

ventilated, it is still more prevalent; and by viciously disposing the places of labour, we can multiply the disease at will. Establish such a Factory in the healthiest district where Scrofula is hardly known; it will not be long before it is observed to be very frequent; and yet you will have carried comfort ('aisance') into a district previously poor. The workman will earn good wages, he will be less exposed to the inclemencies of the weather, will be better fed and better clad. In all else than one circumstance, you will find amelioration; that circumstance is the condition of the atmosphere in which he is placed. The air is bad, and this circumstance is sufficiently powerful to destroy all the good which results from the improvement in other circumstances. Get rid of that, and instead of a wretched scrofulous population, your workmen will be exempt from Scrofula, and will be robust."

A different opinion is, however, expressed by another high authority, Lugol. With respect to this agent, Factory employment, he says: "We have seen at St. Louis many young people in whom Scrofula was manifested in the Workshop, or Factory; we have always questioned them with care, as to the number working together in the same room, and to the number who had become scrofulous. Usually, we have found, that the person we questioned was alone affected with the disease." Again, "I have often questioned patients, to ascertain whether a certain number of people, working together, become scrofulous by a common influence. No fact of the kind has come to my knowledge. Workmen, who are congregated in damp workshops, are exposed at the same time to fatigue, unsubstantial food and intemperance, which is the inevitable alternation of privation. But in the midst of this state of things, Scrofula is not common. In fact, in my own practice, I see most of it where the comforts of life are possessed."

The opinion of Villermé is not unlike that of Baudelocque, but the evidence upon which his views rest, is not given. He says, "But however numerous may be the victims of inflammation and pulmonary phthisis, their premature death does not seem to me more deplorable than the development of Scrofula in the mass of those employed in Factories. We know how common in particular places is this plague spot, which marks the infants and children

with swelled joints and hideous deformities. Especially are its ravages felt in large Towns, where the people are crowded in miserable lodgings, in narrow streets. To those effects must be added, the short feeble figure of those so employed." The want of stature, he shows at Amiens, where among the Factory Labourers, 343 men were required to furnish a contingent of 100, while among the better classes, 193 are all that are required; but to make his case complete, he should have compared the poor of Amiens, not employed in Factories, with those who are so employed.

Among ourselves, opinions are as divided as elsewhere, as to the effects of Factory Labour in inducing Scrofula, and it would not be difficult to establish very opposite results, from the evidence taken before the different Factory Commissions. From their first Report, I extract the following opinions as to the effects of labour in Cotton Factories, and its influence in causing Scrofula.

Letter from Dr. E. Carbut, Physician to the Royal Infirmary, Manchester, to the Factory Commissioners.

"Gentlemen,

"I have answered, to the best of my judgment, the several queries which you have done me the honour to submit to me; but I wish to be permitted to make a few observations upon matters not contained in those queries, more especially as to the gross exaggerations of Medical witnesses, particularly those of London, on the subject of the diseases of the Cotton Factories. These gentlemen, hardly any of whom have had an opportunity of seeing persons employed in Cotton Factories, almost universally attribute to Factory Labour the production of scrofulous diseases. Now, the fact is, that Scrofula is almost unknown in Cotton Factories, although the climate of this town and neighbourhood is particularly cold and humid. In a very extensive examination, which I and some other medical men made a few years ago, we found, to our surprise, that the Cotton Factories, instead of producing Scrofula, are in some sort, a kind of means of cure. The late Mr. Gavin Hamilton, who was for thirty-six years Surgeon of our Infirmary, and who, previously to that, had been Surgeon in the Queen's Bays, said in my hearing, after examining the Cotton

Factory, 'Gad we found the Cotton Factories to be a specific for Scrofula.' In one Factory, examined by Dr. Holme and Mr. Scott, Surgeon to the Carabineers; of 401 persons employed, 8 only were affected with Scrofula, with no case of distortion of the spine or limbs. I myself, accompanied by respectable surgeons, examined several Factories. In one, employing 504 individuals, we found scrofulous affections (generally slight and constitutional), 6; weak limbs, 2; distorted spine, before working in a Factory, 1. In another mill, employing 234, we found scrofulous affections of the neck, eyes, &c., 5. In another, employing 337, we found 4 scrofulous. In another mill, which employed 199, we found 3 scrofulous.

401	8
504	6
234	5
337	4
199	3
<hr/> 1675	<hr/> 26

"This remarkable absence of Scrofula I presume, with perfect deference to the medical gentleman who is one of your number, to attribute to the dryness and warmth of the Cotton Factories, to the lightness of the work, and to the superior food and clothing which the superior wages of the work people enable them to obtain, &c.

"EDWARD CARBUTT, M.D."

But the evidence collected by the gentlemen who were employed on the "Children's Employment Commission," is less uniformly favourable; and although the preponderance is in favour of the better relative condition of Factory Operatives, when compared with other classes of the labouring poor, yet that evidence is of so contradictory a character, that it might be plausibly used in support of either view of the subject.

In Leeds, Dr. T. Smith very kindly examined at my request 1095 children, employed in different Factories, and he examined 548 children of the same class, not employed in Factories. The result is, that those not employed in Factories, exhibited marks of

Scrofula in 8 per cent. more instances, than those whose days are spent in such establishments. In Manchester and other great Manufacturing Towns, a similar result has been obtained by examinations made at my request, and on so large a scale, that there is every reason to feel confident in the opinion already expressed. Again, from his Dispensary practice, Dr. Smith has made me the following Report. "Of 916 persons, between seven and fourteen, the children of Factory operatives, but not themselves employed in Factories, 365, or 39 per cent., had enlarged glands, and 75, or 8 per cent., had scars resulting from scrofulous disease. Of 567 persons, all under twenty-one, and employed in Factories, 124, or 22 per cent., had scrofulous scars."

Mr. Poyser, the intelligent Surgeon of Winksworth, kindly examined for me the people employed in Mr. Arkwright's mills, and the following are the results which he communicated: "Persons examined, 798; total number having marks of Scrofula, 29."*

Seeing that the results were of so favourable a kind, I wished to be assured that the Return included all cases in which any enlargement existed, and the following is Mr. Poyser's explanation on that subject.

"I beg to inform you, that I included in my Return all cases in which the finger could detect any sensible enlargement of the cervical glands. I may also add, that I examined all with the finger, where I had the slightest doubt on my mind that any swelling existed. Indeed, I examined all under twenty, and the greater part of those above that age, with the finger."

I have obtained, through the kindness of Messrs. Horner and Saunders, the results of the examination of 6754 Factory Children, from which it appears, that marks of Scrofula were found in only 905 instances, or only 13½ per cent. The Returns of Mr. Fereday, Mr. Davis, and that of other friends who have kindly made a comparative examination of a large number of children, exhibit similar results, and they leave no doubt on my mind, that children employed in Factories are more free from Scrofula, than the average of children in England and Wales.

Similar evidence is contained in the Report from Mayfield, by James Martin, M.D. "Mayfield Cotton Factory is situated in

* See Appendix.

the parish of Clonegan, county of Waterford. The village is within a few hundred yards of the Factory. The population is 3075, of whom 1060 are employed at the works, which, as to temperature and crowding, are very carefully regulated. Numbers daily seek employment from distant parts of the country; they arrive in the worst state of destitution, but gradually improve in health and comfort. Of those employed in the Factory, 505 are under twenty-one, and 556 are above that age. The average absence from illness is 15 each day. In spring, the maximum has been 32; the minimum, 10; average, 22. In summer, the maximum, 12; the minimum, 4; the average, 7. In autumn, the maximum, 15; the minimum, 6; average, 9½. In winter, the maximum, 28; the minimum, 14; average 21½. In four years, the following are the numbers of diseases regarded as scrofulous, which have occurred.

	External population, 2015.	Factory Operatives, 1061.
Hip disease	6	2
Knee „	7	0
Elbow „	4	0
Wrist „	1	1
Ankle „	1	2
Ulcers (scrofulous)	15	2
Phthisis	10	8
Ophthalmia	7	4
	51	19

It will be observed, that the amount of Phthisis is largest among the Factory operatives; but this is accounted for by the fact, that nine-tenths of all between thirteen and twenty-one, are employed at the Factory. In three years, the deaths in the village were as follows: Amongst the External Population; under thirteen, 27; between thirteen and twenty-one, 4; adults, 38; total 69, or 23 annually. But then, in the last of the three years, fever was epidemic; the previous two years did not average 17 per cent. annually. Amongst the Factory Operatives, between thirteen and twenty-one, 12; adults, 8; total, 20, or 6½ annually.

Of the causes of death among the External Population, the diseases regarded as scrofulous, were as follows:

Hip disease, 2; Tabes Mesenterica, 2; Phthisis, 6; total, 10. Among the Factory Labourers, Phthisis, 5.

Again, if Factory Labour were so prejudicial as has been alleg-

ed, its effect should be equally apparent, whether the Factory were situated in or out of a Town. Now, Dr. Smith, who had made a very careful examination of Factory and Non-factory children in Leeds, has furnished me with the Returns of an examination of children employed in Factories situated in Rural Districts. The number examined was 263; the number having marks of Scrofula, 46, or 18 per cent.* Mr. Poyser's evidence is still stronger, and tends to remove the impression that the influence of Factory Labour is all evil.

There remains for us to consider the evidence of the amount of the influence of Factory Towns in the production of Scrofula furnished by the Registers of deaths. In England and Wales, the deaths from Scrofula, as compared with the total population, are as 7.6 to 100,000. In Rural Districts, the proportion is 9. In Town Districts, it is 5. In Factory Towns, having a population of 2,043,038, the proportion is 4. In Non-factory Towns, having a population of 2,870,416, the proportion is 5 per 100,000.†

The opinion of the insalubrity of the employment in the Woollen Factory Districts, as compared with the Linen and Cotton, so decidedly maintained by several authors, has not been confirmed by the inquiries I have entered upon. In the Linen and Cotton Districts, included in a Table contained in the Appendix, and having a population of nearly 1,000,000, the gross mortality is 2.786; that from Consumption, .477, or 1 in 209; that from Scrofula .004, or 1 in 24,872. In the Woollen Districts, in the Table,‡ and comprising a population of nearly three quarters of a million, the gross mortality is 2.242; that from Consumption, 396, or 1 in 252; that from Scrofula, .005, or 1 in 17,877.

I cannot conclude my observations on Factory Labour better, than by using the words of Villermé. “Whenever large numbers of people are collected into narrow spaces, unless there be any counteracting influence in operation, their health suffers. If we would extend this assertion to the manufactories, the facts which have been made known are far from always confirming it. There is, perhaps, no disease which belongs to a particular Factory, but there are diseases which are more frequent, when the conditions of life of the labourer favour their development. But almost every

* See Appendix.

† Ibid.

‡ Ibid.

disease will prevail in a crowded Non-factory Town, in an equal degree with a crowded Factory Town; and even in Factory Districts, it is upon those who are not employed in Factories, that the mortality falls with most severity. And this seeming incongruity is easily explained; those who are not employed in Factories, are equally exposed with those who are, to noxious local influences; but the earnings of the Factory Labourer are such, as to give him the means to overcome many of the influences of noxious agents, under which the idle, or the irregularly employed, or very poor, would sink."

And further, he says, in reference to the past and present condition of the Factory Labourer in France, and I conceive the observation equally applies to those in our own country: "There are many Factory Labourers whose gains are so small, that they are scarcely sufficient to procure strict necessities. Are they, however, more wretched and proportionally more numerous at present than formerly? There is no proof that they are. It is well that the labourer should know that his present condition is better than it has ever been. The documents from whence we may deduce a knowledge of his condition at different periods furnish the proof. I have been struck at different places, which I have visited before, to see the workman eating better bread, wearing stockings where formerly one only saw naked feet, shoes where there used to be sabots, cleaner, lighter, better furnished rooms. I found, in fact, in all these places, not what I could have wished, but much less that was bad, than twenty or thirty years ago."

"Many persons as well in England as in France, deny that any improvement in the condition of the working man has resulted from the growth of our Factory System. Touched by the misery to be found amidst Factories, they maintain that the condition of the working man has never been more wretched than in our own times; and yet we every day see that the agricultural labourer quits the pure air of the country for the Factory, and never voluntarily returns. Bread and clothing, the most important agents in supporting life and maintaining health, when contrasted with wages, have never been cheaper than during the last twenty years; and in the artisan, what was a luxury formerly, is a necessary now."

The evidence I have collected upon the question of the influ-

ence of Factory Labour upon human life, has produced on my own mind a strong conviction, that occupation in Factories, though in many respects less to be desired than occupation in the open air, is yet accompanied by so many counteracting circumstances, that the evils which may be inseparable from that occupation are mitigated if not counteracted by the increased means of procuring the necessities of life which it affords. The evils of Factory Towns do not consist in Factory Employment, but in the agencies which are commonly found in action in such Towns.

INFLUENCE OF CLOSE CONFINEMENT—PRISONS.

There remains for us to consider the influence exercised upon living beings by the association of several of the causes which have been separately considered. We are thus enabled, to some extent, to apply the method of synthesis, as well as analysis, to the elucidation of our subject.

There is a class of people who are often exposed to the influence of insufficient food, and impure air, and little exercise, sometimes for a considerable time. I mean the inmates of prisons: It is true that they are exposed, at the same time, to other noxious influences, but we have repeated proofs, taken from the Reports of the Inspectors of Prisons, that when their health begins to suffer, their condition may be much ameliorated by an improved diet, all other influences remaining unchanged.

Our inquiry, however, has reference to the influence which such an association of agents has in exciting the development of Scrofula; and the evidence on this subject is not very extensive. Baudelocque says, "That the evidence as to the effect of prison discipline to induce Scrofula, is unsatisfactory; but that there can be no question that Scrofula is frequently developed in such places, as much more so as the crowding is considerable."

The latest, and as some persons think, the greatest authority on the subject of Scrofula, denies that confinement in prisons induces Scrofula. Lugol, says, "We know that houses of detention are generally very humid; that they unite, if not all, the greater number of the things which are regarded as occasional causes of Scro-

ful, misery in every form, privation of air, of light, of exercise, the influence of heat, cold, and of damp, of coarse food, and in too small quantity, dirty and insufficient clothing in winter, a bad bed to lie on, and the deepest demoralization. The union of these causes occasions many diseases in prisons; Scabies, Prurigo, Dysentery, Chronic Enteritis, Putrid and Jail Fevers; but to this list we must not add Scrofula; for not only is it not endemic in prisons, but we scarcely see a case there, and it is equally rare in the dampest and most unhealthy workshops."

The only commentary I shall append to the foregoing statement, is a letter addressed to me by Dr. Baly, the able Medical Superintendent of the Millbank Penitentiary. The document is so important, and so decidedly bears out opinions I have expressed, that I have thought it right to give it entire, together with the evidence upon which it is supported.* In this place I shall merely say, that I conceive the evidence he affords constitutes an ample proof of the following facts: that the mortality of prisons greatly exceeds that of the general population, and that, up to a certain period, it increases with the length of the confinement—that Phthisis and Scrofula seem to be developed more largely in prisons than among those who are free—that the predominance of those diseases must be regarded as the effect of this mode of punishment—and that the injurious influences which appear to be most active in producing them in prisons, are poorness and insufficiency of food, defect of exercise, impurity of the air respired, want of external warmth, and depression of spirits.

SUMMARY OF CAUSES.

The probable influence of the many agents which are said to be efficient to induce Scrofula have now been considered separately, and here I had intended to close the inquiry in so far as concerns this part of the subject. But as no inconsiderable portion of several years of my life has been devoted to the investigation of the disease, the opinions which I have formed of the causes of Scrofula may be usefully expressed in this place, where they can be given with more precision and in closer juxtaposition than was

* See Appendix.

practicable whilst I was engaged in the somewhat controversial task, of considering contradictory opinions, or estimating the relative value of opposing testimony.

The influence exercised by a scrofulous parent, whether father or mother, in transmitting to the child a predisposition to Scrofula, is real, but of very limited extent; and it is not apparent that the influence of a scrofulous parent is more efficient to induce Scrofula in the child, than the influence of equal constitutional debility in a parent, originating in other causes than Scrofula. In other words, an ailing parent is less likely than a healthy one to give birth to a vigorous child, and a weakly child is more susceptible than a vigorous one of Scrofula, as well as of other diseases. But in the sense of a direct specific tendency in a scrofulous parent to reproduce in the child the same disease from which the parent suffers, in virtue of an agency of a different nature to that which would be exercised by simple constitutional debility in the parent, it seems to me we have no satisfactory proof.

The influence of immaturity of years, or of great age in a parent, upon a child, may be stated in the same terms and with the same limitations, namely: that the child of such a parent is less likely to exhibit ordinary vigour, and is, therefore, more susceptible to the agencies of disease than the child of healthy or vigorous parents, but he has not from that cause alone, a tendency to any particular disease, whether scrofulous, or of some other kind.

There is no proof that any form of contact or inoculation exercises any influence in the production of Scrofula.

The development of Scrofula is not shown to be so influenced by climate, or temperature, as to bear any definite relation to the warmth or coldness of the country in which the disease is found.

Neither the general mortality, nor the deaths from scrofulous diseases, bear any definite relation to the closeness with which the population is crowded together, whether the comparison is made between one Town or District and another, or between different portions of the same Town or District.

Particular occupations and social conditions exercise a greater influence on health and the duration of life than is produced by impure air, or insufficient ventilation, but they do not operate in the production of Scrofula in the sense of specific agent, or of a direct cause.

The general mortality and the deaths from particular diseases, bear a close relation to the poverty of the population, and to the vicissitudes, or alternations of prosperity or adversity, to which they may be exposed; whilst wealth and station, which ensure to the more elevated classes of the community, abundant food, ample clothing, convenient and well ventilated dwellings, and pure air, are nevertheless unfavourable to longevity; and the industrious labourer, whose toil ensures steady remuneration, and whose temperate habits and provident character, ensure him the necessities of life, good of their kind and ample in quantity, is in the condition the most favourable to long life and uninterrupted health.

In the last result, then, it is to diseased nutrition, however brought about, that we refer the production of Scrofula; an opinion in which there may be no novelty, inasmuch as many authors have assigned to perverted nutrition a powerful agency in developing the disease—especially Carmichael, in England, and Lepelletier and Baudelocque, in France; yet my controversy with Baudelocque consists in a denial of the exclusive agency which he assigns to impure air in deranging nutrition:—and my object has not been to advance a novel theory, but to obtain, and group, and classify, a collection of observed facts, so numerous as to enable us to distinguish between essential, and secondary or accidental causes, and to ascertain (if such an estimate should be found to be practicable) the separate or relative value of numerous agencies in developing Scrofula.

Diseased nutrition is then, I conceive, the cause of that condition of the system which we term scrofulous; but diseased nutrition originates, it will be said, in various agencies, either acting separately, or associated together. Thus, the inheritor of a feeble frame, may owe to that circumstance an impaired digestion, in spite of the solicitude, and it may have been great, with which he has been reared, and of the prudence with which his food may have been adapted to his condition; or his occupation may have been so long continued, or of such a character; or impure air may have been so constantly respired, as in either case to derange the digestive functions; or, if no one of those agencies shall in itself have been sufficiently active to induce the disease, they may have been associated together, and when thus associate, may so impair, otherwise, the functions of nutrition, as to induce Scrofula, even when the food has been abundant in quantity and judicious in kind.

But the cause of diseased nutrition at that period of life when the seeds of Scrofula are sown, is, in the vast majority of cases, insufficient food, or improper feeding, and even if the less direct agencies, which we have been considering, occasioned Scrofula much more frequently than we believe they do, the distinction is of great practical importance, viz.: that they do not act in virtue of a specific influence suited of itself to produce Scrofula. but as general morbid agencies which impair digestion, and thus indirectly contribute to the production of the disease.

That food, insufficient in quantity, or innutritious in quality, stands in the relation of cause to the development of Scrofula, more directly than any other morbid agent, is shown by this circumstance, that wherever food is abundant in quantity, and of a sufficiently generous character, Scrofula is kept under, that is to say, it is less frequently seen, although other noxious agents are, perhaps, rife, and the general mortality is great; and that in our Rural Districts, where the air is probably pure and the occupation healthy, and where the general mortality is small, Scrofula is largely developed; because the food, even when abundant, does not contain sufficient stimulus to preserve the frame in healthy vigour.

Yet, although we may have no satisfactory proof that a contaminated atmosphere, or any one of the other indirect agencies to which we have referred, will operate so injuriously on the digestive functions, as of itself to induce Scrofula; I do not the less deplore the influence of those debilitating agencies, which impair the healthy activity, and lessen the proper vigour of large numbers of our countrymen.

That the advantages to the health of the community, which have been held forth as the result of improved drainage and ventilation, have been very mischievously exaggerated, I believe; but it is not the less true, that impure air and stagnant filth, are noxious agencies, and that the dwellers in our crowded thoroughfares, will be benefitted by their removal.

But, above all, let not the owner and occupier of the soil point to the increased value of life amongst the agricultural labourers, as a proof that they are sufficiently cared for. The healthy nature of their occupation, the absence of those frequent alternations of prosperity and adversity, to which the artisan is exposed, and the pure

air they respire, may, to some extent, counteract the influences exerted by food of inferior quality, and the other deprivations to which they are subjected; but the extent to which Scrofula prevails amongst this class of the community, marks the privations they sustain, and indicates with sufficient distinctness, that their food, if sufficient in quantity, is in quality, at least, insufficient to preserve the man, engaged in active labour, in healthy vigour.

And when the decreased duration of life in our Manufacturing, as compared with the Rural Districts is considered, it may be safely assumed, that the working man was, perhaps, never subjected to the same evil agencies as now act upon health and life amidst our Manufactories. Great alternations of prosperity and adversity, sudden and extreme vicissitudes, large earnings to-day, succeeded by half or no work to-morrow, uncertainty of occupation, irregular habits, prosperity inducing intemperance and creating factious wants, whilst unaccompanied by those habits of providence which would prepare for the evil day, not far off;—all these, and many other such influences, operate with far more intensity on the manufacturing labourers, than the atmosphere they breathe, or the courts and alleys they inhabit; and according to the intensity of those influences they increase the general mortality, instead of developing the slower and chronic derangement, which assumes the form of Scrofula, and which is rarely induced by active agencies, but is manifested when the whole economy has been gradually and slowly contaminated.

The frequency of Scrofula amongst the classes of society who live in wealth or comfort, has been supposed to militate against any view of the disease, which assigned to insufficient food or improper feeding, a large share in the production of the disease. But diseased nutrition may co-exist with sufficiency of food, and even with seemingly judicious feeding, and is, perhaps, as frequently found in the pampered child of luxury as in the cottage of the peasant.

CHAPTER X.

TREATMENT.—PREVENTIVE MANAGEMENT.

To prevent, or to cure Scrofula, is the practical object of all our investigations upon the subject of the disease; and as prevention is better than cure, we will first indicate those precautions which may often retard, and in some cases altogether prevent, the manifestation of Scrofula, and will next suggest those methods of curing the disease when it shall have been manifested, which experience has shown to be the most successful.

Among the means of rendering the occurrence of Scrofula less frequent, well assorted marriages hold a prominent place. By well assorted marriages, I mean those contracted by parties in health and vigour; their children are more likely to be vigorous, and therefore less likely to suffer from Scrofula than the offspring of diseased or debilitated parents.

Lugol says,* in speaking of persons unhappily afflicted with Scrofula, "That the legislation of ancient Sparta was not probably less tolerant than our own on the subject of marriage; but we must recollect, that it ordered the sacrifice of such children as were born too feeble to become useful in the defence of their country. This custom, which is revolting to us, at least spared the new-born child the infirmities attached to a suffering existence; and besides that, it had the advantage of preventing those individuals from reproducing children, whose fate would be still more unfortunate than their own; it was, in fact, a means of restraining marriages to such persons as possess good health." Lugol adds, that, "Instead of pitilessly sacrificing children, who at the time of birth do not appear to possess qualities likely to make them robust citizens, it is much more humane, and much more worthy of advanced civilization, to arrest the evil at its source, by interdicting marriage to sickly and infirm persons."