that not one person has died of smallpox." In 1814 the disease was introduced by a vagrant, there were 12 or 14 cases and 2 deaths but by a recourse to vaccination the disease was soon checked.[20] As has been seen, these happy results were not general or permanent owing to inefficient vaccination, to ignorance of the necessity of periodic re-vaccination and, most of all, to prejudice against the practice. Nevertheless the results of vaccination upon the death rate were sufficiently astounding, as the figures in the appendix show.

The Carlisle figures, which seem absolutely reliable, show an average annual death rate of 3·64 per 1,000 at a period when the disease, according to most contemporary authorities, had been checked. The figure for the Liberties of London 1771–80 was 5 per 1,000.[22] Smallpox was endemic in all towns but the case was different in the country where isolated places might escape infection for a number of years, though when the disease did arrive they suffered severely. It is not safe, therefore, to apply the town death rate to the whole country though it would apply to villages near towns or situated on lines of communication. We have fairly reliable figures for Sweden which show an annual average death rate from smallpox in that country for the period 1774–1798 of 2 per 1,000. A large proportion of the population of Sweden lived in isolated villages and the incidence of the disease must almost certainly have been higher in England. A guess of an annual death rate of 2·5 to 3 per 1,000 perhaps would not be far from the truth. There is much evidence, however, that this rate was considerably higher prior to the last quarter of the 18th century. In estimating the importance of smallpox from the point of view of population it must never be forgotten that its victims were mainly under 5 years old. According to the Carlisle figures the death rate from smallpox of those under 5 was 28 per 1,000, a figure equal to the total death rate for this age period for the years 1876–1885. For the years 1906–1915 the *total* death rate for this age period was only 16 per 1,000. Napoleon showed a true appreciation of values when, in reply to a request for the release of some English prisoners presented in the name of Jenner, he answered, "I can refuse nothing to this man."

# CHAPTER XV

## The Anti-Typhus Campaign and the Fever Hospital Movement

*Typhus.* (*Synonyms:—Contagious, Spotted, Camp, Gaol, Hospital Ship, Nervous and Putrid Fever.*) Another definite campaign was the one waged against typhus. Typhus is an acute fever and though the parasite which causes it has not yet been discovered, the carrier has been proved to be the human body louse. Until the 19th century the diagnosis of typhus was confused with that of typhoid and of relapsing or recurrent fever.[1] The distinction between typhus and typhoid after a long series of researches, beginning in the early 18th century, was at last firmly established by Still in 1837. Relapsing or recurrent fever was only established as a separate disease in 1843; before that date it was believed to be a mild form of typhus; a so-called mild form of typhus fever, probably relapsing fever was very prevalent in England during the epidemic of 1826–7 and also in the '40's. Since both diseases are carried by lice they are likely to occur together and from the point of view of preventive medicine their distinction was not of great importance. The case mortality of relapsing fever is from 4 to 14%, that of typhus from 10 to 50%. Unlike most epidemic disease typhus flourishes especially in the temperate zone since the virus does not develop in the louse in high temperatures. Epidemics are favoured by any circumstance favourable to the breeding of lice.[2]

Probably much of the so-called plague of the Middle Ages was typhus. It appears to have been endemic in most centres of population in the 18th century and most probably had been so during previous centuries. It seems probable that under-fed persons have less resistance against this disease. The pestilence which follows famine is generally typhus, though this may not be entirely due to the under-fed conditions of the victims of famine but to the tendency of famine-stricken

populations to crowd together at places where there is hope of obtaining food, or sometimes it seems, owing to blind herd instinct. Typhus was naturally liable to appear wherever verminous persons lived in close contact. It notoriously accompanied war and was found so frequently in camps, hospitals, prisons and ships that it was known as camp, hospital, gaol and ship fever respectively.

While no doubt typhus was endemic in the slums of London and other English towns in the 18th century it was generally considered that the gaols were the great breeding places in this country. Pringle said, "jails have often been the cause of malignant fevers".[3] Its presence in the gaols, particularly in Newgate, brought an additional aspect of terror to the grim and sordid Law Courts. In vain sweet herbs were spread to form a barrier between accusers and accused for more than once typhus passed the capital sentence upon the judge himself. In 1750 at the Spring Session at the Old Bailey the Court was infected and four out of 6 Judges, 3 or 4 counsel, an under-sheriff and several jurymen and others were killed to the number of about 40 persons of rank sufficiently high for their death to be noted.[4]

The gaols were also constantly infecting the army and fleet since these forces were largely recruited from among minor offenders. Lind showed Howard at Haslar a number of sailors ill of gaol fever contracted from a man discharged from a London prison. Lind in his Essay on the Health of Seamen says, "The source of infection to our armies and fleets are undoubtedly the jails; we can often trace the importers of it directly from them. It often proves fatal in impressing men on the hasty equipment of a fleet." The first English fleet sent in the war to America lost by typhus above 2,000 men. "The seeds of infection were carried from the guard ships to our squadrons and the mortality, thence occasioned, was greater than by all other diseases or means of death put together."[3] In 1781 The Admiralty introduced "slop ships" on which newly raised men were inspected, cleaned and supplied with new clothing before being distributed; this plan much decreased typhus in the fleet.



The appalling condition of the English gaols was first revealed by Howard who began his investigations in 1773. At a time when all administration in all countries was, judged by modern standards, inefficient and corrupt, the English prison administration stood out for laxity and corruption. The causes lay partly in the extreme decentralization of prison administration; partly in the fact that, from historical causes, the prison administration was largely independent of the magistrates and partly from the conception of prisons as places of detention provided by the gaoler for his own convenience.[5] That is to say, the prisons had no public funds upon which to draw, they had to be self supporting. Though this conception was being gradually modified and by the end of the 18th century certain grants for food were made to poor prisoners, there were no funds for general administrative purposes. It is not surprising that the sanitary condition of the gaols was horrible even according to the standards of the time. Though Howard found much to criticize in the Continental gaols, especially the survival in many places of torture, which was unknown in England, yet the sanitary conditions on the whole were better and in particular he found no gaol fever anywhere abroad. No doubt the centralized administration prevailing over most of the Continent prevented the extroardinary laxity which existed in the English gaols. But one cannot feel that Howard's evidence as to typhus is quite convincing. In England he seems to have viewed every gaol that he wished upon his own authority as a magistrate and a gentleman. The prison authorities were in a peculiarly independent position and did not much care whether his report was favourable or otherwise. As to fever, the gaolers looked upon it as natural to prisons and as Howard himself states, often asserted that it existed when it did not, in order to prevent the entry of prying magistrates. Howard's position on the Continent was very different. He entered the State prisons as the authorized visitor of the authorities, he was known as a prison reformer who considered gaol fever a sign of mismanagement, his report would be read by authority and an unfavourable one might well lead to the dismissal of the gaolers. Perhaps it is not

surprising that he never found a case of gaol fever, though it is difficult to believe that none ever occurred in Continental prisons. Typhus certainly existed in the Continental cities [6] and it is mentioned as one of the prevalent diseases in the Paris Hospice de la Maternité in 1808.[7]. It has to be remembered that climatic conditions were more favourable to typhus in the British Isles than in many parts of the Continent, where the hot summers were a natural check to the disease. Howard, however, was no doubt right in attaching importance to one difference between English and foreign prison administration when he says, " May not one great cause of the unhealthiness of our prisoners be, the want of proper bedding, which obliges them to lie in their clothes? " In many foreign prisons bedding was provided, often also a change of linen and there were sometimes rules about changing linen. At Gratz " the guards see that the *men take off their clothes* at night ".[8]

In this connection it is fair to remember that at this period the use of bed and body linen was more common on the Continent than in this country. Coarse linen was not much used in England, fine linen was only possible for the well to do. The predominant use of woollen garments and bed coverings among the mass of the people did not tend to personal cleanliness. Both Smollett and Arthur Young comment on the common use of table linen in France, even among the poor, owing to its cheapness and this must have applied to body linen as well. Arthur Young says, " The expence of linen in England is enormous, from its fineness. . . . In point of cleanliness, I think the merit of the two nations is divided; the French are cleaner in their persons, and the English in their houses; I speak of the mass of the people, and not of the individuals of considerable fortune." [9] Blane states that body linen was not common in this country until the 18th century. The introduction of machinery in the cotton manufacture and the consequent enormous cheapening of the product led to a widespread change of habit among the mass of the people. Francis Place writing in 1822 says that the English people are cleaner in their persons and their dwellings than formerly, particularly the women, " partly from the success of the cotton manufactures, which has enabled them



to discard the woollen clothes which were universally worn by them, which lasted for years, and were seldom, if ever washed." [10] Heysham says that for the ten years 1778–88 the average annual deaths from typhus in Carlisle were 13 while for the ten years ending 1814 it scarcely amounted to *one*. Discussing the reason for this decrease he says, " On this subject I cannot satisfy my own mind . . . The people in general certainly now pay more attention to cleanliness, and, upon the whole, live better than they did ".[11] A sister-in-law of Sismondi's writing in 1837, referring to the latter's views says, " He has such an intemperate horror of the cotton manufacture that he could not bear my saying that it had added to the comfort of our poor in giving them sheets in their beds which in my youth few of them knew ".[12] Sismondi was not the only person to adopt this attitude; the boon conferred on the mass of the people by a material for clothing and bedding which could be easily washed and cheaply renewed has been curiously overlooked, even by the defenders of machinery. Apart from general comfort and healthiness the new material must have, in particular, greatly reduced the incidence of typhus, since the body louse breeds in clothing, needs a certain amount of continuous warmth and is fairly easily destroyed by soap and water. It is moreover quite destroyed by boiling, and cotton materials can be boiled while woollens are spoiled by boiling.

But typhus was also reduced by the conscious effort of the authorities and of the medical profession. Howard's work had an appreciable effect upon the health of prisoners. He gave evidence before the House of Commons in 1774 for which he received the thanks of the House, and in the same year Mr. Popham, member for Taunton, introduced a Bill for preventing the gaol distemper. (14 Geo. III c. 59.) In his second tour Howard found that the gaol fever, though not eradicated, was much diminished. " Many gaolers " . . . (were) " more mindful . . . for the sake, not only of their prisoners, but of themselves and their own families." [13] The efforts of the Admiralty to prevent typhus infection in the fleet have already been mentioned and about this time the far more difficult task of eradicating it among the civilian population was definitely attempted.

Pringle[14] first recognised typhus under its various names as being one and the same disease but it was Lind who first laid down correct rules for its prevention. His directions have quite a modern ring. In his Essay on the Health of Seamen, 1757, he advocates the destruction of the clothing of the infected person, the washing of his body and all utensils with vinegar, the fumigation of infected parts of the vessel and the destruction of rats, mice and beetles by sulphur fumigation. In 1758 he was appointed physician to the Naval Hospital at Haslar and began to apply his methods to the hospital treatment of the disease. Lind discovered that typhus "contagion will not pass to the distance of many feet through the air; but is communicated by close approach to the sick, or by *fomites*, i.e. substances imbued with the contagion".[15] This was a revolutionary discovery in hospital practice, for typhus had been such a scourge in hospitals that fever patients had been rigorously excluded, these unfortunate persons being left to perish either in their homes or in workhouses, spreading infection broadcast. Edward Percival writing in 1819 stated that infectious diseases (which term at that time was practically synonymous with fevers) were excluded by the Charters of almost every County and City Infirmary in the kingdom. He went on to state, however, that the letter of the law had been ignored in many institutions since the precautions worked out by Lind at Haslar had made the establishment of fever wards possible without risk to the other patients. According to him Lind's methods were copied at Dumfries Hospital in 1776 and at the Edinburgh Infirmary in 1777, but other authorities speak of Haygarth of Chester as the first to apply the new régime to civilian practice. The probability is that the methods were only applied at Dumfries and Edinburgh in order to deal with cases which occurred in the hospital and to prevent the spread of the disease within its walls, but that it was Haygarth of Chester who first opened fever wards for the specific reception of fever patients and who inaugurated a general campaign against typhus.

A description of his work is best given in his own words which are to be found in a letter to Howard published in the



Appendix to the latter's work upon Lazarettos. He says, "The propagation of infectious diseases has been an object of my particular attention for near a dozen years. There appears to be no doubt that the plague spreads by the same laws as many other distempers common in this part of Europe; namely, the smallpox, measles, chincough, scarlet fever, etc. I have long thought, that perfect purification . . . might be performed with great ease and certainty." In the fever wards at Chester "the chief aim of our regulations is not merely to preserve the lives of the infected patients. The principal purpose and benefit of the establishment is to prevent any infectious fever from spreading through poor families, and through the town. It effectually suppressed the febrile contagion which alarmed Chester, in 1784. A plan of this kind has been an object of my anxious wish and attention, ever since the year 1774, when we were visited by a like epidemick. The success of our small-pox society in checking the progress of the variolous contagion, in closely adjoining houses, encouraged and enabled me to propose a plan, which, by easy rules, might prevent the communication of infectious fevers from one ward of the infirmary to another". The proposal for the establishment of fever wards in Chester Infirmary was first made by Haygarth in 1775 and the wards were actually opened in 1783.[16] Though the wards were "situated within 13 yards of some other wards of the building, yet during a space of above 12 years, the contagion of fever was never known to extend itself from thence".[15] This experiment attracted considerable attention and was taken up by progressive doctors in other towns.

In 1792 special rooms were set aside in Manchester Infirmary for the accommodation of the fever cases which occurred in the hospital. Before that time, Ferriar relates, it was found necessary when fever began in the hospital to dismiss almost all the patients, "a measure productive of much inconvenience, and general alarm." The fever wards proved effectual in preventing this necessity but Ferriar had set his heart upon a much more ambitious scheme. About 1792 there was an abortive attempt to form a "committee for regulating the

police[17] of the towns of Manchester and Salford" but "private interests prevailed over those of the public, and nothing effectual was done". In 1795, however, an infectious fever broke out at Ashton-under-Lyne which was supposed to have originated in two cotton works. A committee was formed and a subscription raised to relieve sufferers and an attempt was made to provide a house for the sick, but their prejudices prevented removal from their homes. The Surgeon, Mr. Ogden, traced the origin to a young woman from Manchester. As a result of his report a Board of Health was formed in Manchester and Ferriar was requested to draw up a plan. He says, "a very numerous and very respectable meeting" (was held) "of the friends of the poor; among whom were several proprietors of large cotton mills, who were desirous to use every means for preserving the health of the persons employed by them". Ferriar addressed the meeting, describing the horrible condition of the common lodging houses and cellar dwellings and the lack of provision for the sick. He earnestly advocated the establishment of fever-wards, stating that though the cotton mills were not the original source of fevers, yet fevers were spread by them owing to night work, to the lack of cleanliness both of premises and work people and to the employment of convalescents and want of ventilation. Ferriar expressed the belief that "The remonstrances of so respectable a body, as a committee of this nature, may also be expected to have a proper influence, when they call the attention of the proprietors of manufactories, to practices evidently destructive of health and life".

The Board of Health decided to found a House of Recovery, which name was chosen instead of that of Fever-ward in order not to alarm the patients. The necessary funds were raised by public subscription, four small houses were taken at an expense of £200 and the institution was opened in 1796. It followed the best rules as to cleansing of infected clothing, the provision of special hospital clothing, etc. and that these rules were adequately carried out is shown by Dr. Ferriar's affirmation "that so far from any contagion having been disseminated from the House of Recovery, which was erected at



Manchester in a crowded and much infected part of the town, the district immediately surrounding that establishment was the first cleared of the fever".[15] The Manchester House of Recovery was not merely a fever hospital, it was an institution for the prevention of fever. Rewards were paid to informers who gave notice of cases of fever and also to heads of families who followed the rules for the prevention of infection. In this the promoters were probably copying the Chester Small Pox Society. Patients were removed to the House in a special sedan chair with linen covers, the infected premises were white-washed and cleansed and new bed clothes supplied when it was necessary to destroy the old. Ferriar says that severe cases were favoured for admission, "the physicians have regarded the public good more than their own immediate reputation; and have preferred the solid benefit of preventing the wide diffusion of contagion, to an ostentatious list of cures."[20] Bernard, of the Society for Bettering the Condition of the Poor which wholeheartedly supported the movement, says in 1797 that many former opponents had become active friends and that similar establishments were proposed at Chester, Stockport and other places. He comments, "It is peculiarly in the prevention of disease and contagion, that the benefits return with increase upon the benefactor, and that the merciful receive mercy."[18] Bernard visited the House in 1798 and found it clean, airy and comfortable with iron bedsteads without curtains and with straw mattresses which were frequently renewed. The institution was then serving a radius of two miles and fevers had been greatly reduced. Ferriar said that one of the chief benefits of the House of Recovery, was that the owners of cotton mills were induced to pay a more scrupulous attention to the health of their work people and that their buildings were in general kept cleaner and better ventilated, and that "in most of the large cotton mills, the persons employed are not exposed to more numerous causes of disease, than any other class of labourers, excepting in the process of *mule spinning*" where the rooms were much over-heated. Ferriar adds, "a salutary impression has been made on the minds of the poor, respecting the utility of cleanness in their houses." In 1789

Ferriar had said that many cotton mills were dirty and unventilated.

As illustrating the kind of work which the authorities of the House of Recovery undertook an episode related by Ferriar is enlightening. Not long after the opening of the institution Ferriar was asked by the proprietor of a large cotton mill just outside Manchester to enquire into an outbreak of fever at his mill. Ferriar inspected the factory but could find nothing wrong with the arrangements, but on going into the village found several dirty families from Manchester "who had contrived to make even new houses offensive" and had overcrowded them with lodgers. Ferriar had the patients removed to the House of Recovery, recommended that overcrowding should be stopped and the incurably dirty families dismissed. He adds that the measures were adopted and were successful.

The accommodation at the House of Recovery soon proved insufficient and a subscription of £5,000 was raised to erect a new building "upon a large and commodious scale";[19] it had accommodation for over 100 patients and was divided into 21 wards and had separate wards for scarlet fever. The new building was opened in 1805 and Ferriar says, "Since it has been in the power of the Physicians to admit every case of fever, as it occurs we have felt ourselves completely masters of the disease. Epidemic typhus is now unknown to us, while it has been raging in some of the neighbouring towns . . . and the destructive epidemic of scarlet fever, which was actually introduced into the town during 1805, from Liverpool, has been completely suppressed."[20]

At the time of the first establishment of the House of Recovery in Manchester Dr. Currie of Liverpool, the friendly rival of Percival in well doing, was still engaged in his battle for the establishment of a similar institution at Liverpool. In 1797 he wrote to Percival, "I rejoice in the final establishment of your House of Recovery; which in its consequence will, I trust, prove a national benefit. Yet, when I consider by what irrefragable as well as by what important considerations it was supported, how vehemently it was opposed, and, if I mistake not, how narrowly it escaped being overthrown . . . my satisfaction is mingled with wonder and sorrow. . . . Here, no progress has been made in enlarging our house of reception for fevers, and the institution remains in the same state as before."[21] In 1787 typhus had appeared in the Liverpool Infirmary. Currie says that discipline had been relaxed, the weather had been intensely cold so that ventilation and cleanliness had been neglected, consequently the contagion spread rapidly. However, two wards were fitted up for patients, one for each sex, and these wards were afterwards occupied by such cases of fever as presented themselves. This arrangement continued for five years but the wards were small and underground and in every respect inconvenient, they held at most eight beds and were properly adapted to six beds only but "they admitted of cleanliness and ventilation". The admission of fever cases to the Infirmary (which was contrary to the rules) was objected to by some subscribers but "the want of an asylum for this disease elsewhere overcame these objections". In 1793 a contagious fever prevailed in the workhouse and two spacious wards of 18 beds each were fitted up in that building by the Parish Committee and an arrangement made by which cases of fever were admitted there instead of to the Infirmary and the admission of fever cases to the Infirmary ceased. "The wards for fever at the work-house, have secured that immense hospital, often containing 1,200 persons, from the spreading of fever, to which, previous to their establishment, it was perpetually liable", for the contagion never spread from the wards. The wards "have relieved the Infirmary from the necessity of admitting those miserable wretches, who, under the influence of fever (perhaps caught on ship-board) and refused admittance into private lodgings, were brought up to that hospital, where, if not received, they might have perished in the streets".[22]

But the wards were not large enough to serve as a General Hospital of Recovery and the formalities necessary for the admission of the poor from their own homes also prevented their use for that purpose and in any case Currie considered the provision hopelessly inadequate. In 1796 he brought forward and carried at an open vestry meeting a proposal for the erection of a House of Recovery; but there was great

and organized opposition and the plan had to be dropped. Currie, however, did not lose heart, his plan had been "unanimously received by the gentlemen of the faculty" and the success of the Manchester experiment must have been encouraging. Five years later there were new rectors and new churchwardens who were persuaded to "go heartily into the business"; at a great open vestry meeting of about 2,000 persons held in 1801 the proposal to erect a House of Recovery to be supported entirely out of the parish rates, was carried unanimously. Currie comments that by making the institution rate-supported, "we give it a solid foundation, and have no trouble with annual subscriptions for its support." Apparently some ratepayers thought there was another side to the question but "the honest democracy would listen to no suggestions of prudence", as to delay till peace when the price of building would fall, etc., and treated with utter contempt the suggestion that it would raise the poor rates 6d. in the £.[23] No doubt the honest democracy was right but it is easy to be contemptuous of prudence when other people's money is in question. The institution was opened in 1806; but though the plan for it was furnished by Ferriar a writer of 1810 criticizes the building as being too high and narrow. At that date not only typhus but scarlet fever, smallpox, measles and whooping cough were treated there but, "many of the infected poor obstinately refuse to be removed from their own miserable dwellings."[23] Perhaps part of this prejudice was due to the connection of the institution with the Poor Law. However, Dr. Duncan, who gave evidence at the enquiry of 1833, considered that the institution had done much to improve the health of the town. He said that, "previously to the erection of that hospital, cases of typhus fever formed one-fourth of the whole diseases of the poor, whilst now they do not exceed one-tenth or one-twelfth."[24]

Though the Liverpool House of Recovery was the only one of the early fever hospitals to be entirely supported out of the rates, the voluntary principle was everywhere found difficult to apply to these institutions. The ordinary hospitals depended upon a system of patronage, patients were only admitted by Subscribers' Letters, though exceptions were sometimes made



in cases of urgency. This system appealed to a natural love of patronage, it afforded a cheap and easy method of provision for sick servants, pensioners and protégées and, from a more legitimate point of view, gave subscribers a safeguard against abuse of power by hospital officials. This system, however, was quite inapplicable to Fever Hospitals, since the whole idea of these institutions was to remove the patient to hospital *at once* without any delaying formalities and irrespective of whether he had a well-to-do patron or not. As fever patients were excluded from the ordinary hospitals the support of poor fever patients, either in their own homes or in the workhouse, devolved upon the parish. An outbreak of fever, by laying aside many breadwinners, meant a great addition to the rates[25] and enlightened poor law authorities therefore supported the new methods. In this connection it must be remembered that the magistrates still had considerable power in Poor Law affairs and that they were more likely to be susceptible to new ideas than the overseers. An account of an outbreak of typhus in Hull in 1801 is enlightening in this connection. The victims of the outbreak applied for relief at the workhouse and the workhouse surgeon reported the matter to the magistrates who ordered immediate relief. The relief measures included repaving the street, repairing the drains and supplying a proper descent to carry off foul water. The ceilings, walls and closets of the infected houses were lime-washed and the clothing, furniture and floors washed with soap and water. The doors and windows were set open three or four times a day. One wonders what the assisted persons thought of these drastic measures, since it is stated that they habitually lived in comfortable dirt with their windows shut and "all crevices blocked up". However, they were doubtless placated by the coals and nourishing food and by the sheets, blankets, rugs and body linen which were sent from the workhouse. Nurses were also engaged to look after the sick; four nurses and two superintendents took the fever but recovered, but the workhouse surgeon, who had acted so promptly, died from it. It is stated that the efforts were successful, the fever was subdued in about two months and that, while out of the 17 persons attacked

before the relief measures started 9 died, of the 70 afterwards attended none died. The entire cost of the relief measures was £200. In 1803 fever again prevailed, a Board of Health was set up and fever wards established in an attic of the workhouse.[26]

It is stated in the account of the Society for Bettering the Condition of the Poor that this effort was largely due to the activities of two brothers and a sister named Horner. Thus, in different parts of the country, zealous individuals attained their ends by different means, in Liverpool by persuading a noisy public meeting (but perhaps it was more important that rectors and churchwardens had previously been converted), in Hull by persuading the Bench of Magistrates, in Manchester through the activities of a little group of doctors and of the more wealthy and enlightened cotton merchants and manufacturers. If subscriptions seemed easier to raise in Manchester than elsewhere, it must be remembered that the cotton manufacturers had a direct monetary interest in stamping out fever from the factories.

The London House of Recovery was founded in 1801 in Gray's Inn Lane, it was directly modelled upon the Manchester Institution even to a special sedan chair, which caused a riot upon its first public appearance. Like its Manchester prototype, the institution cleansed and purified houses, clothing and furniture. Lime washing was sometimes objected to by landlords or occupiers, but it was applied wherever permission was given and all fever houses were cleansed and fumigated. Fever was found to be endemic in Saffron Hill, the lower parts of Westminster and in the narrower courts of the eastern borders of the City. The committee offered to whitewash and cleanse these parts and were soon afterwards able to give a certificate of health. Before the establishment of the London House of Recovery the annual deaths from fever in the Metropolis were over 3,000, afterwards they fell to about 2,000 and in 1806 to 1,354. The mortality had been 1 in 4 but in the House of Recovery it was from 1 in 11 to 1 in 18.[27] Bateman said, however, in 1815 that the exemption of the metropolis from fever could not be wholly ascribed to the efforts of the fever hospital.[28] It was partly due, no doubt, to a natural lull in the disease and



Bateman's opinion was justified by a severe outbreak in 1818. Nevertheless the activities of the institution must have greatly reduced its incidence; for instance, Bateman writing in 1818 describes how the medical officers and inspectors of the House of Recovery stamped out various outbreaks by the methods of cleansing and fumigation. He specifically mentions an outbreak in an overcrowded workhouse in Ratcliffe Highway in 1812 and describes in detail the fumigation and limewashing of a court in Cock Hill. He adds that there were several cases of the disease being arrested even among the Irish labourers of Saffron Hill and Cow Cross Street, "crowded together with all their native habits of filth and indolence," and that "the cases in which it has been stopped in single families . . . are innumerable".[15]

But in spite of this good work the financial support of the Fever Hospital was not as good as had been hoped, it had no attraction of patronage or places for dependants. In 1804 through the instrumentality of Addington, Lord Sidmouth, a Parliamentary grant of £3,000 was obtained upon the implied condition of adequate subscriptions in the future. With this grant a building in Pancras Road, originally built for a smallpox inoculation hospital, was acquired and upon Sidmouth's suggestion scarlet fever wards were added; paying wards were also provided. If the general public were apathetic the poor law administrators realized the value of the institution. St. Pancras Parish gave a donation of £50 and an annual subscription of 20 guineas, St. Clement Danes gave twenty guineas, while other parishes paid two guineas for each parishioner treated.[27] This generosity is less surprising if we remember that typhus had been a scourge in workhouses as well as in prisons and hospitals. The account of the outbreak in the Workhouse in Ratcliffe Highway illustrates this. The workhouse was overcrowded at the time, it contained 208 persons instead of the 150 for which it was intended—typhus was introduced and spread rapidly into every ward except one and several persons died, including the Matron. At last a distracted churchwarden wrote to the doctor in charge of the House of Recovery, asking for assistance. Upon this all the patients were removed

to Gray's Inn Lane, the doctor and the inspector of the House of Recovery visited the workhouse and gave detailed directions as to its cleaning and fumigation. Their efforts were successful, the disease being almost at once subdued.[15]

The Fever Hospital movement was not confined to London, Liverpool, and Manchester. Leeds erected a House of Recovery by a public subscription of £3,000 in 1802, and Stockport erected one about the same date. Newcastle-upon-Tyne and Sheffield had anti-fever campaigns which are recorded and no doubt there were many unrecorded ones. It cannot be doubted that the result of this forgotten public health campaign was an enormous reduction in the incidence of typhus. This disease is fairly easily combated by correct methods, as was proved in Serbia during the War, the methods then employed being essentially the same as those laid down by Lind. In 1819 Percival writes, " through extensive districts in England typhous fever is almost wholly unknown ; and many eminent physicians in towns of some magnitude " have expressed doubts of its contagious qualities " as could arise only from the want of opportunities to observe the disease ".[29] It must be remembered that typhoid (or enteric) was not at this time distinguished from typhus and it was probably the observation of typhoid which led to this opinion.

Unfortunately typhus remained endemic in the Irish towns and cities and the migrant Irish labourers were a source of re-infection in this country. In this connection Bateman says, " In some crowded cities, indeed, in which poverty and want prevail more extensively and continuously among the lowest classes of the people than in London, as in Dublin, Cork, and some of the populous towns of the sister kingdom, contagious fever is generally prevalent and in seasons of distress rages to an extent unknown in this metropolis." Percival said that in Liverpool the fever was traced to the Irish quarter. " Typhus is now epidemic in various parts of England . . . this principle of propagation is fed by continual supplies from the sister kingdom." He adds, " In many places . . . the fever has been distinctly traced to Irish labourers; who come over in companies, especially in harvest time, in quest of employment. The



passengers and the sailors in the Irish vessels have, in many instances, sickened on the voyage, and been landed in a state of high fever ".[29] Farr writing in 1837 says, " The poor Irish, we strongly suspect, are keeping up, if they be not introducing, the fevers of their wretched country in the heart of the British cities."[30] It is possible, therefore, that but for this source of re-infection the extinction of typhus in this country might have been ante-dated by 50 years and that this ardent public health campaign, instead of being defeated and forgotten, might have been crowned with victory and honour.