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REMARKS
ON
WOMAN'S WORK
IN
SANITARY REFORM.

THIRD EDITION.

London :

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REMARKS ON WOMAN'S WORK

IN

SANITARY REFORM.

“I conclude that all our endowments for social good, whatever their especial purpose or denomination—educational, *sanitary*, charitable, penal—will prosper and fulfil their objects in so far as we carry out the principle of combining in due proportion the masculine and the feminine element, and will fail or become perverted into some form of evil in so far as we neglect or ignore it.”

Mrs. Jameson.

WOMAN'S systematic co-operation is essential to the success of Sanitary Reform. Our legislators may frame wise Acts of Parliament, enforcing sanitary regulations; but some of the greatest causes of disease and death lie quite beyond legislative interference, and can only be removed by woman's agency. “The Health of Towns Act” may ensure good drainage and water-supply, pure air, and other important external sanitary requisites; but till every woman frames a Health of *Homes* Act, and becomes a domestic “officer of health,” none can ensure that the pure air shall ever be breathed, the good water ever be sufficiently used, or other sanitary conditions ever be fulfilled in-doors. The Government may, by

appointing public analysts and inspectors of markets, check adulteration and the sale of diseased meat; it may, by a wise foreign policy and abolition of needless imposts, empty the world's cornucopia at our feet; but only woman can ensure that wise selection of diet, and that scientific cookery without which even plenty may lead to disease. Men, in their brave spirit of untiring enterprise and self-denying industry, may ransack every corner of the earth, and bring away abundance of the necessaries and luxuries of life; but all will avail little while women ignorantly misuse them. Architects may build houses which in point of structure shall be very temples of Hygeia; but while woman who dwells there ignorantly violates household sanitary law, she will ever make them nurseries of disease and death. The influence of Government and of improved university education may lead to a high development of all branches of physical science, which together constitute the compound science of hygiene; but half its applications can never be made while women know nothing of it. Fathers may work, and legislate, and struggle all their days to secure the moral and material blessings of Christian civilization to their children; but while woman is too ignorant rightly to fulfil even her first great duty of mother, thousands of those children must, as now, die ere they see the light, and thousands more, ere they can enjoy their heritage: though they be not offered to Moloch, as of old, they must, as now, be sacrificed to ignorance.

Such are but a few of the many evils which now exist through woman's neglect of her sanitary work, and which must ever exist till she learns to fulfil it.

To define that work fully, would not be possible even in many volumes, for it extends over every sphere of womanly action. Moreover, as hygiene is yet but a new science, and as woman has hardly begun to take her part in applying and developing it, the time for exact

definitions has not yet come. In this little tract, therefore, only a few general hints can be given, with the hope of leading to a further study of the subject touched upon.

In general terms, sufficiently explicit for the present purpose, the great field of sanitary labour may be considered as divided into two parts:—the amelioration of injurious external circumstances, and the reform of injurious habits and customs. Of these parts, the former may be considered as belonging principally to man—the latter, principally to woman. It is for man's comprehensive mind to devise schemes for draining and cleansing our towns, for improving dwellings, and for placing the necessaries of life within the reach of all; and it is for his strong hand to execute these schemes. It is for him to discover the laws of health, and to teach and apply them in his special sphere. It is for woman, in her functions of mother, housewife, and teacher, to effect those urgently-needed changes in infant management, domestic economy education, and the general habits of her own sex, without which humanity could never even approximate to bodily perfection, though all injurious external circumstances were changed. It is for her to teach and apply the laws of health in her own sphere, where man cannot act.

Conjoined with this general statement of the scope of woman's sanitary work, it may be useful to indicate in the same broad terms, and with the same merely suggestive intention, a few of the means of prosecuting it.

First, it is very obvious that the most essential of those means is knowledge of sanitary science. Instruction in this branch of knowledge, though absolutely essential to the welfare of every one, rarely forms part of a girl's education. But in this case it is easy to supply educational defects; for some of the ablest professors of sanitary science have devoted themselves to

popularizing it by means of lectures and books, from which any woman of ordinary culture and intelligence may gain much of the knowledge she requires. Many very valuable lectures have been recently given by eminent medical gentlemen to the members of the Ladies' Sanitary Association,* and of its branches in Aberdeen, Brighton, and Oxford. No one who has had the opportunity of observing the benevolence and public spirit which so generally characterize the medical profession, can doubt that in most towns some member of it could be found willing to give similar lectures, if women would combine to arrange the preliminaries, as has been done by these associations. Meanwhile, every woman may, at least, procure some of the excellent sanitary books which the labours of scientific men have placed at her disposal.† One of the great advantages which may be secured by Ladies' Sanitary Associations is, the formation of lending-libraries containing well-selected books on all branches of hygiene. Books of the kind thus collected are rarely found in ordinary lending-libraries, and as they have but a small circulation, they are usually published at a price which prevents persons of small means from obtaining a good selection of them.

A great inducement to the acquisition of sanitary knowledge is found in the fact that it will not only enable women to preserve health, but also qualify them for nursing the sick; for the same laws which govern health determine to a great extent the results of disease.

After gaining a knowledge of sanitary science, a second means by which women should prosecute their sanitary work is, a faithful application of that knowledge to their own habits. This seems so very obvious a truth as

* See Prospectus of the Ladies' Sanitary Association, on cover.

† A list of a few excellent sanitary books, suitable for women, is given on page 32.

hardly to need mention, but it is one which many who are zealously working to improve the health of their neighbours do not practically recognise. Persons of large conscientiousness and high culture, who would shrink from violating the laws of their spiritual nature, yet disobey the laws of their physical nature constantly and needlessly, by making obedience dependent on fashion, convenience, and conventional customs. This faithfulness to the one code, and unfaithfulness to the other, arise from a false estimate of their comparative importance and sacredness. The one code is considered as a distinct and authoritative divine revelation, to which obedience must be rendered always and everywhere; while the other is regarded as merely a set of petty prudential maxims, which may be acted upon or not, according as convenience, fashion, and conventional usage dictate. This distinction is entirely false, for sanitary laws actually form part of divine revelation in the Scriptures.

After studying sanitary science, and applying it personally, woman will be prepared to commence her work for the physical elevation of others. This, like all her ministrations, should begin in her own home. That sphere, narrow though it seems, presents scope for an amount of sanitary labour which could not be fully indicated in many volumes. Only a very few of the most common domestic violations of sanitary law can here be mentioned.

Prominently among them, may be placed the use of unsuitable and badly-cooked food. In choosing our food and mode of cookery, we regard palate and length of purse; but through our ignorance, the choice is generally more or less in violation of the laws of health, and we pay the penalty in a host of digestive disorders. Whatever grand schemes of public sanitary reform may be carried out in a nation, the mass of the people can

never attain to a high physical condition till the housewives study the science of health, and bring it to bear upon the choice and preparation of food. Though there is not always need for the mistress of a household herself to prepare the meals, she should certainly have knowledge which would enable her always to order such food and methods of cookery as are suited to the season, and to the particular constitution, occupation, and state of health of each member of her family. This subject is really a most important one; for not only physical, but mental and moral health, are to a great extent dependent on so material a thing as dinner.

In the nursery, woman's ignorant violations of the laws of health are still more frequent and mischievous. The present high rate of infant mortality among us and other civilized communities, is something unparalleled in all creation. From every hundred of our little ones, thirty are cut down,

"An unripe harvest for the scythe of Death,"

before five summers' suns have shone upon them, and a great part of the remainder grow up weak and sickly. No other creature perishes and suffers thus. We do not find the eaglet dead in its aerie, or the young wolf moaning with pain in its lair; among all the inferior animals, health and long life are the rule; while with the offspring of civilized humanity, the capital of creation's pillar, they are the exception. It is true that there are many great causes of infant mortality and disease over which most women have little control. In large towns, thousands of infants fade away, like blighted flowers, for want of pure air, light, and sunshine; others come into the world with the seal of death already on their brow through hereditary influences; and others suffer or die for want of the necessary food and care which poor mothers working at a distance from home cannot give. But in very many

instances the principal causes are maternal ignorance and mismanagement: on all sides "Rachel sits weeping for her children," whom she has herself unwittingly slain. It is worthy of special remark, that, although the rate of infant mortality is very much higher than that of adults, infants are entirely exempt from many of the fatal influences to which adults are subject. Intemperance, overwork, anxiety, "accidents by flood and field," and other things which destroy thousands of adult lives, do not affect infants. Surely they would live and thrive if well managed. With regard to maternal duties, we are generally far too wise in our own conceit; it is a rare thing to find a mother who, however ignorant, does not believe that she knows all about the management of her children. Womanly instincts, it is sometimes argued, teach all a mother needs to know. When it can be proved that there are superfluities in God's creation, and that woman's reasoning faculties are among the number, we may talk of the sufficiency of instinct—not before. Either Drs. Combe, Conquest, Bull, West, and other eminent physicians, who have written volumes to instruct women in infantile management, wasted time and stationery in making "much ado about nothing," or there is a great deal of important sanitary knowledge which every mother ought to acquire.

The first thing which needs to be done in connection with a reform in the management of infants and children is, to obtain intelligent, well-trained monthly nurses and nursery maids.

A monthly nurse, whose work is to tend a mother and child during the most trying and critical period of physical life, ought certainly to be an educated, sensible woman, able intelligently to co-operate with the medical attendant, instead of mistaking one-third of his directions and wilfully disobeying another, as the ignorance and prejudice of the present class of nurses so often lead

them to do. "Serious and important," writes Dr. Bull,* "are the duties which devolve upon the monthly nurse; and well would it be for English women, if all who undertake this office came from a better educated class of society than they too often do. Ignorance and coarseness of manners are unbearable in a nurse; it is dangerous for the medical man to have such a person to carry out his measures, while she is certainly anything but a fit companion for the patient, who nevertheless has almost no other for two or three weeks." We must help ourselves and each other in this matter. Thousands of intelligent women of the middle classes who have their bread to earn, and know not where to earn it, might greatly benefit both society and themselves by going through a course of training which would qualify them for the office of nurse. They need not think such a position beneath them, for no employment is really degrading which affords scope for the exercise of the highest faculties of the employed; and it is quite certain that the efficient discharge of the duties of a nurse would do this far more than many of the so-called "genteel" occupations now followed by thousands of middle-class English women. The heroines of the Crimean war have already ennobled the office of nurse to sick men; we wait now for others to do the same for that of nurse to our own sex in the most critical period of physical life.

Subscribers to lying-in hospitals, might very advantageously use their influence with the committees by urging them to make arrangements for the training of monthly nurses; and mothers generally, would do well to offer every inducement to truly worthy and intelligent women of the middle classes to serve in this capacity. Now, the woman of the middle classes who comes out into the world to earn her own bread, loses caste and position

* Hints to Mothers," 11th Edition, p. 169. London: Longman.

which she would have maintained had she remained at home in burdensome idleness. While this state of things continues, it will not be easy to raise up a better class of monthly nurses. Comparatively very few women in the middle classes, could be found willing to write their own writ of social outlawry by taking the place so long filled by "Mrs. Gamp." We need, every one of us, to be more deeply impressed with the dignity of *all* useful labour; we must learn to honour each other, not in proportion to what society does for us, but to what we do for it.

The want of trained nursery-maids is equally urgent. Children must now be confided to ignorant, untrained girls, who injure them hourly, in body, mind, and heart; and there seems little prospect of obtaining a better class. We have little right either to complain of servants, for they are generally far less to be blamed for being unfit for their duties, than to be pitied as victims of the wrong system of education which has left them so. What is needed in all our schools for girls of the working-classes is, a systematic preparation for their future work, by giving them practical instruction in domestic duties, including the physical management of infants and children. To impart this instruction is at present very difficult, for the teachers in such schools are generally single women who know little of domestic or sanitary matters. Moreover, the pupils would need to practise the operations of washing, dressing, feeding, etc., upon infants. Various plans of meeting these difficulties have been proposed. The one most easily practicable, appears to me to be that suggested by the "Ladies' Sanitary Association." This Association proposes to establish training institutions wherein a few orphan infants might be reared, and practical instruction in their management, and other branches of sanitary knowledge, be given by a competent

female teacher. At these institutions, the senior girls of schools in the neighbourhood might attend to receive instruction as often as necessary: thus they would become qualified not only to tend the children of others, but their own, in after life. To carry out this plan, or some similar one, is an important part of woman's work in sanitary reform; she and her loved ones have long suffered from ignorant, untrained attendants; it is now for her to make an intelligent effort to raise up a better class.

Not only in those departments of household economy already named, but in all others, "a thousand and one" violations of sanitary law are committed through the ignorance of women. No one can read that striking *exposé* of the domestic causes of disease which is given in Miss Nightingale's "*Notes on Nursing*," without feeling convinced that even in the homes of the wealthy, the very alphabet of household sanitary science has yet to be learned.

After the home-work, should come efforts for the improvement of health among our poor neighbours. The prevention of the present fearfully high rate of mortality among their children, is an object specially demanding attention. "It has been shown in the sanitary report," says Mr. Chadwick, "that in the same districts where one-fourth of the children of the gentry have died, more than one-half of the children of the poor have died; and this excess of death among the poorer classes was traceable to preventable causes." Of these, maternal ignorance and mismanagement are, as has been before stated, among the most fatal. Few but those who have been much among the poor, know how fearfully mismanaged their little ones are—how the infant shares his mother's dram and all her food, from red herring to cucumber—how he takes medicine sufficient to treat the whole com-

munity—and how, finally, an incautiously large dose of laudanum wraps him in the sleep that knows no waking.*

Ignorance of the laws of health is not only one of the greatest causes of the low physical condition of the children in poor families, but also of that of the adult members. "The physical elevation of our poor neighbours cannot be effected till they themselves understand all the conditions, material as well as moral and spiritual, upon which it depends, and learn to co-operate intelligently in all our efforts on their behalf. Though a very large number of the sore physical evils that afflict them are undoubtedly the natural results of their low moral

* Many painful instances of the results of maternal ignorance might be cited. The following suggestive cases are taken from a report of the causes of infant mortality in fifty cases personally investigated by Mrs. W. Baines.

"Case 3.—Boy, aged eight months. Died in a convulsive fit. Coroner's inquest. *Alleged cause of death, teething.*"

"Case 48.—Child, aged five months. Coroner's inquest: verdict, 'Over-feeding.'"

"Case 49.—Child, aged seven months. Coroner's inquest: verdict, 'Died through over-feeding.'"

"Fed upon tea and *muffin* heartily the night before it died. Always ate heartily, and had also breast milk."

"These two cases happened together in the same house. The child of a wet nurse, and her nursling, were fed on a hearty supper of bread food, and were found dead at 4 a.m."

The report is thus summed up:

"Total of cases traceable to over-feeding and injudicious feeding"	34.
Or per cent	68."
"The Mortality of Infants," by Dr. C. H. F. Routh, pp. 42-5-6.	

With regard to the use of laudanum and other opiates, Dr. Playfair remarks, "We have three druggists in one district of Manchester, selling respectively five and a half, three and a half, and one, in all ten gallons weekly; two of them testifying that almost all the families of the poor in that district habitually drug their children with opiates." In Rochdale, Clitheroe, and other towns, similar evidence was given.

and spiritual condition, and consequent wilful wrongdoing, probably most charitable workers attribute too much to this score. Nothing is more certain than that many physical evils befall men irrespectively of their moral and spiritual condition or deserts. Those 'eighteen upon whom the tower in Siloam fell and slew them,' were not sinners above all men that dwelt in Jerusalem; neither are all the thousands of our poor neighbours who suffer or die from preventable disease greater sinners than we who keep alive and well. If a man is ignorant of the laws of health, or any other physical laws, and consequently violates them, he will suffer the penalty, whatever be his moral and spiritual condition. If he throws himself off 'a pinnacle of the temple,' in ignorant contempt of the law of gravitation, its action will not be suspended, neither will the angels come to bear him up, but he will fall and be dashed to pieces, whatever the devil may suggest to the contrary. When a man is brought under the action of those supernatural laws which govern the process of spiritual regeneration, he receives no charter of exemption from the action of those natural laws which govern his physical frame. His constitution, with regard to the great material forces of nature, remains the same; fire still warms, and cold still chills, him. His lungs still need fresh air; his skin, pure water; and his stomach, well-selected food; and if he, through ignorance, fails to supply these requisites, and thus violates the laws of health, he will suffer the physical injury which the violation entails, just as though he were the veriest reprobate. There may be 'exceptions,' but the present Divine 'rule' is, not to suspend the action of natural laws, but rather to bring the believer's life into harmony with them. Neither is want of the necessaries of life so great a cause of disease among the poor as most charitable workers believe. We rely quite too much on our schemes

for relief, very good though they are in their place. In thousands of instances it is not want which causes disease, but ignorant abuse and other needless violations of sanitary laws."* It is certain, therefore, that the diffusion of sanitary knowledge is an essential part of a complete scheme for the physical elevation of the poor.

Those of us who are district visitors and tract distributors, have excellent opportunities for imparting this knowledge. We should be all the more successful even in the directly spiritual part of our work, if we showed our poor friends how to remove those sore physical evils which cramp and fetter mind and soul, and so often prevent all thought or care for moral and spiritual elevation. Those who possess an ordinary amount of tact will in many cases find it easy to impart sanitary knowledge during their cottage visitation, without being obtrusive, or violating any of those laws of courtesy which should be held sacred alike in intercourse with peasant and peeress. In those cottages where there is a young family, the visitor will find it a good plan to commence operations by noticing the children, the wonderful baby—"the finest baby the doctor ever saw"—especially, and then it will in many cases be easy to say a hundred useful things about their physical management, fresh air, wholesome food and cookery, cleanliness, etc. All appearance of fault-finding and dictation should be most carefully avoided, or little good will be done; better words of advice to all who visit their poor sisters can hardly be found than those of the Rev. Charles Kingsley:—

"Visit whom, when, and where you will; but let your visits be those of woman to woman. Consider to whom you go—to poor souls whose life, compared with yours, is one long *mal-aise* of body, and soul, and spirit,—and

* "*Christian Spectator*," May, 1862. Article, "*The Diffusion of Sanitary Knowledge among the Poor*."

do as you would be done by; instead of reproaching and fault-finding, encourage. In God's name, encourage. They scramble through life's rocks, bogs, and thorn-brakes, clumsily enough, and have many a fall, poor things! But why, in the name of a God of love and justice, is the lady, rolling along the smooth turnpike-road in her comfortable carriage, to be calling out all day long to the poor soul who drags on beside her, over hedge and ditch, moss and moor, bare-footed and weary-hearted, with half-a-dozen children at her back, 'You ought not to have fallen here; and it was very cowardly to lie down there; and it was your duty, as a mother, to have helped that child through the puddle; while, as for sleeping under that bush, it is most imprudent and inadmissible?' Why not encourage her, praise her, cheer her on her weary way by loving words, and keep your reproofs for yourself? * * * * * Bear in mind, (for without this all visiting of the poor will be utterly void and useless,) that you must regulate your conduct to them and in their houses, even to the most minute particulars, by the very same rules which apply to persons of your own class. Never let any woman say of you, (thought fatal to all confidence, all influence,) 'Yes, it is all very kind; but she does not behave to me as she would to one of her own quality.' Piety, earnestness, affectionateness, eloquence,—all may be nullified and stultified by simply keeping a poor woman standing in her own cottage while you sit, or entering her house, even at her own request, while she is at meals. She may decline to sit; she may beg you to come in: all the more reason for refusing utterly to obey her, because it shows that that very inward gulph between you and her still exists in her mind which it is the object of your visit to bridge over. If you know her to be in trouble, touch on that trouble as you would with a lady; *woman's heart is alike in all ranks.* * * * * * We

should not like any one—no, not an angel from heaven—to come into our houses, without knocking at the door, and say, 'I hear you are very ill off; I will lend you a hundred pounds. I think you are very careless of money, I will take your accounts into my own hands;' and still less again, 'Your son is a very bad, profligate, disgraceful fellow, not fit to be mentioned; I intend to take him into my hands, and reform him myself.' Neither do the poor like such unceremonious mercy, such untender tenderness, benevolence at horse play, mistaking kicks for caresses."*

Much good may be done by the distribution of simple, interesting tracts containing expositions of the laws of health. A series of tracts of this kind has been recently issued by the Ladies' Sanitary Association.† These have been widely circulated with very satisfactory results. "There seems, indeed, no reason why sanitary tract distribution should not be quite as efficient in the work of physical elevation as religious tracts have been in that of spiritual improvement. It is true that both kinds of publications must of necessity fail to benefit the very people who need instruction most. The poorest and most degraded of the people, especially the women, can only read very indifferently, if at all; and therefore the tracts which we give them—however good, suitable, and well received—must in many cases remain unread, or be read so imperfectly as to convey little information. But there is a very large class of the more intelligent and respectable poor among whom tracts are one of the very best means of imparting sanitary knowledge. For, in the first place, it is in many cases extremely difficult to impart such instruction orally without giving offence. It

* "Practical Lectures to Ladies," pp. 61-2-3-4. London: Macmillan.

† See list on cover.

is a remarkable fact that the same poor woman who will not show the least resentment when told the most humiliating spiritual truths about herself, will often be offended even by a slight hint that she does not know how to manage her baby or cook her husband's dinner. The spiritual truths are of such general application that she too often accepts them with just about the same feeling, alas! as that evinced in Topsy's cheerful speech—'Yes, we's all sinners; *white folks is too.*' But the sanitary truths are of far more personal application, and often wound the poor woman's housewifely pride to the quick, and fall on the very "stony ground" of bitter resentment. But sensible little sanitary tracts, when stitched in the same covers with the ordinary religious ones, and quietly circulated in the usual way, will rarely give offence.* Those tracts relating to the health of mothers and infants, may also be very advantageously placed in the boxes of linen which are lent to the poor by maternal societies. Those district visitors who have not maternal or domestic experience, will find that the best way in which they can impart to their poor neighbours that important part of sanitary knowledge which relates to maternal and domestic management is, to give away, or, still better, read such tracts to them. For though a young, unmarried woman may from study be able to impart most valuable information upon the management of infants and children, and upon household matters, she will not find that her words—true and wise though they may be—have much weight with her poor neighbours who are mothers and heads of households. "What *can* she know?" will be a question always presenting itself to their minds. But if she reads from a tract which she assures her hearers was prepared by mothers of families, she may hope to be listened to with

* "Christian Spectator," May, 1862. Article, "The Diffusion of Sanitary Knowledge among the Poor."

attention and docility. On her own authority she must venture to teach only about clothing, fresh air, ablution, and other matters involving no maternal or housewifely arcana.

Those who hold maternal meetings, have in them excellent opportunities for imparting sanitary knowledge. The following remarks on this point, are from the pen of a lady who has worked long and successfully for the elevation of her poor neighbours, and has introduced sanitary teaching at the maternal meetings conducted by her:—

"Maternal meetings are just the opportunities for imparting sanitary knowledge to poor mothers. I find it necessary to vary the mode of instruction. Sometimes I have read one of the sanitary tracts, and conversed a little upon its subject, concluding the strictly religious part of the exercises a little sooner for the purpose. Again, it may happen that the [religious] subject on which I may be speaking leads to sanitary topics. For instance, when speaking of bereavement, and the consolation which mothers may derive from religion in the death of their little ones, the remarks in the tract on infant management come in very naturally, and then at some length the causes of infant mortality may with great propriety be stated, parts of the tract read, and at the conclusion copies of it given to those who have been led to take an interest in the subject.

"As to the manner in which my teachings on the laws of health have been received, I must remark that it is most difficult to get the poor to attend to this subject, and it is necessary to be very guarded in bringing it before them. Remarks which will be well received by one, will be cavilled at by another. Adaptation in such instructions is very essential, and this is impossible unless we have a personal knowledge of the circumstances of our poor neighbours, and that loving sympathy which

they always appreciate. I do not find the poor ungrateful; but certainly they are very sensitive, and will not endure anything like dictation from one who, surrounded herself by every comfort, has no experience of their many privations."

Those of the Ladies' Sanitary Association's tracts which are written in verse and in narrative form, are very suitable for reading aloud at maternal meetings.

Another way in which women can impart sanitary knowledge to their poorer sisters is, by delivering lectures to them. It would require no great genius, or very laborious course of study, to enable a woman thus to teach well and interestingly—in some respects far better than a male lecturer, for there are many important subjects upon which she could speak more fully and freely than conventional rules permit him to do. She, moreover, could explain the laws of health with relation to domestic economy, infantile management, women's dress, etc., far better than the most accomplished male physiologist, though his general scientific knowledge might be very much greater.

Women engaged in writing for the press may do much towards the diffusion of a knowledge of the laws of health, not only among the poor, but among all classes. The numerous works of fiction, magazine articles, and tracts written by women could easily be made a medium for the diffusion of this kind of information. The Rev. Charles Kingsley, Miss Sedgewick, and a few others have already shown, to some extent, how much may be thus done even in the former class of writings. Now, let more of our female writers make imaginative literature a vehicle of popular sanitary instruction—tell us why preventable disease and death for ever sit scattering our hopes and joys, and holding a grim carnival among our loved ones—why youth is ground prematurely old in Mammon's mill—why the churchyard is so full of little graves—why the

young mother's chair stands empty in the ingle nook. Let us have a sanitary "Jane Eyre," "Adam Bede," and "John Halifax." Leaving the writings of female physicians out of the question, women without regular medical or scientific education have already made valuable contributions to sanitary literature. Miss Nightingale's "Notes on Nursing," Miss Martineau's sanitary papers in "Once a Week," Miss Catherine Beecher's "Letters to the People," Mrs. Charles Bray's "Physiology," and Mrs. Barwell's "Infant Treatment," may be cited by way of illustration. This matter concerns not only women of the higher grades of literary talent, but also of the lower—those who never achieve anything more than an occasional letter or article in some third-rate newspaper or magazine; all may do something to dispel the gross ignorance of sanitary law which prevails.

Women engaged in the work of education, can do much to elevate the physical condition of society by instructing their pupils in the elements of human anatomy, physiology, and hygiene. No other branch of secular knowledge is of such universal, every-day utility and importance as these. The mental, moral, and physical welfare of every human being are dependent upon obedience to the sanitary laws; certainly then all should have that knowledge without which obedience is impossible. To girls this knowledge is especially necessary, for upon them will devolve in after life the management of households, the training of infants and children, and the care of the sick, none of which duties can be properly performed by one ignorant of the laws of life and health. Several of the most intelligent members of the medical profession have for years been attempting to introduce the study of physiology and hygiene into our schools. "The following document has been drawn up and subscribed to by sixty-five of the leading physicians and surgeons of London, including the principal teachers of

anatomy and physiology and the practice of medicine and surgery, and also all the medical officers of the royal household:—

“Our opinion having been requested as to the advantage of making the elements of human physiology, or a general knowledge of the laws of health, a part of the education of youth, we, the undersigned, have no hesitation in giving it strongly in the affirmative. We are satisfied that much of the sickness from which the working classes at present suffer might be avoided; and we know that the best directed efforts to benefit them by medical treatment are often greatly impeded, and sometimes entirely frustrated, by their ignorance and neglect of the conditions upon which health necessarily depends. We are, therefore, of opinion, that it would greatly tend to prevent sickness, and to promote soundness of body and mind, were the elements of physiology, in its application to the preservation of health, made a part of general education, etc.

“The Government gave effect to this opinion by ordering the preparation of an elementary work on physiology applied to health, and suitable diagrams to illustrate it, and by instituting examinations in physiology, and making a certificate of ability to teach it a title to an increased allowance of pay.”* The Committee of Council for Education in England and the Commissioners of Education in Ireland then co-operated with the Board of Trade in the introduction of physiology into schools. A series of nine beautifully executed large diagrams, showing the structure of the human frame, have been since published for the use of schools by the Board of Trade. It now remains only for teachers and the friends of education to take advantage of these means; but this, from

* “On Teaching Physiology, and its Applications in Common Schools.” By George Combe. London: Simpkin and Marshall, 1857.

some causes not easily explained without questioning the wisdom and knowledge of all concerned, few seem willing to do. Not only is the study of the structure and laws of the “fearfully and wonderfully made” human frame very useful and interesting, but it is also eminently calculated to elevate and purify the mind, to create lofty conceptions of the love, power, and wisdom of the Creator, and to fill the heart with gratitude to Him.

A very absurd opinion is sometimes expressed that this study injures the delicacy and purity of the mind. This idea is so utterly false and revolting, that it would not be worthy even of mention, did it not unfortunately exist in the minds of many conscientious educators, and prevent them from imparting knowledge of the highest importance. To say that any can be injured by studying those divine laws through which we “live, and move, and have our being,” is nothing less than to reproach the Great Lawgiver. For we must study them, or suffer the heavy penalties resulting from ignorance and consequent violation of them. Here, our ignorance leads to bitter physical suffering; if our knowledge were to cause moral injury, we should indeed be most unfortunately constituted, and should have good reason reproachfully to ask, “Why hast Thou made me thus?”

Women also have it in their power to put an end to the undue exercise of the mental faculties, and the neglect of physical training which are so general in girls' schools, and which so seriously undermine the health of the pupils. To secure healthy, harmonious physical development, some more systematic and thorough method of exercise is needed than walks or dancing lessons, which, though beneficial so far as their influence extends, bring into action a part only of the muscular system. The method of bodily training distinguished as Ling's Rational Gymnastics* is the most perfect of any

* See “Gymnastic Free Exercises of Ling,” translated by Dr. Roth. London: Groombridge, 1854.

yet introduced. These gymnastics are practised with most beneficial results in some of the best conducted schools in London, and also very generally in those in Sweden, Russia, Prussia, Saxony, and Austria. Swimming is another most beneficial exercise, the importance of which cannot be too strongly urged upon the attention of every educator; its claims as a means of self-preservation, independently of its value as a means of health and enjoyment, are sufficient to prove that it ought to form part of the education of all.* Dancing should not be confined, as it now generally is in girls' schools, to the formal lessons given once or twice during the week, but the pupils should be encouraged to dance as a recreation in the playground when the weather permits. In winter evenings too, when the day's work is done, a merry school-room dance—about as orderly as Mr. Fezziwig's—is a very healthful and exhilarating affair, at once destructive to chilblains and “the blues.” Every encouragement should also be given to the practice of those out-door and in-door games which bring the muscles into vigorous exercise.

In many schools it is found very difficult to induce the elder pupils to take any interest in the means of physical development. Usually when a school-girl attains to the magnificent age of thirteen or fourteen, she leaves active games to “the children.” If she is a pretty, vain girl, she straightway turns her attention to the mysteries of bonnets, mantles, and crinoline; if she is an ambitious, clever one, she begins “cramming” for examinations, and waxes great in crayon heads; if she is thoughtful and conscientious, she devotes herself to an unmerciful course of study, under the idea of “improving her advantages;” whatever she is, she votes exercise a bore and a hinderance, and takes as little as she can. This

* See “English Woman's Journal” for August, 1858, article on the “Opening of the Swimming Bath for Ladies.”

state of things is a necessary result of the plan of education usually adopted; girls are rarely taught the value of physical development and strength; they are stimulated by prizes and every possible inducement to cultivate the mind, while the claims of the body are tacitly understood to be of far less importance. But let every girl be constantly and thoroughly impressed with the fact, that the highest perfection and happiness of which her nature is susceptible can be attained only through the simultaneous, harmonious development of all her faculties; let the belle of the school know that health heightens beauty; let the ambitious, studious girl be told of the dependence of mental upon bodily vigor; let the conscientious one be convinced, that to develop her whole being, is a duty she owes to her Creator, to society, and to herself. Let prizes be offered, not only to those who excel in languages, music, and drawing, but also to those who dance best, and execute gymnastics and other exercises with most grace, ease, and precision. Then we should soon see girls taking delight in the means of physical development. In some schools for boys, prizes are offered for proficiency in various active out-door games. This plan should be adopted with girls also: the physical frame of both sexes is governed by the same general laws, both alike require vigorous muscular exercise, both should alike be encouraged to take it. A prize for the boys who throw the hammer the furthest, and fence the most skilfully; a prize for the girls who run the fastest, and skip the best. The idea of any similarity in the training of the two sexes gives instant alarm to some persons, who having no faith in the indestructibility of the eternal distinctions nature has established, fear that if girls are allowed to develop their physical, or other faculties, as fully as boys, they will become boy-like. But, on the contrary, the more fully and freely a girl is allowed to develop her whole being, the more distinctly

marked will her feminine characteristics become. They are deeply rooted in her very nature; there is no need to cripple her for fear of destroying them. It is most painful to know, however, that to thousands of the inmates of our ladies' schools, vigorous out-door exercise is impossible through want of playgrounds. In London there are many hundreds of schools to which no space whatever for out-door exercise is attached—in other words, hundreds of schools where the pupils are compelled to violate one of the primary conditions of health.

In many schools for girls of the poorer classes, also, the health of the pupils is much injured through bodily inaction and other preventable causes. The lady-visitors and supporters of such schools may do very much to remedy these evils. A visitor fulfils her task of inspection but very imperfectly if she confines her attention to the mental and moral condition of the children: she should look upon the school not only as a nursery for minds and souls, but also for bodies, and should see that it is favourable to the harmonious, healthy development of all. "Educate! educate!" is the watchword of the day; but, after all, education is a very questionable boon to poor girls, when it undermines the bodily health upon which they will be dependent for their bread.

It is next to impossible to effect a sanitary reform in schools for the poor while the governesses are so ignorant of the laws of health as they now generally are. The first step must be to convince them of the need of such a reform, and to induce them earnestly to co-operate in effecting it. They should be kindly encouraged to qualify themselves to teach physiology and hygiene, and every facility should be afforded them for the study of those sciences. In many cases, some benevolent medical gentlemen—the name of such is Legion—will be found willing to give a course of lectures in the elements of physiology and hygiene to a class of

governesses and pupil teachers. Several courses of this kind have been recently given under the auspices of the Ladies' Sanitary Association. Where such aid is not available, much of the necessary knowledge can be obtained from books: Mr. John Marshall's "Description of the Human Body," and Dr. P. B. Lord's "Popular Physiology,"* are among those specially suitable.

In many schools a visitor will find ventilation much neglected. This is not the place to detail all the evils resulting from this one cause; suffice it to say, that a constant supply of pure air is one of the primary conditions of health, and where it is not fulfilled in the schools we provide for the children of the poor, we do them a grievous wrong. A lady who visits an ill-ventilated school cannot, it is true, put ventilators in the walls with her own hands, but she can lay the matter before the school managers, and in most cases will succeed in getting it attended to.

The visitor should observe whether the children are comfortably seated. It is common to find little children perched on a high form, with their feet hanging in mid-air, several inches from the floor; others will be found tightly packed together, herring fashion, in various uncomfortable postures. These and other physical discomforts are often the great cause of the children's irritability and so-called "naughtiness," which are generally attributed to something very different. Of course, little physical discomforts never, never make us adult philosophers at all irritable or unamiable; but poor little school children have not attained to our exalted equanimity; if, therefore, we wish to make them "good," we must first make them comfortable. The school forms should all be suited to the height of the children, so that their feet can rest comfortably on the floor, and all over-crowding must be prevented. All the forms

* See list on page 32.

should be provided with backs, as to sit without a support for the spine is to most children very injurious.

The visitor will do well to observe the posture of the children when standing to read, sitting to sew, write, &c. They are often required to stand to recite, &c., with their feet closed and their hands crossed on the chest; a very small base is thus afforded to the body, and the posture is therefore difficult and injurious to maintain; moreover, crossing the hands on the chest prevents free breathing. The best method of standing is with the feet several inches apart, so as to afford a firm base for the body; the arms should hang freely by the sides. It is not judicious to keep the children standing, even in a good posture, more than a quarter of an hour. When seated to write, they will generally be found in a variety of bad postures; the only correct one is with both fore-arms leaning on the desk, and supporting the trunk, which should never lean on the edge of the desk. A bad posture in writing prevents free breathing, and causes contraction of the chest and stooping.

The visitor will do well also to notice by what patterns the articles of clothing made in the school are cut. Very bad patterns are generally used; and schools should, therefore, be provided with model sets made in accordance with the laws of health.

The visitor should ascertain how much time is allotted to out-door exercises in the playground. Half an hour, both in the morning and the afternoon, should be thus spent when the weather is suitable; and when it is not, the children should march, or perform other gymnastic exercises in the school-room, for the same length of time. Ling's Rational Gymnastics, before mentioned, are very suitable for such children.*

The visitor may diffuse sanitary knowledge among the

* The Ladies' Sanitary Association provides gratuitous instruction in these exercises to school-mistresses and pupil-teachers.

children by giving away, as rewards, some of the little tracts before named; the following are especially suitable for this purpose:—1. "Work and Play;" 2. "The Sick Child's Cry;" 3. "Never Despair;" 4. "The Cheap Doctor;" 5. "The Power of Soap and Water."*

Many other ways of promoting the physical well-being of the children will present themselves to the mind of a visitor who is thoroughly and intelligently interested in the subject.

Those of us who teach in Sunday schools may do much by earnestly and frequently inculcating the duty of using all means to preserve and improve health, as a command of God. We should oftener explain the breadth of the command, "Thou shalt not kill;" show that it relates not only to instantaneous suicide and murder, by knife, halter, or poison, but also to suicide by inches, through unhealthy habits, and to slow murder, by forcing those dependent upon us to violate the divinely-instituted laws of health. If we taught all this, we should save many from the common sin of self-destruction—many from walking the earth with the brand of Cain upon them.

There are many other parts of woman's sanitary work which cannot even be mentioned, much less explained, in this small space.

Besides their own direct sanitary work, women may do much indirectly, through their influence over men. The best and most useful men in sanitary and all other labours are, other things being equal, invariably those whose wives, mothers, daughters, and sisters, aid and encourage them in their good work. Men engaged in public sanitary labours have almost invariably to encounter most depressing opposition and difficulty in the prosecution of them; and, for want of woman's sympathy, have often also to endure discouragement by their

* See list on cover.

own firesides. This must not be; for, from the leading member of parliament, endeavouring to introduce legislative sanitary measures, and the rich landowner, anxious to improve his cottage property, to the obscure author, and the poor medical man, spending their leisure in diffusing sanitary knowledge, all need woman's intelligent appreciation, encouragement, and sympathy; and it is part of her divine mission to bestow them largely. Her influence is also sometimes needed even to arouse men to a sense of their duty with regard to the physical elevation of their dependents. Nobler words on this point can hardly be found than those of the writer before quoted—the Rev. Charles Kingsley: “A large proportion of your parish work will be to influence the men of your family to do their duty by their dependents. You wish to cure the evils under which they labour. The greater part of these are in the hands of your men relatives. It is a mockery for you to visit the fever-stricken cottage while your husband leaves it in a state which breeds that fever. Your business is to go to him and say, ‘*Here is a wrong, right it!*’” This, as many a beautiful middle-age legend tells us, has been woman's function in all uncivilised times; not merely to melt man's heart to pity, but to awaken it to duty. But the man must see that the woman is in earnest; that if he will not repair the wrong by justice, she will, if possible, (as in those old legends) by self-sacrifice. Be sure this method will conquer. Do but say, ‘If you will not new-roof that cottage, if you will not make that drain, I will. I will not buy a new dress till it is done; I will sell the horse you gave me, pawn the bracelet you gave me, but the thing shall be done.’ Let him see, I say, that you are in earnest, and he will feel that your message is a divine one which he must obey for very shame and weariness, if for nothing else.”*

* “Practical Lectures to Ladies,” p. 56.

The sum of the whole matter is then, that we, as wives, mothers, heads of households, educators, and supporters of benevolent enterprise, are to a great extent responsible for the sore physical evils around us. Till we work for their removal with all our power, removed they can never be. Noble, disinterested men, are devoting time, talent, and money, to the promotion of Sanitary Reform, but their efforts alone will not suffice. Men drain and cleanse our towns, and build improved dwellings, but in them we practise a thousand violations of health's laws—men labour and legislate to supply the necessaries of life to all, but we misuse them—men discover the truths of sanitary science, but we are too ignorant to apply them—so, after all, the work of physical elevation goes on but slowly. May we soon learn to do our part in it!

S. R. P.

LIST OF BOOKS RECOMMENDED AT PAGE 27.*

- 1.—A Description of the Human Body. By John Marshall, F.R.S., F.R.C.S. Price £1 1s. Day and Son.
- 2.—Manual of Physiology. By Dr. W. B. Carpenter. Price 12s. Churchill.
- 3.—Popular Physiology. By Dr. P. B. Lord. Price 5s. John Parker. †
- 4.—The Principles of Physiology applied to the Preservation of Health, and to the Improvement of Physical and Mental Education. By Dr. Andrew Combe. Price 3s. 6d. Simpkin and Marshall. †
- 5.—Elements of Health and Principles of Female Hygiene. By Dr. E. J. Tilt. Price 6s. Henry G. Bohn.
- 6.—Letters to a Mother. By Dr. J. T. Conquest. Price 5s. Longman.
- 7.—Hints to Mothers on the Management of Health. By Dr. Bull. Price 5s. Longman.
- 8.—A Treatise on the Physiological and Moral Management of Infancy. By Dr. Andrew Combe. Price 2s. 6d. Simpkin and Marshall.
- 9.—The Maternal Management of Children. By Dr. Bull. Price 5s. Longman.
- 10.—The Hygienic Management of Infants and Children. By Dr. T. Herbert Barker. Price 5s. Churchill.
- 11.—Infant Treatment. By Mrs. Barwell; edited by W. and R. Chambers. Price 1s. 3d. W. and R. Chambers.
- 12.—Laws of Life, with Special Reference to the Education of Girls. By Dr. Elizabeth Blackwell. Price 2s. English Woman's Journal Company, 19, Langham Place, Regent Street.
- 13.—Notes on Nursing. By Florence Nightingale. Price 2s. Harrison.
- 14.—How to Nurse Sick Children. By Dr. C. West. Price 1s. 6d. Longman.
- 15.—Digestion and Dietetics. By Dr. Andrew Combe. Price 2s. 6d. Simpkin and Marshall.
- 16.—Letters on Chemistry. By Professor Liebig. Price 7s. 6d. Walton and Maberly. †
- 17.—The Chemistry of Common Life. By Professor Johnston. Price 11s. 6d.; 2 vols. Blackwood.
- 18.—Healthy Skin; a Treatise on the Management of the Skin and Hair. By Erasmus Wilson. Price 2s. 6d. Churchill.

* Those books in this list against which † is placed, are included in the list of books towards the purchase of which grants are made by the Committee of Council on Education.

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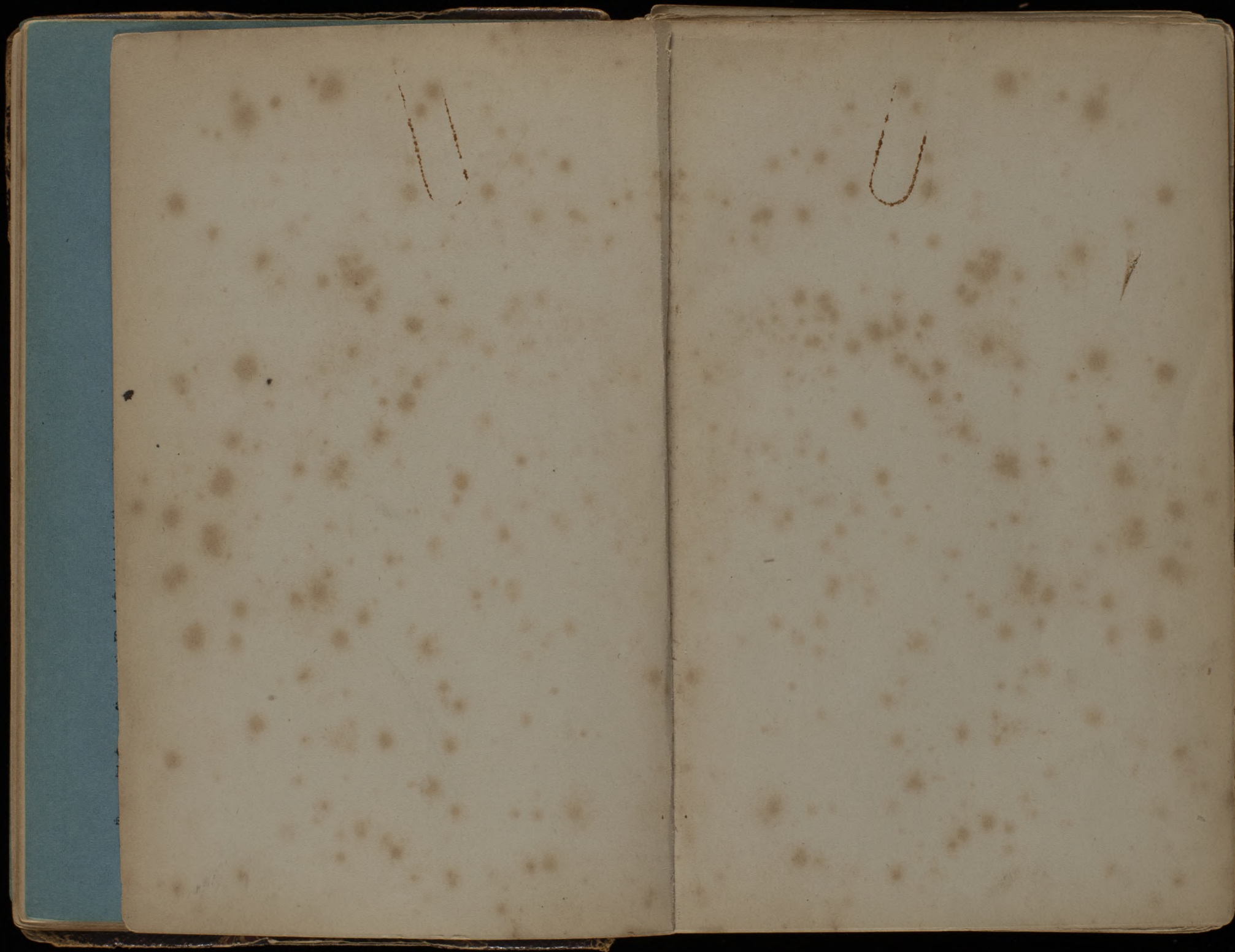
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“THE BLACK HOLE”

IN

OUR OWN BEDROOMS.

ABOUT a hundred years ago a Nabob of Bengal (which means a prince, in India) quarrelled with the English at Calcutta, “and shut up a hundred and forty-six of them in the prison of the garrison, a chamber known by the fearful name of ‘The Black Hole.’ The space was about twenty feet square, the air-holes were small. The captives were driven into the cell at the point of the sword, and the door instantly shut and locked upon them. Nothing could exceed the horrors of that night, told by the few survivors; they cried for mercy, they strove to burst the door. The answer was, that nothing could be done without the Nabob's orders; that the Nabob was asleep, and he would be angry if any one awoke him. Then the prisoners went mad with despair, they trampled each other down, fought for the places at the windows, fought for the pittance of water with which the cruel mercy of the murderers mocked

breathing it through our lungs, but also by our skins. The walls of old houses get filled with these exhalations from our bodies; there is no way of curing this but by whitewashing once or twice a year.* Clean water, clean air, clean skins, are necessary to keep people in sound health; and if there is plenty of fresh air, it will be found that some trades which are called unhealthy, are more healthy than those which let men work all day in a shut-up room with the windows closed.

In the morning when we get up, the first thing we should do is to open the bedroom window quite wide, particularly at the top, and keep it so as long as possible, then to open the bed and stir about the blankets and sheets; for a bed in which we have lain all night cannot be fresh or fit to lie in again until it has been thoroughly aired; then the slops should be emptied immediately, or the foul smell will not leave the room.

Fresh air is particularly necessary for young children and babies. If a child is covered up in a cradle with curtains and bed-clothes so that the fresh air cannot get to its little lungs, it wakes up hot and feverish and cross.

When many people crowd into small spaces to hear music, or lectures, or sermons, without any open windows, they make the air very bad, and then they come out often with bad headaches, or feeling sick and faint, and hardly know the reason why.

* A pennyworth of pink or blue colour mixed with the whitewash makes the walls look very pretty.

Now God has made the fresh pure air, without which we cannot live, "the common air," so as to be got at by the poorest as well as the richest, if we will only take care to secure it. A very little thought would make a place by which the air may come into every bedroom in England. To open the window a little is the best way of airing the room. We ought to be just as fearful of leaving our children without air as without bread. You must also see if the window be very near the ground you cannot air the part above the window even with a great draught. Three men were killed in a sewer quite lately because they were caught by the bad air in a place where the draught could not come. An air-brick or ventilator at the top of the room is therefore quite necessary.

Because we cannot see the bad air, we have a great deal of trouble in understanding how hurtful it is; but "the invisible air" can strike a man dead as surely as a blow on the head, or a knife in his heart. The other day an old well was opened, which was full of foul air; a man was let down to clean it out; before he reached the bottom he became insensible, struck as if by a shot. A second man rushed to help him; but without thinking how best it could be done, went down by the rope, and fell on the body of his comrade the instant his mouth reached the part of the well where the bad air began. A third man—who had a head on his shoulders and knew that it was no use trying to live in such air—began by doing what was necessary to get rid of it; sent

down buckets of lighted straw, threw in a quantity of water, and then went down with a grappling-hook in his hand, fastened it to the clothes of one of the men, who was pulled up with him, and then did the same by the next; but he had been too long below, and was quite dead, and the gallant fellow who had gone down to save them was insensible himself for twenty minutes, so that his friends feared they would not be able to bring him round. In his anxiety to save the men, he had gone down too soon, before the air was cleared. So you see bad air is no fancy.

There are many ways of making air foul; the smells from sewers, and filth of all kinds, pigsties adjoining the houses, drains, churchyards. Workrooms and shops are often made unwholesome if there is much gas used. A gas-burner eats up as much air as eleven men;* so there should be more air allowed to come in and go out where gas is used; still the chief and commonest way of making the air foul, is breathing it from our lungs.

The good God has made a beautiful provision by which the very air hurtful to man is that which sustains the life of plants and trees. They live upon what animals reject. A clever chemist showed this by putting a certain number of aquatic plants and animals into a glass vase full of water. If the animals were put into it alone, the water became bad; and if the plants

* The gas-fittings must be properly tight, and every burner must have a ventilator to itself to be healthy.

grew in it alone, they made the water bad; but when the two were there together, the animal and vegetable life properly balanced, the water never wanted changing. Manure, particularly human manure, is what produces the heaviest crops, and trees when planted about a churchyard help to make it more healthy. So that our Maker has shown us clearly that it is only "dirt in a wrong place," as Lord Palmerston once called it, which does harm. If we keep it in and near our houses, it helps to kill us by poisoning the air; if we spread it on the fields, it helps to feed us by enriching the ground. Cholera, scarlet and typhus fever, and smallpox, are all found to be produced by the bad air coming from drains, cesspools, rivers dirtied by sewers, filth of all kinds, and want of fresh air.

In towns it is much more difficult to improve the drains, but in the country "father" can almost always find an outfall for the dirty water and a fit place in the garden for the manure.

Now, as God has put it into our power to get rid of these things, and shown us how mischievous they are by the mischievous effects, it is not only foolish but wrong if, by our neglect, we go on breaking what He has thus shown to be one of His laws. Life is thrown away in the common course of events by the want of care in such small things, much faster than in great battles. We are very pitiful when we hear that three hundred men were killed at Inkerman; but we think nothing of it

when the Registrar-General's Return shows that six hundred people died in London of preventible disease. "Let each one mend one," a wise woman once said, "and then we should get on faster."

If every mother kept her own house clean and freshly aired, there is no telling how many dreadful diseases would be saved to the nation. So that we must remember that we are not only responsible for the health of our children, but of our neighbours too.

ROBIN GRAY:

OR,

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ROBIN GRAY.

FIRST PART.

The night was dreary, damp, and cold;
Wildly, with sleet and rain,
The wind shrieked midst the chimney tops,
Beat fiercely on the pane.

The gas lamps shed a fitful light
Upon the crowded street;
And ever thronging by, was heard
The tramp of hurrying feet.

Basket on arm, in busy haste,
A housewife onward hied,
To visit swift the tradesman's shop,
And weekly store provide.

With frugal mind, she counts her pence,
And asks how things are sold,
Intent to spend her money well,
Lest her good man should scold.

Then homeward bound, she enters there,
The fire burns bright and clear,
The table sets, and lays the cloth,
Prepares the humble cheer.

Her husband, though on comfort bent,
Seems yet so taciturn,
That "what had vexed him in the day,"
His wife resolves to learn.

"Why, John, what aileth, bonny man?
Why look so sad and glum?
Scarcely a word all supper-time,
You might as well be dumb!

"I hope you've heard no news that's bad;
Whatever may betide,
Don't keep it to yourself, dear John,
But in your wife confide."

"Well, dame, I must confess to you,
I do feel rather sad,
Although I've heard no news to-night,
At least, no news that's bad.

"But I have had a fearful shock,
A sudden, sad surprise,
That made my poor heart leap, and brought
The tears into my eyes.

"You well remember Robin Gray,
Who went with me to school,
With whom I've conned full many a task,
For good old Simon Poole.

"When we were young and merry boys,
A right brave lad was he,
And many a kindly act of yore,
Has Robin done for me.

"As I was coming home from work,
A little while ago,
A merchant hailed me in the street,
One Mr. Smith, of Bow.

"He gave an order for our firm,
Kept me some time in talk,
And questioned me of much, ere I
Could well resume my walk.

"He wants a steady, trusty man,
The wages too are good,
Would well maintain a family,
In clothes, and rent, and food.

"While we conversed, among the crowd
The other side the street,
A form I recognized, passed by,
With weary, tottering feet.

"It looked so haggard, wild, and ill,
I scarcely knew the face,
So sorrow-stricken in its gait,
And languid, faltering pace.

"The gaslight gleamed upon the form,
Upon the ghostlike head,
More like than humankind, it seemed
A spirit from the dead.

"'Twas Robin Gray, I beckoned, tried
In vain to catch his eye;
I much do fear, my dear old friend,
Is deep in misery.

"So poorly clad, his mean attire
Betokened poverty—
With hasty leave of Mr. Smith,
And much of courtesy,

"I crossed the street, and followed quick;
Alas! I thought in vain
To overtake poor Robin Gray,
I ne'er saw him again.

“Perchance, into that court he turned,
That lies there, close behind,
Or wandered on, footsore and sad:
But which—I could not find.

“I wish I’d gone into the court,
And asked the neighbours there,
Whether they knew his name, and if
He lodged there anywhere.”

John turned his chair, and stirred the fire,
It blazed up bright and clear;
Then looking fondly at his wife,
He thus resumed, “My dear,

“It worries me, I can’t enjoy
My supper in the least;
I don’t believe that I could eat,
If I were at a feast.

“I seem to view his pallid face
In every thing I see;
And in my thoughts, some undefined
Strange feeling urges me

“Once more to try and seek him out,
Before I go to rest;
The court’s not far—that corner shop—
I’ll ask there—’t will be best.

“I’ve read it somewhere, God oft gives
An inkling in the mind,
A secret impulse to perform,
Some good He has designed.

“Gray’s just the man for Mr. Smith,
Would suit him to a T;
Who knows? perhaps the Lord intends
Poor Rob some good through me.”

John stopped, his sympathetic spouse
First wiped away a tear,
Then thus replied, “My dearest John,
I very much do fear

“Your search will be in vain to-night,
Yet, if you feel inclined,
By all means follow out your bent,
And ease your anxious mind.

“The comforts that surround us from
Our Heavenly Father’s store,
Demand that as the years roll round,
We learn to prize them more.

“His tender hand, His providence,
Hath brought us on thus far;
And by His mercy, ’tis alone,
That we are what we are.

“How shall we praise His name enough,
For all His boundless love?
What can we do in our poor way,
Our gratitude to prove?

“We might have been beset with ills,
In want of daily bread;
Homeless and houseless, with no couch
To rest our weary head.

“Sick and in suffering—no friend
To sympathize or save;
No comfort here—without one spark
Of hope beyond the grave.

“We might have been as millions are,
Entombed in heathen night;
No faith in Christ, no trust in God,
Without the Gospel light.

- “It is our duty, John, to do
 For others what we can;
 Then go forth, dearest, in His name,
 I much approve your plan.
- “And may He go with you, and guide
 Your footsteps to your friend;
 And round your path and on your deeds,
 His blessing still attend.
- “In such a cause, I am content
 To sit alone and wait;
 Nor will I worry, John, or fret,
 Or grumble if you're late.”

John kissed his wife, donned coat and hat;
 But what became of John,
 As down the street, he hurried fast—
 Why, you shall hear anon.

SECOND PART.

Down in a dark and narrow court,
 Within an upper room,
 Sits a young mother meanly clad,
 In fear, and doubt, and gloom.

She has been lovely once, but now
 The bloom has left her cheek,
 No more a buxom country girl,
 But sickly, pale, and weak.

For woe and penury have been
 For months her daily lot,
 For months she trusted on for aid;
 They fled, but brought it not.

A glimmering rushlight flickers on
 The scene within the room,
 The clean though scanty furniture—
 Scarce penetrates the gloom.

No fire is in the little grate,
 No loaf upon the board,
 No friend to whisper words of hope,
 Vanished the slender hoard.

She thinks of pleasant verdant meads,
 Where oft she used to roam,
 The waving cornfields ripe with grain,
 The old farmhouse at home:

Of all her childhood's happy time,
 When in the fields at play,
 She skipped and frolicked joyously,
 Among the new-mown hay:

Of when she wandered hand in hand
 With Robin by the mill,
 And gathered lilies by the brook,
 Or daisies on the hill:

Her girlhood, when she plighted troth,
 And stood a blushing wife,
 How kind and faithful he has been
 Through all their wedded life.

She thinks, too, of the old churchyard
 Where her dear parents lie,
 Of little Robin her first-born,
 An angel in the sky:

How bravely in more prosperous times
 Rob toiled with might and main,
 From early morn to latest eve,
 A livelihood to gain:
 And to put by a little store,
 To aid when age should come,
 Or when affliction dark might cast
 A shadow o'er their home:

How when that fever struck him low,
 And racked with anguish keen,
 For many a week—how gentle too
 And patient he had been.

His little store has melted all
 Like snow-drift in the sun;
 Their household treasures, parted with
 For sustenance, one by one.

Her memory dwells upon the past;
 How bitter is their fate;
 His robust form and manly mien,
 How sadly changed of late:

How through the busy city's haunts,
 Weary, and hungry, faint,
 He daily wanders to seek work,
 Nor ever makes complaint:

How sorely tried his faith has been,
 How nigh unto despair;
 How nobly he still struggles on
 In faith, and hope, and prayer:

He rose at dawn, has been from home,
 Throughout the livelong day:
 "God in His mercy grant to him
 Success upon his way."

"What keeps him later still to-night?
 His usual hour is gone;"
 She longs to ask "What cheer, my love?"
 But dreads his answer, "None."

A tiny foot is heard, pit, pat,
 Upon the creaking stair;
 "'Tis I, dear mammy, I'm so tired;
 Dear mammy, *are you there?*"

"And I've been to the chandler's shop;
 You know you said I must;
 But Mrs. Simpson is so cross,
 She says she will not trust.

"Mammy, I feel so very bad,
 I want some bread to eat;
 I shiver so, I am so cold
 All over to my feet.

"Mammy, why can't we get some bread?
 Dear mammy, tell me why,
 If we can't get some bread to eat,
 Oh tell me, *must we die?*"

"Is father coming—won't *he* bring
 Something to eat to-night?
 Oh why is he away so long,
 E'en since the morning light?"

"My sweet, my pet, my pretty one!"
 She soothes with accents mild,
 And loving kisses on its lips
 The poor, wee, toddling child.

Poor suffering mite! it hides its eye
 Low in her lap to weep,
 Wraps her scant skirt around its head,
 And sobs itself to sleep.

The infant at her bosom gives
A plaintive wailing cry,
Her tears fall fast upon its cheek,
The fount of life is dry.

She bows her head and prays for strength
To suffer and endure;

“Thy promise, Lord—‘Bread *shall* be given,
And water shall be sure;’

“Father in heaven, I cry to Thee,
My faith is sorely tried;
I plead Thy promise—hear my prayer,
That Thou wilt yet provide.”

And as she prayed, a shining one,
By mortal ken unseen,
With raiment white and wings of light,
All clothed in radiant sheen,

Touched her pale lips with seraph fire,
And breathing on her, stood
A messenger of inward strength,
A messenger from God.

* * * * *

A heavier foot is on the stair,
Weary, faltering, slow,
She eager lists to every tread—
“’Tis Robin’s step, I know.”

“My heart bleeds, Mary, love, for you,
And for our children dear;”
And o’er his honest careworn face
There trickled down a tear.

“I’ve travelled far, footsore, to-day,
Despite the sleet and rain,
And sought at twenty firms for work,
But sought, alas, in vain.

“I passed a rich man’s house, Mary,
Feasting and revelry;
It seems so hard I cannot get,
A crust for you and me.

“I do not ask for charity,
I’d work to skin and bone,
If some kind friend would bid me earn
A shilling of my own.

“All dark, all dark and drear, Mary,
No refuge can I see;
Alas, ours is a bitter lot,
For starvèd we must be.

“I passed a reeking eating house—
The beef, and ham, and veal,
And steaming rolls sore tempted me,
I felt that I could steal—

“Not for myself—I dreaded so
To hear our Effie cry
‘Bread, bread, dear father, give me bread,’
And have none to supply.

We might go to the Union house,
But that must never be;
I’d rather starve than live entombed,
And separate from thee.

“Oh why am I thus sorely tried?
Why is God’s mercy slow
To hear my earnest prayer for help?
Why doth He tempt me so?

“ My spirit’s breaking, Mary, dear,
I’m crush’d with want and care.”
That strong brave heart was bursting th
And filled with dark despair.

Her infant slept—she kiss’d its cheek,
And laid it down to rest,
Then crept soft to her husband’s side,
And nestled to his breast.

“ Hush! hush! dear Robin, talk not so,
We must not doubt His word;
For though He scourge and chasten us,
Yet faithful is the Lord.

“ Each little bird that builds its nest
Beneath the slanting eaves,
Hath its own portion—from His hand
Its daily food receives.

“ More tender than a mother’s love,
Is His, who on the cross
Died to redeem our guilty souls,
And suffered for our loss.

“ He will not always hide His face,
He chastens us in love,
To sanctify, and make us meet
To dwell with Him above.

“ Doubt not His love, though all be dark,
Whatever may betide,
His promise stands securely fixed,
The Lord will yet provide.

“ For time and for eternity
We’ll trust Him though He slay;
He will not break the bruised reed—
Oh! let us kneel and pray.”

They bent beside their lowly bed,
Their children sleeping there—
Poured out their souls before the Lord,
In humble, earnest prayer.

And while they wrestled hard with God,
Kneeling before His throne,
Again descended from above
That bright and shining one,

(God works by means) unseen by John,
Upon his dreary road,
Directed his uncertain path,
Led him to their abode.

John helped their need with hearty zeal,
A faithful, loving friend,
And proved that they ne’er ask in vain,
Who on the Lord depend.

He took poor Gray to Mr. Smith,
Who gave him full employ,
Which caused each throbbing pulse to beat
With thankfulness and joy.

To hoary age Gray served him well,
Nor ceased his God to bless;
Ready and swift to lend an ear
To others in distress.

And oft upon a winter’s eve,
Engaged in social chat,
John, Robin, Mary, and the dame
In cheerful conclave sat,

With swelling breasts recounting o’er
The mercies God had given,
And humbly hoping through His Son
To meet again in heaven.

And He blessed both their humble homes,
 Their basket and their store,
 While from past trials and providence,
 They learned to trust Him more.

Let all who love His holy name,
 Whatever ills betide,
 On the dear Saviour cast their care,
 Assured He will provide.

THE END.

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SANITARY DEFECTS

IN THE

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A Lecture delivered at the South Kensington Museum.

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BY

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of the Academy of Fine Arts in Florence, &c. &c.*

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HEALTHY DWELLINGS,
AND
PREVAILING SANITARY DEFECTS
IN THE
HOMES OF THE WORKING-CLASSES.

AMONGST the various circumstances of which man is the creature, none have a more powerful influence on his physical condition than those connected with his dwelling; whilst in respect to the labouring and the poorest class, this influence also, very widely affects his moral and his spiritual condition.

In viewing the question of "healthy dwellings" under this two-fold aspect, as presenting a remedy for much wide-spread physical evil, and as pointing to the means of removing very formidable obstacles to the moral and the religious improvement of a numerous class of the community, its double claim on the attention of the Christian philanthropist, and on the earnest efforts of all who have its advancement in any way within their power, is clearly manifest.

Believing that the influence of the Ladies' Sanitary Association cannot be directed to an object of greater importance, I felt bound to comply with the request made, that I would present, in a condensed form, the experience of sixteen years, during which the study of this question, with its practical application gratuitously, at home and abroad, has occupied much of my time. And before doing so, as a proof of cordial sympathy with the objects of the Association I have now the

honour to address, it may not be out of place to quote a resolution proposed by me at the Congrès International de Bienfaisance, held in Brussels, in 1856, and which was unanimously adopted by the Representatives of about twenty different Countries there convened under royal authority:—

“The Congress declares that it is of public utility that the working classes be enlightened by all possible means in regard to the improvement and the keeping of their houses in good order. It declares that the instruction of the young in the labouring classes ought to comprise all which relates to the cleanliness of their persons and of their dwellings, to the benefits resulting from good ventilation, and the evils resulting from humidity. Lastly, it thinks that the study of the science of preserving health is one which ought to be rendered accessible to all.”

The condition of “healthy,” in regard to dwellings arises either out of that which is local or structural, and may, in those respects, be said, in the majority of instances, to be not under the control of the occupants; or else it results from circumstances which they ordinarily have the means of changing.

IGNORANCE AND WANT OF CONSIDERATION.—Amongst the class of persons whose advantageous position usually gives them the power of choosing a residence, there are, however, not a few who, either through ignorance, or from want of consideration, are manifestly insensible to the evils they expose themselves to, in a dwelling which is unhealthy as to its locality, or deficient as to its sanitary arrangements; until the serious, if not fatal consequences, are painfully manifest in the state of their own health, or that of their family. A single illustration of this fact may be drawn from the last annual report of the Registrar-General, where, amongst other analogous cases referred to, is that of three young ladies, nineteen, eighteen, and fifteen years of age, the daughters of a Lieutenant-Colonel, who died in the past year at Lyncomb, near Bath, from the effects of imperfect drainage.

Such cases show that the importance of this inquiry is not limited to one class of the community,* but that all have a personal interest in knowing what are the conditions essential to a “healthy dwelling.” In endeavouring to point them out with precision and brevity, my aim will be to avoid the use of technical terms, as much as possible; and with a view to simplify the treatment of the subject, it will be considered under the three heads already indicated. 1st, as to that which is local; 2nd, as to that which is structural; and, 3rd, as to that which may be distinguished as being mainly, though not wholly dependent on the Occupants of the dwelling.

ESSENTIAL CONDITIONS.

IN REGARD TO LOCALITY.—High and dry situations, with a free circulation of air, whether in towns or in the country, are proverbially healthy; whilst those which are low and damp, or surrounded by confined air, are the opposite. Experience, afforded by the state of troops when encamped, or when in permanent barracks, or in hospitals, is conclusive on this point. It is on record that the mortality of troops in Jamaica has been diminished from 120 to 20 per thousand, by their removal from the plains to the hills. And it is well-known that ague, dysentery, and fever prevail in localities where the surface of the ground is naturally wet, and insufficiently drained; or where there exists an accumulation of decaying matter, of which one sure indication is the presence of an abundance of flies.

* That such studies might be useful to public men is evident from a statement very recently made in parliament, with reference to Netley Hospital, which was denounced as the most mismanaged public affair in this country, and its site declared to be, in a sanitary point of view, most improper for a hospital. Mr. Sydney Herbert said, “That it had not been spoken of a bit too severely in the discussion, and that when the plan was first proposed, he himself protested against it, but the House did not support him;” and he added, “Ill adapted as our military hospitals no doubt are for their purpose, civil hospitals are not a jot better. Many of the London hospitals quite capped anything to be found in the worst military establishments of that kind.”

Dampness of situation is also productive of mental depression and bodily feebleness, which excite a craving for intoxicating drink.

SOIL AND SURFACE DRAINAGE.—Wherever, therefore, dwellings are built on naturally wet ground, it is essential to their being healthy, that ample provision be made for draining the soil, as well as for ordinary surface drainage, and the carrying off of surplus fluid from the house itself. This necessity is more manifest in the country than it usually is in towns, as their gradual formation and progressive increase, have generally been accompanied with surface drainage, under some form or other. Good surface drainage is, however, peculiarly necessary in towns built on an uneven surface, as is the case with the Metropolis, which has been built on low hills, in the midst of an imperfectly reclaimed swamp, partially underlaid by a stratum of peat. The lower levels on either side of the Thames, where the drainage has been most inefficient, are well-known to have been much more severely visited with cholera than the higher parts of the Metropolis. Dr. Farr tells us that, taking the mean of the cholera epidemic of 1848 and 1854, in London, nearly 11 per 1,000 of those living under 10 feet of elevation died, to 1 per 1,000 of those at the highest elevation; and that if London be divided into terraces of different degrees of elevation, the mortality from an epidemic of cholera is, in round numbers, inversely as the elevation.

HOUSE DRAINAGE.—The providing efficient means for house drainage, as well as a good surface drainage, is a duty which, in the case of towns, obviously devolves on the public authorities. The consequences of a past neglect of this duty have been recently manifested at Windsor, where the prevalence of fevers and choleraic complaints having led to an investigation, the drainage of the town was found to be very defective; whilst, on the contrary, at the castle, a separate and perfect system of drainage having been provided, no disease existed there.

In house drainage, one valuable modern improvement is the use of glazed earthenware tubes, which should invariably be kept as much as possible without the building; and especial care ought to be taken that the pipes which discharge into them are properly trapped, in order that they may not become a medium for the escape of foul air into the dwelling.

CESSPOOLS.—Cesspools under basement floors have been the cause of sickness and deaths innumerable.

During the cholera in 1849, to my knowledge, several cases, wholly traceable to this cause, occurred in one house. Whenever these latent sources of mischief are discovered, they should be removed as quickly as possible. The experience of an eminent sanitary engineer leads me to believe that in many houses of the first magnitude, both in the metropolis and in the country, which are not of recent construction, this evil exists, as well as that of defective drains, causing the ground under the house to become sodden with fetid matter. The gases which originate in these places and diffuse themselves over the dwelling, constitute one of those conditions of local impurity which exercise a powerful influence, when the state of the atmosphere is favourable to an outbreak or spread of cholera, fever, or other kindred complaints.

PURE WATER.—For an ample supply of *pure water*, one of the most important accessories to a healthy dwelling, the public authorities should, in the case of towns, be held responsible. The contamination of our rivers, by their being unscrupulously and at the same time most wastefully made the receptacles of sewage, has rendered them very generally incapable of supplying the neighbouring population with wholesome water. That drawn from wells is not unfrequently impure, though its sparkling appearance and freshness to the taste might lead to the contrary supposition; in towns this is generally caused by an infiltration from some neighbouring drain, cesspool, or other deposit of putrefying matter. Many such instances in the metropolis might be referred to; one was recently

mentioned to me by the medical officer to the General Post Office, as having been the cause of much internal derangement to several of the *employés* in that establishment, and which had led to his recommending the use of The Patent moulded Carbon Filter. In the last report of the Registrar-general, reference is made to a well at Sandgate, as containing 40.96 grains of impurity per gallon.

BENEFICIAL RESULTS OF RECENT MEASURES.—Measures recently taken in many places have effected much good in respect both to drainage and to the supply of water. The noble example set by Glasgow, especially deserves the highest praise. The purity of the water now abundantly drawn for the supply of that city from Loch Katrine, a distance of 34 miles, and which has involved an outlay of about 1,500,000*l.*, may be judged of by the following figures, which represent the total amount of impurity in grains per gallon. In the water supplied to Glasgow from Loch Katrine, 3.16. In the water supplied to London, by the leading companies, according to the returns for May last,—Chelsea, 17.84; Grand Junction, 17.95; New River, 18.52; West Middlesex, 20.08; Lambeth, 20.80; Kent, 21.68.

DRAINAGE AND WATER IN THE COUNTRY.—For dwellings in the *country*, good drainage and ready access to *pure water* are not less essential than they are in towns, and they ought, therefore, to be made the subject of deliberate investigation before the locality of a dwelling is fixed on.

Gravelly soil is unquestionably the most healthy, and next to it is one of sand. The embosoming in trees should be avoided; loose soil close to the house is frequently a cause of damp, which might be remedied by a flagging of stone or asphalt; and in many situations a dry drain ought to be formed round the building. Care should therefore be bestowed in regard to the surface of the ground about a dwelling, as well as in the selection of its site.

ASPECT.—The influence of *aspect* on the salubrity of a dwelling is too often overlooked: in preference to all others, the south should be chosen. In towns, the

difficulty of obtaining a sunny frontage may frequently be great, if not insurmountable; but the value of having the sun's rays for some portion of the day within the dwelling, especially in the rooms occupied by children or by invalids, should never be forgotten. I could point to a large Convalescent Asylum in the country, so arranged that the spacious gallery used by the patients for exercise, and where much of their time is passed, is, for the greater part of the day, without the cheering and warming rays of the sun. I know not whether in this instance it was the case, but such mistakes are very likely to arise out of the prevailing mania for the choice of plans in competition, which are often made by novices and selected by incompetent judges, instead of experienced professional advice being taken.

REMOVAL OF LOCAL DISEASES.—In particular localities, diseases which formerly prevailed have, under the influence of sanitary improvements, such, especially, as a free circulation of fresh air, efficient drainage, and cleanliness in the houses and the persons of their occupants, greatly diminished, and in many instances entirely ceased. This has been the case, to a remarkable degree, in some of the valleys of Switzerland, where the painful disease in the neck called "*gottre*," and the species of idiotcy called "*cretinism*," formerly prevailed much more extensively than they do now. Remarkable instances have been mentioned to me in that country of the sad consequences to children born and reared in a low and damp ground story, whilst those in the floor above were perfectly healthy.

RESULTS OF SANITARY IMPROVEMENTS.—The beneficial results of sanitary improvements effected in several of our large towns within the past ten years are very manifest. I select four, out of nineteen returns which have been obtained. In the metropolis, the death-rate has been reduced from 25 in 1,000 to about 23; in the Liverpool district, from 39 in 1,000 to 26; in the Bradford district, from 28½ in 1000 to 20; and in the Croydon district from 28 in 1000 to 21. Knowing, however, as we do, that the normal standard is certainly

not above 17 in 1,000, these results should only be regarded as a proof of our responsibility, and an encouragement to perseverance in the discharge of duty.

PAST NEGLECT OF SANITARY SCIENCE.—How greatly sanitary science has in past days been neglected, even in places where, especially, health ought to be considered of primary importance, may be judged of from an observation made very recently by the Dean of Christchurch, in reference to the removal of Westminster School—"Eton," he said, "is notoriously unhealthy; Winchester is in a swamp; Harrow and Rugby without water."

VENTILATION OF TOWN DWELLINGS.—Before passing on to the next head, I observe, in reference to the local position of buildings in towns, that, if the streets around them are of sufficient width, and there is no obstruction to the current of air, dwellings in towns may be better ventilated when they are moderately high, than when they are low and surrounded by higher buildings which exclude a free circulation of air. Nothing can be worse in this respect than the narrow courts terminating in a *cul-de-sac*, which are so numerous in London and many other towns, small as well as large.

COMPARISON BETWEEN LONDON AND PARIS.—The vast extent of ground in London covered by low buildings, tenanted by the poorer classes, will account for the much larger area occupied by houses in proportion to the number of inhabitants, than there is in Paris. A fact, which may suggest the practicability of increasing the provision of dwellings for working people, near their occupations, and at the same time improving their healthiness.

PRACTICAL ILLUSTRATION OF IMPROVEMENT.—As a practical illustration of the advantages which might be derived from the destruction of existing streets of low and miserable tenements, and the replacing them with lofty and suitably arranged dwellings for the working classes, I may refer to two streets, both of them close to New Oxford Street; one, on the south side, which

leads out of George Street, is the notorious Church Lane. The other is Streatham Street, which lies to the north of New Oxford Street, leading out of a continuation of George Street. Let any one take the trouble of standing at the end of Church Lane—I do not ask him to go down it, but merely to look, and then turn his steps to the neighbouring building in Streatham Street, the "Model Houses for Families,"* where, if he enter the quadrangle, and pass along the galleries which give access to the distinct dwellings for fifty-four families, arranged in five fire-proof stories, he will have ocular demonstration of the benefits which may, without pecuniary sacrifice, be placed within reach of the working classes; and he may also, by visiting at the same time the "Model Lodging-house" for 104 single men, in George Street, learn the amount of accommodation and comfort which can be given on the self-supporting principle, for the payment of 4d. per night.

ESSENTIALS IN THE STRUCTURE OF A DWELLING.—Having already noticed under the head of "Locality" that a free circulation of pure air, an efficient drainage, and an ample supply of good water are indispensable requisites to a healthy dwelling, we come now to inquire secondly, *what is essential in the structure of a dwelling to its being healthy?* 1. It must be dry. 2. Warm. 3. The number and area of its apartments must be in proportion to the number of the occupants, and a due provision be made for a well-ordered family life. 4. It must be well lighted. 5. It must be properly ventilated, and free from noxious vapours of every kind.

1. DRYNESS OF FOUNDATION.—In order to a house being *dry*, it must stand on a *dry foundation*; and where this is not otherwise obtainable, artificial means should be adopted, either by forming a stratum of concrete,

* These Model Houses, as well as the Model Lodging House in George Street, are fully described, and plans of them are given in my "Essay on the Dwellings of the Labouring Classes, their Arrangement and Construction," published by the Labourers' Friend Society.

varying in depth according to circumstances, but never less than 12 inches, or by bedding slate in cement, or laying asphalt through the whole thickness of the wall, under the floor level. The ground floor should be raised not less than about 8 inches above the external surface, and where there is no basement story, and the floors are of wood, they should be ventilated by means of air-bricks built in the external walls, the ground being excavated to the depth of not less than 12 inches.

FLOORS.—Whenever, for the sake of economy, a *basement* or *ground floor* is laid with brick or tile, it is essential that there should be a dry bed beneath it. Hollow bricks, if well made, may, with advantage, be used for this purpose, and will prove warm and durable. In some parts of the country, lime and sand floors are pretty generally used for cottages, and when properly made with a dry substratum, are said to last upwards of forty years. Stone or slate is, of course, preferable to either, in the places where there is much wear. Bed-rooms ought, in our climate, to have boarded floors.

WALLS.—The *walls* must be weather-proof, of sufficient thickness to secure dryness and warmth. On the facilities for obtaining a good and *non-porous* material may depend whether brick, stone, or flint be used; whichever it be, good mortar is essential to dryness. In some places concrete, *Pisé*, or cob, with an external facing of plaster, or rough cast, may be employed with advantage, provided the foundation be dry. Hollow walls conduce greatly to dryness and warmth; they may be formed either wholly of brick, or externally of one of the other materials before named, and lined with brick or tile, a small hollow space being left between. The same advantages are derivable from the use of hollow bricks, and they are also well adapted for the lining of walls. A glazing on the external surface of brickwork is an effectual preventive of damp, and it is to be regretted that suitably glazed bricks are not easily to be obtained, at a moderate price.

COVERING OF ROOFS.—For the *covering of roofs* tiles are generally found to be warmer in the winter and

cooler in the summer than slate; and, requiring less lead, are more economical. In some localities, however, slates* of good quality and substance are so much more easily obtainable than tiles, that they will invariably be used; and in such cases, the evils attendant on changes in the temperature should be particularly guarded against by extra boarding, felt, or double plastering. Projecting eaves should invariably have gutters, to prevent the drip, which renders the walls and foundation damp.

SHIP-BOARD.—How greatly *dryness on ship-board*, which is the sailor's dwelling, is conducive to health, may be learnt from a fact stated by Captain Murray, R.N. After being two years in H. M.'s ship *Valorous*, amongst the icebergs of Labrador, he proceeded thence to the Caraccas and the West India Islands on a long cruise, and returned to England "without one casualty, or, indeed, having a single man on the sick list." After describing the especial care taken to secure perfect dryness in every part of the vessel, Captain Murray says, "I am satisfied that a *dry* ship will always be a healthy one in any climate."

WOOD.—The use of inferior or unseasoned wood in any part of a dwelling is a false economy, whilst the cracks and shrinkages caused thereby are often prejudicial to health.

2. WARMTH.—The *warmth* of a dwelling depends not only on its aspect, its dryness, the materials used, their proper application and substance, as I have already noticed, but also on the *structural plan*, and particularly on the relative position of the doors and fire-places, as well as of the windows and spaces for beds, which should be so contrived as that the occupants are not exposed to draughts.

DOUBLE SASHES.—It is surprising that, with all our regard for comfort, we should not more frequently, by the use of double sashes, which are so commonly

* On the South Coast, slated roofs are frequently white-washed on their sunny side, but this obviously can have but a partial effect, whilst it is very unsightly.

used in many parts of the Continent, endeavour to modify the effects of our variable climate, and retain more of the small portion of genial warmth which passes into the room from our wastefully constructed open fire-places.

The artificial warming of buildings will be referred to hereafter in connection with ventilation.

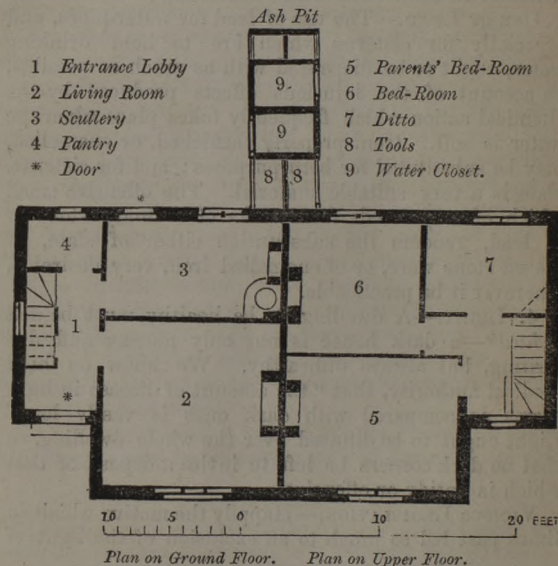
3. NUMBER AND DIMENSIONS OF APARTMENTS.—It is essential to a healthy dwelling, that the number and area of the apartments be in proportion to the number of the occupants, and that suitable provision be made for all that appertains to a well-ordered domiciliary life. Not only that of the master and mistress as well as that of the children, but also that of the servants, whose health and morals it is the duty of their employers to care for.

The question of the amount of space required for health being greatly dependent on efficient ventilation, will be considered hereafter under that head. Suffice it at present to say, that the scale of accommodation in most dwellings, depends in a great measure on the means and circumstances of the occupants; as these vary so much, all that I can attempt is to point out the minimum provision which should be made in the country for a labourer's family, consisting of parents and children of both sexes.

A LABOURER'S DWELLING IN THE COUNTRY.—There should be a small entrance-lobby, a living-room not less than 150 feet in area, a scullery, of from 60 to 80 feet area, in which there should be a stove or fire-place for use in summer, as well as a copper and sink; there should also be a small pantry. Above should be a parents' bed-room of not less than 100 feet superficial, and two sleeping-rooms for the children, averaging from 70 feet to 80 feet superficial each, with a distinct and independent access. Two of the sleeping-rooms, at least, should have fire-places. There should also be a ventilated, lighted, and well-drained closet, and suitable enclosed receptacles for fuel and for dust. The height of the rooms, in order to their being healthy, should be scarcely less than 8 feet, and even 9 feet

would be desirable, but for the extra expense. With a view to ventilation, the windows should reach nearly to the ceiling, and the upper part be invariably made to open. The annexed plan of a pair of double cottages provides such accommodation, many other examples including those built by the Windsor Royal Society in 1852-3, are given in the Essay on the Dwellings of the Labouring Classes before referred to.

Plan of a DOUBLE COTTAGE to unite all that is essential for a Labourer's Family.



SMOKING OF CHIMNEYS.—To revert again to the essentials in the construction of a healthy dwelling, I add, that the *smoking of chimneys*, if not caused, as it often is, by the want of sufficient air in the apartment, or by bad management in the first lighting, or

in the putting on of fuel, generally arises from some defect in the construction of the flue, and not unfrequently from its being too large to insure a continuous upward current. Nine inches square, or, which is preferable, 10 to 11 inches diameter, is a size sufficient for all ordinary chimneys. Especial pains ought to be taken to avoid smoke, an evil which so greatly contaminates the air, and has proverbially, but one parallel in the category of domestic grievances. Of Dr. Arnott's smokeless fire-place I shall have occasion to speak hereafter in connection with ventilation.

USE OF LEAD.—The use of lead for water-pipes, and especially for cisterns which are to hold drinking water, ought to be dispensed with as much as possible, on account of the injurious effects produced by the chemical action which frequently takes place when the water is soft. Iron, properly varnished, or enamelled, may be substituted for both purposes; and for cisterns, slate is a very suitable material. The offensive smell which often proceeds from sinks of ordinary stone or of lead, renders the substitution either of slate, of glazed stone ware, or of enamelled iron, very desirable, wherever it be practicable.

4. LIGHT.—A dwelling, to be healthy, must be *well lighted**—a dark house is not only gloomy and dispiriting, but always unhealthy. We know on high medical authority, that “the amount of disease in light rooms as compared with dark ones is vastly less.” Light ought to be diffused over the whole dwelling, so that no dark corners be left to invite a deposit of that which is untidy or offensive.

VICIOUS LEGISLATION.—Happily the motive which in times past led so much to an exclusion of the light of

* Although the influence of light on physical life is a subject on which but little is known, some important facts are recorded. Sir James Wylie, who studied at St. Petersburg the effect of light as a curative agent, found in hospital rooms in that city, which were without light, that only one-fourth the number of patients left cured, as compared with the number who left cured, from properly lighted rooms. *Vide an article, by Sir David Brewster, in the North British Review, Vol. 29, 1858, entitled “Researches on Light.”*

heaven no longer exists; and though ages may pass ere the evils resulting from a vicious legislation are entirely swept away, yet the removal of the tax on windows, and of that on glass, must, amidst much to discourage those who have long and zealously laboured in the cause of sanitary amelioration, be regarded as most valuable concessions in its favour.

5. VENTILATION AND WARMING.—*Proper ventilation, efficient warming, and entire freedom from noxious odours,* constitute, with the four points already noticed, the sum total of those essentials to a healthy dwelling which are dependent on locality and structure.

The question of *ventilation* is of the first importance: though, judging from the neglectful indifference of multitudes, its value is far from being duly appreciated by the educated, and even by some in the scientific classes of the community. Were it otherwise, the closeness perceptible on entering many of their dwellings, the oppressive heat of the rooms, the sickening fustiness in the apartments occupied by the servants, and too frequently in those of the children, would certainly not exist. In halls and lecture rooms, as well as in schools and other places of public resort, how often does the atmosphere become unbearable through the neglect of an efficient application of known laws. I name but one instance—that of the large room of the Society of Arts* on a crowded night. Many others might be added.

IN HOSPITALS.—In hospitals† the want of due attention to this important branch of hygienic science

* In this instance remedial measures have been adopted since this Lecture was delivered.

† “Infection acts through the air. Poison the air breathed by individuals, and there is infection. Sick people are more susceptible than healthy people, and if they be shut up without sufficient space, and sufficient fresh air, there will be produced not only fever, but *erysipelas*, *pyæmia*, and the usual tribe of hospital diseases.”

“In every such example the ‘infection’ is not inevitable, but simply the result of carelessness and ignorance.”

“In solid-built hospitals the progress of the cases will betray any curtailment of space much below 1,500 cubic feet. In Paris 1,700, and in London 2,000, and even 2,500 cubic feet are now thought advisable.” *Miss Nightingale’s Notes on the Sanitary Condition of Hospitals.*

has too often led to the aggravation of disease and the destruction of human life. It is recorded of one hospital that the deaths, which before the ventilation were one in six, were, after ventilation, reduced to one in twenty.

IN THE CRIMEA.—Mr. Rawlinson, the sanitary commissioner, when testifying to the marvellous results of the introduction of sanitary measures in the Crimea, says, "The first requisite in all cases was improved ventilation." The opinion of Miss Nightingale on this, as well as on other points which come within the scope of our inquiry, are so well known that frequent reference thereto might be deemed superfluous; I cannot, however, withhold a quotation from such eminent authority, which strengthens my general argument. Alluding to the enormous mortality of children,* Miss Nightingale says, "The causes are perfectly well known: they are chiefly want of cleanliness, want of ventilation, want of white-washing,—in one word, defective household hygiene."

IN ORDINARY DWELLINGS.—It is with ordinary dwellings that our observations have chiefly to do, and when we remember the number of hours passed within doors by every human being in a civilized state, it will be manifest that the breathing of vitiated air for so large a portion of the twenty-four hours, must be as injurious as living on unwholesome food.

INFLUENCE OF VENTILATION.—A remarkable proof of the influence which ventilation has on health was given some years since at Glasgow. In a block of buildings known as the barracks, which contained a population of 500 persons, 57 cases of typhus fever occurred in two months, and within the year there were about 100 cases. A medical gentleman had them ventilated by carrying a pipe from the upper part of each room into the shaft of a neighbouring factory

* It is stated on the authority of investigations made by Dr. W. T. Gairdner, that the deaths of infants, in the new town of Edinburgh, are at the rate of 23, as compared with 173 in the lower districts of the old town.

chimney; the result was, that in eight years only four cases of typhus occurred.

SPACE REQUIRED.—The cubical space required to keep a healthy man in full vigour is a question of much importance, and one on which very different opinions have been expressed. Experience gained in poor-house dormitories, prisons,* &c. has led to the conclusion that from 450 to 500 cubic feet are requisite, and that the ventilation should be such as will cause an entire renewal of the air about once in the hour. Observations made at the model lodging-house in George Street, St. Giles's, which is a confined situation, satisfy me that the cubical space of 535, which is provided in the dormitories of that building for each inmate, is, with proper ventilation, abundantly sufficient to render them healthy; such was proved to be the case even when the cholera raged in the neighbourhood, and had not a single victim out of the 104 men who lodged within its walls. From this fact I think it reasonable to infer that the cause of unhealthiness in the Wellington Barracks, where the cubical space per man allowed in the dormitories is stated to be 500 feet, must be caused, not by want of space, but by some other existing evils, particularly defective ventilation, pointed out in the Report made to the General Board of Health by the Commission on Warming and Ventilation.

MISTAKES WITH REGARD TO SPACE.—As mistakes with regard to space may create imaginary difficulties, and either impede sanitary reform, or cause a serious unnecessary expenditure,† I think it of use to notice an error

* The space allowed in the cells of prisons should not be regarded as an absolute criterion; at the Model Prison, Pentonville, there are about 800 cubic feet.

† The Report of the Government Commissioners above referred to says, at folio 99:—"Under all the circumstances, we would urgently direct the attention of the Minister at War and the Horse Guards to the *absolute necessity* of providing more room and accommodation for the soldier in barracks; and that instead of 500 cubic feet of space, that 700 to 800 cubic feet should be allowed per man, or, as in the case of the Wellington Barracks, that only ten persons should occupy the space allotted to sixteen; and that these regulations should be enforced as soon as extra spaces can be provided throughout the whole of the

on this point, made in a recent article on "Labourers' Homes," in the *Quarterly Review*, where it is stated that the Lodging-house Act requires an allowance of 700 cubic feet per person. On inquiring of the Assistant Commissioner of Police as to the fact, I learned "that 30 feet superficial is the space allowed to each lodger, in the metropolitan common lodging-houses, the rooms averaging 8 feet high [which is equal to 240 feet cube], and that 50 feet superficial is allowed to each police constable lodged in a station or section house, the rooms on an average being 9 feet high" (which is equal to 450 cubic feet). The Poor Law Board, without laying down a fixed rule applicable to all circumstances, adopts as a basis of calculation, an allowance of 500 cubic feet for every person in the sick wards, and 300 cubic feet for every healthy person in the dormitories.

FREEDOM FROM STAGNATION.—All dwellings should be so constructed as that they may be everywhere accessible to pure air, and free from stagnation in any part.

SURROUNDING AIR.—The state of the surrounding air has necessarily much influence on that within the dwelling, and the renewal of the latter should always be sought from the purest source, instead of the supply being drawn, as it often is, from a low, damp situation, or a confined internal court.

COMPONENT PARTS OF THE AIR, &c.—It is unnecessary for me to describe on this occasion, as I have

United Kingdom." In a previous part of the report, at folio 92, are found the following apposite remarks, which scarcely appear to have emanated from the same mind:—"The continuous removal of impure air, as it arises, is of very much greater importance than the cubical contents of air in a room." "In the soldiers' rooms, which are constantly occupied, the amount of cubical space can be of very little importance, for how lofty soever the rooms may be, unless the heated and impure air can pass away, the space will soon be occupied by air unfit for respiration, and the greater or less size of the room will only resolve itself into a little more or a little less time before the air is brought into an impure condition." "The soldiers' rooms are about 12 feet in height; with good ventilation this might be reduced to 11 feet or even to 10 feet without disadvantage."

done elsewhere,* the component parts of the air, the process of its deterioration in passing through the lungs, or the other sources of impurity, and the many accessory influences in and about a dwelling which tend to vitiate the air within: some of these have been already noticed, and others will be referred to hereafter, in their proper place. The main *practical question* is, in what way the air, which has become vitiated can be renewed with a supply of pure fresh air, without the creation of a draught injurious to the health? To do this the air must enter copiously, but almost imperceptibly, and when used, its exit should be both continuous and complete.

VENTILATION IN ITS APPLICATION.

VENTILATION OF TWO KINDS.—*Ventilation* is of two kinds, *natural* and *artificial*; the former being effected by means of windows and doors, with the crevices round them, as well as by chimneys and fire-places, which are important agents in natural ventilation, and may also, by scientific arrangements, be made conducive to an efficient system of artificial ventilation, peculiarly applicable to dwelling-houses.

NEW BUILDINGS AND OLD.—It must be obvious that improvements easily adopted in new are not always applicable to old buildings, but, as far as circumstances allow they should be carried out, from a settled conviction that pure air is indispensable to a healthy state both of body and mind.

WINDOWS.—Windows, properly constructed, made to open at the top as well as below, and suitably placed, afford the most ready means for the natural ventilation of dwellings, besides which are the various contrivances of louvers, of perforated glass, zinc, tin, &c.

CHIMNEY.—Whenever a fire is lighted in a room the *lower stratum* of air is immediately set in movement;

* In a lecture entitled "Home Reform," an address to working people on the improvement of their own dwellings. Published by the Labourers' Friend Society, 21, Exeter Hall.

a current of air is established from the crevices round the doors and the windows, or from any other openings, toward the chimney, whereby much of the vitiated air is carried off. This process of ventilation takes place in a slight degree when there is no fire in the chimney, and therefore bed-rooms are much more healthy with a chimney than without. It should not, however, be forgotten that a large portion of the vitiated air ascends above the chimney opening, and therefore it is essential that a provision be made for its removal thence, whenever perfect ventilation is desired.

INDEPENDENT SUPPLY OF FRESH AIR.—An independent supply of fresh air may be introduced into most rooms which have a fire-place, by conveying it through a pipe or channel formed under the floor or in the wall to an air-chamber constructed at the back or sides of the stove, in order that it should be there warmed before entering the room.* The same, or a separate pipe or channel, may also be used for feeding the fire with air, independent of that in the room, for this purpose it should pass out at the cheeks of the stove, rather than beneath the grate, which is liable to cause a diffusion of dust in the room. Such an independent supply is calculated to prevent the chimney from smoking, as well as cold draughts passing from the windows and doors to the fire.

VENTILATING VALVES.—It also renders chimney ventilating valves more certain in their action than they often are, owing generally to an insufficient draught in the chimney, which causes an emission of smoke into the room. These valves would be invaluable for the discharge of vitiated air, which is their intended purpose, were it not for this occasional ingress of smoke. The most effective means of avoiding that

* I have seen at the office of the Association for Promoting Improvement in the Dwellings of Agricultural Labourers in Scotland, 53, North Frederick Street, Edinburgh, a solid fire-clay bed-room chimney-piece and grate, formed so as to leave, when it is set, a cavity round it, in which, if cold fresh air be admitted, it is warmed, and may thence pass into the room, or be conveyed to another apartment. The cost is about 20s.

evil is the carrying up an independent flue in close contact with the smoke flue constantly in use, as that from a kitchen: the air within it is by this means rarefied, and the action of the valve rendered more efficient. Tubular flues, made double for this express purpose, are found to answer well, and have the advantage of occupying but little space.

INGRESS OF SMOKE.—The best remedy for an ingress of smoke, in cases where the valve is fixed in the chimney flue, is Dr. Arnott's smokeless grate, with the draught duly regulated by a contraction of the vacant space over the fire. These grates have also the advantage of economizing fuel considerably.

ORDINARY GRATES WASTEFUL.—With regard to the ordinary grates in use, I may here remark that they are alike wasteful of heat and fuel, both of which would be much economized by the substitution of a stove projecting slightly into the room, and combining the chief advantages of Dr. Arnott's ventilating stove* with the cheerful open fire-place.† I have seen some such stoves in use on the continent, and believe that the only valid reason against their adoption in England, beyond the force of custom, is the difficulty—not, however, an insurmountable one—of applying them to our fire-places with their ornamental chimney-pieces, &c.

In reference to fire-grates generally I would recommend, as one of the most useful modern improvements, the forming the back and the linings with fire-brick instead of iron.

DIFFICULTIES TO BE OVERCOME.—The intimate connection between warming and ventilation has led to a digression, in returning from which I would remark,

* It is to be regretted that the public should suffer from the disinterestedness of the scientific inventor of this and other valuable appliances for warming and ventilating our dwellings, in consequence of their proper manufacture and application not being secured by a patent right.

† Professor Hosking, in a lecture at the Royal Institution, suggested the rudiments of construction for a stove of this description. In his work, entitled, "Healthy Homes," many valuable practical suggestions are made on warming and ventilation generally.

that the greatest difficulty to be overcome in all arrangements for natural ventilation, which provide an exit for the vitiated air, separate from that by which fresh air is introduced, is the securing that it should always thus act, and not become the medium of ingress for cold air, as is often the case, on a change of temperature in the apartment, when no artificial means to prevent it are provided.

GAS AS A RAREFIER OF THE AIR.—Gas is sometimes used for this purpose, in order to rarefy the air. I have successfully applied it within a shaft or tube of wood, the light being placed behind a square of glass,* and the air entering through perforated zinc, with a fall-down hopper-enclosure before it. Thus the apartment, or rather, series of dormitories, one above the other, receive from the same quarter the combined benefit of light and ventilation.

PERFORATED TUBES AND VENTILATORS.—Tubes of wood, perforated with holes, or having chinks at the angles, may with advantage be fixed for ventilation in the angles of the ceilings to common rooms, or be carried across the ceilings, in which latter case they have also been used for admitting fresh air, as well as for the exit of vitiated air.† These tubes distribute the air more generally, and are not liable to be closed, as is the case with Sherringham's, or the cottage ventilator made by Hart. Where, however, tubes are not used, the most simple way of introducing fresh air, apart from a window ventilator,‡ is by fixing one of the ventilators just named in an external wall near the ceiling, with an

* This application was made in 1847, at the dormitories of the George Street Model Lodging House.

† In the appendix to Dr. Arnott's work on the smokeless fire-place, a description of the latter application of these tubes at the dormitory of the Field Lane Ragged School will be found; and in the Rev. Henry Stuart's work on the "Social Condition of Agricultural Labourers in Scotland," at folio 50, is described the mode of applying the tubes, 2 inches clear, which are used in small bed-rooms with great success.

‡ A good and cheap cottage ventilator may be made with a triangular piece of zinc fixed in an upper angle of a window, and perforated in the centre, a rim being formed round it to receive a moveable cover, which may be hinged.

air-brick outside. In small rooms with a fire-place, this addition to the usual means of changing the air, generally suffices to keep them in a healthy state. At the same time, it is desirable that there should be near the ceiling an opening exclusively for the escape of vitiated air. This is most indispensable in small bed-rooms without a fire-place. In some instances it may be effectively done by means of a pipe carried through the roof and bent at the top; in other cases, an opening may be made over the door, with perforated zinc fitted in. Perforated or ventilating glass may, in some situations, be used; and it should be remembered that where openings can be formed on the opposite sides of rooms, the air will be most speedily and effectually changed.

McKINNELL'S VENTILATOR.—Amongst various devices for effecting ventilation without artificial aid, is that of Mr. McKinnell, which has been much used in Glasgow, and lately in England. It combines the admission of fresh air by an outer tube surrounding an inner tube, through which the vitiated air should constantly ascend and make its escape. The tubes are fixed in the centre of the ceiling or roof, and by a broad flange or fan, extending from the inner tube, below the level of the ceiling, and reaching beyond the outer tube, the pure air is diffused as it enters.* The certainty of a uniform action is required to render this ventilator perfect; but that is probably unobtainable without some such artificial appliances as I have now to speak of.

ARTIFICIAL VENTILATION.—*Artificial ventilation* is ordinarily effected by the action of valves, fans, pumps, screws, furnaces, stoves, or other artificial heat, including gas, and a variety of contrivances, whereby air is either drawn out or forced into the apartment. In the

* Properly conducted experiments can only decide the practical value of the objection to the admission of fresh air in the upper part of the room; on the ground that the air vitiated by breathing, which ascends in consequence of its relative lightness, is in that case, only diluted, and not entirely replaced by pure air. A simple test, whereby the deterioration of the air could be readily ascertained, is a great desideratum.

one case. the space occupied by the vitiated air which is withdrawn, is replaced by an admission of pure fresh air; and in the other, the pure air forced into the apartment causes a displacement of the vitiated air, for the escape of which due provision must be made. In both cases, a just proportion between the volume of air which ought to enter, and that which should be expelled, is necessary; and in order that the fresh air may be adapted for use at all seasons of the year, means must be provided for warming it, prior to its distribution in the apartment. The best means for effecting this, is by bringing it in contact with heated firebrick, suitably arranged in stoves or furnaces. When heated iron is used for this purpose, the air is liable to be deteriorated, or, as is commonly said, burnt. Hot water, which is similarly employed, has not this injurious effect.

UNHEALTHY WARMING.—Nothing can be more inconsistent with a healthy system of warming than those arrangements which provide only for raising the temperature of the air already in the apartment, vitiated as it may be. Such is mostly the case when the German hot-air stove is used, and also when hot water is circulated in pipes through the apartments. But either may be employed with impunity as an auxiliary to an open fire.

MOTIVE POWER—SUCTION OR PROPULSION.—The question has been much discussed here as well as in Paris and Brussels, whether suction or propulsion be preferable as a motive power for effecting the change of air in ventilation; and after examining both systems in their practical application, the latter appears to me decidedly preferable, excepting in peculiar cases, where the power of suction may be more readily applied.

When fresh air is forced into an apartment, through suitably placed openings, it becomes more generally diffused than it does when its entrance is dependent on the withdrawal of the vitiated air by means of suction, the tendency of which is to draw the fresh air towards the point of exit, instead of leaving it to

disperse and circulate freely. Suction involves the further disadvantage of setting in movement whatever noxious vapours may be within its reach.

NECESSITY FOR NATURAL VENTILATION.—My object in giving these latter details, which are mainly applicable to artificial ventilation, will be misunderstood if it were inferred that I would, under any circumstances, dispense with an ample provision for natural ventilation in dwellings. At all events, until the science be more thoroughly mastered, and its practical application more simplified than the Report of the Government Commissioners on Warming and Ventilation,* before referred to, would prove it to be.

CLEANLINESS.

Having considered that which is local and that which is structural, I come now to notice that which is in the main, though not wholly, dependent on the occupants themselves, to constitute a healthy dwelling, *external and internal cleanliness*, and a proper use of structural arrangements.

EXTERNAL CLEANLINESS.—*External cleanliness*, which includes the clearing away of all dirt and refuse, as well as the scavenging the streets, must in towns be provided by the local authorities, and every clearance ought to be with sufficient frequency to prevent any accumulation in the dwellings.

The most suitable provision for rendering a dwelling dry, or for its efficient ventilation, will not secure the health of the occupants, if there be either around or within the abode an accumulation of dirt,† whether in a solid or liquid state. Houses may, to all appearance,

* It is to be regretted that this Report, with its mass of information, fails to place the subject in that clear light which was contemplated in the suggestions made by Dr. Arnott in 1849, for an investigation by a committee of eminent scientific men, comprising chemists, engineers, and physicians.

† Such accumulations I have seen in close contact even with model houses, so called; greatly to the discomfort and most injurious to the health of the occupants.

be very desirable dwellings, but if there be defective drainage, or cesspools within their precincts, or untrapped and foul sinks, there is no safety for the inmates. Nor can the close proximity of stables and of dung-heaps, their indispensable adjuncts, be a matter of such indifference as might be supposed from the practice so prevalent in the most wealthy parts of the metropolis, one inevitable effect of which is, that in the summer, many windows, which should be opened for ventilation, remain closed in order to exclude the noxious fumes of the stables.

NEGLECT OF SANITARY LAWS.—Neglect of sanitary laws is as much manifested in the country as it is in towns, and on the Continent* not less than it is in England. It would be easy to point to spots where the air is unrivalled for purity, and the scenery around of surpassing beauty; and yet such are the accumulations about the dwellings that it is often difficult to enter the doors without wading through a stream of filth, alike offensive to the sight and to the smell. Can it be a matter of surprise if such violations of the known laws by which God regulates the health of his creatures, be visited with sickness and premature death? With equal certainty as to the issue, we may predict that those who live in close proximity to black and stagnant pools, to foul ditches, or to sluggish open drains, will periodically suffer from fever or dysentery, as we do that the house in flames will be consumed, if the destructive element be not extinguished, or that the neglected garden will be overrun with weeds and become a wilderness.

INTERNAL CLEANLINESS.—*In the houses of the wealthy* all that, as matter of daily routine, is connected with *internal cleanliness*, including proper attention to the sinks and traps, as well as the ventilation generally,

* In proof of this assertion, I may refer to my pamphlet entitled "The Physical Condition of the Labouring Classes resulting from the State of their Dwellings," in which is given a table of the comparative rate of mortality in different countries and capitals of Europe. It is published by the "Labourers' Friend Society," and has been translated and published in various places on the Continent.

is mostly left to the care of servants; and often through their ignorance, rather than their culpable neglect, the health of the family, and especially that of the younger children, is very seriously injured, without the slightest apprehension as to the cause. Were it necessary, numerous instances might be cited in proof of a fact which is calculated to arouse even the most self-indulgent, and to induce them to co-operate in the diffusion of sanitary knowledge for their own sake, as well as that of their neighbours and dependents.

MISS NIGHTINGALE'S NOTES.—The study of much that is contained in Miss Nightingale's very instructive "Notes on Nursing," might be of great advantage to such persons; and I could earnestly desire that in a suitably abridged form, the valuable practical directions with which it abounds, were widely circulated amongst female servants, who would, doubtless receive with merited attention, the instruction of a lady whose name is so universally known and respected.

THE MIDDLE CLASSES.—Amongst the middle classes, many would contribute less grudgingly than they now do the cost of public sanitary improvements, and even urge their extension, if they were better acquainted with the laws of health; whilst they could not fail of deriving especial benefit themselves from a practical knowledge of such of them as relate to in-door life, whether it be that of the dwelling-house, the manufactory, or the workshop: in all of these the advantages of cleanliness and good ventilation, are of paramount importance, whilst in each case the same general rules are applicable. There are, indeed, but few places where proper ventilation is more needed than it is in those hives of human industry, where large numbers of working people congregate for many successive hours, partly by gaslight, which in itself greatly vitiates the air.

THE LOWER CLASSES.—Descending to the lower stratum of the social edifice, we cannot doubt, that a knowledge of the intimate connection which exists between physical suffering and the want of cleanliness in the house, or in the person, would be instrumental in

restraining many who gradually yield themselves up to habits which end in a reckless fatuity, and lead them to the beer or the spirit shop, for the means of stimulating their enfeebled energies, or of satisfying that craving which is produced by the want of pure air. The first step in the downward course usually begins with want of cleanliness; disease and vice follow in succession.

DIFFICULTIES OF WORKING PEOPLE—DESIRABLENESS OF AGITATION.—The difficulties with which working-people have to contend in regard to their dwellings, in most thickly populated towns, are very great. Indeed, there is no social or political grievance in the removal of which they are more deeply interested than they are in being freed from the hardship of having to live in the midst of filth, foul air, and pestilential exhalations. The organization of such an agitation amongst them as would lead to their feeling how much they are concerned in all the essentials of a healthy existence, is heartily to be desired. To such an agitation, as was said by the Right Hon. William Cowper, at the late meeting on social science held in Bradford, "a cry for a new charter might succeed, and certainly would not be treated with disdain, if the five points of that new charter were to be pure air, pure water, good drainage, unadulterated food, and open spaces for exercise." To which I should desire that "healthy dwellings" were added, as a right which those who cannot protect themselves are entitled to claim at the hands of the Government, on precisely the same ground as the community at large seek protection from fraudulent weights and adulterated food. "As yet the necessity of protecting life from the influence of poisonous dwellings has not practically been acknowledged, though the principle is in the statute book."

HOMES OF THE WORKING CLASSES.

CONTRAST TO A HEALTHY CONDITION.—The striking contrast which the homes of large masses of our working

population present to all that is essential in a healthy dwelling, renders them not only a painful study, but also a just cause for national humiliation.* I have felt it to be such, when endeavouring on the Continent to press attention to those sanitary ameliorations, which are, in all countries so greatly needed. It is true that England has taken the lead in associated practical efforts for the improvement of the dwellings of the labouring classes,† and that, for several years past, individual efforts have been made by some of the most exalted in station and social position. Legislative measures have also been adopted with the same end in view; but these being chiefly of a *permissive* character, but little, comparatively, has been effected in producing any marked improvement in the domiciliary state of the masses of our working population in towns, if we except the state of the common lodging-houses, which, under the operation of a *compulsatory* Act, have been very greatly improved.

THE EARL SHAFTESBURY'S DESCRIPTION.—No words of mine can so vividly present a true picture of the scenes which may be witnessed within a short distance of our own doors, as those of the Earl of Shaftesbury, in a preface to the published report of a very remark-

* A well-known American writer says of England,—“The pauper lives better than the free labourer, the thief better than the pauper, and the transported felon better than the one under imprisonment,”—a contrast which could not have been drawn until, through the philanthropic labours of Howard, “the gaol fever” had been banished from the precincts of our prisons. We learn now, from the annual report of the Brixton prison, that in 1857, whilst the needlewomen of London died at the annual rate of 34 in 1,000, the death rate of female prisoners, who were healthy on their admission into that prison, was for the same period, only 13·6 per thousand,—a rate singularly coincident with that in the model lodging-houses of London, to which reference has been previously made.

† In a paper on the “Improvement of the Dwellings of the Labouring Classes,” read at the Liverpool Meeting of the National Association for the Promotion of Social Science, and published in its Transactions for 1859, I have given an Historical Sketch of this movement, and dwelt at some length on the efforts made in England as well as in other countries. In a paper read at the Glasgow Meeting of the same Association the progress of the movement is continued down to 1860, and Scotland is treated of in a separate paper.

able address lately delivered by his lordship in the House of Lords. "The domiciliary state of whole legions of our fellow citizens has been with me, for some time, a subject of observation and inquiry: and I do not hesitate to assert that it lies at the root of nineteen-twentieths of the mischiefs that we seek to redress. Not only the actual dwelling, but the situation of it, the character, physical and structural, of the locality, whether it be street, or court, or alley, or some deep, dark, and poisonous recess, never penetrated, except by its own wild and unknown inhabitants, must be included within the term 'domiciliary state;' and in those places,—low, narrow, with a death-like darkness, impervious to light or air (the work of greedy speculators uncontrolled by law)—are aggregated all the fearful influences that breed evil, and neutralize good wherever it seeks to establish a footing among those neglected classes. Fever and disease of every kind prevail: a poor standard of physical strength, the result of the foetid atmosphere they inhale by day and by night, deprives them of power to do able-bodied work; while loss of energy and depression of spirits drive them to seek life and support in vice and intoxication."

"Their modes of existence are sometimes diametrically opposite. A large mass is found in the perpetual din and whirl of close-packed multitudes. A smaller, in the remote and silent retreats of filth and pestilence (through which no thoroughfare passes), dwells in a kind of savage solitude, seldom emerging by day from their hiding places, and rarely visited. But whether in great or small numbers, whether in the most active or the most tranquil quarters, all are equally shut out from the possibility of domestic life. A dozen families in a single house, though barely sufficient for two; as many individuals of both sexes and of all ages in a single room, the common and only place for cooking, washing, and sleeping; the want of fresh air, the defect of water, of every decency, and of every comfort, give proof enough. We need not wonder why the gin-shop

and the tap-room are frequented; why the crime of incest is so rife; why children are ragged and ignorant, and the honest dignity of the working-man's home degraded or forgotten. These poor people, by no fault of their own—for they did not create the evil, nor can they remedy it—are plunged into a social state which is alike dishonourable and unsafe to our common country."

Lest it should be supposed that the evils which, thus photographed by a master hand, present so dark a picture* of human wretchedness, only exist in the metropolis,† I will give two or three examples of the state of things in our provincial towns, after first quoting from a recently-published work by a lady whose Christian efforts have brought her much into personal contact with a western suburb of the metropolis. My own observations lead me to know that her experience is but an illustration of what may be met with in many other spots round London.

DESCRIPTION IN "RAGGED HOMES, AND HOW TO MEND THEM."—Mrs. Bayly, in "Ragged Homes, and How to Mend Them," justly says,—“One of the greatest obstacles which meet those who are striving to improve the homes of the poor, is the construction of dwellings. There are whole streets of houses in this neighbourhood, whose appearance gives you the idea that they were originally designed for a higher class of people; and yet the builder must have known that the supply of such houses was already much beyond the demand, and that, if let at all, the inmates must be poor. Nothing, however, adapts them for this class of inhabitants. Five or six families may occasionally be found in one such house, with no more provision for

* Must not the remembrance of such a picture as this restrain us from yielding an unqualified assent to the words lately uttered by one of our most eminent statesmen—"This country is making most wonderful progress in everything that constitutes national greatness and prosperity;"

† The illustrated and very graphic descriptions given by Mr. Godwin in a recent *brochure* entitled, "Town Swamps and Social Bridges," may enlighten those who are at all sceptical on this subject.

health, comfort, and decency, than ought to be made for each one. The houses professedly erected for the poor are still more deficient. They are sometimes built below the level of the road, so that the drainage is to them, instead of from them. The basements are consequently fearfully damp, and the whole atmosphere in every part of the house is impregnated with the effluvia from the stagnant sewage."

MATERIALS. — STAGNATION OF THE AIR. — "The materials used in buildings are so bad, and the workmanship so inferior, that the floors are always loose, and every thing seems constantly getting out of order. We have whole streets of small six-roomed houses, let out entirely to the poor; so that three families frequently live in one house. *There is no outlet to the air at the back of these dwellings, either by door or by window.* One long blank wall is all that is to be seen. Frequent illness prevails among the inhabitants of these streets, and I can never forget the scenes presented there during the visitation of the cholera."

NECESSARY RESULTS. — CALL FOR GOVERNMENT INTERFERENCE. — After mentioning a case of horror, alas! too much like others frequently occurring in these inhuman abodes, and which, if they were only represented in wax, as the ravages of the plague are in the museum at Florence, we should turn from with a shudder, but never forget them; the writer depicts with so much feeling and clearness the necessary results of a state of things, which those who have long thought on the subject are increasingly convinced can be remedied by no other means than such Government interference as would effectually counteract the reckless ignorance, and the heartless cupidity of the owners of such property, that I cannot abstain from quoting another passage. "I sat down, as soon as I reached home, and wrote a letter to the editor of the *Times* describing the scenes I had witnessed this morning, calling his attention particularly to the construction of those houses: and then asked, in the bitterness of my heart, if, with all our extensive and costly paraphernalia of

government, nothing could be done to stop this awful waste of comfort, health, and life. The importance of the subject at once recommended itself. The narrative not only appeared, but was backed by every argument and appeal that the talented pen of the editor could bring to bear upon it. But there it ended; no steps have been taken to make the construction of such dwellings contrary to the law of the land. Many fathers, mothers, and children, too, have since died in those streets; only in these cases by lingering fever, instead of by sudden cholera. Surely the cries of distress must have ascended again and again, and "have entered into the ears of the Lord of Sabaoth!"

"But there is still a darker side to this grievance. The death of a few is less calculated to excite our compassion, than the miserable, lingering existence of the many. When I see the little boys and girls playing before the doors, often with crooked backs, or crooked limbs, with emaciated forms and faces, if not with still more unmistakable marks of disease, I cannot help thinking—Are these boys to be our future working-men, upon whose sinew and muscle we are to depend for cultivating our soil, constructing our railways, sinking our mines, and defending our country? and are these girls to be the mothers of the next generation?"

DWELLINGS IN PROVINCIAL TOWNS. — On the state of the lower class of dwellings in our provincial towns we have the evidence of innumerable official reports. In one of them we learn that "at Leicester the worst houses are to be found in the old quarters of the town: they are the habitations of the working-classes and the poor, and are faulty both in arrangement and structure. For instance, there are eleven houses of one room each, at first used as *pigsties*, but the speculation failing, they were converted into dwellings, each 14 feet by 10 feet, and 6 feet 6 inches high, with an average of five persons in each room.

Of Swansea we know, on the authority of the mayor, that in a sanitary survey of the epidemic districts, there were found in five consecutive cottages

in one street, seventeen, thirteen, eight, ten, and twelve inhabitants; each house had two sleeping apartments, the largest 10 feet by 8 feet, the other only 8 feet by 6 feet, giving a total of sixty inhabitants shut up in ten rooms, not too large for the requirements of ten persons; and, as a necessary consequence, some form of disease was always present.

With reference to the town of Hertford, it is stated that out of 294 court-yards or alleys, close and confined, with an entry from the main street, and mostly terminated by *cul-de-sac*, only 32 have any outlets at the back for ventilation. Referring to such places, it has been remarked by Mr. Rawlinson, that "in the towns formerly occupied by an agricultural population, and afterwards adapted to receive an increase of artisans and manufactories, it is universally the custom to convert old and decayed manor-houses or other buildings of any extent into a number of dwellings; but the requisite attention to sewage, ventilation, and other accommodation, demanded by the increased number of inmates, seems quite forgotten, and they are left to make the best arrangement they can for themselves, when in fact the most careful supervision should be exercised by the proprietors." In another report, the same gentleman, after naming ten northern towns, says, "There are blocks of houses and tenements which no remedial measures can ever make healthy dwellings, because the construction prevents free ventilation, and the sun can never shine within the crowded area, or even the light of day break the continuous night in which many of the poor at present exist."

PHYSICAL RESULTS.—The *physical* result of such a state of things, wherever found, has been already spoken of, and may be illustrated by a single example, taken from the report of the Assistant Commissioner to the Metropolitan Police made in March, 1859: "The occupant of one room said, 'I was a strong healthy man when I came into this court four years ago; now I am fast sinking into the grave. I have scarcely had a day's health since I have been here.'

MORAL AND RELIGIOUS ASPECT.—"Viewing the results in their *moral* and *religious* aspect, the present Bishop of Ripon, when Rector of the parish of St. Giles's-in-the-fields, thus wrote: 'The physical circumstances of the poor paralyze all the efforts of the clergyman, the schoolmaster, the Scripture reader, or the City missionary, for their spiritual or their moral welfare. * * * Every effort to create a spiritual tone of feeling is counteracted by a set of physical circumstances which are incompatible with the exercise of common morality. Talk of morality amongst people who herd men, women, and children together, with no regard of age or sex, in one narrow confined apartment! You might as well talk of cleanliness in a sty, or of limpid purity in the contents of a cesspool!'"

A SCENE DESCRIBED BY THE AUTHOR OF "THE MISSING LINK."—A scene in Lisson-grove, the north-western St. Giles's of the metropolis, is thus described by a lady, the well-known author of "The Missing Link:"—"The heart sickens at the sight of degraded lads and girls, lost to every sense of decency; and one can only ask, Where were these brought up, and whence do they swarm forth, to mock the God of Heaven, and defile the air they breathe? Whence? Let those who know them, lead you to their homes, or truly their 'dens'—back kitchens, 8 feet square, with broken floor and window—where the mother, drunk, sits on an old tin kettle in the midst: she has on one garment and a tattered shawl, but her baby has nothing; and a three-year old child, crippled by a fall from a chair, and with one eye cut out, has nothing; or to rooms where each corner has its family, and where one lies dying of starvation and another of small-pox. Such is the close of life to thousands in London. City Missionaries and Scripture Readers know it; Medical Men know it; the Clergy know it; but the gulf of misery is immeasurable, and it is given up in despair. These homes make these people, generation after generation. Would it have been thus if the Christian women of London had long ere this

found their true mission, and fulfilled it? Mothers make homes, and mothers make 'dens.'"

COMBINED EFFORTS.—I offer no apology, in addressing a ladies' association, for having quoted at such length the writings of two ladies, who devote both time and talent with so much Christian zeal, to the carrying into effect their well-devised plans for promoting the temporal as well as the spiritual benefit of their suffering fellow-creatures. In regard to such efforts I most cordially agree with an eminent clergyman in the north, Dr. Guthrie, when he says,—“The grand and only sovereign remedy for the evils of this world is the gospel of our Lord Jesus Christ. But he rather hinders than helps the cause of religion who shuts his eyes to the fact, that in curing souls, as in curing bodies, many things may be important as auxiliaries to the remedy, which cannot properly be considered as remedies. In the day of his resurrection, Lazarus owed his life to Christ; but they, that day, did good service, who rolled away the stone. They were allies and auxiliaries.”

HOMES OF THE RURAL POPULATION.—The prevailing sanitary defects in the homes of our *rural labouring population* have yet to be noticed. Although much has lately been done by many landowners to improve the cottages on their estates, and instances might be named in which a sense of duty, in this respect, has been manifested by a princely, and, at the same time, judicious expenditure; it is a very lamentable fact, that in all parts of the county there are so many cottages around which the external air may be good and circulate freely, but their aspect is such, that the sun's rays never enter the dwelling, or the site is remote from good water, or the drainage defective. The walls, the roof, or the floor, perhaps all of them, admit the external humidity. The windows are badly constructed for the purposes of light and ventilation. The rooms are very low, and too few in number, for a family; indeed it is rare to find more than one or two bed-rooms in an old cottage, although three are

evidently indispensable to the health and moral habits of a family with children of both sexes.

Were a system of registration of the actual condition and extent of accommodation in existing cottages, such as was recently suggested by Dr. H. Acland* of Oxford, generally adopted, it would doubtless elicit such startling facts as must lead to a very extensive improvement. With the like view an unsuccessful attempt was lately made to obtain, by means of the coming census, reliable facts bearing on the same subject.

SELECTION OF PLANS.—In some instances which have fallen under my own observation, I regret to say that the want of judgment in the selection of plans has led to the building of cottages, more particularly in the neighbourhood of manufacturing towns, which by no means combine all the requisites of a healthy dwelling. In other cases an unnecessarily heavy expenditure has been incurred, whereby an impression is created that even under favourable circumstances, the moderate return of $3\frac{1}{2}$ to 4 per cent. clear, cannot be obtained from well-built cottage property.†

PECUNIARY RETURN.—This is not a suitable occasion for entering at length on the important question of pecuniary return for capital invested in the improvements of the dwellings of the labouring classes; were it so, I might quote the words of the Duke of Bedford, and other distinguished landowners, who have placed its bearings, with regard to the *proprietors of land*, in their true aspect; and I could show, that from 4 to 5 per cent., clear of expenses, and in some instances

* The form of registration proposed by Dr. Acland, has been published for gratuitous distribution, and may be obtained of Mr. Parker, Bookseller, Oxford, on enclosing a directed and stamped envelope.

† Benefit Building Societies present an important machinery for providing improved dwellings for the working classes; and any judicious advice given to the members, in the selection of their plans, may essentially contribute to the acquisition of a “healthy home.” In many places on the Continent, societies have been formed by philanthropic persons to build suitable houses, and to afford facilities which enable the working classes to become the owners of their own dwellings; the parties advancing the money being satisfied with four per cent. interest, and the security of a sinking fund to pay off the capital.

a higher rate, has been realized in towns, from newly-built improved dwellings, in a sufficient number of instances, to prove that, with the exercise of a sound discretion and careful management, a return may be obtained which is about equal in per-centage to the average profits of the nine great Railways diverging from the metropolis.

NECESSITY FOR PRACTICAL KNOWLEDGE.—It would, however, be unreasonable to expect that those who, whatever may be their zeal in the cause, have not the requisite knowledge, can themselves conduct with pecuniary success undertakings which are so practical in their character. With great justice and feeling does Miss Nightingale say, "What cruel mistakes are sometimes made by benevolent men and women in matters of business, about which they know nothing, and think they know a great deal."

BENEFICIAL RESULTS OF LEGAL INTERFERENCE.—As bearing on the question of pecuniary return, I may add, that one important result which would inevitably follow the legal enforcement of a good sanitary state in all dwellings let in apartments to pay a low weekly rent, must be, that those who now obtain a large profit out of the necessities of the poor, would be forced either to effect the much-needed improvement of the dwellings themselves, or to part with them on equitable terms, to those who might be willing to make the necessary outlay, in anticipation of a reasonable, but not extravagant return. At present, such property, if sought after, can only very occasionally be obtained at a price which, with the heavy expenses of repairs, and the maintenance of old buildings, will yield a fair rate of interest.

THE RESULTS OF PAST EFFORTS.—It is gratifying to know that the results of all the efforts made to improve the homes of the working classes have, in regard to the occupiers, been most encouraging. In order to show how greatly *employers of labour* may in this respect promote the welfare of their dependants and their families, I instance two cases which, though

they differ greatly in many respects, are both calculated to stimulate and encourage to similar efforts for the relief of those who, through the wretchedness of their homes, are sunk into a reckless state.

AN EXAMPLE IN ENGLAND.—Lord Palmerston, in addressing a meeting lately held at Romsey, said, "When a cottage is in such a ramshackle state, that it is impossible for the wife to keep it clean, she becomes a slattern, everything goes to ruin, the man is disgusted, and flies to the beer-shop. If, on the contrary, the wife feels that she can, by a little exertion, make the cottage decent and respectable, she does so, and then the man enjoys the comfort and happiness of his home, stays away from the beer-shop, and the sum of money he would spend in liquor goes to the benefit of his wife and children. I had an example of that in a double cottage of my own. It was in a dreadful state; the walls were not air-tight, it had a brick floor, a bad roof, and everything uncomfortable. The people who occupied it were slovens and slatterns, and quarrelsome ill neighbours. At a small expense it was made tidy; boarded floors were put down; a little porch erected, with a wood-house and other conveniences, and from that moment these people altered entirely their character, altered entirely their conduct, became well-conducted people and good neighbours, which they had never been before. * * * Depend upon it, a very great deal can be done at a moderate expense towards making old cottages decent and comfortable."

AN EXAMPLE IN AMERICA.—The other case was mentioned to me in Paris, when inquiring as to the disposal of a legacy of 50,000 dollars left by the late American ambassador, Mr. Abbott Lawrence, for building model houses in Boston. My informant, Professor Beck, of Harvard College, U.S., as a practical illustration of the benefits resulting from individual efforts, said, that "Shortly after engaging an out-door servant, who was a native of Ireland, I had much reason to complain of neglect of duty, and learnt indirectly that the man was intending to abandon his

wife and children. A serious conversation with him, and a representation of the cruelty and wickedness of his conduct, led him, without attempting a justification, to acknowledge, after some hesitation, that he felt discouraged; he was desirous of keeping his family in a respectable condition, and educating his children, but he was obliged to keep them in a miserable neighbourhood, occupied by people of the lowest character, who, old and young, gave themselves up to intemperance and other vices; he found it impossible to prevent the evil effects of such a neighbourhood upon his family, especially his children; he had not the means of procuring a better habitation, and did not know what to do. This conversation having directed my attention to the importance of proper dwellings for this class of people, and entertaining in other respects a favourable opinion of the man, who had received a good common school education, after some reflection I proposed to him, that if he could find a small piece of land in a respectable neighbourhood, I would advance the money for its purchase and for the building of a suitable house. He seized the proposition with great eagerness; he found a piece of land, and a house was built. This change from a bad to a good dwelling was the saving of the man and his family. The house is so large that he lets a portion of it to one or two other families. The rent thus received is more than sufficient to pay the interest of the debt, and the surplus of his wages has gone to paying off the principal. The man remained in my service eight years, until I left to make a tour of two years in Europe. The prosperity of the man continues. His habits of industry and thrift are confirmed."

MEANS FOR RENDERING DWELLINGS HEALTHY HOMES.

After instancing these two cases of a successful application of remedial measures, it may be useful, in closing, to recapitulate briefly the various means, through the use of which, the dwellings of our working population can be rendered "Healthy Homes."

They may be ranged under the three heads of—Government measures: the action of public bodies, of the employers of labour, as well as of voluntary associations: and personal influence.

GOVERNMENT MEASURES.—In England, where every man's house is said to be his castle, legislative interference can only be anticipated to a very limited extent, beyond the enactment of general sanitary laws, and those which are strictly of a permissive character, or calculated to favour the action of individuals and of associations, in providing improved dwellings. A step further in advance, one which has proved most successful, has been taken in the regulation of common lodging-houses; and not until the same principle is applied to the enforcing of a good sanitary condition, with suitable arrangements in all tenements in towns and populous neighbourhoods, let at low weekly rents, can it be anticipated that the miserable dens,* in which large masses of our population at present herd, will be cleared of their filth, and rendered fit for the occupation of human beings. Within the jurisdiction of the corporation authorities in the City of London such a power was conferred in 1851, and is discreetly exercised under the supervision of the Medical Officer of Health, to the great benefit of the poor, and a marked diminution in the returns of mortality, which have fallen since that date from 25 to 23 in 1,000.

STANDING ORDER OF THE HOUSE OF LORDS.—By a standing order of the House of Lords, provision has been made for ascertaining the necessity of enforcing

* I well remember seeing repeatedly in the metropolis a room about 22 feet by 16 feet, the ceiling of which could be easily touched with the hand, without any ventilation excepting through some half patched broken squares of glass, and in it were constantly lodging from 40 to 60 human beings, men, women, and children, besides dogs and cats. The Lodging-house Act has in this case effected a great reformation; but the want of power to extend its regulations further, leaves a mass of untouched filth and misery; for, as is said in the last Report of the Assistant Commissioner of Police, 1859: All the evils which that Act was intended to remedy still exist, almost without abatement, in single rooms occupied by families, single rooms so occupied being exempt from the operation of the Act."

the construction of suitable dwellings for the working classes, in lieu of such as may be demolished, under powers granted by Parliament for the carrying out of public improvements, or the works of large companies, such as docks, railways, &c. The non-enforcement of such an obligation, has led to incalculable misery and evils in our own metropolis, as well as in that of a neighbouring country.

CLOSE PARISHES.—Legislative interference is also much needed to provide a remedy for the evils arising out of the selfish system pursued in some “*close parishes*” of pulling down cottages, in order to obtain relief from a burden, which is thereby thrown on a neighbouring parish, regardless of the hardships endured by the labourer, who is often as a consequence, compelled to walk several miles to and from his work. A calculation of the positive loss from the waste of valuable time and strength thus expended was made by the late Sir Robert Peel; and yet, many who have labourers in their constant employ still need to be convinced that it is as much their interest to care for them, in regard to their dwellings, as it is to provide well situated, healthy, and convenient stables for their cattle.

UNDRAINED GROUND, &c.—The building of small houses on undrained ground, and without proper sanitary arrangements, should, as a fruitful source of sickness, and consequent expense to the public, be entirely interdicted.

PUBLIC BODIES AND EMPLOYERS OF WORKING PEOPLE.—Public bodies including many departments of Government, railway, and other commercial companies, as well as the regular employers of working people generally, whether they be agriculturists, manufacturers, owners of mines or quarries, have it in their power greatly to promote the well-being of those whom they employ, by caring for their domiciliary condition, and by either providing suitable dwellings for them; which may generally be done with ample security as to the rent, or by aiding them to form amongst themselves

well-constituted associations for the carrying out of that object. In other instances existing dwellings may, as we have shown, be greatly improved at a moderate cost.

MODEL DWELLINGS.—The construction of model dwellings, by associations formed for that purpose, as well as the renovation of old houses, have proved in some places of great value as an experimental and pioneering movement, irrespective of the direct benefit conferred on their occupants, and their immediate neighbourhood. The *pecuniary* return, of necessity, depends much on the judgment and care exercised in the selection of sites, and in the arrangement of the plans, as well as on watchful and economical management.

H. R. H. THE PRINCE CONSORT.—The practical results of the personal interest taken in this object by His Royal Highness the Prince Consort, in connection with the Great Exhibition of 1851, have been manifested in several instances. The leading features of H. R. H. Exhibition Model Houses* having been followed more or less in many dwellings subsequently built for working people. I have seen such in Edinburgh, at Liverpool, Ramsgate, Brighton, Windsor, and near the Shadwell Station, on the Blackwall Railway; where a range of miserable old houses has been replaced by an entire street of “Healthy Dwellings,” built after this plan for 112 families, by W. E. Hillyard, Esq., of Gray’s Inn, who receives from them 6 to 7 per cent. clear on an outlay of about £14,000. To the same source is traceable the providing in several instances suitable accommodation for married soldiers; the entire want of which previously led the late Duke of Wellington to object to the Model Houses being placed in the barrack-yard, at Knightsbridge, lest they should

* Plans of these Exhibition Model houses will be found in the later editions of my Essay on the “Dwellings of the Labouring Classes” before referred to; and in my paper on the “Improvement of the Dwellings of the Labouring Classes,” in the transactions of the National Association for Promoting Social Science, for 1858, is given a plan for dwellings, in thickly populated towns, similarly arranged, but with modifications suggested by subsequent experience.

give rise to much dissatisfaction in the army. During the recent session of Parliament £30,000 has been voted for this much-needed object.

PERSONAL INFLUENCE OF LADIES.—If ladies throughout the length and breadth of the land, would individually make themselves acquainted with the domiciliary condition of the working people in their own neighbourhoods, and would enter into their difficulties in this respect, a task vastly more easy than that to which ladies have devoted their time and talents with so much zeal and wisdom, in visiting our prisons and hospitals: the sights they would witness, and the reflections which must arise therefrom, would compel them to exert all their influence in promoting the greatly-needed reform.

FIELD OF LABOUR FOR LADIES.—Although the power of aiding directly in the removal of existing structural defects in the dwellings of the poor, is not very generally possessed by ladies, their influence may be exerted with the greatest benefit in pointing out to others the necessity for, and persuading them to carry into operation, those remedial measures which have already been referred to. Ladies may frequently contribute to the removal of those sanitary evils for which the law has provided a remedy, often unknown to the sufferers, by pointing it out, by advising as to the mode of proceeding, or by friendly communication with the proper authorities, such as the Medical Officer of Health, or the Inspector of Nuisances.

SYMPATHY.—There is, moreover, a field for the exercise of influence in which ladies may labour, and have done so most efficiently. They can impart instruction, can exhort, encourage, stimulate, and, above all, can manifest that sympathy, which shines with such attractive lustre in the crowning grace of Christian charity.

PRACTICAL DUTIES.—Amongst those practical duties, of which the necessity and advantages may be pointed out to the wives of working-men, one of the first in importance is, that she should be “a keeper at home,”

and attend to her household duties as well as to her children; for without this, a dwelling may possess all the conditions essential to health and morality, and yet the occupants be comparatively little benefited by its advantages.

ENCOURAGEMENT OF SOBRIETY, &c.—Ladies can exercise a personal influence, by either teaching, or causing to be taught, the benefits resulting from a free admission of pure air, of personal and household cleanliness; and they can facilitate the obtaining of such articles as whitewash, brushes, and ventilators, as well as the mending of broken windows; they may also enforce, more especially on wives and mothers, a careful attention to the many details which conduce so much to health and domestic comfort, and render home attractive, rather than repulsive, to husbands and sons. They can likewise be instrumental in promoting those habits of temperance which enable husbands to expend on home comforts “the fool’s pence” whereby the publican is so greatly enriched, to the impoverishment and incalculable injury of the labouring classes.

Ladies have, in many places, by the bestowment of premiums and rewards for the best-kept cottages, greatly promoted the health and the comfort of their occupants. They have also exercised a most beneficial influence, through personal intercourse, and what have been aptly called “Mothers’ meetings,” conducted in a spirit of Christian kindness, with the aim of teaching the poor to help themselves.

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