117,	466	35,
Spain and Portugal ...	169	41,	240	211	44,	171	36,
Italy and other European States .....	262	83,	315	299	68,	87	26,
United States .....	506	514,	1,016	640	610,	583	589,
Other States, America, Asia, and Africa ....	7	2,	274	11	4,	14	5,
Totals Entered	15,557	3,863,000	248	15,046	3,768,000	13,378	3,525,000
CLEARED:—							
United Kingdom and Dependencies .....	12,110	3,142,000	259	11,491	2,925,000	12,269	3,073,000
Russia .....	155	48,	312	84	29,	60	16,
Sweden .....	361	68,	189	337	68,	259	58,
Norway .....	886	185,	208	573	117,	795	169,
Denmark .....	1,248	125,	100	1,200	121,	1,382	141,
Prussia and other German States .....	2,070	408,	197	1,918	338,	1,974	335,
Holland and Belgium..	984	153,	155	985	168,	1,057	201,
France .....	1,752	191,	108	2,140	224,	1,723	189,
Spain and Portugal ...	167	39,	230	198	43,	182	39,
Italy and other European States .....	388	119,	306	486	148,	338	110,
United States .....	490	478,	975	605	575,	641	637,
Other States, America, Asia, and Africa ....	11	4,	342	8	3,	9	3,
Totals Cleared	20,622	4,960,000	240	20,025	4,759,000	20,689	4,971,000

GOLD AND SILVER BULLION AND SPECIE.—IMPORTED AND EXPORTED.—(United Kingdom.)—Computed Real Value for the First Six Months Jan.—June), 1859-8.

(First Six Months.)	1859.			1858.		
	Gold.	Silver.	TOTAL.	Gold.	Silver.	TOTAL.
IMPORTED FROM:—	£	£	£	£	£	£
These Towns, Holland, and Belgium. }	338,000	2,211,000	2,549,000	1,112,000	385,000	1,497,000
France .....	814,	4,093,	4,907,	460,	1,250,	1,710,
Portugal, Spain, and Gibraltar .....	36,	97,	133,	166,	380,	546,
India, Turkey, and Egypt .....	299,	7,	306,	735,	10,	745,
West Coast of Africa ...	44,	2,	46,	58,	5,	63,
China .....	....	....	....	35,	86,	121,
Australia .....	3,973,	....	3,973,	4,372,	....	4,372,
South America and West Indies .....	1,147,	1,395,	2,542,	2,383,	1,543,	3,926,
United States .....	3,882,	411,	4,293,	2,826,	96,	2,922,
Other Countries .....	1,198,	11,	1,209,	241,	27,	268,
Totals Imported ..	11,731,000	8,227,000	19,958,000	12,388,000	3,782,000	16,170,000
EXPORTED TO:—						
These Towns, Holland, and Belgium. }	682,000	716,000	1,398,000	212,000	846,000	1,058,000
France .....	8,301,	207,	8,508,	5,620,	207,	5,827,
Portugal, Spain, and Gibraltar .....	149,	....	149,	66,	....	66,
India and China (via Egypt) .....	125,	8,832,	8,957,	57,	3,112,	3,169,
South Africa .....	2,	5,	7,	65,	3,	68,
Mauritius .....	....	....	....	107,	26,	133,
Dutch West Indies ...	137,	6,	143,	10,	68,	78,
United States .....	10,	3,	13,	135,	....	135,
Brazil .....	64,	60,	124,	134,	57,	191,
Other Countries ..	43,	30,	73,	8,	8,	16,
Totals Exported ..	9,513,000	9,859,000	19,372,000	6,414,000	4,327,000	10,741,000
Excess of Imports .....	2,218,000	....	586,000	5,974,000	....	5,429,000
" Exports .....	....	1,632,000	....	....	545,000	....

## REVENUE.—QUARTER ENDED 30TH JUNE, 1859.

*An Abstract of the Net Produce of the REVENUE of the United Kingdom in the YEARS and QUARTERS ended on the 30th June, 1859 and 1858.*

YEARS, Ended 30th June.	1859.	1858.	1859.	
			Less.	More.
	£	£	£	£
Customs .....	24,347,322	22,838,794	....	1,508,528
Excise .....	18,221,000	17,944,000	....	277,000
Stamps .....	7,881,981	7,649,598	....	232,383
Taxes.....	3,185,000	3,154,033	....	30,967
Post Office.....	3,220,000	3,010,000	....	210,000
	56,855,303	54,596,425	....	2,258,878
Property Tax.....	6,266,106	10,330,162	4,064,056	....
	63,121,409	64,926,587	4,064,056	2,258,878
Crown Lands.....	280,540	276,654	....	3,886
Miscellaneous .....	2,287,624	1,676,475	....	611,149
Totals .....	65,689,573	66,879,716	4,064,056	2,873,913
			'59 Less—£1,190,143	
QUARTERS, Ended 30th June.	1859.	1858.	1859.	
			Less.	More.
	£	£	£	£
Customs .....	6,108,418	5,879,039	....	229,379
Excise .....	4,945,000	4,626,000	....	319,000
Stamps .....	1,960,582	2,084,370	123,788	....
Taxes.....	1,349,000	1,326,000	....	23,000
Post Office.....	785,000	765,000	....	20,000
	15,148,000	14,680,409	123,788	591,379
Property Tax.....	782,106	1,199,587	417,481	....
	15,930,106	15,879,996	541,269	591,379
Crown Lands.....	64,500	64,000	....	500
Miscellaneous .....	497,650	335,970	....	161,680
Totals .....	16,492,256	16,279,966	541,269	753,559
			'59 More—£212,290	

## REVENUE (UNITED KINGDOM).—QUARTER ENDED 30TH JUNE, 1859:—APPLICATION.

*An Account showing the REVENUE and other RECEIPTS of the QUARTER ended the 30th June, 1859; 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, 1859, viz.:—	£
Great Britain .....	—
Ireland .....	£604,564
	604,564
Income received in the Quarter ended 30th June, 1859 .....	16,402,256
Amount received in the Quarter ended 30th June, 1859, in repayment of Advances for Public Works, &c. ....	478,286
	17,575,106
Balance, being the Deficiency on the 30th June, 1859, upon the charge of the Consolidated Fund in Great Britain, to meet the Dividends and other Charges payable in the Quarter to 30th September, 1859, and for which Exchequer Bills (Deficiency) will be issued in that Quarter .....	2,929,910
	£20,505,016

## PAID:—

Net Amount applied out of the Income for the Quarter ended 30th June, 1859, in Redemption of Exchequer Bills (Deficiency) for the Quarter ended 31st March, 1859, viz.:—	£
Total Deficiency .....	£529,226
Abate—Redeemed by Sinking Fund .....	280,000
	249,226
Amount applied out of the Income to Supply Services in the Quarter ended 30th June, 1859 .....	9,780,915
Ditto for Exchequer Bonds redeemed .....	2,000,000
Charge of the Consolidated Fund for the Quarter ended 30th June, 1859, viz.:—	
Interest of the Permanent Debt .....	£6,404,759
Terminable Debt .....	657,300
Interest of Exchequer Bills (Deficiency) .....	—
The Civil List .....	100,696
Other Charges on Consolidated Fund .....	395,317
Advances for Public Works, &c. ....	285,346
Sinking Fund.....	203,350
	8,046,768
Surplus Balance beyond the Charge of the Consolidated Fund for the Quarter ended 30th June, 1859, viz.:—	
Great Britain .....	—
Ireland .....	428,137
	428,137
	£20,505,016

CORN.—*Gazette Average Prices (ENGLAND AND WALES) during each Week of the Second Quarter of 1859; together with the MONTHLY and QUARTERLY Average.*

Weeks ended Saturday, 1859.		Weekly Average. (Per Impl. Quarter)					
		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
April	2 .....	40 8	33 10	23 4	33 2	40 4	38 2
"	9 .....	41 —	31 3	23 4	29 10	40 4	39 5
"	16 .....	41 2	33 6	23 7	31 6	41 5	39 4
"	23 .....	41 4	32 8	22 7	32 2	41 4	38 11
"	30 .....	42 6	32 8	23 4	30 3	41 8	38 6
Average for April .....		41 4	33 4	23 2	31 4	41 —	38 10
May	7 .....	44 10	32 5	24 2	32 8	42 8	39 11
"	14 .....	52 5	32 10	25 4	33 4	45 1	42 —
"	21 .....	51 4	33 7	26 3	35 3	47 2	45 5
"	28 .....	53 6	33 6	25 9	33 8	40 0	42 10
Average for May .....		51 3	33 1	25 4	33 8	45 4	42 6
June	4 .....	53 5	33 8	26 1	37 7	47 —	40 5
"	11 .....	51 5	31 8	25 11	41 9	45 —	41 5
"	18 .....	49 11	31 5	24 11	36 9	46 7	40 3
"	25 .....	48 3	31 1	24 9	37 6	46 8	41 9
Average for June .....		51 9	31 11	25 5	38 4	46 3	40 11
Average for the Quarter ..		47 3	32 10	24 6	34 3	43 11	40 7

## RAILWAYS.—PRICES, April–June, and TRAFFIC Jan.–June, 1859.

Railway.	For the (£100). Price on			Miles Open.		Total Traffic For the 26 Weeks.		Traffic pr. Mile per Week. 26 Weeks.		Dividends per Cent. pr. Ann. Half Years.	
	1 April.	2 May.	1 June.	'59.	'58.	'59.	'58.	'59.	'58.	30 June '58.	31 Dec '58.
				No.	No.	£	£	£	£	s. d.	s. d.
Lond. & N. Westn.	94½	87	90	810	752	1,658,000	1,548,000	89	91	37 6	42 6
Great Western.....	59	50½	54	465	465	762,	717,	77	69	—	25 —
Great Northern .....	102½	95½	99½	283	283	583,	561,	77	79	33 9	61 3
Eastern Counties.....	60	52½	55	489	489	629,	617,	56	56	23 9	32 6
Brighton .....	112½	106	109½	202	192	355,	334,	102	94	50 —	70 —
South-Eastern.....	70½	61	64½	302	302	491,	466,	87	84	30 —	50 —
South-Western ....	92½	86	89	333	291	407,	371,	60	68	42 6	57 6
				2,884	2,774	4,885,000	4,614,000	78	77		
Midland .....	101½	94	98	614	614	816,000	896,000	55	52	42 6	55 —
Lancsh. and York.	94½	85	88½	289	289	655,	581,	96	91	37 6	40 —
Sheffield and Man.	38½	33	35½	173	173	274,	243,	61	57	—	—
North-Eastern.....	92½	84	88	824	814	963,	925,	51	45	42 6	47 6
South Wales .....	66	61	62	171	171	165,	173,	42	40	60 —	25 —
				2,071	2,061	2,953,000	2,738,000	61	57		
Caledonian .....	82½	72	78½	199	199	340,000	327,000	75	76	35 —	40 —
Gt. S. & Wn. Irlnd.	106	105	105½	229	225	177,	165,	33	34	50 —	50 —
				5,383	5,259	8,355,000	7,814,000	68	66		

<sup>a</sup> Consols.—Money Prices on three dates as above, 95½ to ½, —89½, —92½ ex-dividend.  
 Exchequer Bills. „ „ 33s. pm., —20s. pm., —19s. pm.

## BANK OF FRANCE.

Extract of Official Returns as rendered for Dates as under—Converted at 25 francs = £

## I.—LIABILITIES (Passif).

1	2	3	4	5	6	7	8	9	10	11	12	13
Date.	Billets to Bearer. (Circulation.)			Billets to Order. (Bank Post Bills.)			Current Accounts. (Deposits.)				Other	Total.
	Paris.	Branch.	Total.	Paris.	Récep- pissés.	Total.	Trea- sury.	Paris.	Branch.	Total.	Liabili- ties.	Liabili- ties.
	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £
1857.												
Jan. 8....	21·76	2·73	24·49	·21	·14	·35	3·06	5·55	·90	9·51	5·08	39·43
Apr. 9....	21·43	2·35	23·78	·20	·14	·34	2·75	4·62	·96	8·33	5·12	37·57
July 9....	22·12	2·22	24·34	·22	·17	·39	4·56	5·59	·99	11·14	9·02	44·89
Oct. 8....	22·20	2·02	24·22	·27	·18	·45	3·50	5·51	·97	9·98	9·11	43·76
1858.												
Jan. 14....	21·39	1·87	23·26	·23	·12	·35	2·51	5·84	1·16	9·51	9·02	42·14
Apr. 8....	21·79	1·64	23·43	·26	·11	·37	3·72	5·23	1·11	10·06	9·07	42·93
July 8....	23·69	1·63	25·32	·25	·18	·43	4·35	5·66	1·13	11·14	9·04	45·93
Oct. 14....	....	....	27·62	·30	·32	·62	4·70	5·61	1·13	11·44	8·94	48·62
1859.												
Jan. 13....	....	....	30·19	·26	·24	·50	2·84	7·35	1·21	11·40	8·94	51·03
Apr. 14....	....	....	29·21	·26	·36	·62	3·05	8·39	1·13	12·57	8·92	51·32

## II.—ASSETS (Actif).

Date.	Coin and Bullion.			Portfolio. (Discounts.)			Ad- vances on Ingots.	Ad- vances on Public Stocks.	Ad- vances on Shares.	Other Assets.	Total Assets.
	Paris.	Branches.	Total.	Paris.	Branches.	Total.					
	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £
1857.											
Jan. 8....	2·88	4·80	7·68	11·22	11·40	22·62	·15	1·24	·93	6·81	39·53
Apr. 9....	4·24	5·16	9·40	10·53	10·22	20·75	·11	1·17	·78	5·36	37·57
July 9....	4·39	6·10	10·49	12·02	11·37	23·39	·09	1·17	·80	8·95	44·89
Oct. 8....	4·28	4·74	9·02	12·66	11·69	24·35	·14	1·19	1·13	7·92	43·76
1858.											
Jan. 14....	2·84	7·22	10·06	11·68	10·07	21·75	·18	1·26	1·96	6·93	42·14
Apr. 8....	6·35	8·96	15·31	8·03	8·62	16·65	·12	1·41	3·37	6·07	42·93
July 8....	9·31	11·81	21·12	7·31	8·43	15·74	·12	1·54	2·34	5·07	45·93
Oct. 14....	10·13	11·84	21·97	7·66	8·47	16·13	·10	2·50	2·73	5·19	48·62
1859.											
Jan. 13....	9·01	12·02	21·03	8·98	9·45	18·43	·07	2·26	4·13	5·11	51·03
Apr. 14....	9·15	12·60	21·75	8·73	9·07	17·80	·03	1·60	5·03	5·11	51·32



BANKS in NEW YORK, BOSTON, PHILADELPHIA and NEW ORLEANS, 1859.  
Monthly Averages deduced from the Official Weekly Returns.—Converted  
@ \$5 = £.

1859. Averages of Months of	New York.				Boston.			
	Liabilities.		Assets.		Liabilities.		Assets.	
	Circl.	Deps.	Loans.	Specie.	Circl.	Deps.	Loans.	Specie.
	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £
Jan. ....	1.52	22.94	25.85	5.74	1.32	4.25	11.95	1.56
Feb. ....	1.56	22.12	25.64	5.21	1.26	4.01	11.79	1.32
March .....	1.60	21.55	25.33	5.12	1.06	3.94	11.65	1.26
April .....	1.66	22.37	25.85	5.17	1.37	4.28	11.65	1.30
May .....	1.69	22.42	25.75	5.08	1.38	4.27	11.60	1.36

  

1859. Averages of Months of	Philadelphia.				New Orleans.			
	Liabilities.		Assets.		Liabilities.		Assets.	
	Circl.	Deps.	Loans.	Specie.	Circl.	Deps.	Loans.	Specie.
	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £
Jan. ....	.55	3.46	5.27	1.21	2.14	4.46	4.20	3.24
Feb. ....	.55	3.27	5.30	1.19	2.44	4.66	4.50	3.34
March .....	.58	3.37	5.36	1.21	2.53	4.56	4.53	3.37
April .....	.67	3.48	5.61	1.27	2.56	4.39	4.21	3.18
May .....	.61	3.45	5.44	1.22	2.47	4.06	3.79	3.05

Note.—According to *Hunt's (New York) Merchants' Magazine*, the rate of Discount in New York on "Prime endorsed 60 days' Bills," was, in the middle of the several months as follows, viz., March, 4½ @ 5½;—April, 5 @ 5½;—May, 6 @ 6½; June, 7 @ 8.

## BANK OF ENGLAND.—WEEKLY RETURN.

An Account, pursuant to the Act 7th and 8th Victoria, c. 32, for each Week ending on a Wednesday, during the SECOND QUARTER (April—June) 1859.

ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
Liabilities.	DATES.	Assets.			Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
Notes Issued.	(Wednesdays.)	Government Debt.	Other Securities.	Gold Coin and Bullion.		
Mlms. £	1859.	Mlms. £	Mlms. £	Mlms. £	Mlms. £	1859. Per Cent.
32,74	April 6 ....	11,01	3,46	18,27	21,49	
32,39	" 13 ....	11,01	3,46	17,92	21,76	
31,88	" 20 ....	11,01	3,46	17,41	22,00	
31,43	" 27 ....	11,01	3,46	16,96	21,93	28 April 3½
31,05	May 4 ....	11,01	3,46	16,57	22,26	
30,86	" 11 ....	11,01	3,46	16,38	21,82	5 May 4½
31,02	" 18 ....	11,01	3,46	16,54	21,39	
31,18	" 25 ....	11,01	3,46	16,71	21,22	
31,57	June 1 ....	11,01	3,46	17,09	21,09	2 June 3½
31,74	" 8 ....	11,01	3,46	17,27	21,13	9 June 3
31,74	" 15 ....	11,01	3,46	17,27	20,52	
31,90	" 22 ....	11,01	3,46	17,42	20,45	
32,11	" 29 ....	11,01	3,46	17,63	21,26	14 July 2½

## BANKING DEPARTMENT.

											18
Liabilities.					Assets.					Totals of Liabilities and Assets.	
Capital and Rest.		Deposits.			DATES.	Securities.		Reserve.			
Capital.	Rest.	Public.	Private.	Seven Day and other Bills.	(Wdnesdys.)	Government.	Other.	Notes.	Gold and Silver Coin.		
Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	1859.	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £
14,55	3,10	10,00	12,92	.78	April 6	11,71	17,72	11,25	.68	41,36	
14,55	3,13	5,03	15,98	.82	" 13	11,37	16,94	10,53	.67	39,51	
14,55	3,14	5,08	15,12	.81	" 20	11,37	16,81	9,88	.64	38,70	
14,55	3,15	5,25	15,33	.77	" 27	11,37	17,51	9,50	.68	39,05	
14,55	3,16	5,47	15,96	.78	May 4	11,37	19,14	8,79	.63	39,93	
14,55	3,21	4,87	17,14	.83	" 11	11,28	19,62	9,04	.66	40,60	
14,55	3,22	5,28	17,29	.79	" 18	11,28	19,56	9,63	.65	41,12	
14,55	3,22	5,68	17,02	.76	" 25	11,28	19,30	9,96	.70	41,24	
14,55	3,16	6,30	16,84	.78	June 1	11,28	19,21	10,48	.67	41,63	
14,55	3,17	7,22	15,94	.75	" 8	11,28	19,05	10,61	.69	41,63	
14,55	3,17	8,58	14,80	.80	" 15	11,28	18,71	11,22	.68	41,89	
14,55	3,17	9,30	14,02	.74	" 22	11,28	18,38	11,45	.69	41,79	
14,55	3,18	9,83	12,98	.72	" 29	11,28	18,46	10,84	.69	41,27	

## CIRCULATION.—COUNTRY BANKS.

*Average amount of Promissory Notes in Circulation in ENGLAND and WALES, for each Week ended on a Saturday during the Second Quarter (April—June) of 1859; and also the Average Amount of Promissory Notes in Circulation in SCOTLAND and IRELAND during the Four Weeks ended on the 9th April, the 7th May, and the 4th June, 1859.*

ENGLAND AND WALES.				SCOTLAND.				IRELAND.			
DATES.	Private Banks. (Fixed Issues, 4-40.)	Joint Stock Banks. (Fixed Issues, 3-30.)	TOTAL. (Fixed Issues, 7-70.)	Four Weeks, ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2-75.)	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 6-35.)	
1859.	Mlms. £	Mlms. £	Mlms. £	1859.	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	
April 2	3,48	3,11	6,59	April 9	1,38	2,39	3,77	3,34	3,62	6,96	
„ 9	3,56	3,11	6,67								
„ 16	3,58	3,14	6,72								
„ 23	3,59	3,15	6,74								
„ 30	3,57	3,10	6,67								
May 7	3,54	3,06	6,60	May 7	1,54	2,44	3,98	3,50	3,55	7,05	
„ 14	3,51	3,05	6,56								
„ 21	3,45	3,02	6,47								
„ 28	3,37	2,98	6,35								
June 4	3,36	2,92	6,28	June 4	1,74	2,74	4,48	3,41	3,39	6,80	
„ 11	3,36	2,93	6,29								
„ 18	3,36	2,94	6,30								
„ 25	3,35	2,93	6,28								

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
DATES.	Paris.			Hamburg.			Calcutta.			Hong Kong.		Sydney.	
	London on Paris.	Bullion as arbitrated.	Premium on Gold per mille.	London on Hambg.	Bullion as arbitrated.	New York.	India House.	At Calcutta on London.					Standard Silver in bars in London.
	3 m. d.	Agnt. Engd.	For Engd.	3 m. d.	Agnt. Engd.	For Engd.	60 d. s.	60 d. s.	3 m. d.	6 m. s.	30 d. s.		pr. ct.
1859.		pr. ct.	pr. ct.		pr. ct.	pr. ct.	pr. ct.	d.	d.	d.	pr. ct.	d.	
April 2 ..	25-32½	0-3	....	par	13-5½	0-6	....	109½	26	25½	57	½ p.	62½
" 16 ..	25-30	0-4	....	"	13-6	0-4	....	"	"	"	"	"	62
May 7 ..	25-40	0-5	....	"	13-5	0-2	....	110	"	25¾	59	"	60½
" 21 ..	25-40	0-4	....	"	13-3½	0-8	....	"	"	25¾	59	"	"
June 4 ..	25-37½	0-2	....	½ dis	13-4½	0-2	....	110½	"	25½	68	"	61
" 18 ..	25-32½	"	....	par	"	0-1	....	"	"	"	59	2½ p.	62½
July 2 ..	25-37½	"	....	"	13-4	0-2	....	110	"	24½	58	....	"

# GLOBE INSURANCE,

## FOR FIRE, LIFE, ANNUITIES, REVERSIONS,

Established 1803.

EMPOWERED BY SPECIAL ACTS OF PARLIAMENT.

CORNHILL AND CHARING CROSS, LONDON.

## DIRECTORS.

Chairman.—THOMAS M. COOMBS, Esq.

Deputy-Chairman.—WILLIAM CHAPMAN, Esq.

Treasurer.—GEORGE CARR GLYN, Esq., M.P.

Boyce Combe, Esq.	Rich. Lambert Jones, Esq.	W. H. C. Plowden, Esq.
William Dent, Esq.	John Edw. Johnson, Esq.	Sir Walter Stirling, Bart.
James W. Freshfield, Esq., F.R.S.	Robert Locke, Esq.	W. Tite, Esq., M.P., F.R.S.
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Robert Hawthorn, Esq.	Fowler Newsam, Esq.	Josiah Wilson, Esq.
	William Phillimore, Esq.	Benjamin G. Windus, Esq.

## AUDITORS.

ALEX. MACKENZIE, Esq. | GEORGE SAINTSBURY, Esq.

## CAPITAL:

ONE MILLION STERLING.

The whole Paid-Up and Invested; thereby affording full Security to parties Assured.

## LIFE DEPARTMENT.

In order to combine the latest improvements in the practice of Life Insurance with those principles of Solidity and Security which have distinguished the GLOBE during its extensive experience of nearly Sixty Years,

New Tables of Life Premiums at Reduced Rates are adopted, comprising a *Non-Participating Scale* for fixed Sums upon very moderate terms; and a *Participating Scale* at higher rates, but entitling to BONUSES of Two-Thirds of the Profits at the Quinquennial divisions.

The BONUS so declared may be applied in one of three modes—namely By addition to the Policy; By reduction of future Premiums; or, By an equivalent payment in cash.

The Directors desire to draw attention to the following examples of the Profits accruing on *Globe Participating Life Policies* under the BONUS declared as at 31st December, 1858.

Age at Date of Policy.	Original Sum Insured.	Original Annual Premium.	Complete Years in force.	BONUS at 31st December, 1858, applied—		
				By Addition to Policy.	By Reducing future Premiums to	By payment in CASH.
	£	£ s. d.		£	£ s. d.	£ s.
35	1,000	28 2 6	6	72	26 3 11	32 15
40	1,000	32 15 0	6	72	30 10 1	35 7
50	1,000	45 12 6	6	72	42 3 9	42 9

NOTE.—Policies upon which from One to Five complete Years have elapsed, participate in proportion to the above Scale.

The profits apportioned in the above cases are equivalent—if added to the Policy—to a Reversionary Sum at death equal to ONE POUND FOUR SHILLINGS PER CENT. PER ANNUM on the Sum Insured for each of the completed years elapsed since the date of the Policy. Or, if taken in the form of an IMMEDIATE CASH PAYMENT, that payment is equal, at most ages, to considerably more than ONE YEAR'S PREMIUM.

PROSPECTUSES, containing further information; with Tables of Premiums at other Ages, and for INSURANCES ON LIVES, according to various plans—and also the Rates of ANNUITY granted by the GLOBE INSURANCE—may be had at the Offices of the COMPANY; or of the Agents.

## FIRE DEPARTMENT.

Every description of FIRE INSURANCE is undertaken by the GLOBE.

(By Order of the Board)

WILLIAM NEWMARCH, Secretary.

# THE LONDON ASSURANCE,

INCORPORATED A.D. 1720,

FOR LIFE, FIRE, AND MARINE ASSURANCES.

HEAD OFFICE—No. 7, ROYAL EXCHANGE, CORNHILL.

JOHN ALVES ARBUTHNOT, Esq., *Governor.*  
JOHN ALEX. HANKEY, Esq., *Sub-Governor.*  
BONAMY DOBREE, Jun., Esq., *Deputy-Governor.*

## DIRECTORS.

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Henry Bonham Bax, Esq.  
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Capt. R. W. Pelly, R.N.  
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P. F. Robertson, Esq.  
Alex. Trotter, Esq.  
Lestock Peach Wilson, Esq.

*Actuary.*—PETER HARDY, Esq., F.R.S.

WEST END OFFICE, No. 7, PALL MALL.  
COMMITTEE.

Two Members of the Court in rotation, and  
HENRY KINGSCOTE, Esq., and JOHN TIDD PRATT, Esq.  
*Superintendent.*—PHILIP SCOONES, Esq.

## LIFE DEPARTMENT.

This Corporation has granted Assurances on Lives for a period exceeding One Hundred and Thirty Years, having issued its first Policy on the 7th of June, 1721.

Two-thirds, or 66 per cent. of the entire profits are given to the Assured. Policies may be opened under any of the following plans, viz.:—

At a low rate of premium, without participation in profits, or at a somewhat higher rate, entitling the Assured, either after the first five years, to an annual abatement of premium for the remainder of life, or, after payment of the first premium, to a participation in the ensuing Quinquennial Bonus.

The abatement for the year 1859, on the Annual Premiums of persons who have been assured under Series "1831" for five years or longer, is upwards of 36 per cent.

The high character which this ancient Corporation has maintained during nearly a Century and a half, secures to the public a full and faithful declaration of profits.

The Corporation bears the whole EXPENSES OF MANAGEMENT, thus giving to the Assured, conjoined with the protection afforded by its Corporate Fund, advantages equal to those of any system of Mutual Assurance.

Premiums may be paid Yearly, Half-Yearly, or Quarterly.

All Policies are issued free from stamp duty or from charge of any description whatever, beyond the Premium.

The attention of the Public is especially called to the great advantages offered to Life Assurers by the Legislature in its recent Enactments, by which it will be found that to a defined extent, Life Premiums are not subject to Income Tax.

The fees of Medical Referees are paid by the Corporation.

Annuities are granted by the Corporation, payable Half-Yearly.

Every facility will be given for the transfer or exchange of Policies, or any other suitable arrangement will be made for the convenience of the Assured.

Prospectuses and all other information may be obtained by either a written or personal application to the Actuary, or to the Superintendent of the West End Office.

JOHN LAURENCE, *Secretary.*

## QUARTERLY JOURNAL

OF THE

## STATISTICAL SOCIETY.

DECEMBER, 1859.

*The PAST, PRESENT, and PROSPECTIVE Financial Condition of  
BRITISH INDIA. By COLONEL SYKES, M.P., F.R.S.*

[Read in Section (F), at Aberdeen, September, 1859.]

THE Financial Condition of the British Government in India has for a few years past been the subject of the most conflicting statements; high authorities, even in Parliament, have recently declaimed against a perennial deficiency, from which there was no recovery, because a crushing taxation had reduced the people to indigence, and a succession of loans had only relieved immediate difficulties, to accumulate and enhance those difficulties in the end. These statements appear to me to have had their origin in the vague and indefinite associations that the ceaseless wars which had been carried on in India, occasionally at enormous cost, had necessarily involved Indian finance in inextricable confusion.

I am free to confess that some years ago I had considerable misgivings, and was influenced by appearances; occupying at that time a position in the Home administration of the affairs of India, I caused, in December, 1842, a statement, from an early period, to be drawn up in the proper department at the India House, of the real condition of the Receipts and Expenditure in every branch of revenue and charge at each Presidency, together with the pressure of the interest of the debt in relation to the annual net revenue. To limit the very great labour which an annual statement for a lengthened period would entail, I adopted the expedient of taking every tenth year for each Presidency, commencing with 1808-9. That statement was laid upon the table of the Court of Directors on the 14th December, 1842, and on the 12th March, 1852, I caused the statement of the fifth decennial period to be produced, comprising the financial year 1849-50. These statements I shall now lay before