

Dr. Sutherland's report on the outbreak of cholera, in the workhouse of the Taunton Union; and the reply of the Board of Guardians. 1849.

Contributors

Sutherland, John, 1808-1891.

Publication/Creation

Taunton : Printed by William Court, Fore Street, 1849.

Persistent URL

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DR. SUTHERLAND'S REPORT

ON THE

OUTBREAK OF CHOLERA,

IN THE

WORKHOUSE OF THE TAUNTON UNION;

AND THE

R E P L Y

OF THE

BOARD OF GUARDIANS.

1849.

TAUNTON:

PRINTED BY WILLIAM COURT, FORE STREET,

1849.

REPORT.

IN a communication which I had the honor of transmitting to the General Board of Health on the 8th instant, in regard to the sudden and violent epidemic seizure in the Workhouse of Taunton Union, I mentioned the defective structural arrangements which the house presents, and now beg respectfully to lay before the Board the result of my subsequent observations and enquiries.

A practised eye can perceive at a glance that the workhouse in question has been constructed without due regard to sanitary principles. Its situation, though suburban, is badly drained. On one side the ground is higher than the level of the base of the building. The drainage is carried by a sewer into a cesspool, in the garden, which until very lately was open. It is now, however, covered over; and the overflow passes out of the garden, and discharges itself into a pestilential ditch in a neighbouring field, not far from the garden wall.

The elevation of the workhouse is remarkably low; it consists of a front building and branches, or rays, which project into the yard behind it. This yard is surrounded by low badly-constructed sheds, which are used partly as offices, partly for wards: and in one of them is situated the girls' and infant schools belonging to the establishment.

On entering the building one is especially struck with its wretched construction. The passages and staircases are narrow, low, dark and noisome, and some of the water-closets open into the landings. The wards themselves are remarkably low, and badly ventilated, while the overcrowding, so far as could be judged of by the number of bedsteads, was, perhaps, greater than I remember to have seen it elsewhere. In some instances the water closets open into the wards; and in the sick ward it forms part of the ward itself, the closet being boxed off by a wooden partition.

It was stated that the workhouse was intended to accommodate 410 inmates, although there were only 276 in the house when the disease broke out.

The amount of overcrowding which nevertheless existed, may be judged of from the following measurements, taken while I was in Taunton, and furnished to me by the surgeon to the workhouse:—

GIRLS' BED ROOM.

	Feet In.
Length	38 6
Breadth	16 10
Height ...	9 0
Superficial area	648 sq. feet
Cubic contents	5834 0
Number of inmates	18
Cubic space allotted to each	324 0

GIRLS' BED ROOM.		Feet	In.
Length		38	10
Breadth		17	11
Height		8	9
Superficial area		695	0
Cubic contents		6084	0
Number of inmates	26		
Cubic space allotted to each		235	0
BOYS' BED ROOM.			
Length		26	9
Breadth		17	10
Height		8	9
Superficial area ..		477	0
Cubic contents		4174	0
Cubic space for each of the inmates, 26 in } number		160½	0
CHILDREN'S SICK WARD.			
Length		12	0
Breadth		17	0
Height		8	9
Superficial area		215	0
Cubic contents		1885	0
Number of inmates.....	10		
Cubic space to each		188½	0
WOMEN'S BED ROOM.			
Length		41	6
Breadth		17	0
Height		8	9
Superficial area ..		705	0
Cubic contents		6173	0
Number of inmates... ..	12 and 3 children		
Cubic space to each		411½	0
MEN'S BED ROOM.			
Length... ..		31	0
Breadth		16	0
Height..... ..		8	9
Superficial area		524	0
Cubic contents		4589	0
Total inmates... ..	14		
Cubic space to each		328	0

These wards may be taken as specimens of the degree of overcrowding which existed at the time of the attack. The only room fit for the purposes of a ward, in the whole establishment, is the Board-room in which the Guardians meet a few hours a week.

A kind of ventilation is in practice in this Workhouse. There are a few perforated zinc plates in the roof of the wards, which communicate with the outside of the building, and the windows are hinged. Over the doors there are also wooden coverings, which are intended for the admission of air from the staircases.

The ventilating plates are utterly inadequate for the intended purpose. The windows are kept closed at night, and I saw a number of the ventilating doors opening into the staircases, nailed up. The opinion ex-

pressed in evidence by Mr. Foster, the medical officer to the establishment, on the general results of this state of things is as follows:—

“On visiting the wards at night has found them close and offensive and has repeatedly complained of the windows being shut. The ventilation is bad. Considers that, even with the reduced population which existed in the wards lately, the space was not above two-thirds of what was requisite for safety.

“The house is liable to offensive smells from the water closets, especially in the sick ward. It has been represented to the Guardians, but nothing has been done. Considers the present sick wards are not at all fit for sick, more especially for pulmonary disease, the windows opening immediately over the heads of the beds. The rooms are low, and the ceiling close against the tiles. Ventilation cannot be obtained.”

In these sick wards the cholera cases were being treated, and the account given by Mr. Foster will show their utter inadequacy for the intended purpose. Provision is being made for the future treatment of the Workhouse sick in a separate infirmary, just completed, in which most of the vicious construction of the Workhouse has been rigidly copied.

After making every reasonable allowance for the terror and confusion which the frightful outbreak of the disease occasioned, the inmates of the Workhouse bore unequivocal marks of filthy habits, which must be enumerated among the predisposing causes of cholera. Complaints were made to me of the impossibility of making the people keep themselves clean. This I would readily admit, but a prior question suggests itself; to wit, are there sufficient means of cleanliness provided? I answer unhesitatingly that there are not. A few washing troughs are provided in the yards for those who choose to use them. They are like a manger in size and form, and are made of metal. A pipe supplies water, but in the two troughs I saw there were no means of preventing its running out. There were no plugs, and I was told that the people had to use tubs for washing in.

Mr. Foster says:—

“There are no baths for the purposes of cleanliness. Those who enter the house are washed all over before admission. Tramps for the night are not so. The people are generally of dirty habits, and cannot be kept clean. There are no washhand basins for the inmates; there are none in the sick wards to my knowledge.

“Has often seen the sick washing themselves in the chamber pots. The paupers wash in a long trough. They are supplied with towels, but not with soap, to my knowledge.”

To complain of paupers being filthy in their habits, under such management, is simply absurd.

On examining into the water supply, I found that it was obtained from a well in one of the yards. The first specimen brought to me for examination presented a slight opalescent appearance, and under the microscope gave unequivocal evidence of the presence of organic matter. I represented this fact to the Guardians; but it appears to have been accidental, as other specimens examined next day were quite clear.

I now come to a most important part of the enquiry, namely, the subject of *Diet*.

Mr. Foster states that on the occurrence of epidemic disease in the Work-house, the dietary on two separate occasions was altered at his

request, with immediate advantage. The last of these occasions was in March, 1849, when a low typhoid fever made its appearance.

At a subsequent date, which he cannot give correctly, he states that the following dietary was substituted for the one he had recommended in March, and that this was done without any consultation with him. The Guardians, he states, sent for a confirmation of it on the day the change was adopted; but he was out of town. He has repeatedly objected to the diet to individual Guardians, but never heard the inmates object to it.

It was as follows:—

MALES.—*Breakfast*.—Bread, 6 oz., $1\frac{1}{2}$ pint oatmeal gruel, every day in the week.—*Dinner*.—Males, Boiled meat, $4\frac{1}{2}$ oz., potatoes 1 lb., two days a week; suet pudding, 14 oz., two days a week; soup, $1\frac{1}{2}$ pint, bread, 6 oz., three days a week.—*Supper*.—Males, Bread, 6 oz., cheese, $1\frac{1}{2}$ oz., five days a week; broth, $1\frac{1}{2}$ pints, bread, 6 oz., two days a week.

Females receive a somewhat smaller allowance, and children under 15 have two-thirds of the adult rations.

My attention has been forcibly called to the subject of diet in the present instance, not only from personal enquiry, but also by a number of gentlemen resident in the town. The General Board of Health called especial attention to the necessity of care as to articles of food in its first notification, but no change appears to have been made in consequence. I am informed on very good authority, that the diet in Taunton Workhouse is the poorest, and at the same time the dearest, of any of the Unions in that part of the country.

With meat twice a week, it cost $4\frac{1}{8}$ d per head daily, (including $\frac{1}{2}$ d for clothing).

In Bridgwater, with meat six days a week, the diet and clothing ($\frac{1}{2}$ d) amount to $3\frac{3}{4}$ d per head per diem; and in Williton it costs the same as at Bridgwater, with meat five days a week.

It is a remarkable fact, that while in the Union-house of Williton only one case of cholera proved fatal, and not more than seven or eight in the Union-house of Bridgwater, no fewer than 60 perished in a few days in Taunton Workhouse.

As I shall presently show, diarrhoea appeared in Taunton Union-house a considerable time before cholera broke out, and yet no change in the diet was made.

Before proceeding further, it may be well to recapitulate shortly the chief defects which appear to have predisposed to the outbreak of the disease. These have been stated to be—

- 1st. Overcrowding and defective ventilation.
- 2nd. Want of personal cleanliness.
- 3rd. General structural defects in the building.
- 4th. The nature of the diet.

If these things have co-operated in predisposing to cholera, we should naturally expect to find that they have also caused a low standard of general health.

The following table of the average population of the Workhouse, with the proportion of deaths, has been placed in evidence by Mr. Foster:—

Years.	Average Population.	Deaths.
1842-3	322	44
1843-4	293	39
1844-5	305	41

1845-6	280	33
1846-7 ..	306 ..	56
1847-8	343	60
1848-9	361 ...	72

A large proportion of these deaths take place among people who enter the house in a state of ill-health, so that it would be difficult to separate the effect of the conditions within the house upon the inmates; but there can be no doubt that the mortality is excessive.

Mr. Foster says :—"The Union-house is very subject to epidemics, to measles, scarlet fever, typhus, diarrhœa constant, especially in the children, dysentery, scurvy."

On applying the test of infantile mortality, the following general result is stated by Mr. Foster :—

"So far as I know, no child, dry nursed, has been raised beyond four years of age; and the only child that has attained that age has died of cholera. Bronchial affections are very common among children, caused, as I believe, by the practice of drying the wet napkins of the children over heated pipes in the wards, which under present arrangements, cannot possibly be prevented.

Like most other predisposed localities, Taunton Work-house gave indications of the approaching fate of its inmates for some time before it arrived.

About the 10th of September last, bilious diarrhœa appeared in the house. Early in October the disease shewed a tendency to advance. In the first week or ten days of the month there were a good many cases, and one man died of dysentery. Except this diarrhœa, the house was unusually healthy till the 3rd of November, when cholera appeared. The first case passed into hopeless collapse in ten minutes from the time of seizure. Up to 4 p.m. of the 5th, no fewer than 42 cases and 19 deaths took place. From that period to half-past nine a.m. of the 7th November, other three cases and seven deaths occurred. On the 8th there were four new cases and four deaths. On the 9th, nine new cases and five deaths. On the 10th, four new cases and nine deaths, making in all 62 cases and 44 deaths. The latest accounts which I have received give the total deaths at 60 or more.

Out of 54 deaths, the following are the proportions at different ages :—

Belonging to Girls' school	23
" Boys' " 	9
Adults	12
Old people.....	8
Infants	2

54

The large proportion of the sufferers belonging to the girls' school would lead us to expect some serious local mischief. The school is a long, low, narrow, damp shed, utterly unfit for a school room; and the infant school, at the far end of it, is only fit for a coal cellar. The building appears to have been much over-crowded, and this no doubt affords another reason for the outbreak which took place among its unfortunate inmates.

On the appearance of the disease, an immediate change in the diet was

made. Milk was substituted for gruel for breakfast, and $4\frac{1}{2}$ ounces of meat were given instead of soup.

After making myself acquainted with the facts of the case, I sent the following letter to the clerk to the guardians :—

“ London Hotel, Taunton, 8th of Nov., 1849.

“ Sir,—The sudden and violent outbreak of cholera in the Taunton Union Workhouse appears to me to be connected with the following circumstances.

“ FIRST.—The wards of the Workhouse are very deficient in space, and the ceilings are much too low to admit of a proper circulation of air in them.

“ SECOND.—The general arrangements as to ventilation are very defective.

“ THIRD.—The situations of the water-closets is not the one best adapted to insure the purity of the atmosphere ; while in the ward set apart for cholera cases, the water-closet forms in reality part of the ward.

“ FOURTH.—The cubic space in the staircases, wards, &c., is much too small to afford breathing space for the number of inmates which the house seems intended to accommodate ; and consequently the population has been overcrowded.

“ FIFTH.—This latter remark I would apply with great force to the girls' school-room, which appears to have been one source of the mischief. I have no hesitation in stating that the building set apart for this school-room is unfit for such a purpose, on sanitary grounds alone.

“ SIXTH.—It is an observed fact, that defective nourishment is one powerful predisposing cause to attacks of cholera. I have examined the diet-table in use in the Workhouse previous to the outbreak of the disease, and I am decidedly of opinion that it was not suitable, and consequently that the state of constitution which such a dietary tends to produce would be such as to fall a prey very readily to epidemic disease.

“ The last matter to which I would direct attention is the state of the water supply. The specimen which I saw yesterday was by no means pure, and contained a quantity of organic matter. The source of this should be enquired into.

“ Possibly there may be some defect in the drainage, and the water may hence become contaminated. If so, the necessary repairs ought to be made, and the well pumped out as far as practicable. The use of a charcoal filter and boiling water will to a great extent remove any impurities.

“ It is possible the ditches in the vicinity of the Workhouse may in their present state also vitiate the atmosphere to a certain extent ; but the matters which I have placed prominently forward, I consider as being of most importance in the present case. I do not mean to assert that these caused the cholera. But I think that there can be no doubt that they have all co-operated in rendering the inmates of the Workhouse extremely susceptible of the epidemic influence which pervades the whole district at the present time.

“ In regard to the management of the disease, I should advise specially that all the children be at once removed from the house, to the neighbouring school-rooms, which have been kindly offered for the purpose.

“ That the wards where the disease appeared be evacuated, thoroughly lime-washed and cleansed.

R E P L Y.

THE Board of Guardians have given their most serious consideration to the letter of the Poor Law Board of the 16th of November last, and likewise to the copy of Dr. Sutherland's report on the outbreak of cholera in the Workhouse, and they now desire to offer the following observations thereon :—

Dr. Sutherland's report to the Board of Health is so different in tone and character from that orally made by him to this Board immediately subsequent to his first visit to the Workhouse, that its perusal could not fail to excite surprise in the minds of the Guardians. Moreover, they cannot but express their regret that a public officer, in the prosecution of a most important enquiry, should deem it consistent with his duty, while in constant communication with a public and responsible body of Guardians, who received his visit with courtesy, and were willing to give him any information, documentary or otherwise, he may have required, to give credence to statements made to him *ex parte* by private individuals impugning the character and conduct of this Board, and should have promulgated them with the sanction of his authority, without first taking the most obvious means of testing their correctness, or giving the Board an opportunity of refuting them, if unfounded.

These statements will be more fully adverted to hereafter in commenting on the report.

Dr. Sutherland states the following as among the more prominent causes which appear to him to have predisposed to the outbreak of cholera :—

1st.—Overcrowding and defective ventilation.

2nd.—Want of personal cleanliness.

3rd.—General structural defects in the building.

4th.—The nature of the diet.

The Guardians will proceed to consider the first and third of these causes conjointly.

They beg in the first place to draw the attention of the Poor Law Board to a paragraph in the second annual report of the Poor Law Commissioners (page 28,) in which they state "that after an enlarged experience, the plans for the construction of Work-houses, which, with professional aid, they had prepared and circulated for general information, were, in their judgment, on the whole, *superior*, both as regards cheapness and *completeness of arrangement* to any of the other numerous plans which had come under their notice." This Board of Guardians, at its formation, being desirous of profiting by the Commissioners' experience, and of erecting a Work-house on the most approved principles, appointed Mr. Kempthorne, their architect, who was the designer of the plans which the Commissioners had stamped with their approval. The plan of the present Work-house was prepared by him, and under his superintendence, and with the sanction of the Commissioners it was constructed to accommodate 400 inmates.

From the period of its erection up to the date of Dr. Sutherland's report, though it has been frequently visited by officers of the Poor Law Board, and has been under the charge of different medical officers appointed by this board, neither of these officers has ever communicated to the Board the fact, if fact it be, "that its construction is wretched, that the passages and staircases are narrow, low, dark, and noisome; that the wards are remarkably low and badly ventilated, and all, with the exception of the Board Room, unfit for the purposes of a ward," and that, as regards its general structural arrangement and means of ventilation, it is ill adapted for the purposes of a Work-house, and for affording the accommodation to the number of inmates for which it was designed. On the contrary, Mr. Graves, Assistant Poor Law Commissioner, visiting the house on the 30th June, 1846, reports the *ventilation to be good*.

The Guardians further wish to remark under these heads, that two occasions have occurred on which the attention of the Poor Law Board, and also of this Board, was specially directed to the structure and means of accommodation of the workhouse. The first occasion was in 1842, when, in consequence of the attention of the Poor Law Commissioners being called to the crowded state of certain workhouses, which, in their eighth annual report (page 13), they state had been brought under their notice, and seemed to call for special consideration, they took such precautions in their general workhouse regulations as would make it difficult for any such improper crowding of the inmates to occur again; and among the steps which the Commissioners adopted for securing this object, are the following rules, which, in the above annual report they quote thus:—

"1st. By article 78, No. 4, of the Workhouse rules, we have made it the duty of the medical officer to report to the Guardians, in writing, any defect in the diet, drainage, ventilation, warmth, or other arrangements of the Workhouse, or any excess in the number of any class of inmates which he may deem to be detrimental to the health of the inmates.

"2nd. By article 11 we have required the Guardians to report to us, after conferring with their medical officer, the greatest number of paupers which ought to be admitted into the Workhouse."

In obedience to the order of the Poor Law Commissioners, and in accordance with the last-mentioned article, this Board, on the 13th April, 1842, made a return, signed by the clerk and medical officer, of the greatest number of paupers which ought to be admitted into the Workhouse, viz., 410, being ten above the number for which it was originally built; so that at that time, after the Workhouse establishment had been carried on for four years, no suggestion was made on the part, either of the Poor Law Commissioners, or of the medical officer of this Board, that the workhouse accommodation was insufficient.

The second occasion above alluded to was in June last, when this Board accepted certain plans and specifications for their proposed new hospital, and sent them to the Poor Law Board for approval and confirmation. The Guardians would here notice Dr. Sutherland's remark on this new building, viz., "That in it most of the vicious construction of the Workhouse has been rigidly copied." The Guardians had not been previously informed that their Workhouse was viciously constructed; but if it were so, this was undoubtedly an occasion when it might be pre-

"The wards set apart for cholera cases are much too crowded for safety. They are not capable of accommodating above half the number of cases I saw in them yesterday. Two cholera cases in one bed should never be seen. There was one such instance. There should be a proper ward for diarrhoea cases, and a convalescent ward. It is impossible to obtain a sufficient number of nurses for the sick, I should advise that application be made to Bristol for a supply from St. Peter's Hospital.

"I consider the change which has been made in the diet of the paupers since the disease appeared, as a great improvement, and likely to be attended with the most beneficial results.

"I also consider the plan of medical inspection which has been adopted as sufficient to meet the present emergency. All the paupers should be carefully examined twice a day, so as to ensure the immediate treatment of premonitory cases, and this examination should include the children who are to be removed.

"In regard to the town of Taunton itself, there are evident indications of the presence of the epidemic, although no case of developed cholera has yet appeared. A number of cases of diarrhoea were reported yesterday by the medical officers, which, although not large in reality, were still sufficiently numerous, in proportion to the population, to indicate caution and watchfulness.

"The most scrupulous cleanliness should be observed in all parts of the town. All nuisances and pigsties should be removed. The medical officers should report every such case, and also all houses which require washing with quick-lime, which is one of the most powerful preventive agents with which we are acquainted. In short, the regulations of the General Board of Health should be rigidly carried out in every particular. Overcrowded houses are always dangerous; and should cholera appear in the town, it will be necessary to provide houses of refuge to which people may be removed from such houses. They are generally kept a week or ten days in the refuge, and the houses are purified and lime-washed.

"I entirely approve of the plan of house to house visitation which has been adopted by the Board of Guardians, and if it be vigilantly carried out great good will result. It is the only plan of managing the disease. After cholera has fairly developed itself medical aid is of little avail, but in the early stage it will save almost every case.

"I am, Sir, your most obedient servant,

(Signed)

"JOHN SUTHERLAND,

"To the Clerk to the Guardians of Taunton Union."

The children were removed the same night to large airy school rooms in the neighbourhood. Two of them died on the night of removal; but I am happy to say that the effect of the removal was to prevent further casualties. I advised all to be removed for whom accommodation could be procured, and the able-bodied went away of their own accord. Lime-washing was extensively carried on, and a large house at a distance was obtained for the purposes. Six well qualified nurses were brought from Bristol according to my request, so that every measure of precaution was taken. The inmates were carefully watched, and a person was placed over each water-closet to note and report all who frequented it oftener than once a day. In consequence of these measures the disease appears to have been arrested. The sick wards were placed under better regulation, and kept free of crowding.

While cholera was carrying off the inmates of the Workhouse, the town of Taunton was visited by diarrhoea; but the Local board of Health in conjunction with the Board of Guardians, made such excellent regulations for the visitation of houses that not a single case of cholera took place in it.

The county gaol, which is situated at the other extremity of the town, also escaped; and it may be interesting to point out those contrasts which presented themselves to me on going over it.

I found the sleeping cells having the following dimensions:—

	Feet.
Height	9
Length	13
Breadth..... .	7
Superficial area.....	91
Cubic contents for one prisoner	819

The cells in other parts of the building;—

	Feet.	Inches.
Length	10	6
Breadth.....	8	6
Height	8	6
Superficial area	89	3
Cubic contents.....	935	0

There is a corridor, having a common ventilation, with 71 cells. It is 30 feet high, 100 feet long, and 12 feet broad. A most perfect system of ventilation passes through every cell, and a temperature that hardly varies 3 degrees in the 24 hours is preserved. Each prisoner has the means of personal cleanliness. He has his water-closet, wash-hand basin and unlimited water supply. He has abundance of good diet, and cleanliness is strictly enforced. The following table of the sanitary state of the gaol, put in evidence by the Governor, Mr. Gane, will shew the result:—

Years.	Inmates.	Infirmity cases.	Deaths.	
1842.....	840	60	3	
1843... ..	1026	60	2	
1844	1122	35	1	
1845.....	959	46	1	
1846.....	821	25	1	
1847.....	973	18	1	} 83 years of age.
1848.....	1199	33	2	

It is a very striking fact, that while out of 276 unfortunate inmates of the Workhouse, no fewer than 60 have been cut off within a week from cholera, there has not been a solitary case either of cholera or diarrhoea in the gaol.

On reviewing all the facts of the case, this outbreak of cholera at Taunton must be considered as principally evidencing the truth of those principles contended for by the General Board of Health, by showing the fatal results arising from the neglect of the most obvious natural laws.

(Signed)

JOHN SUTHERLAND.

London, 20th Nov., 1849.

Dr. Sutherland remarks, on visiting the Workhouse, the inmates bore unequivocal marks of filthy habits, and that no sufficient means of cleanliness were provided. Did he arrive at this conclusion, having been predisposed thereto by Mr. Foster's statement above adverted to? But his conclusion, however arrived at, is opposed to that of the experience of the Guardians and of their numerous Visiting Committees, as appears by their reports, and by the aforesaid testimony of the master, and is also opposed to that of the Poor Law Inspectors who have visited and reported their visits to the Guardians. The last of such reports is that made on June 30th, 1846, by Mr. Graves, who writes thus—"The inmates clean, and well attended to." From the circumstance of there being no later written report of any Poor Law Inspector's visit, it may be inferred, that whenever such visit was made, there was nothing, either as regards the cleanliness of the inmates or any other matter, requiring notice.

In estimating the trustworthiness of Dr. Sutherland's remarks on this subject, the disadvantageous circumstances under which he visited the Workhouse and reported on its arrangements, must not be lost sight of. He made his investigation at a time when, as he truly says, "The frightful outbreak of the disease occasioned terror and confusion among the inmates." At such a time the discipline which usually prevailed may be expected to have been relaxed. The whole attention of the officers of the house was necessarily devoted to the sick, and the ordinary restraints being withdrawn, the naturally dirty and slovenly habits of the paupers may be expected to have been more conspicuous.

The Guardians state, without fear of contradiction, that the children among whom the greatest number of fatal cases of cholera occurred, were uniformly cleanly in their clothes and persons, as may be abundantly proved by the testimony of those who were in the habit of seeing them, and no evidence besides Dr. Sutherland's has ever (so far as the Guardians know) been adduced to shew that among the adults and old people there has not existed generally as great an amount of personal cleanliness as could reasonably be expected, bearing in mind the difficulty of breaking through their previous habits.

4th. As to the diet. The Guardians will now proceed to state the motives and principles which guided them in framing their workhouse dietary. In the early part of this year their Workhouse was subject to a great influx of tramps or vagrants, as well as of other paupers, an evil which throughout the spring seemed to be on the increase. During the months of March, April and May, in the present year, the average weekly number of paupers of all kinds in the house was no fewer than 390, a number far exceeding the previous usual average. In investigating the causes of this evil, the Guardians ascertained that the Workhouse dietary, then in use, was not only very superior to that which the independent labourer could obtain out of doors, but that it was also superior to that of most of the Union Workhouses in West Somerset, and therefore that their Workhouse system, instead of being a discouragement of pauperism, offered inducements to the idle and profligate to seek a maintenance within its walls.

The subject of the Workhouse dietary being brought under the consideration of the Board on the 30th May last, the following resolution was adopted:—

"That a Committee, consisting of the undermentioned Guardians be

appointed to consider and revise the present Work-house dietary, with the view of assimilating it to the less expensive dietary to which the independent labourer is restricted, and at the same time to frame it on a scale which shall be compatible with the maintenance of the health of the inmates, and that the committee do report to the Board on this day fortnight."

The Committee met in pursuance of the above resolution, and having before them five dietaries, in addition to their own, then in use in Work-houses in Somerset, and likewise the several dietaries published by the Poor Law Commissioners in the appendix to their second annual report, which they therein state had been used in different parts of England, and had been proved to be sufficient in quantity, and perfectly unexceptionable as to the nature of the provisions specified in each ; and also recognising the importance of the principles stated by the Commissioners with reference to Workhouse dietaries in the same report ; the Committee framed the subjoined dietary commented on by Dr. Sutherland, and presented it to the Board on the 13th June last, together with the following report :—

"The Committee, appointed on the 30th of May last to consider and revise the present Workhouse dietary, beg to report to the Board that they met for that purpose on the 5th instant, and proceeded to consider the subject referred to them.

"They are of opinion that the present dietary is far superior to that which the independent labourer is enabled to obtain ; and consequently that it holds out inducements to persons of idle and improvident habits to seek a maintenance in the Workhouse, where they may be better fed, as well as clothed, than those labourers subsisting by their own honest industry. The Committee have framed the annexed dietary (not very different from that heretofore in use), which they believe to be free from the foregoing objections, to be sufficiently varied in regard to the articles of diet, and to be amply sufficient for the healthy sustenance of the inmates ; they therefore recommend it for the adoption of the Board.

"Signed, John Mockridge (vice-chairman), R. King Meade King, George Trenchard, John Stephens."

The report was adopted, and the dietary hereto annexed (which, on comparison, will be found to be not dissimilar, and fully as liberal as dietaries No. 5 and 6 in the appendix to Poor Law Commissioners' second report), was subsequently sanctioned by the Poor Law Board. The dietary, moreover, is on a more liberal scale than that of the two adjoining unions of Langport and Chard, copies of which are subjoined ; and here the Guardians cannot help especially noticing that part of Dr. Sutherland's report in which he says—"I am informed, on very good authority, that the diet in Taunton Workhouse is the poorest, and at the same time the dearest, of any of the unions in that part of the country." The Langport and Chard dietaries, which speak for themselves, will shew how little trustworthy is the authority on which Dr. Sutherland has chosen to place reliance, and having, from false premises, come to the conclusion that our dietary is the *poorest*, he goes beyond the sphere of his sanitary enquiry to endeavour to shew it is also the *dearest*, and thereby insinuates that the Guardians are as ignorant as they are parsimonious in regard to their expenditure. In support of his statement he institutes a comparison between the dietary of Bridgwater and that of

sumed the circumstance would have been brought to their notice. The occasion, however, was not seized on by the Poor Law Board, for, on the 3rd July last, they acknowledged the receipt of the hospital plans in the following terms :—

“The Board have affixed their seal to the plans in testimony of their approval thereof; but observe, that there are some details of construction in the specification which it is desirable should be altered. They therefore send the accompanying copy of remarks by their architect, and recommend the Guardians to carry into effect the suggestions contained in them.”

The following are the remarks of the Poor Law Board's architect, on the subject of ventilation and drainage :—

“In addition to the proposed means of ventilation it will be desirable to have an Arnott's valve ventilator in all the sick rooms, fixed in the chimney of each room, as near the ceiling as practicable, to facilitate the escape of impure air.

“The brick drains, specified to be 12 inches square, seem much larger than requisite for the purpose; but it will be best to use the glazed stone-ware pipe drains, which are much more efficient and durable, as well as, in general, much cheaper than brick drains.

“The soil drains from the water closets, four inches diameter, connected with a main drain of six inches diameter, would be ample for the purpose.”

These suggestions were carried into effect, and the building is now erected, and capable of supplying, as the Guardians believe, the wants of an Infirmary; but if its construction is, as Dr. Sutherland asserts—bad, and modelled on the faulty construction of the Workhouse, the Board submit that these defects, both in the original construction of the Workhouse, and of its supposed copy, the Infirmary, should have been pointed out to them by the architect whom the Poor Law Board consulted, when the plans were before him.

Strong remarks have likewise been made by Dr. Sutherland on the Workhouse school-rooms, which the Guardians admit are defective; but it appears that the appropriation of that part of the building now used as a girl's school-room (though, as the Board now believes, an injudicious appropriation) was made at the suggestion of Mr. Kempthorne, the architect, who writes thus :—

“The alterations proposed by the committee, as to the childrens' school-rooms, may be easily effected, and at a small expense, viz., providing the school-rooms in the present work-rooms in each yard, the present relief stores in boys' yard will answer well for a boys' work-shed, and is not likely to be wanted for its original purpose. The room over the dining-hall will then be used in part (as before) for the boys' bed-room; but a large part will be unappropriated, and may be used for any future purpose.”

In connection with this subject, the Guardians have nothing further to add, than that having availed themselves of the best information within their reach of the requirements of Workhouse accommodation, and having, with the approbation of the Poor Law Commissioners, erected at a cost of about £8,700 their Workhouse buildings, on a scale, as they believed, commensurate with the wants of the Union, and with suitable provisions for the health of the inmates, they feel that, assuming the correctness of

Dr. Sutherland's views, that these buildings are so badly constructed as to be inefficient for the purposes for which they were intended, no blame in the matter can fairly be attributable to the Guardians. At the same time they feel that the subject is one so deeply affecting the health, not only of the inmates of their own Workhouse, but of numerous others in the kingdom built on a similar scale, and with similar arrangements, that it demands the most serious consideration of the Poor Law Board, and that the soundness of Dr. Sutherland's views should be tested by the best professional aid. It must be also remembered that at the time of the outbreak of cholera the Workhouse contained only 264 inmates, instead of the full complement, 410.

The Guardians will here state in reply more particularly to the letter of the Poor Law Board, that they are fully aware of the inadequacy of their present school-room accommodation, as their previous correspondence with the Poor Law Board will shew.

They hoped to have been able, when their new Infirmary was completed, to appropriate suitable rooms in the Workhouse for this object; and they now pledge themselves to take the subject again into their early consideration, with the view of providing, either in their present Workhouse, or by new erections, such school accommodation as shall be adapted to their wants, and as shall be unobjectionable on sanitary grounds.

2nd. As to the want of personal cleanliness in the Workhouse. The Guardians desire at the outset of this branch of the enquiry, to avow their responsibility for the fulfilment of all the prescribed rules for ensuring personal cleanliness among the inmates of their Workhouse; but in making this admission they also desire to record their opinion, that if any of their subordinate officers connected with the Workhouse, whose duty it is to see to the faithful observance of the rules, either themselves neglect them, or fail to report to the Board the neglect of them by others, they are no longer deserving the confidence of the Board. With respect to the statement of the Board's medical officer, Mr. Foster, embodied in Dr. Sutherland's report, as to there being no wash-hand basins nor soap for the inmates, and that he has often seen the sick washing themselves in the chamber pots, he cannot fail to be aware that so gross an outrage on decency would, if brought to the knowledge of the Board, have been severely censured. It is inconceivable that such abuses should have escaped the notice of the Visiting Committee; but, supposing them to have existed, it was Mr. Foster's bounden duty to have complained of them at the time they occurred. But to conceal them from the Board, who, as the books testify, always received his suggestions with deference, and in almost every instance acted on them, and to reveal them for the first time to Dr. Sutherland, could answer no conceivable purpose, as this Board must think, but to excite a feeling of prejudice against the Guardians, whose servant he was.

The Guardians refute Dr. Sutherland's allegations, that the Workhouse paupers had neither soap nor suitable washing apparatus, by conclusive evidence, which he may himself have obtained had he sought it, viz., the Union account books, shewing that these necessary articles were from time to time supplied, and the testimony of the master of the Workhouse that they were constantly in use. The master is also ready to substantiate on oath, if need be, that every tramp was, on admission to the house, thoroughly cleansed by means of a warm bath, unless he happened to arrive at an hour in the evening too late for the bath to be prepared.

Taunton (the latter being three-eighths of a penny per day more costly than the former); but to prove that these are not fair subjects of comparison, the Guardians need only remind the Board that the dietary of the sick forms an important ingredient in the expense of the general Workhouse dietary; and that if the average proportion of sick in one Workhouse should exceed that of another, or if the articles of diet ordered by the medical officer of one Workhouse should be more expensive than those ordered in the other, the total cost of the dietary in such two Workhouses would of course vary, although the dietaries in both houses, for the healthy, may be precisely the same.

Dr. Sutherland mentions that the General Board of Health called special attention to the necessity of care as to the articles of food in its first notification, but that no change appears to have been made in consequence.

The following extract from the minute book of the Board, under date 21st February, 1849, will shew that the Board took the matter into their consideration, and will sufficiently explain why no change was then made in the diet :—

“ Mr. Foster, medical officer, with reference to the minute of the last meeting, referring the letter from the Poor Law Board and the copy of one from the General Board of Health on the subject of the dietary of the inmates of the Workhouse to him, reported that he did not consider any alteration in the diet at present necessary, the health of the inmates being improved, but that if any alteration be made, a dinner from bread and cheese be substituted for soup once a week.

“ The letters above referred to having been read, ordered that no alteration be made at present, but that if Mr. Foster should see any necessity for a change, that proposed by him, bread and cheese, in lieu of soup once a week, to be adopted.”

Dr. Sutherland proceeds to state that diarrhœa appeared in the house a considerable time before cholera broke out, and yet no change in the diet was made; and he goes on to say that, “ Like most other predisposed localities, Taunton Workhouse gave indications of the approaching fate of its inmates for some time before it arrived. About the 10th of September last bilious diarrhœa appeared in the house. Early in October the disease shewed a tendency to advance. In the first week or ten days of the month there were a good many cases, and one man died of dysentery. Except this diarrhœa, the house was unusually healthy till the 3rd of November, when cholera appeared.”

The natural inference to be drawn from the foregoing statements is, that the Guardians, for some unaccountable reason, obstinately adhered to a dietary which Dr. Sutherland characterises as “ unsuitable, and tended to produce a state of constitution which would fall a prey, very readily, to epidemic disease,” notwithstanding frequent admonitions of its *injurious* tendency; and that so far from the cholera, as it appeared in the house, being a sudden outbreak without premonitory symptoms, as Dr. Sutherland told the Guardians at his first visit, and which he said was a form in which it had often manifested itself in other localities, it was ushered in by numerous warnings brought to the knowledge of the Board by their medical officer, but which were wholly disregarded by them. The Guardians have shewn that they paid attention to the suggestions of the Board of Health made to them in February last, and the following

extracts from the medical officer's report book from July 11th up to the 3rd of November when cholera appeared, will show how little he regarded the cases of diarrhœa which occurred during that period in the Workhouse, as "indications of the approaching fate of its inmates," or if he did so regard them, how much it is to be regretted that he did not pointedly draw the attention of the Board to the subject, with the view of taking precautions to avert the threatened calamity, as he did in former instances when other epidemic diseases prevailed.

Extracts from the Medical Officer's weekly reports.

1849. July 11th.—Since my last report sickness has decreased.
 July 18th.—Reporting on the state of health of the house, I am happy to state that it continues generally good.
 July 25th.—The inmates of the house remain generally healthy.
 August 1st.—The house remains generally healthy.
 August 8th.—In reporting to day of the state of the health of the house I am happy to state it remains generally good.
 August 15th.—During the past week several inmates have complained of irritation of the bowels, which has passed off after taking a little medicine, therefore I have not returned them on my list; in other respects the house remains generally healthy.
 August 22nd.—The inmates of the house remain generally healthy
 August 29th.—Nothing particular has occurred.
 September 5th.—Generally healthy.
 September 11th. Several of the inmates have during the past week complained of slight diarrhœa, but not bad enough to report; in other respects the health of the house remains in much the same state as last week.
 September 19th.—The house is generally healthy.
 September 26th.—The house remains generally healthy.
 October 3rd.—The house remains generally healthy, with the exception of a great tendency to diarrhœa.
 October 10th.—Several cases of diarrhœa have occurred since last report, two or three severe, but are better; Esquin Jeff's has died from dysentery, after an attack of a fortnight's duration.
 October 17th.—Diarrhœa much the same as last week.
 October 24th.—Since my last report nothing particular has occurred.
 October 31st.—During the past week one woman has been confined, one has died from diarrhœa. Hurley, Caroline has been admitted, labouring under diarrhœa, after leaving Bridgwater Workhouse, where she stated she had been for some time; she is now in a very dangerous state.

The foregoing extracts from the medical officer's report also shew that the health of the inmates of the Workhouse improved for some time after the adoption of the new dietary.

It is also to be noticed that Mr. Foster states to Dr. Sutherland that "he has repeatedly objected to the diet to individual Guardians, but never heard the inmates object to it." This remark singularly coincides with an observation of the poor Law Commissioners in their 2nd annual report, page 5 wherein they state "Complaints of the insufficiency of the allowance of food in the Workhouses, have occasionally been made by persons of the higher classes, but they have seldom sprung from the pauper inmates habituated to scanty cottage fare."

If, then, Dr. Sutherland's remarks on the subject of the dietary are well founded, the Guardians cannot but feel that the Poor Law Board have incurred a heavy responsibility in sanctioning it, and this Board a similar responsibility in persevering in it. But if his remarks rest on no better authority than that of "a number of gentlemen, resident in the town," which the guardians have shewn to be erroneous, then all such remarks, particularly that of the insufficiency of the dietary, are, in the opinion of this Board, to be strongly deprecated, as only calculated to foster the prejudices of a too numerous class of persons, who, either ignorant of the duties and responsibilities of those charged with the execution of the Poor Law, or failing to discriminate between the principles which govern a compulsory system of relief to the destitute, and those which govern the voluntary distribution of alms to the indigent, embarrass the Guardians in their duties, already sufficiently onerous, and impede, instead of aid, the just administration of the law.

Dr. Sutherland contrasts the Workhouse with the County Gaol, wherein no case of cholera has occurred, and this he seems to attribute to the superiority of its sanitary arrangements over those of the Workhouse. But the Guardians submit there is little, or no analogy between the two establishments. The inmates of the gaol are usually strong, able-bodied persons, between the ages of 16 and 35; those of the Workhouse, very young, or old and infirm. The master of a Workhouse has neither the same means nor the power of strictly enforcing the rules which provide for cleanliness, ventilation, &c., which are possessed by the governor of a gaol, aided by a numerous staff of subordinate officers. The dietary of a Gaol must necessarily be of a more liberal character than that of a Workhouse, to counteract, in some measure, the depressing influence of imprisonment, and to enable the prisoners to undergo the discipline and hard labour to which, sometimes, for lengthened periods, they are subjected.

In enumerating the causes which led to the outbreak of cholera, there is one fact, that of an imported case of cholera, from Bridgwater, which Dr. Sutherland has omitted to mention, but which the Guardians think it right to advert to, more especially as the circumstances attending it have been much commented on by the inhabitants of the Town and neighbourhood.

On Sunday, the 28th of October, a woman, named Caroline Hurley, was admitted into the Workhouse, after certificate of her fitness for admission by a medical officer, and in Mr. Foster's (the medical officer) weekly report to the Board, dated 31st October he states, that she was "admitted labouring under diarrhœa, after leaving Bridgwater Workhouse." On Thursday, the first of November, she died in the Taunton Workhouse, the reported cause of death being diarrhœa, and on Friday, the following day, a post-mortem examination of the body was made in the dead-house, but without authority, by Mr. Foster. Early on the following morning, Saturday, the cholera broke out, caused, as was alleged by many persons, by the effluvium from the body (it not being then suspected by the Guardians that the patient died of cholera), but which the Guardians, after consulting Dr. Sutherland and other medical men on the subject disbelieved. Further enquiries, however, have brought these facts to light, viz., that Caroline Hurley had been attacked with cholera in the first week of October, while she was in the Bridgwater Workhouse; that

on the day she left it, namely, Saturday, the 27th, she was in a very weak and feeble state, and left in spite of the advice and remonstrance to the contrary, of her medical attendant. There is no doubt, therefore, that when she arrived on the Sunday at the Taunton Workhouse, she was still suffering from the effects of cholera, and that cholera was the cause of her death on the succeeding Thursday.

In conclusion the Guardians desire to express their deepest concern for the melancholy loss of life which has recently occurred, a feeling which is evinced by the prompt and efficacious measures they took at the outbreak, and have since continued, for arresting the ravages of the disease. They have no desire to shift on others whatever share of responsibility may fairly attach to themselves, and in this, as in all other matters, they court the strictest enquiry and investigation into their conduct. Experience has taught them that in the administration of the Poor Laws there are peculiar difficulties to contend with, and this experience as well as the consciousness that every act of theirs is narrowly scrutinised and liable to be misrepresented, would impel them, even if no higher motive actuated them, to be most vigilant and sedulous in the discharge of their arduous duties.

These considerations will, it is hoped, prevent every candid mind from giving a too ready an acceptance to *ex parte* statements unfavourable to the Guardians, or to condemn their conduct on slight evidence.

And whenever a dispassionate enquiry shall be made into their whole system of Workhouse management, they feel confident that the recorded minutes of their proceedings will bear out the assertion that throughout they have been actuated by a humane and considerate regard for the well-being of the poor, no less than for the interests of those whose industry and labour provide the funds for their support.

TAUNTON UNION DIETARY.

			Breakfast.		Dinner.				Supper.			
			Bread.	Gruel.	Cooked Meat.	Bread.	Soup	white peas potatoes or other vegetables	Suet Pudding.	Bread.	Cheese.	Broth.
			oz	pint	oz	oz	pints	lbs.	oz	oz	oz	pint
Sunday	Men	...	6	1½					14	6	1½	
	Women	...	5	1½					12	5	1½	
Monday	Men	...	6	1½	4½			1		6		1½
	Women	..	5	1½	4½			1		5		1½
Tuesday	Men	...	6	1½		6	1½			6	1½	
	Women	...	5	1½		5	1½			5	1½	
Wed.	Men	...	6	1½					14	6	1½	
	Women	...	5	1½					12	5	1½	
Thursday	Men	...	6	1½		6	1½			6	1½	
	Women	...	5	1½		5	1½			5	1½	
Friday	Men	...	6	1½	4½			1		6		1½
	Women	...	5	1½	4½			1		5		1½
Saturday	Men	...	6	1½		6	1½			6	1½	
	Women	...	5	1½		5	1½			5	1½	

INFIRM—Tea for breakfast and supper, not exceeding one pint per meal, sweetened with sugar, not exceeding half an oz. to a pint of tea, together with butter, not exceeding five ozs. per week, in lieu of gruel for breakfast and cheese or broth for supper.

CHILDREN, under nine years of age—To be dieted as the Guardians shall direct ; above nine and under sixteen to be allowed the same quantities as women.

SICK—To be dieted as the Medical Officer shall direct.

CHARD UNION DIETARY.

			<i>Breakfast.</i>		<i>Dinner.</i>					<i>Supper.</i>			
			Bread.	Gruel or Porridge.	Cooked Meat.	Peas or Vegetables.	Soup.	Suet Pudding.	Bread.	Cheese.	Bread.	Rice or Potatoes.	Cheese.
			oz	pints	oz	lbs.	pints	oz	oz	oz	oz	oz	oz
Sunday	Men	...	7	1½				14			7		1½
	Women	..	6	1½				12			6		1½
Monday	Men	..	7	1½					7	2	7		1½
	Women	...	6	1½					6	2	6		1½
Tuesday	Men	...	7	1½	4	1¼					7		1½
	Women	...	6	1½	4	1¼					6		1½
Wed.	Men	.	7	1½			1½	7				20	
	Women	...	6	1½			1½	6				18	
Thursday	Men	...	7	1½				7	2	7			1½
	Women	...	6	1½				6	2	6			1½
Friday	Men	..	7	1½	4	1¼					7		1½
	Women	...	6	1½	4	1¼					6		1½
Saturday.	Men	...	7	1½			1½	7				20	
	Women	...	6	1½			1½	6				18	

OLD PERSONS, of the age of sixty and upwards—One oz. of tea, five oz. of butter, and seven ozs. of sugar per week in lieu of gruel for breakfast.

CHILDREN, under nine years, at the discretion of the Guardians.

CHILDREN, above nine and under thirteen years, the same as women in the dietary.

All SICK paupers according to the directions of the Medical Officer.

LANGPORT UNION DIETARY.

		Breakfast.				Dinner.						Supper.			
		Bread.	Wheat flour Gruel.	Oatmeal Gruel.	Rice Flour Gruel.	Meat, or Peas Soup.	Bread.	Suet Pudding.	Rice, or Vegetables.	Cooked Meat.	Vegetables.	Meat Pudding.	Bread.	Cheese.	Broth.
		oz	pints	pints	pints	pints	oz	oz	oz.	oz	lb.	oz	oz	oz	pints
Sun.	Men	-7	1½			1½	6						6	2	
	Women	-6	1½			1½	5						5	1½	
Mon	Men	-7		1½				12	8				6		1½
	Women	-6		1½				10	8				5		1½
Tues	Men	-7	1½			1½	6						6	2	
	Women	-6	1½			1½	5						5	1½	
Wed	Men	-7		1½						5	1		6	2	
	Women	-6		1½						4	1		5	1½	
Thur	Men	-7			1½	1½	6						6	2	
	Women	-6			1½	1½	5						5	1½	
Fri.	Men	-7		1½				12	8				6		1½
	Women	-6		1½				10	8		oz		5		1½
Sat.	Men	-7		1½							8	12	6	2	
	Women	-6		1½							8	10	5	1½	

OLD PEOPLE, sixty years of age and upwards—May be allowed one oz. of tea, four ozs. of butter, and five ozs. of sugar per week in lieu of gruel for breakfast.

If thought desirable, half an oz. of butter in lieu of cheese to the women for supper.

CHILDREN, under nine, to be dieted at discretion; above nine, to be allowed the same quantities as women.

SICK—To be dieted as directed by the Medical Officer.

LANCASHIRE COUNTY INFIRMARY

In-patients		Out-patients		Total	
Male	Female	Male	Female	Male	Female
10	12	15	18	25	30
12	14	18	20	30	34
14	16	20	22	34	38
16	18	22	24	38	42
18	20	24	26	42	46
20	22	26	28	46	50
22	24	28	30	50	54
24	26	30	32	54	58
26	28	32	34	58	62
28	30	34	36	62	66
30	32	36	38	66	70
32	34	38	40	70	74
34	36	40	42	74	78
36	38	42	44	78	82
38	40	44	46	82	86
40	42	46	48	86	90
42	44	48	50	90	94
44	46	50	52	94	98
46	48	52	54	98	102
48	50	54	56	102	106
50	52	56	58	106	110
52	54	58	60	110	114
54	56	60	62	114	118
56	58	62	64	118	122
58	60	64	66	122	126
60	62	66	68	126	130
62	64	68	70	130	134
64	66	70	72	134	138
66	68	72	74	138	142
68	70	74	76	142	146
70	72	76	78	146	150
72	74	78	80	150	154
74	76	80	82	154	158
76	78	82	84	158	162
78	80	84	86	162	166
80	82	86	88	166	170
82	84	88	90	170	174
84	86	90	92	174	178
86	88	92	94	178	182
88	90	94	96	182	186
90	92	96	98	186	190
92	94	98	100	190	194
94	96	100	102	194	198
96	98	102	104	198	202
98	100	104	106	202	206
100	102	106	108	206	210
102	104	108	110	210	214
104	106	110	112	214	218
106	108	112	114	218	222
108	110	114	116	222	226
110	112	116	118	226	230
112	114	118	120	230	234
114	116	120	122	234	238
116	118	122	124	238	242
118	120	124	126	242	246
120	122	126	128	246	250
122	124	128	130	250	254
124	126	130	132	254	258
126	128	132	134	258	262
128	130	134	136	262	266
130	132	136	138	266	270
132	134	138	140	270	274
134	136	140	142	274	278
136	138	142	144	278	282
138	140	144	146	282	286
140	142	146	148	286	290
142	144	148	150	290	294
144	146	150	152	294	298
146	148	152	154	298	302
148	150	154	156	302	306
150	152	156	158	306	310
152	154	158	160	310	314
154	156	160	162	314	318
156	158	162	164	318	322
158	160	164	166	322	326
160	162	166	168	326	330
162	164	168	170	330	334
164	166	170	172	334	338
166	168	172	174	338	342
168	170	174	176	342	346
170	172	176	178	346	350
172	174	178	180	350	354
174	176	180	182	354	358
176	178	182	184	358	362
178	180	184	186	362	366
180	182	186	188	366	370
182	184	188	190	370	374
184	186	190	192	374	378
186	188	192	194	378	382
188	190	194	196	382	386
190	192	196	198	386	390
192	194	198	200	390	394
194	196	200	202	394	398
196	198	202	204	398	402
198	200	204	206	402	406
200	202	206	208	406	410
202	204	208	210	410	414
204	206	210	212	414	418
206	208	212	214	418	422
208	210	214	216	422	426
210	212	216	218	426	430
212	214	218	220	430	434
214	216	220	222	434	438
216	218	222	224	438	442
218	220	224	226	442	446
220	222	226	228	446	450
222	224	228	230	450	454
224	226	230	232	454	458
226	228	232	234	458	462
228	230	234	236	462	466
230	232	236	238	466	470
232	234	238	240	470	474
234	236	240	242	474	478
236	238	242	244	478	482
238	240	244	246	482	486
240	242	246	248	486	490
242	244	248	250	490	494
244	246	250	252	494	498
246	248	252	254	498	502
248	250	254	256	502	506
250	252	256	258	506	510
252	254	258	260	510	514
254	256	260	262	514	518
256	258	262	264	518	522
258	260	264	266	522	526
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