PART III.

THE LESSON OF THE EPIDEMIC.

CHAPTER I.

Our Present Condition.

§. 1. To enumerate the arrangements which a wise Community would adopt beforehand to mitigate the terrible scourge of coming Epidemics, would be to describe the manner in which a civilized and well-regulated people, acquainted with the laws of health and the causes of disease, would strive to live on ordinary occasions: and as this would lead the reader into questions of the most extensive nature—social, so called, political and religious—it cannot be fully discussed in this place.

That such a history, however feeble, will alone state the needs of any thoroughly peopled town, in the particular matter before us, a little reflection will show. It is quite certain, and it would be impertinent now to spend words in proving it, that the health of individuals is influenced by their manner of life: no one doubts but that a man may drink himself into hopeless dropsy; that by over labour he may induce heart disease; by imprudent labour disease of his lungs; that by mental excitement and late hours he may destroy the integrity of his nervous system; or shorten his days by ever working at work for which he is by nature unfitted. Instances of individual self-destruction from avoidable circumstances might be multiplied without end. With these individual cases we have not here to deal. Each man has a free will, and he must make his choice according to the knowledge he possesses. But with communities this is not so: they have lawgivers and laws: these may be good, or they may be bad. The Community may be barbarous or civilized. We have here to do with Civilized Communities only; and concerning them it is not to be doubted, and no educated person does doubt, that *communities*, as well as *individuals*, may violate the sanitary laws which our Creator has imposed on us; and that the consequence of the violation of these laws is punishment to the *community* for its *common* crime; as it is in the case of the individual for his individual crime.

§. 2. This argument can not be now pursued. In many places it has been shown, that bad municipal laws and bad local management cost more in many particulars than good laws and good management: to use a common expression, "Bad work makes work," and "the ratepayer pays twice." This subject also is as interesting as it is extensive. Life is a holy thing; and if communities throw away the lives of the individuals who compose them, or make these sickly, short, and miserable, the community will, in some manner, 'pay for it.' It will have work done badly by the crushed artisan while he lives; it will maintain him for years in his sickness, and his children on his death.

I should be ashamed of dwelling on subjects of this kind, did I not feel that in this matter, as in many others, many of the People of England have yet to awake as from a dream. Though scientific men, aided by the press, have for many years striven to rouse us to a sense of insecurity, the habits of our country, the lengthy labour of discussion which is to be gone through in most public questions, and the precarious results of the votes in public assemblies, retard improvement, and too often ensure mischief. From this and other causes we bid fair, when the Cholera again appears, in many particulars to be in as great danger as on either previous occasion. The last Epidemic was at its height here before efficient steps were taken to meet it. When the steps were agreed upon, in more than one instance they grievously miscarried, in consequence of the routine by which it was thought necessary to cramp them. And in one department, the Field of Observation, second to none indeed in importance, notwithstanding the undaunted energy of a Lady engaged therein, for many days the most common necessaries were deficient, and the most ordinary precautions unheeded. All this is well known here; and yet, after the fullest discussion, and in the most solemn manner, the Radcliffe Infirmary, the great Medical Institution of this District, decided that it could not assist in providing any accommodation for infectious disorders, or aid in offering alleviation to the City and County in the event of any future Epidemic Disorder*; and it is more than probable that, notwithstanding the urgent representations that have been made on the subject, we shall in respect of a Building fit to receive Contagious or Epidemic Disease, be as unprepared as we were in 1854, notwithstanding the terrible warning of the Cholera in that, and of the Small-pox in that and in the preceding year. Whether the General Hospital of a City or County surrounding it sees fit to offer such a boon to the People, rests of course wholly with its Managers; and, as I have said, with us the answer has here been a negative one; but that, with the warning which we have had, and with the Histories of former Pestilence, we should be content, when the General Hospital has so formally declined, to be without any permanent provision for Epidemic infectious disorders,

* See Appendix.

seems to be both undesirable and rash. The general relations of Provincial Hospitals will be discussed in a succeeding chapter, and this point will be there considered.

Sufficient grounds have, I think, been stated to satisfy the minds of most persons that our Sanitary arrangements are not complete; it will not be an idle task to consider the general plan upon which we should proceed to bring about their completion.

§. 3. L'Hygiéne, ou plutot la Civilization dont elle est une face, se résume en deux mots—Moralité, Aisance,—says a French writer†. In other words, to have "competency of living according to our condition," and "to possess our hearts right before God," are essential to our physical well-being. But—competency of living! Let the Urban, or even the Country Reader ask himself if all about him have competent meat and drink for their stomachs and their blood; competent air for their lungs; competent exercise—sufficient and not extreme—for their muscles; competent means of cleanliness for their skins. And under the second head: whether they possess their hearts right before God? Let him ask—has the intellectual, moral, and religious training of himself and those about him been such as to ensure, as far as our fallen nature allows, such habits of self-control, and such sense of duty towards God and his neighbour, as affords to the nervous system the chance of a competent use and competent repose? Alas! I trow not. So far from these words being beside or beyond the mark—they point to the eye of it, and yet do not touch the thousand circles which necessarily surround it. We must feel the bitterness of the evil which social life entails on the less honorable members of the body politic. The feet must tread the mire, yet they may be clad; and the hands may be washed and warm, though they be thick with toil. It is not simply a wrong to our Fellow Men, if that is withheld which they may justly claim: it is sin and degradation to the Rulers.

To all this England is now awaking. The question is—What is the Remedy? How can we apply it? Are we hindering or aiding it? Are even our institutions a hindrance or an aid?

We can answer these questions more cheerfully now in 1856 than heretofore. The law of England, thanks to the great exertions of eminent statesmen and philanthropists, makes provisions for the general healthiness of Town districts, and during Epidemics especially, which a few years ago could not have been hoped for by the most sanguine citizen.

§. 4. Yet many evils—some remediable, some not—remain. The following seem to be the chief, which, independently of the great questions connected with the demand and supply of labour, are incidental to great towns, and some of them in their

† Michel Levy. Traité d'Hygiéne Publique et Privée.

degree to Oxford:—Food, bad in quality; Water, insufficient or bad; Lodgings, insufficient in space, bad in natural site, and far worse by human agency; great Nuisances, such as offensive trades—slaughter houses; inadequate Drainage; inadequate places of recreation, or none; the all-but-necessity of bad company from the closeness of dwellings. Consequently on all these increased liability to disease: on account of the value of ground, small school rooms, with inadequate yards, rendering Education more injurious to health than in the country, and making "the child, the father of the man," more sickly than he need have been. There follows greater temptation to vicious habits in consequence of nervous exhaustion.

Connected with the Conditions of Labour, in many cases in common with but in excess over the country districts, are:—Wages insufficient for procuring ENOUGH of Food, Clothing, or Fuel, and Proper Lodgings; Prolonged Hours of Work in consequence of competition; insufficient time for relaxation, acting on the man's whole moral and religious nature through exhaustion of the nervous system; unhealthy work rooms.

To reduce these evils to their minimum, what are the means in our power? Some things we can do, each for ourselves. Some things we can do by voluntary combination. Some things can only be done by the legislature.

To exhaust these subjects would lead me very far beyond the limits of this Memoir. I shall therefore restrict myself to observations on a few of the most obvious and most practical points of our economy; viz. (1) Habitations; (2) Ventilation; (3) Drainage; (4) Medical care of the less affluent classes; (5) The relations between Moral and Physical well-being. It will be found that under these heads may be comprised most of what a Physician may venture to remark on the social condition of such a City as Oxford.

CHAPTER II.

On some Habitations in Oxford and their Ventilation.

Of the importance of Ventilation, or, in other words, of introducing healthy air into all dwellings, it is impossible to speak too strongly; nay, even it is scarcely possible to speak strongly enough; this applies especially to the houses of the poorer classes, whose rooms are usually smaller in all dimensions; they are generally lower, and more crowded, not only proportionally but actually, than the houses of the upper classes. I am quite satisfied that not only do some of the worst forms of physical disease depend on ill-ventilated dwellings, but also that some of the worst forms of vice are engendered thereby. This I state, not only on the authority of the many volumes which have treated on this subject, but from my personal

observations as a Physician in and about Oxford. Those who have not paid particular attention to this subject, may, I doubt not, think any words which at all properly describe the consequences of habitually living in inadequately ventilated dwellings, as exaggerated and forced. But such persons should bear in mind the following:—

That without Pure Air, in adequate quantity, the ordinary physiological changes of the human body cannot be carried on in their normal manner.

That in proportion as the air is vitiated from any cause the injury to the structures of the body becomes more or less severe and more or less permanent.

That fresh air to the amount of more than 200 cubic feet per hour is required for each adult. That if this is not provided, the same air is inspired over again.

That in some of the smaller rooms of the poor not a fourth part of the volume of air required for health is obtained.

That it is certain that a very great improvement may be made in the condition of all sleeping and living rooms by the introduction of Arnott's Valves into the Flues: although they do not completely remedy the evil where there is not an up current in the chimney into which they are laid.

So very much has been written of late years on this subject, that I forbear from wearying the Reader with any further statements. But I deeply lament the decision of our Infirmary to have gas burners without ventilating tubes, as being a mischievous example to this district: and regret, for the same reason, that the very careful and long continued labours of a Committee, including Professors Donkin and Daubeny, appointed to advise on its Ventilation, were set aside*. I have pointed out elsewhere that the enlightened Bench of Magistrates have shown their sense of the importance of the question, as far as Prisons are concerned, by the pains bestowed on this department of Hygiene in the construction and adaptation of the County Gaol.

But I cannot forbear quoting the following passage from the Appendix to the Report of the Scientific Committee of the Board of Health. There Dr. Arnott, in a Paper on the Influence of Atmospheric Impurity on Asiatic Cholera, writes—

"The department of the art of cleansing, which remains the most imperfect, is that of Ventilation. The reasons of this are, that air, under common circumstances, is invisible; that scarcely 200 years have passed since scientific men suspected that air was at all a ponderable substance—occupying space, and only in our own day, since air has been used for stuffing for air-pillows, and one kind, with the name of coal-gas, has been sold by measure from pipes, as water is, have people generally conceived of it as being truly a thing; that only about 100 years ago had even chemists learned that air or gas is not one unchangeable substance, but is one of the three forms called solid, liquid, and aeriform, which certainly many, and probably all substances, may assume under different degrees of

* See Appendix B.

heat, compression, and combination; that the particular substance, for instance, to which the name of oxygen has been given, since it was discovered by Dr. Priestly in 1783, which, in its separate state at the temperature of our earth, exists only as an air with which air-cushions may be stuffed, yet constitutes eight-ninths by weight of all the water on our globe, about a fourth of all the earth and stones, and a large proportion of the flesh and other parts of animals and vegetables; then men had not until lately reflected that solid or liquid filth in a house, if not swallowed in food or drink, can be noxious only when it gives out part of its substance as foul effluvium to be breathed; and, lastly, men knew not that expired ordinary breath, which, if inhaled again alone when recent or fresh, may only suffocate by excluding fresh air, becomes, when stagnant or long retained in a place, in part, truly putrid or corrupt, as turtle soup or venison might change, and may then assume the forms of the different poisons which produce the gaol, the hospital, or the ship fevers, and other spreading diseases, or of that which, when joined with the peculiar morbid agents of small-pox, measles, scarlatina, or cholera, cause these to rage. Acquaintance with such facts, however, being once obtained, men can understand that Ventilation is not of ordinary, but of paramount importance, for it can remove not only the breath-poison of inmates, but also the foul air arising from all other sources, and so may act as a substitute for good drainage until there be time and opportunity to establish that. There is no liquid poison which may not be rendered harmless by copious dilution with fresh water, so there is no aerial poison of which the action may not be similarly influenced by dilution with fresh air.

"It is important also here to remark that modern houses, since the introduction of close-fitting glass windows and of chimney flues with low openings for fireplaces, have been rendered what persons ignorant of the nature of air could not suspect, namely, singularly efficacious traps for catching and long retaining all impure air or effluvium which may enter them from without, or be produced within them. Such airs, the exhaled breath, for instance, being generally warmer and specifically lighter than the external air, are buoyed up towards the ceiling of rooms, where, if there be no outlet, they stagnate long, like oil floating on water, and are little disturbed by even copious streams of fresh, colder, and heavier air gliding along the floor from doors and windows to pass up the chimney-flue. * * Effluvium from such filth as cesspools contain has, in past inquiries, been that most attended to, but there are many facts to show that this impurity of retained and corrupted breath, scarcely heeded in general, has been the chief element of the foul atmosphere which has led to numerous Cholera outbreaks. * *

"With such facts in view as are set forth in the preceding paragraphs, all must perceive both the close dependence of men's health and well-being on the maintenance of purity of air within and about their dwellings, and the lamentable extent to which this object is missed in present ordinary procedure."

It is quite certain that there is no remedy for many of the houses even in a town such as this. Whether it would answer commercially to pull them down and rebuild them depends on so many local circumstances, that it is idle to offer any general opinion on the subject. I learn, on the authority of a very eminent builder, also a landed proprietor, that, commercially, the erection of a comfortable cottage in the country will not pay a proper interest on the outlay. Mr. Pusey made various endeavours to solve that problem, with some success. For many years, as every one knows, the County Gentry of England have bestowed much attention on the subject. The facts, in a commercial sense, are not easily attainable. A large landed proprietor in the west of England can erect a convenient, healthy, and architecturally picturesque labourer's cottage for *about* £100, or a double cottage for £160. Whether they would be built by contract for this sum, I cannot say*. Sir Walter Trevelyan has, in Northumberland, houses of this kind, that may well serve as a model; using square blocks of wood, prepared in a saw mill, and placed endways for the ground-floor: a mode of flooring more durable than any ordinary paving stone.

In the last few years we have had, in Oxfordshire, frightful instances of the evils of Foul and Bad Dwellings, as accessories in the production of Fever. The parishes of Fringford, of Mixbury, and of Souldern may be specified as lamentable examples of this: of course I do not pretend to assert that bad Ventilation and bad houses were the sole causes of the Disease in those villages, but that circumstances generally avoidable were so, is not to be doubted: and I am assured by Mr. Turner of Deddington, that overcrowding was the chief cause of the alarming fever at Souldern. As I have already described what occurred at Oxford, in Gas Street, during the Cholera of 1854, this point need not be further dwelt upon.

It is well known that such outbreaks are costly to a degree for the parishes where they occurred; and it is well known also that the spread of Fever may generally be entirely prevented by Hygienic rules.

The Manchester and Salford Sanitary Association have published advice to workmen on the choice of dwellings†: as their advice cannot be materially improved, it is here reprinted, for the consideration especially of any working men who may see these pages, and are not acquainted with the Tracts of the Association.

"1. Not to take house or rooms on the open bank of a sewer-river, nor near any standing water, or offensive works.
2. Not to take house or rooms without regard to sufficiency of the size in respect to his family.
3. Not to take house or rooms where the landlord will not undertake to keep the drains free from bad smells.
4. Not to take house or rooms which are blocked up at the back, and where a thorough draught cannot be made by opening doors and windows both at the back and front.
5. Not to take house or rooms where any room is over a midden, ash-pit, or privy; or where the privies face the houses.
6. Not to take house or rooms in a confined court or entry, and especially where there is in it an open midden or ash-pit, or where the privies are common to a number of houses.
7. Under no circumstance whatever to occupy a cellar, and always to seek for bed-rooms in which there are fire-places, and windows that readily open at top and bottom."

* Various designs have been carried out; notices of some prize plans, with full particulars, may be found in the valuable Journals of the Royal Agricultural Society (London, Murray), and of the West of England Society (London, Ridgway).

† Manchester and Salford Sanitary Association Tract Series, No. 2. See also, The Dwellings of the Labouring Classes. Roberts. (London, J. W. Parker, &c.)

The time is quite gone by when the workmen of England require to have the practical wisdom of these remarks explained at length. Those indeed who do not see the necessity of them, will nevertheless do wisely to act upon them forthwith. A difficulty however arises often in this, that only bad houses are to be had. Now, with respect to Oxford, it is manifest that none should lodge in bad and close rooms in St. Thomas', St. Aldate's, and St. Ebbe's, if they can secure better rooms in more healthy localities. They had far better walk a mile or two from their work to be in a good air when at home, than put up with the depressing influence of foul air every night. A miserable cottage in the country is better (unhealthy though it be) than a good room in a close alley with houses placed back to back.

I know no more honourable Memorial that any College or combination of Colleges could raise to show the sympathy they feel with their poorer neighbours than the erection on the healthy ground to the north of Oxford, (as, for instance, near the Infirmary,) of a set of Dwellings for the Labouring population, constructed in the best manner, and with all the proper arrangements for Water, Lighting, Ventilation, and Drainage. So much has been done for the domestic comfort of the poor by the erection of Baths and Washhouses, that it is a pity not to complete the good work. There is every facility for such a procedure, if a body of men in the City, such as the ten who cleared the Foul Alley in St. Thomas's, of which I have elsewhere spoken, were to place themselves in connection with the Metropolitan Society for Improving the Dwellings of the Industrious Classes*. They would find in the office of the Society ready advice, and the fruits of a large and practical experience. They would learn the precise cost, and obtain the commercial data for such an undertaking: for no man of business considers works of this kind as really successful unless they repay the founders. We may say, I think, with confidence with respect to Oxford, that if land were given, or leased on favourable terms, all doubt of even commercial success would be removed. Shares would be taken to secure the erection of the buildings, and these shares would be moderately remunerative. The experience of the Metropolitan Association, upon the whole, seems to justify this observation. Single rooms for single men would not repay us: dwellings for families on flats would.

I am thus particular on this point, because harangues on unhealthy dwellings are singularly unsatisfactory as long as healthy dwellings are not to be had.

Many parts of our City, now not to be spoken of with approbation, will be unexceptionable if the long anticipated Drainage is completed. Let the Reader examine once more the Map which faces the title-page, to see which parts are still imperfectly drained, or wholly undrained. Then let him ask himself where the masses of the poor can take houses properly drained; even if the houses were fit for them in other respects.

* Metropolitan Association for Improving the Dwellings of the Industrious Classes. Charles Gatcliff, General Secretary, 19, Coleman Street, London. A pamphlet entitled 'Healthy Homes,' price 6*d*. Houlston and Stoneman, gives full information on this subject.

CHAPTER III.

The Drainage of Oxford.

The Drainage of Towns in general, and even of Oxford itself, has been the subject of so much discussion, that it would be impossible, within the compass of so brief a Memoir as the present, to impart any knowledge beyond that which is within the reach of every one, or to attempt even a résumé of the whole matter. So many debatable questions, financial, engineering, sanitary, agricultural, and legislative, are involved in it, that the briefest statement would occupy a volume. Yet some notice must be taken of it, and as the Writer has given some attention to the subject, and has, for many years, had opportunities of forming an opinion on it, at least as far as regards Oxford, he feels bound to add in this place such remarks as, however trite they may appear to some persons, do yet deserve the serious attention of persons hitherto uninformed on the subject.

There are two main points to be attended to in the Drainage of a City situated as Oxford has been described to be (p. 21). The *first* is the keeping the alluvial plains of the Isis and Cherwell, into which the town abuts, free at all times of the year from surface floods. The *second* is the removal from the town of the surface waters, and sewage of the town, without contamination of the rivers.

First, as to the Drainage of the Thames' Valley. The condition of the Thames' Valley (and we need not speak of its tributaries) is a national disgrace. That the towns situated on the chief river of a kingdom such as England, should be subject to evils of which a small Dutch farmer would be ashamed, is remarkable; and that in a University town, a centre, therefore, of knowledge and intellectual progress, up to the middle of the nineteenth century, the cellars of many houses should be periodically flooded, and other parts wholly undrained, is startling. The fact is only to be noticed. The entire question of the causes need not here be discussed. To what *physical* conditions is it due? Manifestly to two. First, to the low situations in which houses have been allowed to be built; and, secondly, to the ponding back of the surface waters up the Thames Valley, by either a naturally inadequate river-outlet, (an exceptional condition in physical geography,) or by the obstruction of an outlet originally by nature sufficient. It excites grave reflection when we consider that the greatest works for regulating the Thames waters were constructed many centuries ago, and that had a similar sagacity to that engaged

in their preparation been exercised with regard to the works since erected on the banks of the river, the waters from Thame and Cricklade down to Teddington would not have been now the theme of so frequent reprobation. I have long been satisfied that until the GOVERNMENT take in hand the waters of the Thames' Valley as a whole, Oxford will never be adequately drained, and the City will not reach that acme of salubrity which it is reasonable to hope for, and proper to strive to obtain *. Nothing short of this will secure the desired result, the health of the inhabitants of this, the most important water-valley of England. If private interests and local convenience are to regulate the outlets of the chief waters of the country, the country at large must bow to their convenience, and suffer still, as it has hitherto suffered. If, on the other hand, the Thames reverts to what it was created to be, the great uninterrupted undammed water-course of the south-east of England, then the Thames' Valley may, under judicious management, become one of the chief gardens of England, and its perfectly regulated waters and irrigated ground may supply vast quantities of cheap food, profitably raised, to the Metropolis. To effect this necessary change, fresh Powers by new unfettered Legislation are imperatively demanded.

To ensure the full benefit of such a change—a change not only from floods at one time of the year, but also from offensive exhalations of decaying substances left by the receding waters at another, a second great alteration is required; *the sewage of the towns must not be cast into the rivers;* or if it be so cast in, then most vigorous measures should be taken to increase the stock of fish and other forms of animal life; nature's great preventive against the evils of putrefaction †.

But for two reasons it is patent to every one that neither the sewage of this, nor

* This opinion has its justification, if any be required, first, in the general nature of the case, as obvious upon the condition of the Valley; but secondly also, on the fact that attempts have been made with great energy to get the evils remedied, but without success. For a full account of the proceedings of a very thorough inquiry made in 1853, see Report of the Committee on the Inundations of the Thames, signed by Mr. Pusey. (Hall, Journal Office, Oxford.) I cannot mention the name of Mr. PUSEY, without adding my respectful but affectionate tribute to a man whose name will live as long as the progress of agricultural science in this century is remembered; and long after those who felt the charm of his noble heart are numbered with those that have been.

† I must not in this place permit myself to dilate on the advantages which might be derived under another state of river management, from pursuing an inquiry into the applicability of this great physiological truth to the purification of the Thames. Experiments on the breeding of fish have been brought to very practical issue in France and elsewhere; and though not prepared with evidence in support of this view, I believe that it may hereafter be found to be quite feasible, and perhaps also commercially and œconomically advantageous, to take measures to raise largely the stock of edible aquatic animals for the purification of the rivers of England.

of any other town, ought to be cast into the rivers: first, because it contaminates them: secondly, because it wastes organic rejectamenta which might be turned back again into the ascending series of the great chemical transformations ever going on in the circle of organic and inorganic existences. As to the first head, the contamination of the waters, if it were merely that foul, muddy, stinking waters are less pleasant to look upon, to smell, or to imagine of, than clear streams from the clouds and the watersheds, something, though not much, should be conceded to the taste of those who loved the baser sort. But in truth, let no words be wasted on the matter: foul rivers are a nuisance and an injury to health, a tale too often told, and a fact too easily proved, to require illustration here.

As to the second head, the waste of manure by casting the sewage into the river, I am almost deterred from expressing an opinion concerning this point, by the great difficulty of the subject—a difficulty the magnitude of which is not always rated highly enough. I might indeed honourably shelter myself under the fact, that having, as one of the City Commissioners some years since, actively urged that body to place the whole question in the hands of one of the first British engineers, all responsibility was removed from me on Sir William Cubitt's appointment, especially when I was able to witness the zeal and energy with which Mr. Macdougall Smith carried out Sir William's instructions in collecting the necessary data. But then I notice, first, that the Commissioners have entirely departed from Sir William's recommendation in one great question, the place of the Water supply, by erecting new Water-works at a spot below the City*, instead of, as he naturally desired, on a part of the stream above it; a point of the more moment, because the population will certainly extend up, not down the stream, on account of the far more salubrious character of the ground to the north of Oxford than in any other direction in the Valley. I therefore consider it quite possible that in other respects also his comprehensive view may be departed from, and therefore no injury arises from the reconsideration of it in this place. Indeed further, I may remark, that in Sir William's and Mr. Macdougall Smith's Report, though ample space is left on the plan for "Receiving Reservoirs for Sewage manure," near the outlet of the main, no plan is specified whereby we may decide on what course is to be taken with the Sewage deposit in the tanks, and no calculations appended in the body of the Report as to the probable value of such deposit. Under these circumstances it may perhaps be permitted to remind the reader of the chief points involved in the disposal of Town Sewage †.

* The new Water-works derive their supply, not from the river, but from a large Railway excavation, in a gravel bed, near the river.

† It seems to me undesirable, in a sketch like the present, to refer at every point to Reports and Authorities. In the Appendix will be found the Titles of some books, to which persons interested in the subjects of which this Memoir speaks may first of all refer. Most of them are in the Radcliffe Library.

First, All organic refuse*, that is to say, excrements, solid and liquid, of men and animals, waste articles from kitchens, slaughter houses, and manufactories, should be at once removed from the neighbourhood of human habitations.

Secondly, Those parts which are known to be most capable of reconversion into useful organic structures, or, in other words, which are fit for manure, should be removable in the least expensive manner to land capable of, or already in, cultivation, without contaminating, and so also being lost in the rivers.

Now, the refuse organic matters above enumerated may be either collected unmixed in each house, in convenient receptacles, and removed by human or by horse power. Or, they may be allowed to mix with surface water, other water, various detritus, and waste objects, and carried off by drains and main sewers; in which case it will require a head of water, variously applied, to clear or flush such drains and sewers.

In the first of these cases the receptacles, tanks, or cesspools may be fixed or moveable, that is, they may be emptied on the premises, and the contents removed, or they may be carried away to a convenient locality to be emptied. In this case, the matter fitted for manure may be applied to the ground in a more or less solid or semifluid form, or water may be added on the land to be manured.

In the *second* of these cases, the more solid portions and the urine are mixed with *large* quantities of water, and they cannot again be applied in a solid form except some process be resorted to for depriving them of the water which has been so freely added: in this case the urine passes away with the waste water, and is avowedly lost altogether as a manure; it being well known to be the richest constituent of the sewage †.

Each of these two plans has its advocates, and its advantages. In China ‡, in various European towns, Frankfort and Paris especially, both *fixed* and *moveable* tanks and cesspools are used, and are believed to be used both with convenience and profit. In Paris a company for the purpose of profit has been lately started on the moveable tank system.

To the English mind generally the cesspool system has become abhorrent, is loudly condemned by the Boards of Health, and would scarcely obtain a hearing. It may be questioned, however, whether the advantages of a thoroughly well regulated fixed or moveable cesspool system are fairly estimated at present in England, and whether the decision that no cesspool should be allowed to exist in towns of

* For a very clear exposition of the nature of this organic refuse, and its decreasing value, see a paper by Professor Way, on the Use of Town Sewage as Manure, Journal of the Royal Agricultural Soc. of England, vol. 15.

† See Professor Way, loc. cit.: Lawes in the Journal of the Society of Arts, 1855: and ordinary Physiological Works, &c.

‡ Through my friend Professor Max Müller, I have obtained from the Abbé Huc an account of the customs of China in this respect. See Appendix C.

moderate size, is either expedient, necessary, or just. But, on the other hand, it is quite as much a matter of question, whether this method (the only sound one of using the Town sewage undiluted) is better adapted in a commercial view for Agricultural purposes; and it is, I think, certain that it is far more offensive, and possibly more unhealthy even under the most perfect management, than an *efficient* system of cleansing by drains.

This *second* method, the removal of refuse by means of drains, is that, as the reader knows, which alone now finds favour in this country; and without venturing to enter upon the engineering questions connected with its mode of application, questions, be it observed, of the greatest nicety, and still in dispute among engineers themselves*, we must again recur to the two great cardinal points in the disposal of Sewage, that it be not allowed to foul the streams, and that it be employed, if possible, with profit. To this last point, the first being taken for granted, we may in conclusion turn.

This is a question purely agricultural and monetary. 1st, If the Town population of Oxford wishes to cart the Sewage on the lands *below* Oxford, will the land occupiers choose to have it? 2ndly, Will it cost more to distribute it over the land than the urban and suburban or farming and gardening population can with advantage to each pay for such distribution.

These questions have been argued with so great skill and learning by Mr. Lawes†, that for the present there is little more to be expected or desired in the investigation, and we shall be led, I hope, to a practical opinion with reference to the subject of our inquiry, how best to dispose of the Sewage of Oxford.

The conclusions of the distinguished Agricultural Chemist just named, will be not improperly represented thus:

First, That the value of Town Sewage has been greatly over-estimated.

Secondly, That its low 'manuring' value makes it unprofitable, if either heavy land-carriage or expensive works are necessary for its distribution.

Thirdly, That it is more desirable to apply it in a liquid than in a solid state.

Fourthly, That it is applicable to grass, rather than to any other kind of crops.

Mr. Lawes's valuable paper and the conclusions, as I have stated them, have special reference to the Sewage of London. Great mistakes on all kinds of subject matter are sometimes made by applying conclusions drawn from London to other places, and therefore these or other statements can hold good only in other places *mutatis mutandis*. On the whole, however, there is not much modification required

* See, for instance, Mr. Rawlinson's paper on the Drainage of Towns, with the discussions upon it. Minutes of Proceedings of the Institution of Civil Engineers, vol. 12.

‡ See the Journal of the Society of Arts, March 7, 1855.

in the application of Mr. Lawes's observations to towns of moderate size, and to Oxford especially, as will be seen in the sequel. The value of the refuse of houses, and especially of human excreta, is of course nearly the same here as in London, not much more or much less. There is probably a smaller proportional nitrogenous residue from manufactures. We should have therefore to consider only the bearing of the second and third propositions respectively. This is easily done.

We have, and always shall have, some grass land on which the Sewage may be employed at a moderate distance from hence, and as a matter of fact we do now send Sewage to more than fifteen miles from Oxford at a profitable rate to the seller, the night-soil man*, and the purchaser, the farmer, (so they believe respectively). It is quite *possible*, therefore, that a far larger part, if not the whole of our Oxford Sewage might be disposed of in this manner, that is, if it can be collected. The questions therefore are narrowed to these.

First, Is there any way in which the Oxford Sewage can be profitably employed on grass lands near Oxford?

Second, Should it be employed in the dry or in the liquid state, for the advantage of the farmer?

Third, Can it be furnished by the Town in the way most desirable, or sufficiently desirable for the land?

As to the first, this is admitted.

As to the second, the farmer can profitably employ it in either state, if it is brought within his reach at such a cost, that its manuring value shall equal the corresponding manuring value of guano at any given sum †.

As to the third—

1st, It appears to me to be proved by Mr. Lawes and Professor Way, that, as respects London, *the solid part of the Sewage cannot be profitably extracted from the sewers*; that is to say, reconverted from the liquid to the solid state. Mr. Wicksteed is of a different opinion, and his works at Leicester will in a few years determine the truth of his views on this great point, with respect to towns of moderate size. Meanwhile, however, the conclusion to which we shall presently come renders the decision of this question unnecessary, as far as Oxford is concerned.

But, 2ndly, (*a*) Mr. Lawes asserts that in sufficient quantity Town Sewage is useful, and at a certain price is profitable, as a manure in the liquid state; and, (*b*) as has been said, Mr. Wicksteed avers, that it can be solidified from the liquid state with advantage by his process; and, (*c*) lastly, our night-men prove that it

* There is a certain fallacy in this, for he is already well paid for emptying the cesspool. All the profit that he can obtain from the contents he has removed, is over and above the profit upon the removal.

† See Mr. Lawes's paper above cited.

can be carried with profit, in the form of compost (with ashes, &c.) to several miles' distance, this compost being made from the undiluted contents of cesspools.

We may therefore conclude thus. We have the choice of three possible methods of application.

1st, in the liquid state, discharged by drains or otherwise upon the land. (Lawes, Board of Health Reports, &c., &c.)

2ndly, in the solid state, after being reclaimed from drains and mixed with lime, &c. (Wicksteed, objected to by Lawes, and as I think unanswerably, so far as London is concerned, and by Way as a general question.)

3rdly, in the solid state, having been removed from cesspools and mixed with loam, ashes, &c. (Practice of China, Frankfort, Paris, night-soil men in England, &c.)

Of these three methods, the first and the third are much to be preferred. The second appears to be too doubtful in its permanent results, commercially speaking, to warrant me in placing it on an equal footing with the others. The first is simpler, and therefore, if it can be applied, better. The third in the competition of solid manures must necessarily have the preference to the second, as having never been diluted, and as having retained the urine; or rather such parts of it as have not been lost by decomposition. The urine is confessedly lost by the second scheme.

It remains then to consider the absolute and relative merits of the two methods.

1st, Distribution of manure over land from moveable or immoveable cesspools.

2nd, Distribution of manure over land from the drains direct.

(1.) There are grave objections to this method. In the first place, cesspools are probably under ANY regulations *less efficient* than a perfect drainage system.

(2.) They do not and cannot dispense with drains and sewers for the surface waters, and therefore, either the contents of the drains and sewers, with whatever filth they chance to receive, will have to be emptied into the rivers, or else disposed of as I shall point out presently.

(3.) They are exceedingly costly, though their advocates assert less costly than a drainage and water-closet system.

(4.) They are manifestly more fitted for small than large Towns, on account of the number to be conveyed along the main thoroughfares.

Against which may be set the experience of the Chinese, Parisians, and others, as aforesaid, (with the counter-statements, however, on the opposite side again.)

I conclude, therefore, concerning cesspools, however perfect, moveable, or immoveable, that, as far as I am acquainted, though there are not sufficient grounds to justify their total legal abolition, yet there is great cause to believe that, for reasons to be next given, an efficient drainage is preferable for Oxford, and that no cesspools should be allowed except under stringent regulations; in which case,

unless there were a sufficient number in existence to employ an active staff, they would shortly fail for want of commercial value; and the sooner in proportion to the efficiency and the success of the drainage system of irrigation to be proposed.

2nd. If indeed it be true that the best method of employing Sewage Manure is in the liquid state, then all the advantages of the former method, as far as the employment of manure goes, fall to the ground before the greater advantages of the better way; and it becomes at last a purely engineering question.

Let us then, lastly, consider the sum and substance of the arguments for the *liquid* manure. 1st, as manure, that is, agriculturally. 2nd, as a means of ridding the Town or Towns of excrements, that is, in the sanitary and engineering sense.

First. That there is some agricultural value in Town Sewage, though much overrated by most persons, is admitted, and requires no argument, as has been stated above (p. 118); the sole question is, the cost of bringing it to the farmer. If, therefore, the Town conveys the manure to land-occupiers, and allows the use of the manure at a rate satisfactory to the farmer, the latter is a gainer, and the Town loses nothing, unless the cost of conveying the Sewage to the farmer exceeds the cost of any other method of removal by a sum greater than the farmer pays for the use of the material *.

Secondly. It is therefore in the end an engineering question, which may be put thus:

It being admitted that the best plan for removing the Sewage from towns, is in most instances by means of drains; and it being admitted that most Sewage is, on the one hand, injurious to the streams, and, on the other, useful to the agriculturists; can the City of Oxford, without loss or with profit, distribute such Sewage to adjoining lands, and in so doing cause no injury to the health of the neighbourhood? Are there lands upon which the Sewage can be safely and profitably spread, and by what methods can it be done?

I think it would be presumptuous in me to attempt to answer this question involving so many and such important interests. Another question may however be put to the influential readers in the County and City, into whose hands these pages may fall. Is there a sufficient acreage of land lying in the Valley of the Isis and Cherwell, which could be made far more valuable by Sewage raised to such a height by steam-power, as to be applied down the valleys respectively by means either of the Devonshire 'catch meadows,' such as may be seen at Pusey, or by the

* There is an able summary of these two points in "Minutes of Information collected on the practical application of Sewer water, &c."—General Board of Health, 1852. I am not however prepared to subscribe to every axiom there laid down, though I should expect, from the great skill and labour employed on this and other of the most valuable documents of this able and industrious branch of the public service, to find their conclusions borne out.

plan of hand-pipes, and here suggested by the Board of Health, and stated to be cheaper of application than the catch meadows *.

I think it may be safely said, that in the mere engineering point of view there lies little difficulty. The Sewage might be conducted to any point below Iffley, on the line from thence to Sandford, or in a more southerly direction towards Kennington, and then be pumped by steam power to any height where ground could be obtained. The preferable site would probably be in Bagley Wood. It might have thence an efficient fall in very various directions, extending therefore the area of its operations, and diluting thereby also such odorous effects as may be produced †. Unfortunately I cannot on theoretical grounds recommend the application of the Sewage to the improvement of Port Meadow; but it might be made amazingly profitable to the Freemen, if properly drained and highly cultivated, and if it were supplied by the Sewage in regulated quantities.

In fact, it is hardly to be doubted that such a tract of land would amply repay the expenses attending the applications. Many persons perhaps are not aware that some land near Edinburgh treated in this way is let for £20 or even £30 an acre ‡.

I have felt it a duty to go into this subject at a length wearisome, I fear, to most readers, and in a manner superficial to a few. But my object has been to put both the importance and the difficulties of the subject clearly before as many as I was able. I add therefore, now, a summary of the most important propositions that I would suggest for consideration.

1st. That the Government should undertake to deal with the whole question of the management of the Thames waters, including its tributaries.

2nd. That a special regard be had to the breeding of fishes.

3rd. That with respect to Oxford a plan and estimate should be carefully gone into for applying the Sewage, by the method of irrigation, to grass lands.

4th. That steps be taken, when new powers are had, for the strict regulation of cesspools, but not for their compulsory abolition.

It remains for me to refer the reader to the following valuable Letter which Professor Voelcker kindly permits me to make public:

* I have no certain information to bring against this statement, but it is scarcely credible. Where there is sufficient fall, the west country catch meadows are constructed at far less cost than ordinary draining.

† It is unnecessary to add here calculations of the amount of Urine and of Fæcal matter, and their contained Nitrogenous constituents voided daily by the 26,000 inhabitants of Oxford. Suffice it to refer to Mr. Lawes' Paper, to Lehman's Chemistry, and various Physiological Works, for such particulars; and to add, that I am favoured by Mr. Lawes with the practical opinion that our Sewage water would be advantageously distributed over 200 acres of land.

‡ See Report of the Board of Health on Sewer water, &c.; quoted above.

" Royal Agricultural College, Cirencester,
Feb. 7th, 1856.

" Dear Sir,

The economic application of Sewage water, as you well know, is attended with considerable difficulties, arising, on the one hand, from the great dilution of this liquid, and, on the other, from the absence of any efficient method of economically extracting the soluble, and by far the most valuable manuring substances.

The attempts which have been made in this country to convert Sewage into a portable solid manure have failed; and I believe all processes that will be employed for this purpose must give unsatisfactory results, as long as we remain unacquainted with the means of obtaining economically the soluble ammoniacal and nitrogenized compounds, as well as the more valuable alkaline compounds, which together form so large, and by far the most valuable portion of Sewage water.

The lime process of Mr. Wicksteed, it is true, deodorizes Sewage water, but in my opinion is not calculated to produce a portable manure, which can be used with economy even beyond a short distance from the manufactory. In the elaborate paper on Sewage Manure, by Mr. Lawes, this gentleman has clearly shewn that the agriculturist can buy the same amount of fertilizing constituents, contained in Sewage manure, prepared by the lime process, at a much cheaper rate in the form of Guano, or of bone-dust. Mr. Wicksteed's calculation of the commercial value of the Leicester Sewage manure is not based on any data, but is merely assumed.

It is to be regretted that he proposes to verify his calculation by the practical experience of farmers, who may employ this manure, instead of calling into aid analytical chemistry, which might tell him at once whether or not his calculation be correct.

Practical experiments, except they are comparative, and made under the most varied circumstances, and extended over a long period, cannot determine the money value of a manure. The efficacy of a manure does not necessarily determine its commercial value. Lime, for instance, often produces a most beneficial effect on the land to which it is applied, but no one would think of estimating the commercial value of lime by the effects it produces when used as a manure. Its fertilizing value indeed is often much greater than its commercial or money value.

The Leicester manure, I have no doubt, may be applied with economy to many soils, especially to land deficient in lime; but the effects which it will produce on one soil, or even a number of soils, cannot serve as data for calculating its commercial value. This is ascertained by putting the question: At what price can I best buy in the manure-market those matters, which, existing in the Sewage manure produce a given effect? The determination of the amount of those substances contained in this manure, on which its fertilizing value depends, at once enables us to calculate how much it is worth. Had Mr. Wicksteed applied this infallible test to the Leicester Sewage manure, he would have found that his estimate of the value of this manure is far too high.

In my opinion, the lime-process cannot furnish a portable manure, which when sold at a price that leaves a fair profit to the maker, may not be more economically purchased in other fertilizing matters.

Allow me also to point out to you an evident mistake, which has crept into Mr. Wicksteed's able Report. It is stated on the authority of Messrs. Aikin and Taylor, that the lime removed nearly all the soluble matter in the Leicester Sewage water, (see Wicksteed's Report, p. 46); and further, on the authority of Mr. West, chemist of Leeds, that the clear Sewage water, drawn from the lime-deposit, contained not a trace of any other matter than carbonate of lime, sulphate of lime, and chloride of sodium. Professor Way and Mr. Lawes, on the contrary, have shewn that the soluble ammoniacal compounds and salts of potash, which constitute a large proportion of the solid matter in Sewage water, cannot be removed by lime; a fact, I think, which every analytical chemist will find verified, who will take the trouble and possesses the requisite skill of thoroughly investigating this subject.

The impractibility of converting Sewage, by means of lime, into a solid manure may suggest the question, whether it may not be advisable to replace the Sewer system by tanks, in which the human excrements may be collected unmixed with foreign matters. Collected in this way human excrements no doubt are more manageable, and better adapted to the manufacture of a portable manure.

I am, however, no advocate for cesspools, for the following reasons:

In the first place, I believe, cesspools would nowhere be tolerated where the comparative salubrity of water-closets has once been appreciated.

In the second place, I would observe, that the periodical emptying of cesspools is a great nuisance, which in crowded cities would become intolerable, and be more or less injurious to the inhabitants.

In my own native place, Frankfort on the Main, most houses are provided with cesspools, situated below the cellar, and so large as not to require to be emptied but every four or five years. These cesspools, when nearly full, fill the houses with an insufferable smell, and as the town authorities allow their being emptied only after eleven o'clock at night, during the colder seasons of the year, much inconvenience, and, no doubt, injury to the health of the inhabitants is caused by them. The effluvia from the contents of the cesspools during their removal is so great, that those people who have friends whom they can visit, or can afford to take a journey, leave the house when the cesspool requires to be emptied. The sulphuretted hydrogen which is given off from the excrementitious matters during their removal, tarnishes every metal vessel in the house, and blackens the white paint to such an extent that the whole house has to be repainted. That no accidents occur I can only ascribe to the general custom of sprinkling the whole house with a solution of chloride of lime, and leaving doors and windows open day and night.

In the third place, I know that the manufacturer of a portable manure from undiluted

human excrements, experiences a similar difficulty to that which is felt in the attempt to prepare a valuable solid manure from Sewage water.

The Paris and Frankfort dried nightsoil manures are far more concentrated and valuable, than the portable Sewage manures prepared by the lime process, and yet the French and German poudrettes find little favour with the practical man, simply because they have found by experience that they can obtain the fertilizing matters contained in poudrette more cheaply, by laying out their money in the purchase of stable-dung, or guano, bone-dust, and other portable manures.

The reason of this is obvious. In the manufacture of poudrette, the constituents of urine, which in comparison with the solid excrements are far more valuable, are lost almost entirely. The result of this is a manure of comparatively speaking low fertilizing value, which the manufacturer can only dispose of at a fair profit, by asking a higher price than it is worth intrinsically. The conversion of the contents of cesspools into an economic portable manure, no doubt, is capable of improvement; but in our present state of chemical knowledge a great obstacle is presented in the impossibility of economically incorporating with such a manure the most valuable constituents of excrementitious matters.

As carried out at present, the manufacture of poudrette is neither very profitable to the maker, nor advantageous to the agriculturist who uses dried nightsoil manure.

Thus even on the score of the economy of preparing a portable manure from the contents of cesspools, the erection of tanks in the place of sewers, I believe, cannot be recommended.

These and other considerations, which it would lead me too far to detail in this letter, have convinced me, 1st, that the sewers of towns ought not to be displaced by cesspools; 2nd, that at present the manufacture of a portable manure from Sewage water cannot be carried out beneficially to the farming interest; and, 3rd, that the only manner in which Sewage water appears to me likely to become an economical manure, is to employ it for irrigating grass land, and probably also market gardens.

In conclusion, I may observe, that the soil is so excellent a disinfectant, that no injury to the public health would arise from an extensive system of irrigation with Sewage water.

Believe me, dear Sir, to be

Yours very truly,

AUGUSTUS VOELCKER."

Dr. H. Acland.

There can be no better commentary on the general conclusions of the previous Essay, and on the Letter from Professor Voelcker, than an Analysis, which has been made at the Royal Agricultural College at Cirencester since the above were in type. This Analysis is subjoined.

"*Composition of Leicester Bricks, made from Sewage by Mr. Wicksteed's Lime-process.*

Moisture	10·52
Organic Matters *	12·46
Oxides of Iron and Alumina	2·89
Phosphate of Lime (bone-earth)	2·27
Carbonate of Lime	52.99
Sulphate of Lime	1·76
Carbonate of Magnesia	3·67
Potash	·26
Chloride of Sodium	·45
Insoluble Siliceous Matter (sand)	13·50
	100·77
* Containing Nitrogen	·60
Equal to Ammonia	·72

"In glancing at the results obtained in the analyses of the Leicester-sewage-brick manure, it will be observed that its chief component part is Chalk. It contains also a good deal of Sand, Clay, and about 12 per cent. of Organic matters, besides 10 per cent. of Moisture, some Gypsum, Magnesia, and Phosphate of Lime. The Organic matter furnishes on decomposition but a small amount of Ammonia, and therefore is not worth much as a manuring constituent.

It will be observed, that this Manure contains little more than $\frac{1}{2}$ per cent. of Nitrogen, only 2 per cent. of Phosphate of Lime, or bone-earth, and no appreciable quantity of Potash, or ready formed Ammonia.

Now since the economic value of an artificial Manure depends principally, 1, Upon the amount of Nitrogen, which it contains, in the form of Ammonia, or Nitric Acid, or Nitrogenous Organic Matter; 2, Upon the percentage of Phosphates (bone-earth), and, 3, Upon the amount of Salts of Potash, it is plain that the intrinsic value of a Manure, which is as poor in these constituents as the Leicester Bricks, must be very small indeed.

A careful calculation will show that the whole of the Nitrogen, Phosphate of Lime, and Potash contained in 1 ton of Leicester Bricks, can be supplied in $\frac{3}{4}$ cwt. of Peruvian Guano and 1 bushel of commercial bone-dust.

The expenses for $\frac{3}{4}$ cwt. of Guano being 9 shillings, and for 1 bushel of bone-dust 3 shillings, will bring the intrinsic value of the Leicester Brick-manure to no more than 12 shillings per ton.

J. CHR. AUG. VOELCKER, M.D.

Prof. of Chemistry in the Royal Agricultural College, Cirencester."

CIRENCESTER, APRIL 4th, 1856.

CHAPTER IV.

On certain points affecting Voluntary Institutions for giving Medical Aid.

It has been said that one of the distinctive characters of the Christian era is the existence of great institutions, whereby they who need help, receive it; and receive it not by right, but by good will. Concerning this observation two things may be remarked; the one, that it is to be noticed of some men that they detest all which they receive from another as of favour: the other, that some claim from the community in which they live that their actual necessities should be provided for as of right. Both these propositions have a show of reason, and are often found to be popular. Both, when pushed to their extreme limits, are certainly untenable. In the happy order of things which the Providence of God has permitted to arise out of the mixed wilfulness and strong sense of our Anglo-Saxon Race, it has come about that the two principles above named, whatever may be said of them on theoretical grounds, have, in many particulars, and in every department of our commonwealth, been happily blended. Sometimes they clash: the voluntary labourers resent the compulsion of the State; and the State officials honestly desire to obtain uniformity of action. The unsymmetrical but mighty machine of a kingdom such as England, creaks in the ears of the Executive, as the multifarious and too often heterogeneous portions labour on their way. To regulate this mechanism, if its several parts play lawlessly, each on its own axis regardless of all unity of action, is manifestly impossible. To cripple the will of the individual centres, to force them to obey rigidly an inflexible law, is to pluck out the elasticity which forms the whole into a living body; to destroy the powers which made it what it has become, to stifle for ever the energies which alone give it the power of repair, and to condemn it to destruction by the pressure of surrounding and antagonistic elements.

Of this combination of principles, and of these modes of action, the Medical Relief, afforded to the Poorer classes in England, is an example.

Examine the instance of a County Town such as Oxford. A poor man ill has practically the choice of going into the sick ward of the Union-house, of being attended at his own home by the Union surgeon, of receiving advice at the Dispensary, of being attended at his own home by the Dispensary surgeon, of becoming an out-patient at the Hospital, or an in-patient at the Hospital*. If his case be chronic, he may, by selecting the admission-day, place himself under whatever Physician he pleases, in a medical case; or whatever Surgeon, in a surgical case.

It is hardly necessary to add that the State provides the Union Medical Relief; that the Voluntary kindness of individuals, bestowed by legacies, gifts, or subscriptions, secures the remainder; that to the extent of the State relief there is no

* Of course, he often obtains, besides or instead, advice from Practitioners not belonging to any of these Institutions.

limit; and to the relief afforded voluntarily, the limit of the size of the Institution, and the power of finding a Recommendation, if the Hospital be not a Free one.

Now, first, as to the Medical Aid provided by the State.

It is sometimes the fashion to decry the Union Medical Relief. Nothing can be more unjust. Every precaution is taken to ensure that it should be the best that is to be had. The Parish in full conclave elects its Guardian; the Guardians, or the majority of them, appoint their Medical Officer, and fix his salary. An able Government Commission watches their proceedings, and keeps them within certain bounds. There is every guarantee therefore that the Officer shall be the best that can be obtained; the regulations under which he acts, his salary, and his duties the most proper under all the circumstances of the case. If it be not so in the practical result, it must be because the electors do not do their duty, or because good medical men will not take the office, or because the State regulations are faulty: either one or two or all of these may combine. It is impossible for me here to pursue this argument to its end*; but this must be added. The Poor Law of England is one of the most amazing institutions that the world has ever seen. It is a guarantee on the part of the community, to every individual composing it, that he shall neither want food, clothing, shelter, or medical aid when he is in need and cannot, by his own exertions, or by reason of ill-health, obtain them. It is true that the State gives no more of these than is barely necessary for life—but it gives that. As Dr. Farr has it† in an invaluable Essay on Insurance:—

> "In a nation without a settled system of relief, such as the Poor Law affords, the sick man often obtains relief at Hospitals in the large cities; he is sometimes succoured by the Priest, or by the Christian proprietor; but how often does it happen that all these resources fail, or afford only temporary succour to an abiding infirmity? Death by starvation is in England accidental; in the countries without a Poor Law—that is, in nearly every other country—the relief of want and suffering is *the accident*."

But he goes on to say, as it is necessary to add,

> "The Poor Law is imperfect, as it professes only to be a provision against destitution; and provides the same relief for the accidentally ruined proprietor, merchant, lawyer, medical man, farmer,

* I cannot, with propriety, here discuss what is the proper amount of the salaries to be paid to Union Surgeons. The whole subject of Medical Relief, provided by the State, requires fundamental revision. I have been told of instances of Union Surgeons spending more than their salary on Medicine alone for the poor, for several years. It may be true that they prefer this to surrendering their office; but there is no question, I think, that it is ungenerous on the part of a State to allow the very necessities and known kindness of professional men to be a means of further overworking and underpaying them. The Oxford Guardians have made liberal and admirable arrangements in their United Parishes. They have halved the work, increased the salary, and have given the Union Surgeons a Dispenser, and provide all Medicines. This is well for the Surgeon, better for the poor.

† See the Twelfth Annual Report of the Registrar General.

tradesman;—for the mutilated artizan, for the agricultural labourer, bending under the heavy labours of a long life, who have either contributed largely for many years to the poor-rates, or have supported themselves to the last moment of pressure, the same workhouse for all the unfortunate members of these classes as is provided for the vagrants, beggars, drunkards, unimprisoned criminals, for all the idle and improvident members of society, who never contribute to the poor-rates at all, but are constantly living, and breeding families of beggars to live in perpetuity, at the expense of the rate-payers."

The Poor Law does not profess then to provide any of the luxuries of life; and so gives help to none who can obtain better. It is quite conceivable that a State might compel all its members to insure their lives according to their station, but ours does not. Accordingly they who desire more than the supply of the Poor Law, and are able to obtain it from their wealthier neighbours, or to provide by Voluntary Associations, such as Benevolent Societies, and the like, do not come to the State for Relief. This applies to Medical advice, as well as to food and to shelter.

It should of course be remarked, that before the Poor Law had reached its present systematic and admirably contrived work of administration, many of our large Hospitals existed; and they were founded by benevolent persons because the State did not do its duty; and that, therefore, if we admit that the Medical Relief of the Poor is properly provided by the State, then such Subscriptional Hospitals are superfluous. It is the special object of this section to state clearly what seems to be the Function of such Hospitals; and under what conditions they may hope to continue to discharge, with advantage to the community, the duties they have undertaken.

Hospitals, supported as Benevolent and Voluntary Institutions, profess to provide medical aid either to persons who do not come within reach of the State assistance, or to give to those who do come within that reach, more than the State affords. If the matter be viewed rigorously, they ought only to do the former; because Medicine and Surgery can properly be handled only in one manner. The equality of man in his bodily nature raises her voice, and says, "Sickness is one to the poor, and one to the rich: or if not so, then, the poor, because of his poverty, needs the more in his sickness." Therefore the poor of the Union should be at least as well cared for as the patients of the Hospital. But, in fact, it is not so. A Hospital is one of those institutions that cannot be conducted meanly and well: a person may be warmly and meanly clad, warmly and meanly housed, well and cheaply fed. But he cannot be as well, as healthily, as readily cared for in his sickness in a poor Institution as in a more wealthy one; in a very small as in a larger one; in an Institution where cheapness rather than kindness and charity is the first law.

I do not mean to say that a ward in a Poor-house cannot be as well furnished,

and as kindly watched, and as skilfully officered as a ward in St. George's Hospital; but in many Poor-houses it would be difficult; in some impossible; in few, I suspect, can it be seen. But still the principle of the State Relief, as things are now, will enter more or less into the Infirmary of the Union; a magnificent Hospital, the pride of the wealthy, the joy of the loving, subscribers, will gather round it more scientific appliances, more medical talent, more earnest pupils, more trained nurses than the Guardians can hope to obtain. The large Hospitals will thus be deservedly esteemed a boon to those who can frequent them; and will be certainly preferred to even the best Infirmary provided, as at present, by the State, to be used at the will of all who need.

The desirableness then of the existence of Hospitals for the Poor, independent of and beyond the Medical relief afforded by the State, being admitted, they have corresponding duties. I will endeavour to state, first, what Functions a Subscriptional Hospital may be reasonably expected to discharge: and, secondly, what kind of persons should be able to profit by them.

A General Public Hospital should show itself to be—

(1) A Standard of Medical and Surgical Science and Practice, and a means of promoting a knowledge of both.
(2) A Model of Economical Arrangement, and of Scientific Sanitary Appliances.
(3) A Pattern of the Manner of Managing the Sick, under whatever aspect they may be considered.

First—Hospitals should be a Standard of Medical Science and Practice.

The question has been often discussed whether Hospital appointments should be obtained by examination, or as now, by the chances of popular election. Probably the best way is by leaving the choice to a Committee, appointed by the body of electors for the purpose. This has been done at St. Mary's Hospital in London. But, no doubt, upon the whole, the Hospital appointments in Great Britain and Ireland are held by a set of men inferior to none of their brethren. They have the advantages as well as the duties which belong to the posts of mark in their profession, and are virtually the chief teachers of it. It is unnecessary therefore to speak of Hospitals in this respect: they cannot, on the whole, be better officered. With regard to work done in imparting the knowledge which the Staff possesses. it varies according to the size, nature, locality, and popularity of the Institution to which they are attached. The Metropolitan Hospitals take the lead; and it is proper and eminently desirable that they should. It is only in special cases that Provincial Hospitals should attempt to compete with them. These cases are those

where the Hospital stands in the centre of a great population; and where therefore it is a large one, largely supplied with acute cases, and with numerous examples of slighter forms of disease: and where also the Medical Staff is picked from a wide circle of active Practitioners. Provincial Hospitals can have no vocation to teach students if they are not so circumstanced; with this reservation, that a *small* number of hard working men can obtain a great deal of Clinical knowledge in a small Hospital: either at the outset of their pupillage, or at its close: a first-rate Medical Education they cannot get.

Nothing else can offer the peculiar benefits which a large Metropolitan Clinique bestows. An advanced student might have great advantages in a Hospital such as the Radcliffe Infirmary. Not however as that is now conducted. A young man entering as a pupil there sees only the practice of *one* person: he is one man's pupil. He could perhaps enter to several of the Staff; but that is not the custom. He therefore studies one-seventh of the cases. The same arrangement exists with the Clinical Professorship. Instead of there being, as in Edinburgh, two or three Clinical Teachers, one Physician alone gives Clinical Lectures: so that only a third of the Medical Cases, or not a seventh of the inmates serve for Clinical Instruction*.

There are reasons which need not be discussed in this place, why in Oxford and Cambridge it is unquestionably desirable that there should be a certain range of Medical and Surgical Instruction; but, speaking of Provincial Hospitals generally, their function as teachers is not that of giving lectures to pupils. It is being to the surrounding districts the accessible, public standard of the state of Medical and Surgical Practice, and of Medical and Surgical Science and Apparatus. It is a silent testimony they give, but an invaluable one. But for this purpose they must in every thing be kept as nearly as possible on a par with the Metropolitan Hospitals. Why this is of special moment will presently appear. Let it therefore be here only repeated, that the first aim of a Provincial Hospital should be to meet all the great exigencies, Medical and Surgical, of its district, and to be a Centre of Medical Experience and Knowledge.

Secondly—A Provincial Hospital is to be to its District a Model of Sanitary and Œconomical arrangement.

In the same way the Hospital is to be looked up to as the Type of all Scientific Hygienic appliances and of useful œconomical arrangement; for instance, of Ventilation. All Hospitals are not however agreed on the propriety of this. Gas was lately

* It has been earnestly pressed on the Hebdomadal Council, in order to avoid this loss of power, to divide the Clinical Professorship, hereafter, among the Physicians, or at all events to divide it into two. But that body, I am told, has no power to make such a change.

introduced into the Radcliffe Infirmary: some of the Medical Staff—and others—signed a protest against its introduction without proper Ventilating Flues: partly on the general ground of impropriety: partly on the ground of the public duty that the Hospital should in such things be a model of Sanitary arrangement. But the votes decided the other way: so that there is a ready answer when, in this part of England, Ventilation is asked for in workshops or sleeping rooms—"at the Oxford Infirmary the introduction of Gas into wards used both for sleeping and living was discussed; and it was settled that it might be introduced, and that Ventilating Tubes were unnecessary *."

The County, on the other hand, decided on adopting the most elaborate means for Warming and Ventilating the County Gaol; and that Institution must be referred to, and not our Hospital, for appliances of this nature. When indeed the same standard of internal perfection which has been aimed at in our excellent County Prison, has been provided for the sick poor of the district, we may hope to see efficient and equable warmth and Ventilation; a more extended garden for those approaching to convalescence; and a large covered and warmed airing ground for the treatment of pulmonary diseases, which abound in some portions of our population; a safe place for contagious disease: separate wards for special diseases: and a clergyman resident on the premises.

In another particular also a Provincial Hospital may, by very small means, effect great results, I mean by instruction in the Kitchen. It is needless to pourtray the unimaginative character of common English cooking. Where a Frenchman, a German, or an Italian can luxuriate, an Englishman will grow thin. Various books have been written to remedy this misfortune, culminating in M. Soyer's elaborate volumes. In no department of this branch of Chemistry applied to the arts are we more signally behind our age than in that of Food for the Sick. It is a very few years, not ten, since, in a well known Hospital, every patient had on Christmas-day roast-beef and plum pudding, followed probably by senna the next day. It was thought a fanciful innovation at the time that a young Physician suggested that jelly, or fish, or any other delicacy might, for just the same cost, be given in honour of the Christmas festival. A similar inelasticity pervades the whole culinary ménage. A Hospital might be maintained for less cost with more culinary resources; and the women would learn to value what they would see in practice to be as advantageous as pleasant. It might be made, with very little trouble and with great advantage, a part of the duty of the Hospital kitchen to teach girls and adult females, whether inmates of the Hospital or no, the essentials and the varieties of a sick dietary, and the other forms of useful and economical cookery. In almost every Town a Lady might be found who would undertake to superintend this department

* See Appendix C.

with no charge whatever to the establishment. What would be the gain to the agricultural and labouring population of such a district as this, what the amelioration of hundreds of cottage hearths by this slight addition to the objects of the Hospital, many benevolent persons will at once appreciate.

Thirdly—The best manner of providing for the Inmates of Hospitals.

Under the third head, the Best Manner of Managing the Sick, under whatever aspect they may be considered, are evidently contained questions of the most serious importance. I must crave forbearance from persons of various opinions while I endeavour to place the matter in a clear light, from the point of view in which it presents itself to me. This is undertaken with the more readiness, because there is just now a new feeling springing up in England on the whole subject of Hospitals and their Nurses: and there is much risk of misunderstanding, and consequent loss of power among the numerous philanthropists whose interests are engaged.

The great question which is fundamentally at issue between those who desire to alter the character of our Hospital Nurses, and of our Hospitals, and those who think that upon the whole they are very well as they are in England, is this, Are Hospitals institutions for the mere relief of human suffering? or, Are they religious houses in which our fellow men, treated with all the warmth of Christian charity, are to receive spiritual consolation and such medical aid as they require? In other words, to push the difference between the two views to the extreme, Are they places for the benevolent application of science? or, Are they Christian families, into which the Physician is called at the need of the inmates?

However it may be with other men, I heartily sympathize with both these views. I can take extreme delight (I can use no other word) in the mere scientific application of the Healing Art, in all the dry routine of a vast Hospital, where the Student and the Surgeon may for days and weeks exchange no other idea with the scores of his patients than those which relate to their vital changes, and their pathological processes; where the man, and his bed are known as No. 14 or 15, and his death thought of only as the end of the case: in all this, I say, I can, God be thanked, take extreme delight. It is the honest expression of earnest minds devoted to a noble purpose, with a zeal that knows no flagging, a heartiness that feels no daunting. It is that temper which has helped to make the Arts of Medicine and Surgery the boon to mankind which they are; which scorns all meanness; which courts all publicity; which yearns after truth for the truth's sake; and which at once sharpens the intellect, and strengthens the practical purpose of every nature that is noble enough to be ennobled by it.

And yet, on the other side, it must be admitted, that, with all this that has been said, great evil may be compatible, and has existed. The teachers may be lax and worldly; the students dissolute; the servants corrupt: it may, it need not, be so. I doubt not but that round the Hospitals of Europe there have, in days gone by, been gathered habits of vice; but, speaking of what I have seen myself—I can do no more—I think many prevalent notions concerning Medical Students and Hospitals, unjust and unfounded. I wrote so when a student at a London Hospital: I repeat it with a much larger experience now.

"Some persons, indeed, suppose that Medical students are different from other men; and many hard things have been bandied about at our expense. I have heard their necessary occupations in the dissecting room, and their studies in the hospital vilified; the very means, that is, which in patience, in doubt, and in difficulty they pursue, that they may confer health and its blessings on their neighbours; and, which is prodigious, the charge that usually crowns the rest, is, that they really take pride and pleasure in their pursuits.

"Experience has, moreover, shown me, that the world has not been in this matter charitable above her wont. The question ought not to be, whether we are bad men, and want control, for that I doubt not; but whether we are worse than other large bodies of young men. *Considering our disadvantages*, I speak only of what I have seen, I think not*."

With respect to the Nurses especially, I am most anxious for an opportunity of publicly testifying, that as far as I can recollect, having been in the wards as much and at as various times as any student of my age, I have never heard a nurse say an improper thing, or saw a nurse do an improper act. For aught I know, many have been dismissed for various misconduct during my pupil days; and no doubt were so: but I may further say, that, of all the nurses I happen to have known, the three persons I would rather have in my house, in the case of any grievous illness befalling me or mine, are or have been all of them hospital nurses.

So much however is known of our ordinary English Hospital system, that it would be idle in me to describe it. It is like most other things in England, neither perfect nor bad. As mere Medical institutions, I suppose them not to be surpassed. Through the devotion of our Chaplains† and other religious visitors, much is done for the spiritual, and intellectual, and moral care of the inmates; much more is done in foreign countries, and more can be done in this: the question is, had it better be done?

The simple way of answering this question is, to remind the reader of the mode of working in a well known institution, often held up as a model for imitation: I

* A letter from a Medical Student on some Moral Difficulties in his Studies, and on the Duty of the State to aid in lessening them. Rivington and Churchill, 1841.

† I cannot speak of Hospital Chaplains without recording my debt of gratitude to the Chaplains of St. George's and of Guy's while I was a student in London.

mean the establishment of the excellent Pastor Fliedner at Kaiserswerth; one which certainly any one, desirous of practical information on this aspect of a Hospital, should visit. It may of course be said, that Pastor Fliedner's Hospital is really founded for the purpose of training his Deaconesses; and yet this is no objection. It is a Hospital worked on the plan of a religious institution. It will be borne in mind, that the very essence of this indefatigable man's work is to show that such a Charity can exist among Protestants; and that he has no reason to doubt this, from the extraordinary success of his work, will, I believe, be readily allowed. His Deaconesses—persons of every rank—agree to remain for a certain time, are at liberty however to leave if they will; and serve without money reward*. Ladies of noble birth are among his Sisters; women of the humblest origin, and the meanest education, are equally available. Each understands the whole routine of the house; but each finds her vocation in that for which her previous life and her qualities the best fit her. I imagine no one doubts the reality of the benefits conferred. The character of the medical and surgical treatment must of course depend upon the officers who accept or are appointed to the respective duties.

It is impossible to go round the wards of a Continental Hospital, in which Sisters of Charity perform or superintend the work of the house, without feeling that they inspire into the sick rooms an air of cheerfulness and of comfort which cannot be surpassed. There is a charm in that which is done for love, which cannot be purchased. They who are paid may, of their free will, bring the law of love to their work; but, as a general rule, the love of the shepherd, and the work of the hireling have each their distinctive mark. Whatever faults in the conduct of the people; whatever grave errors in the subjugation of their will; whatever falsehood in the dogmas of their teachers, it must be owned that the Religious women of the Continent have the art of tending the sick, and caring for the orphans. There is no sight more touching than to see dense rows of young children rising tier above tier in a crowded schoolroom, that stands in the heart of a crowded district of our large towns; the sunk eyes of sickly and inattentive children; the pale and eager faces of those intent and able to learn; the marks of poverty and domestic suffering that may be read in their dress and their general bearing; the harassed and careworn face of a young government master, who has tasked himself beyond his strength to gain a precarious but honourable position: nothing, I say, more touching in one aspect of human life, except only in another view of it, to see in some foreign Orphan-house a high-born Sister playing with her self-appointed orphan charges; with every appliance that her religious notions suggest;

* They have only sufficient to obtain their clothes.

with every charm that her manner may impart; with the most entire perception of the weakness of her charge, and of the variety of methods of cheering, soothing, training them in body and in mind.

It is quite impossible, I think, for any unprejudiced person to see and compare these two sights, without feeling that we have something to learn of the manner of tending the sick, and rearing the young among our poor.

If, in the present section, any single suggestion were to be offered, especially to Provincial Hospitals, it would be the having attached to them a Residence for a Married Chaplain. In some institutions he lives far from his Hospital, and has other duties*. It cannot therefore be his home. If the Chaplain and his household be part of the Institution, and himself a man of earnestness of purpose, and ability and judgment equal to his office, his residence at his Hospital would probably bring all of spiritual, intellectual, and œconomical advantage which the English mind will approve or can attain. Such a person, as the Governors would be likely to appoint, would check all the novelties and fancies which the well intentioned, but inexperienced, might desire to introduce: while he would bring about all that his own office, or the tender watchfulness of his wife, might suggest of real pastoral and temporal good, to the many ignorant and uncultivated people that would pass under his care.

In a country where so many excellent Subscriptional Hospitals exist, it may seem to have been superfluous to narrate what has been just set forth. It is however of great moment that these principles should be clear in the minds of the subscribers, and that they should not be lost sight of. The whole fabric of Voluntary Hospitals may be endangered, if even one Hospital were to fall short of them. The way this unfortunate result may be brought about, and the consequences that would ensue, may thus be briefly stated.

The State reasonably requires of its Institutions, by whomsoever founded or conducted, that they fulfil their work; and in the event of their failing, the genius of the day places them under State protection; takes away much of their voluntary character, or appoints State Institutions in their stead. This process might very soon take place in all Medical and Sanitary Institutions. England has become what she is mainly by private and local voluntary exertions. But her Government, alive to her great needs, intends to see those exertions rightly directed, and equal to her emergencies: or to place them under Central control: this may be an evil, but it is a much less evil than shortcoming. The true wisdom lies in our making all Local Institutions rise with the increasing demands of a growing population

* At the Radcliffe Infirmary the income given to the Chaplaincy is divided between two Clergymen, who visit *on alternate months*, neither being residents. In four years we have had three elections to the Junior Chaplaincy.

and advanced civilization; in our determination to make them each year fit representatives of the knowledge, wisdom, and science of the present epoch, such as they were at the day of their foundation.

The General Board of Health, in their Instructional Minute issued in 1854, discouraged the multiplication of Hospitals for the reception of Cholera Cases; but they advised that wherever there is a General Hospital, in a Town, conveniently accessible, arrangements should, if possible, be made with the authorities for the reception of necessitous Cases. Whatever applies to Cholera will apply to other Epidemics; such as Scarlet Fever, Typhus, and Small-pox. The request is most reasonable.

The amount of inconvenience, not to say risk, which small families undergo when their only servant, or one of a small number is prostrate with Fever, or other infectious disease, can hardly be appreciated by those who have not experienced it. If the General Subscriptional Hospitals cannot relieve their Towns of the danger and discomfort of such Cases, assuredly accommodation will and should be provided by the Guardians; or by order of the General Board of Health; or by some other compulsory demand on the rates. If the Guardians, during an Epidemic, are compelled to erect a Hospital, they assuredly would not remove it when the Epidemic is ended. They would foresee the need of such an Institution; they would keep it standing; probably use it; and gradually receive into it persons afflicted with other urgent disease: a Staff would grow up round it; arrangements would be permitted by which the poor of other unions would enter it; then patients would be admitted on payment; and the Voluntary Hospital would necessarily decline in funds and fall into desuetude.

If the two Hospitals were equally good, there might be nothing to lament in this: but other circumstances are intimately mixed up with any organic social change such as this. These consequences are viewed by one person as the greatest advantage; by another as one of the greatest evils.

With respect to Subscriptional Hospitals, the case is this: I have met persons who wish to see Hospitals supported "out of the Rates:" they view in that the transfer of influence from the Aristocracy and the Gentry, and the Clergy, and the wealthier parts of the community, the present maintainers of the 'Charities,' to the will of the greatest number of the voters: they see in that change, at all events a blow to classes they dislike, and a possible obscure gain to themselves.

In this change there would be a disruption of many ties; opportunities of kindness lost on one side, and of gratitude on the other; and duties of charity transferred to the call of the collector. Hear what an eminent French writer says, who has made England his especial study.

"L'opinion est encore d'accord avec la tradition pour imposer au sujet Anglais le droit et le devoir de travailler et de prendre de la peine dans l'intérêt du bien général. * *

"Les premiers intérêts de tout peuple civilisé, l'enseignement, la charité, la police, plongent leurs racines et puisent leur séve dans l'intarissable réservoir des volontés indépendantes et des sacrifices spontanés de vingt millions d'âmes Chrétiennes.

"L'Anglais donne son argent, son temps, son nom à une œuvre de charité ou d'intérêt public; il met sa gloire à ce que l'œuvre qu'il adopte ainsi soit au niveau de tous les besoins et de tous les progrès; mais pour y parvenir il ne songe pas à invoquer ou à accepter la main mise des agents du pouvoir sur tout ce que ses pères et lui ont fondé. Il garde l'autorité avec la responsabilité, le droit avec le devoir. * *

"*Supported by Voluntary Subscription:* telle est la fière et noble inscription qu'on lit dans toute l'Angleterre sur la façade de la plupart des hôpitaux, des hospices, des asiles divers de la misère humaine. Alors même que le governement a pris l'initiative, le public est toujours venu revendiquer sa part et son droit: *condidit rex, civium largitas perfecit*, comme il est dit sur la façade de l'immense hôpital des aliénés de Bedlam. On comprend bien que ces mots: *entretenus par des souscriptions volontaires*, impliquent ceux ci: *gouvernés par l'autorité des souscripteurs.* C'est toujours le même principe: l'effort, le sacrifice personnel et permanent, puis le droit et le pouvoir naissant du sacrifice et de l'effort. *Tant que ce principe sera en force et en honneur, l'Angleterre n'aura rien à craindre**."

There are four other points which the observation of some years induces me to suggest to the consideration of the Philanthropists of this and other Cities which may be in circumstances similar to our own.

Serious Disease the true claim for admission to a Hospital.

The professional services of a Hospital are mainly without emolument; and cheerfully and thankfully rendered: therefore the work should be made as light as is consistent with its being done with efficiency. In some Hospitals the senior medical officers take the in-patients, and there are junior officers who take the out-patients. Here in Oxford all have charge of out-patients. I am inclined to doubt whether this is a wise arrangement; and I believe it would be far better if the two senior Physicians had the in-patients, with each a Clinical Professorship, and the junior had the out-patients. On this there is much to be said on either side. Next, it may be doubted whether in Oxford it is necessary that there should be any Medical out-patients*. I believe that, considering the fact that far more attention is exacted than formerly from the Union Surgeon,—liberally administered as the Oxford Union is in this particular,—that there is an excellent Subscriptional Dispensary, with a paid medical officer to attend the poor at their own homes, it may with confidence be said that the poor can be better cared for in the City by the Union or Dispensary Surgeon than they are as out-patients at the Hospital. With respect to Medical out-patients from the Country, I am convinced that many

* L'Avenir Politique de L'Angleterre par Le Comte de Montalembert, p. 255. éd. 2de.

* This does not apply to In-patients discharged relieved.

derive great injury from journeys to Oxford in inclement weather; and that they come to and fro, when it would be better that, rather than do so, they should have no treatment at all. I will not venture to speak of other Towns, especially the large Towns of England, and still less of London, which is quite exceptional in this particular; but I am satisfied that in this and the surrounding Counties, considering the excellent Practitioners who hold Union appointments in them, Country patients should be discouraged from coming as Medical out-patients to Oxford as much as possible. Further, that if the Subscribers to the Hospital, after calmly reviewing the whole circumstances of the Country, the improvement in the Poor Law, and the higher education of the general Practitioners in country districts, should then conclude that out-patients' orders for Medical cases should still exist, it would be far better to have *one Form of Recommendation,* and to let it rest with the Physician of the week to decide which cases should occupy the beds, and which should be out-patients. It is certain that in our Hospital it constantly happens that many of the Recommendations should exchange hands: that persons come with in-patients' orders whose cases are far too slight to justify their occupying a bed,—but it is invidious to refuse them: and that poor creatures come with only out-patients' Recommendations, whom it is a source of misery to see return home. The Recommenders judge often by the comparative importunity—the Physician by the comparative necessity of the sufferers.

There may be evils in 'Free Hospitals' with which I am unacquainted; but the friend of the poor will endeavour to break down every obstacle to the freest admission of the worst Cases of disease at the shortest notice. Serious disease is the true ground of admission to a Hospital. It is sometimes said, that, if this principle were allowed, Subscribers would lose the patronage given by their subscription; and that all manner of "Parish Cases," Fevers, and Inflammations, &c. would get in. I do not believe Subscribers are influenced by so mean motives as this implies. They maintain their Hospital as a public good, and take pride in it: and it is my firm belief that, the more practically free a Hospital, the more severe would be the cases that come thither; the more good would be done, and the more munificent would be the Contributions. This applies to the Diseases of Children as well as to those of Adults: for no County Hospital is complete that has not a Childrens' ward.

The Labouring Poor not the sole Objects of Charity for a Hospital.

There is misunderstanding often as to the Nature of Poverty. To earn less than is sufficient to enable a prudent man to obtain a livelihood in his business is poverty: to have more than a man need expend, is comparative wealth.

There is no class of persons more poor than they who, having small salaries, are

required to dress well to keep their situation, or who need books, or other matters which are costly. I may be excused for instancing teachers of various grades—of either sex.

Now all such persons are ruined, as the world has it, if they have aid from the Parish, or if they go to a Dispensary. They therefore are most fit objects for whom to provide aid; but their address, education, and appearance is often a hinderance to their being aided in distress. Such persons have sometimes small means which they would gladly apply to aid their treatment. For Chronic Diseases of Females especially this would occur. For the reasons before named—the increased care of the poor—it would be exceedingly desirable for our Infirmary, and other Hospitals, to take in persons of education and small means, on payment, and in a separate ward. I have been myself an in-patient in such a Hospital in Rome; and ever grateful shall I be for the kindness I received there. I was in lodgings; alone; ill; far from any attendant. A dollar (four shillings), a day was the sum paid by me for a separate room, and the supply of every want. This sum amply repaid the Institution. The more satisfactory to the recipient who could pay it. The comfort, independence, and freedom from care which single men and single women would feel if they had this course open to them, without loss of caste, are not to be described in words*. To draw up details of such a scheme would here be out of place.

On the necessity of providing Nurses for the Poor.

Far more important than a revolution in Hospital Nurses appears to me the obtaining Nurses trained and qualified to attend the poor at their own homes†. There is no object more requiring the energy of the benevolent; none more certain to repay their exertions; none more easy of execution. A very moderate Subscription, the cooperation of Guardians, the consent of the Governors of Hospitals, with the aid of the Parochial Clergy, might at once obtain for every town a corps of Nurses, such as we had at Oxford at the time of the Cholera. A Lady, resident here, is willing to undertake the organization and superintend such arrangements for Oxford. A body of more or less competent women would then be ready at all times to wait on the sick poor. They might at once effect good in various ways. Their knowledge of cooking alone would be a positive boon, supposing always they had been properly instructed, as has been proposed, at the Hospital. The more able of them would in time become trained Nurses for all classes; they would be known and certified. This would probably have been attempted here had not the

* In London there is more than one Institution of this nature.

† In Sussex a society has been formed with a similar object for country parishes; in them Nurses are much needed. Information concerning it may be had of the Rev. W. M. Blackwood, Rotherfield.

Cholera Nurses, for the most part, gone out to the Crimea, and had not other circumstances delayed the public proposal of this plan. What can be effected in Oxford, can be effected elsewhere. Persons might come hither for instruction from parishes in Oxfordshire and the adjoining counties. In connection with every Hospital, through the kingdom, such an institution might soon exist, to the great advantage of every class in society, and to the maintenance of many respectable women, and especially of widows.

The benefit of such an organization is so apparent, that I need not say more on the subject; but only suggest to the reader, the boon that it would be during the prevalence of Epidemics of whatever kind*.

On certain points in Female Penitentiaries.

There are several questions which this section invites us to discuss; among others the unsatisfactory character of some of the Regulations in Medical 'Clubs' or Benevolent Societies: wherein, I am informed, the medical adviser is sometimes remunerated at a rate which does not pay his outlay for medicine. But this and others I must pass by, to name one topic of grave importance—the admission of Fallen Women into General Hospitals. From our Hospital all venereal cases are excluded. This is an intelligible rule, and is to be strictly observed. No woman of known bad character is admitted there: all therefore can safely send young women in whom they are interested.

Then what follows? we have no "Lock Hospital." A few years ago, when I was beginning practice, a young woman in an agony of suffering appeared at the Infirmary. The case was a forbidden one. She must go away. She expressed a willingness to go to the Penitentiary. I applied there: she could not be received. She had an acute disease. She remained in the street; and finally found her way to the foul ward of the Workhouse. A Lady going, from religious motives, to visit her, was refused admittance.

* The Epidemiological Society (13, Upper Brook Street, Grosvenor Square,) has laboured to promote the supply of Nurses to the poor, through the medium of Workhouses. Various applications have been made by the Committee of the society to the Poor Law Board. There are difficulties in the way of the proposed plans, which at present are insuperable. But the object and the design are really excellent. I am disposed to think that a Voluntary Association in every town or union, aided and supported by the Guardians, would, in some respects, be far better. At all events, until the Poor Law Board do undertake the plan, it is earnestly recommended to the attention especially of the WOMEN OF ENGLAND.

I take this opportunity of remarking on the great inconvenience and distress which sometimes arises here, from the want of a place to which insane persons, not paupers, can be sent on *immediate* notice. The Warneford Asylum has a weekly admission day.

Well, then, these wretched women, when, pressed by sickness and suffering, they would return, cannot. In the Hospital they may not be treated: they must be thrust with their fellows into a proscribed ward in the Workhouse, and be hardened. Our Penitentiary, when urged, took the noble course: all honour to it: it agreed to receive them well or ill. The numbers have increased to overflowing; and a New House and more Funds are wanting. If this meet the eye of a wealthy man, let him be assured he can give no sum that is not needed, and will not be used.

Now I do not say that all Penitentiaries should do this. I think not. Two classes of Penitentiaries are wanted: the one where women are received: the other where they are kept. In the first, they should be taken in any state of disease: in the second, it is better that they should be in health. On this point I can have no doubt. The two establishments may be under the same management: or in concert with each other in different localities—as Oxford is with Wantage, and elsewhere. The receiving houses may be small. A Penitentiary for discipline cannot be conducted on a very small scale. A large ship is more easily managed than a small one.

With these brief considerations the present remarks on the working of Voluntary Medical Institutions, in Oxford and probably in some other Towns, must be brought to a close.

The chief points which have been brought forward for the consideration of those interested in them are—

1. The nature of the claims on the State for Medical Relief.
2. The duty of the State to see that there are efficient Medical Institutions in every County or District.
3. The great disadvantage to the Country if the State Institutions supersede Voluntary Institutions—
   - As Centres of Medical and Surgical Practice,
   - As Standards of Scientific and Hygienic Knowledge,
   - As Safe Receptacles for Contagious and Epidemic Disease.
4. The desirableness of receiving, upon weekly payment, certain of the Middle Classes into private wards and apartments provided for them in connection with the County Hospital.
5. The revision of the mode of admission to some Hospitals, so as to ensure that those only enter the Hospitals who truly need it; and that none are Out-patients who cannot be *thoroughly* treated in that manner.
6. The duty therefore of zealously supporting Dispensaries, by which the classes above "Paupers" are visited at their own homes, as a much truer Charity than the Out-door advice of the Hospital.

7. The making the Hospitals serve as Instructors in Nursing, and in the art of Cooking economically for the Sick.
8. The endeavour to use them, as far as possible, as means for Moral Instruction and Spiritual Improvement to the inmates. This view need in no way interfere with their thorough efficiency as Scientific and Medical Institutions: but cannot be effected without engrossing the chief energies of the Chaplain.
9. The preparing lists of persons willing and qualified to serve as Nurses among the Poor; to organize them so as to be available in Epidemics, and at all other times; and through the agency of such organization, to give them all instruction calculated to make them efficient aids in sickness.
10. The providing in all Towns where there is need for it, special means of treating penitent women: 1st. That they may be kindly dealt with in their sickness: 2nd. That there may be no excuse for admitting them into the wards of the Hospital.

Those that have thought of the questions touched on in this section, and who have successfully conducted the Voluntary Medical Institutions, which are among the chief glories of our nation, will bear with a meagre but hearty acknowledgment of their labours: they will heartily desire to see the time when the Government shall find no need to inquire into Charities, because they are perfectly administered; and will be spared the duty of controlling Subscriptional Institutions, because they are a model to those of the State. Until that time, they will earnestly wish that the administrative talent and the large influence which exists in every County in England, should jealously provide that the Voluntary Institutions, which watch over the temporal necessities and bodily infirmities of the honest and labouring poor, shall in nothing fall short of that perfection which various Institutions for the punishment of Crime or the reform of the Criminal have in their district attained.

CHAPTER V.

On the Connection between Mental Cultivation and Physical Improvement.

Upon the judicious Education of the people depends, more than on any other human means, the destiny of our country. God be thanked that each year some ground is gained in the strife against the social evils that sometimes bid fair to overwhelm us. But as long as a large part of our population are, in respect of one or more of the three great portions of their earthly nature, the Physical, Moral,

and Intellectual, so much lower than they might be, the public opinion, which rules in a constitution such as ours, must be frequently in error; and the greater good must for a time too often yield to the less. The discussion which is caused by the conflict of opinion is nevertheless one of the most efficient means of judicious changes, and of real progress.

To aim at, to hope, and to pray for Physical, Moral, and Intellectual perfection in any given state is not perhaps the part of the wise; but to look for a uniform progress towards all three in his own country and his own place, to strive to add his pebble or his stone to the rising edifice, is the duty of every true-hearted Christian man. The three cannot be separated. I have no more hope of raising a high moral and intellectual standard in a state inconsistent with our physical necessities, speaking of masses of society, than I have of seeing much physical improvement in districts where the moral and intellectual life is dormant. God be thanked, there is no nook of this country, none where our tongue is known, but that there the voice of a higher culture and a nobler aim is heard, uttered however feebly, yet in some sort uttered by our teeming press. For this City, our special care, it is no Utopian idea to entertain the hope, that as far as a place, without manufacture and trade, can be esteemed a type of society at all, this may be made one which can be a model of a community living in the greatest possible amount of physical comfort, moral well being, and intellectual light that England can show; and if, with our large proportion of cultivated minds, warm hearts, and of persons placed above want, this cannot be so here, I know not where on earth we shall turn to seek it. The germs of such a condition are here. It is no dream that we or our children may see the ripened fruit.

Some highly educated persons however seem little aware by what humble means many of the best habits of mind may be formed in children. If such had ever associated with mechanics, they would have learned that in many or most mere mechanical trades the good workmen are all distinguished by some valuable moral habits: which, however they may be hindered by some personal obliquities from exercising their influence over the whole man, are yet in themselves excellent, and *capable* of leavening the whole character. A good carpenter or a good smith will not do bad work. His master may try to make him do bad work, for the master's main business is to sell whatever will find a market; but the good workman will not do it; he would rather do what hurts his whole soul—do nothing, and see his family in distress; or work for less than he is worth; either of which wears his heart out by the sense of injustice. In short, he must be *Accurate* and *Truthful*. With the squareness of his work and the straightness of his line are intimately connected his notions of right and wrong. The good workman is *Humble* withal; he knows the struggle good work has cost him; and his satisfaction in it is mixed with a sense of

his own feebleness in respect to all good work, and all higher work which he cannot himself do. He is *Charitable* and *Helpful* to others, because he has a fellow feeling with all who strive as he strove; and he desires that all good work should prosper, as he wishes that all bad should come to an end. He is *Noble*, because he feels himself to be a part of the whole army of workers who from the beginning of the world have striven in all Arts, and all Times, and all Places to do their duty in the station of life in which they have laboured. If I have to excuse myself for such a digression, my excuse is twofold: 1st. I think that these truths belong really to all work of whatever kind; and, 2ndly, that just now it is of especial consequence to bear them in mind. I often think of Keble's lines in respect of all work—

> The trivial round, the common task
> Will furnish all we ought to ask:
> Room to deny ourselves . . . .

I never look but with reverence on the features of an aged carpenter, now fourscore; with whom, encouraged by the family laws of my father's house, I used to work in my boyhood. I first learnt to read in his work and at his bench what I have now related; and never, as a child, saw him at his work, but that I felt the nobleness of labour, and saw in his conscientiousness germs of the principle of martyrdom for truth's sake: indeed it is by the observation of such ways and by such associations for good and for evil that many of the first notions of our children are formed, their powers directed, and the *quality* of those powers established.

The advantages of a higher kind of knowledge, beyond mere mechanical knowledge and mechanical skill, lie in great measure in the developement of the same qualities by means of a higher subject-matter; they therefore raise the whole man, but are not necessary for the development of the qualities in question any more than a knowledge of dogmatic theology and patristic lore are necessary to the formation of the spiritual life of a Christian. And besides, in every kind of progress, a risk equal to the good attained is run—an almost universal condition of all attainment in this life of barter and trial.

Once more, it is quite wrong to think that the principle at the root of all this is not of universal application. The principle is constant, but the cases, to which it is applied, vary. Even in questionable occupations, that is, occupations in which there is a greater risk of evil than hope of good, there is always the chance and possibility of discipline; as, for instance, in field sports. Every one knows the rigorous conscientious habits of a true old sportsman, as distinguished from the luxurious young one who has his gun carried and loaded for him. Men have diversities of gifts: some have one power within them, some another; but in all the gifts and in all the operations there is a "spirit" to lead to good, as there is a power to degenerate to evil. If a man *can* only take a pleasure in dogs and horses, let him

do so: shoot well and hunt well: and go to the Colonies. There the natural gifts which made him hunt well here, will make him rough it well there with rough natures of men and things; and be of infinite use to his fellow men there, and prove an Honour to his Country: but by no means let him be a barrister or a physician. So it is throughout. The training for life is as various as the modes of life. All subject-matter, and all modes of life rightly used, become the means of true education. Dr. Chalmers, thirty years ago, advised the teaching of Political Economy and of Natural Science to the working classes; because, he says*,

> "There obtains a very close affinity between a taste for Science and a taste for Sacredness. They are both of them refined abstractions from the grossness of the familiar and ordinary world; and the mind, which relishes either, has achieved a certain victory of the spiritual or the intellectual, over the animal part of our nature. The two resemble in this, that they make a man a more reflective and a less sensual being than before. * * *
>
> "For this purpose, it is not one, but many kinds of scholarship that are effectual. Whatever may stimulate the powers of the understanding, or may regale the appetite for speculation, by even that glimmering and imperfect light, which is made to play in a mechanic school among the mysteries of nature; and may unveil, though partially, the great characteristics of wisdom and goodness that lie so profusely scattered over the face of visible things; or may both exalt and give a wider compass to the imagination; or may awaken a sense that before was dormant to the beauties of the divine workmanship, and to the charms of that argument, or of that eloquence, by which they are expounded; each and all of these might be pressed into the service of forming to ourselves a loftier population. Every hour that a workman can reclaim from the mere drudgeries of bone and muscle, will send him back to his workshop and his home a more erect and high-minded individual than before. With his growing affinity to the upper classes of life in mental cultivation, there will spring up an affinity of taste and habit, and a growing desire of enlargement from those various necessities by which the condition of a labourer may now be straitened and degraded. There will be an aspiration after greater things, and the more that he is fitted by education for intercourse with his superiors in rank, the more will he be assimilated to them in a taste for the comforts and decencies of life. In the very converse that he holds with the lecturer, who one day expounds to him the truths of Science, and another day examines and takes account of his proficiency, there is a charm that not only helps to conciliate him to better society, but that also familiarizes him, in some measure, to the tone of it."

Dr. Chalmers was one of the hearty genial able men who could see the good side and the capabilities of every thing; and he was not a man to fail to perceive the value of Physical and Social Science. The resistance to his enlightened views armed noble weapons with a poison, by handing them over not unfrequently to men who had not his moral qualities, and who did not feel, as has been said thousands of times, that the educational value of the material means was not in the knowledge they gave, but in the discipline they imparted. Accordingly even the much vaunted Physical Sciences have failed over and over again in their use; out of most accurate, most ennobling studies, popular scientific exhibitions have furnished to thou-

* Christian and Civil Economy of large Towns, vol. iii. p. 378, and p. 383.

sands, only a new form of excitement, and another occasion for inaccuracy. From this evil however, or rather with it, much good also has sprung: and now, here in Oxford, as in many other places, persons of all classes are beginning to find the futility of inaccurate science and of popular lectures, except as a means of creating and fostering interest in what is good; and they see the necessity of closer, more precise, application to those subjects with which each individual mind feels a natural sympathy. Here we are many years behind Edinburgh and some other towns in these respects; but our people will not lag: it is not speaking with over confidence when it is said, that ere long, with the influence of our New Museum, of the Working Men's Institution, the Free Library, and other appliances, the younger part of the population, urged on, with a patience almost inexhaustible, by the blessed impulses that are stirred up in the nature of every man, will glide insensibly into a stream of Knowledge, such as our fathers knew not of; and over which they may pass safely, if guided by the Spirit of Wisdom, as well as the Spirit of Understanding and of Knowledge*.

But then I am forced to confess my belief, that the kind of Training by Work and by Science, to which I have alluded, is not adequate to bring about the Happiness of any Society. Indeed, whatever theoretical opinions there may be on the nature and credibility of the Articles of the Christian Faith, no man hardly, who has prospered in his undertakings, is inclined to doubt that Christianity has added happiness to man just in proportion to the sincerity with which its faith has been held, and the tenderness of conscience with which its maxims have been obeyed: and no woman, who is a mother, and whom her sex or ours would admit to have discharged her functions so as to obtain their approval, would be found to say that, as far as the multitudinous chances of this life will permit, there was any method so sure for bringing about the happiness and worldly prosperity of her children as an early Christian training†.

A part of Christian discipline is termed, by some teachers on such subjects, the law of self-sacrifice. If there be one thread that seems to interweave itself, and disperse its hue over the whole of our life, it is this: we are not for ourselves. The history of our universe tells the tale—the meanest things on earth reecho it. All things exist for others besides themselves: elements for compounds; inorganic elements for organic existences; the lower forms of life for the higher; the higher for man; man for his fellow-man, and for his Maker. The great cycle of chemical changes that go on through the world, touches, as it were, at one point, the nature

* These were to be the Qualifications of the *Workmen* of the Tabernacle. Exodus xxxi. 3.

† Any one not acquainted with the Work will thank me for referring him to Kay's Promises of Christianity.

of man, and so through him serves the great end of all, the worship of the Creator of all. Within the vortex of human duties and human destinies, there is a collision as endless, a sacrifice as continuous, a reward as great. If the inorganic elements are wrought into higher compounds, and the lower forms of life fall before the growth and the necessities of the higher kinds, so individuals among men continue to effect that for which by themselves they are powerless; lower intellects are subservient to the more gifted; whole races sink before the advancing tides of others destined to speed the great Progress of Man.

In a more narrow view of society, the same self-sacrifice is the law of life. The surrender to duty of all that is dearest, and the yielding to that duty with joy are the means by which, on a small scale or on a large, great moral steps are made. Of this training, and the struggle that it costs, all partake. All obey, resist, or slip meanly by. They who escape the contest have no certain honour among men—no peace in themselves. In them is no Spirit of Content. The child that has learnt the principle of obedience, and of faith its cornerstone, that has grown up in it, has looked for his reward beyond this world rather than in it, that has the settled purpose of preferring duty in all things to his own desires, that, in a word, follows the guidance of the Gospel,—that child grows to be a happy man, blessing, and blest. All things that can take root in him, bear fruit according to his opportunities and his powers. His intellect expands, if intellectual developement be his sphere; but it expands harmoniously: his handywork, if handywork is his lot, is good work—work that satisfies his own love of truth, and the need of his employer: whether the growth of his intellect or the skill of his hands be his aim and his duty, his affections and his passions are warm, but under the control of his reason.

Nothing can compensate to the man for the loss of such culture: without it his intellect, however furnished, his manual skill, however applauded, leaves him sorrowing in heart—dissatisfied, restless; if opportunity of power occur, makes him a man dangerous to other men. Seeing all this to be so, philanthropists and mature statesmen have, for the most part, declared that all Education, to be complete, must also be Religious. But in what sense, and how to be attained, has been yet, as a Great National Question, an unsolved problem.

The reader may, before this, have asked himself in what manner this apparent digression is connected with the subject in hand. But it is a principle acknowledged, I presume, by all persons who have thought on these questions, that the improvement of the people depends on the combined elevation of their whole nature, as well as on the amelioration of their surrounding circumstances. Accordingly every one who feels it to be his vocation to aid or to strive to aid in promoting the health or increasing the material comfort of the community, must force himself to a conclusion on the mode of training their moral and intellectual powers. We in Oxford are most especially bound to do this; not only on account of the Educa-

tional character which belongs to our city, but also on account of the dissatisfaction which has been loudly expressed at the real or supposed shortcomings of the training provided by the University. They who have continually assisted in bringing about some of the additions to our studies, must have done so with the view of either improving or removing the old instruments of Mental Discipline. They who have insisted on enlarging the means of Intellectual Culture, by the introduction of the Natural Sciences, and the expenditure of large but ill-afforded sums on the appliances of Physical Knowledge, must have done so either because they wished this Natural Knowledge to supersede the study of Language, History, and Mental Philosophy, or because they thought these three were, at this age of the world, imperfect representatives of the range of human thought, and of human achievement. Which of the two they intend they should declare.

It is without question that many persons here have earnestly endeavoured to promote the welfare of EVERY rational method of moral and intellectual culture; and have not allowed themselves to be, as it were, partisans of any circumscribed portion of mental culture: and this rightly: there are few now to be found who believe that an implicit and unintelligent reception of Religious Dogmas, or a mere Linguistic Scholarship, or restricted devotion to any of the Natural Sciences, would, apart from each other, be the best training for a man.

The tendency of our time seems to be to the exaltation of Intellectual Developement. This is well: but it is already discovered that this is not to be gained by attendance at Lectures only,—that something beyond is required for real Mental Discipline. Working Classes are therefore added to evoke the self-education which is necessary for all real mental progress. This is also well. By thorough application to any worthy subject of study, certain powers may be strengthened: by truthful, honest, accurate Drawing, by sound, careful, precise Musical exercise, vocal or instrumental, certain properties of sense, and certain valuable qualities of mind may, without doubt, be heightened and ennobled. By any of the Classificatory Sciences pursued practically*, powers of Observation, Comparison, Reflection,

* By this, of course, is intended practical, experimental study of practical experimental subjects, as opposed to mere verbal, book knowledge. It is extraordinary how frequently the necessity of attention to this is overlooked by both Students and Examiners. Our Natural Science School here will utterly fail in its use, if this be not kept constantly in view. In Chemistry, Physiology, Geology, &c. there should be no Examination without a practical testing of the candidate. The late Hebdomadal Board most unfortunately erased from a notice, prepared on this point, an invitation to Students to offer dissections for demonstration at the Examinations; but they have now, this year, been happily introduced. A Prize has been lately proposed for Essays with dissections of our Fauna, and no apprehension need any longer exist as to the efficient practical character of the School. It is intended to offer shortly a suitable Prize, with a similar object, to the Oxford Working Men's Institution.

Judgment are matured according to the original mental constitution of the student. By History, by true and philosophical investigation of Language, in connection with its origin and developement, all or almost all the faculties of which we are capable are called into play, unless we except the higher powers of abstraction, which are disciplined by Mathematical Studies.

It must, therefore, be a source of unceasing gratification to all who desire the happiness of their fellow-men, that every well conducted institution for the advance of knowledge should flourish. But it must not be expected *that this increase of intellectual power will make our homes happy.* What I have said on that head need not be repeated here: and we may come to the practical conclusion for which this almost tedious and trite summary concerning Education has been made.

Religious training lies at the root of the contentment and happiness of man. Intellectual cultivation is not adverse to Religious training, but is no substitute for it, and is become in our time a necessity to every one in his degree. Intellectual culture is nothing, except it have full play, unchecked by religious opinion: its essence is the unfettered search after truth. Religious growth is quite compatible with this, under conditions felt in the heart of the true believer, and understood by none else. The true Intellectualist and the sincere Religionist must each be free. Neither can surrender unconditionally to the other. I can hope nothing from the attempt to introduce into State schools religious teaching pared down to that which is offensive to no denomination. At the point at which it comes to be inoffensive to all, it is necessarily wholly unacceptable to every one who truly desires to have it, and understands its operation upon our hearts.

The main object of the State is assuredly to secure, as far as possible, the good conduct of the people: this is most easily attained, no doubt, by early, judicious, and enlightened religious training. But religious teaching is just that part which the English people do not choose to delegate to the State. Therefore the State has apparently no other course than to cherish to the utmost the Voluntary efforts of the Religious Communions; to aid them in proportion to their exertions; to insist on their reaching a certain intellectual standard; but by no means to interfere with the spiritual charge of their own members. To all which the establishment of merely secular State Schools would be fatal*. These seem to be the general aims of the Committee of Council on Education.

But to discuss the method of reconciling the two views of Secular and Religious Education, would be to enter upon the history of the Educational Enactments of the last twenty years†: and to suggest a plan for future guidance, would be a task

* How far this is applicable to a few of our largest Towns, I feel I have not the data for forming a conclusion.

† See particularly, with reference to the subject of the preceding paragraph, the noble-hearted "Public Education," by Sir James Kay Shuttleworth.—Longman, 1853.

which, to say the least, it would be wholly out of place to attempt here. But deeply impressed with the conviction that sanitary, moral, and intellectual improvement must move on hand in hand; satisfied of the necessity both of maintaining the Religious Character of the Education of this country, and of continuing the Intellectual Educational Developement which has made such gigantic strides since 1830; being most sensible, and firmly convinced that Voluntary and Local Efforts of the Community are essential to the maintenance of the English character, and that these efforts will certainly succumb before the force of the Government, unless they prove equal to the emergencies of the case, it seemed to me an imperative duty, if I stated any opinion at all on the means of promoting the physical welfare of the people, to express these convictions, which, as a Physician living in a place of Education, I have been led to form*.

In the discharge however of this duty, I am consoled by the belief that they who know so much of the course of the Educational History of the Country as to think such generalities superfluous, and they who do not see the reason of such digression in a Sanitary Paper, will equally believe it possible that the sentiments expressed may awaken thought in some mind that has not before so viewed the subject; whilst no one but the Writer need suffer from the labour that has been expended upon it. It is a further subject of consolation to me that, having endeavoured to come to independent conclusions on the subject, I find them not to differ from those expressed by persons who appear to me to be sound exponents both of our National History in this subject, and trustworthy thinkers on the matter itself. So that I can thankfully and happily watch the course of public controversy on a subject of momentous interest which my other duties forbid me to share.

There follows necessarily, upon the question of Religious and Intellectual Training, the consideration of Recreation.

Now Recreation is the freeing the body and the spirit from strain, to which either or both are subjected. What is recreation to one man is therefore labour to another: and the student could often do no better than wield the adze or the hammer

* It was certainly impossible ten years ago to notice, without consternation, how hundreds of the Clergy and Gentry were constantly passing through this place without any knowledge whatsoever of Physiological laws, or Hygienic principles; when all the country besides was yearning for acquaintance with them. It was, in another aspect of society, appalling to find a few years since, in even this favoured City, half a dozen boys, of ages from 7 to 10, who did not know the name of Christ, but as a common oath; and who never had been in a place of worship. The former of these evils ceased in a measure with the foundation of the Natural Science School, and will come to an end when the New Museum has fairly entered on its full work: the latter scandal probably does not now exist. Indeed, the more I see of Oxford, the more I am inclined to suspect that, on the whole, there is less gross evil than in most Towns.

for awhile, and let the body-worn mechanic peruse the works which he had left on his desk.

It is curious enough to notice how ignorantly some persons recreate themselves. Men often, in another form, press on the exhausted function, believing mere change to be equivalent to rest—which it sometimes is: or they wholly abandon themselves to idleness, whereas some occupation is absolutely necessary to any man accustomed to work.

Of all the causes which press on the spirit of a man who is fully engaged in the competition, anxieties, and cares of life, those which tell on him as a spiritual being, "heir of immortality," are, from time to time, the weightiest. He feels the urgent need of some time and some place where he may go apart for rest awhile. To the greatest number this is impossible. He has no such place, even if he have the time. The fields, it may be, are too far; his house is too crowded; he can find no quiet spot; the streets are his refuge and his chiefest solitude. What is it in us English which makes it impossible for the Churches to be always open, that the weary in heart may find stillness there? Has the experiment failed in the few cases that it has been tried? Are there none, to whom the opportunity has occurred, that can tell of the blessing of the few minutes dragged out of the hurried work, and soothed by the peace of the dim still Church?

What do the appointed guardians of our Churches say to this? Where do they expect the poor, careworn, overcrowded members of the flock to meditate? Do not the daily services at Westminster and elsewhere tell the feeling of the people? But do they not need simple mental repose and prayer as well as a service in which they cannot pause? Are none of the intellectual portion of the Community too weary on Sunday to follow the longer, and fuller of our services? and do they not pant often for just the quiet of the altar-side, where they might commune and be still? Does Peterborough Cathedral suffer because its doors and every quiet nook, to its honour, stand daily open?

Next in importance to this kind of Re-Creation, or making again of the spirit of man, ranks the feeding of his Intellectual Faculties. Of the way in which this is to be done; of the reading which is desirable for children or for men in their various stations, it would be obviously idle here to speak. But, as to the means, it is clear that (1st) until lately the means were not within reach in Oxford, but that now in the Free Library they are; and (2dly) that among the greatest boons which have been conferred on the working classes is certainly the Act by which Free Libraries may be supported by Rate. It can hardly be necessary, though it may be agreeable to some, that we should have a Free Museum, because the University can assuredly meet the wants of the City in this respect; and there will, I presume, be, ere long,

a department of applied Science and Art, of Engineering, and an Exhibition of Œconomic appliances in the New Museum.

So we need, in Oxford, nothing more at present, in this respect, except increased space in the City Library, and the further developement of its resources. It was determined to keep this Institution open on Sunday evening: the decision gave, I fear, much offence to a minority. In that minority I could not place myself. The rational mode of observing Sunday, in particulars of this kind, has for many years engaged my attention; and I have taken much pains, on various opportunities, to inform myself of the true manner in which a laxer method of observance than our own operates in various parts of the Continent. My conclusions, unsatisfactory as they may appear, are easily told. I am satisfied that a genuine observance of the Sunday adds to the Happiness of Working and Professional Men: I am satisfied that many of those who always make it a day of the most open holiday are not those laborious persons who the most require rest: I am satisfied that in many Continental Towns, where there is much open gaiety, the portion of the community that has the truest sense of the whole nature and destiny of man, and that strive to live at once in the most active discharge of duty in this world, and with the most constant looking forward to the next, find their chiefest rest in the peaceful contemplation of the visible works of God; in the application of their mind, as far as they can apply it, to that which they feel their nature to stand in need of; to such communion with their Maker as their souls can reach; to such unbending of the body as their physical state requires, and not to the reeking air of the beershop, the noise of the highway, or the excitement of public assemblies. But, above all, I am satisfied that, seeing the exceeding variety of men's natural powers and inclinations, of their early training and associations, and their present mental and physical necessities, nothing is more uncharitable, and nothing more untrue than a stern judgment of all men by any settled rule. Almost all such rules depend on the early associations of those that apply them. Such things must be left to each man's heart; and the truest Physician of Souls is he who throws in the way of the people the greatest opportunities of spiritual and intellectual elevation in their most attractive forms; and, looking to the blessing of the Preserver of Men on these larger views, trusts little to legislative and restrictive enactments. All which will appeal in detail to the minds of men in the most diverse and sometimes the most opposite form.

It is quite needless now to draw the attention of the working classes, or indeed of any part of society, to the value of that part of the contents of their Library which treats of Natural Knowledge. It may truly be said that it has the especial advantage of enabling its votaries to refer, for the most part, to the original source,

by questioning Nature herself. There are and ever will be unsolved problems in the Natural History of every neighbourhood; dissections to be made; developement to be studied in every water; the abstrusest Chemico-Physiological questions to be answered. There are stars to be explored by the observer; and their motions to be calculated by the mathematician. None of these are out of reach of the many: we have among our own tradesmen ardent cultivators of various departments of Natural Knowledge. May every success attend their undertakings, and all means be open to them. Any one conversant with the true nature of Physical Science, knows well that wrongly pursued for the purpose of science, it is wrongly pursued for the whole man: speaking generally, moral faults will react on his intellectual frame*. A Christian it cannot make him: as Bacon says, "Out of the contemplation of Nature, or ground of Human Knowledge, to induce any verity of persuasion concerning the points of Faith, is, in my judgment, not safe: Da fidei, quæ fidei sunt."

The effect of Natural History Studies on the Character of Man is not as yet fully felt. Under the term, "Studies of Nature," must of course be included all that relates to natural objects; their external form and appearance, their formation as a whole, their internal nature. They include, on the one hand, all external appearances, represented in art; such as human form, human expression, with their modifications and the causes of them: and, on the other, all the internal structure, relations, functions, of all things organic and inorganic, by whatever means examined and made known. It is clear that nothing else is an adequate history of Nature, or of any of its parts. To consider internal characters as the sole object of Natural History, would be as ridiculous as to consider their outward appearance its only business. I name this only to remind the Reader how many educated persons, in every rank of society, are interested in the progress of Natural History, including, for instance, the 22,000 Medical Practitioners in Great Britain alone.

We must not at all measure their full effect on man, by their effect hitherto. They are only beginning to tell. Some sciences are quite in their infancy; but they reach maturity early: and, if fed on Truth, which is their Tree of Life, they never die. I freely admit the danger and the fear of this state of man. By the tree of knowledge was his fall; and as the people run to and fro, and knowledge is increased, pride may bring about a more terrible, because a final, degradation of the mature race: but it need not. Individuals have each their free-will, which in the totality is the will of the race. The triumph of the individuals is the triumph of the race.

Now what are the qualities which the study of any portion of the field of Nature, unless her reign be disturbed by his rebellion, engenders in Man? First of all,

* See a noble discourse on this subject by Hugh James Rose, in his Sermons preached before the University of Cambridge.

truth, candour, freedom from prejudice and partizanship, gentleness, patience, perseverance, hope, sagacity; then the love of all kindred spirits, and the peace of a contented mind*. Of all these they partake the most whose life and habits the most befit the student of the unwritten word of God, "of that his servant Nature, whose manuscript lies open and expansed to all." In Science, as elsewhere, Man's evil nature intrudes to mar the Work. But in the contest is his strength:

> "Who strives, he wins; and gathers might
> For other future sterner fight."

In consequence of the increased Education of the People, the struggle for these habits of mind is more and more widely spread. Not only the artist before his model, the anatomist with his knife, the chemist at his balance; not these only who are the professors and exponents of their lore, but through all society, fresh from the school or the lecture, the tradesman with his microscope, the apprentice in his daily walk, the mason at his carving, are looking on Nature, with reverence, or without; are drawing in her silent teaching, or casting it out; are interpreting this page as the Progress of Man, or contemplating it as the Word of God.

Truly this knowledge is power. What does History say? Do they, that have power, wisely use it? or do they not?

There are other means however of Mental Refreshment than those which the Libraries provide. I allude to Music and to Drawing. As to the first, it is to be acknowledged that its successful cultivation implies either great Natural Gifts or great Precision and Industry, and that all homage should be shown to Milton's conviction†, "that solemn and divine harmonies recreate and compose our travailed spirits; and that, if wise men and prophets be not extremely out, they have a great power over dispositions and manners, to smooth and make them gentle from rustic harshness and distempered passions."

Public Music, Amateur and Professional, deserves therefore, in every Community, the highest encouragement. Hullah has unquestionably been a National Benefactor. Oxford, with her Choral and Motett Societies, and her College Choirs, may and probably will show what kind of intellectual training can be furnished to a considerable portion of a Community through the subtle sense of hearing. But indeed of this, as of the Drama, it must be said, that, to be a real instrument of good, it requires the earnest efforts of able and generally cultivated minds. Great harmonies, like the amazing mechanism through which they find their way to our

* See an account of the temper of a scientific man, quoted in the Appendix to a Sermon preached before the University by my excellent and able colleague, Professor Price.

† Probably every one who reads this knows Milton's letter to Mr. Hartlib.

soul, are grave and holy things, and by no means to be trifled with. Bad Music is an intellectual nuisance, and it is one way by which the virgin senses of children are polluted, as bad wall-prints and incorrect drawing are another; it is as great an intellectual evil as a foul smell is a physical one. But the greatness of the evil our accustomed ears are too hardened to appreciate. An evil, however, it is, and one which would not be borne in a New Atlantis or in a Model Republic.

There is nothing more curious, and few things more saddening to me, in the History of Man, than to notice how Arts are lost; and what great labour the race endures in regaining them. It is wonderful how, after Palæstrina and some of our old English Composers had written their "solemn and divine harmonies," they should be set aside for the florid trash which passed current thirty years ago: and the more remarkable is this, as the Services of Palæstrina are yearly heard in Rome, and as our Cathedrals should have disseminated a true and elevated taste in and through every district in the kingdom. To say here a word on the deep-rooted cause of this is not for me. I may venture only to record that the cultivation of Public Music is an educational object well worthy of the attention of our best residents, who may cooperate in this matter with the zealous Musical Professor, and with those who have already done so much for it. The amount of material for the purpose is enormous, and needs only bringing together and cultivation, to show what results can, by hearty combination, be brought out in one small City. The Printers of the University Press have explained by their Concerts what one body of men can accomplish. The proposal to erect an Organ in the Town Hall will, if carried out, tend to foster, as it does in other towns, the highest development of Public Musical Art.

There should be now no need for any man to urge the study of Drawing, either as a means of cultivating powers of observation and habits of precision, or as a higher kind of intellectual exercitation. We have been roused in our time from the aimless dilettanteism of the past age to a right apprehension of the two great ends of Art: the one, the earnest, faithful contemplation, and honest, patient imitation of the forms and the colours with which the earth has been adorned: the other, the teaching of the heart and the intellect through the painted or sculptured ideas to be conveyed by that form and colour. Whatever qualities may be strengthened by this loving earnest imitation, we may train in our institutions for Drawing: whatever we may learn from the great spirits that have from time to time spoken for the good of men in this form of speech, we may, if we be humble, glean from their works. But here, as in Science, all self must be eliminated; and he who would learn from even the outward aspect of the world the lessons it will teach, must approach as a child—in reverence and in trust. I know no sign of our time more hopeful than this, that not only have the mechanical skill and the mechanical appli-

ances, brought to bear upon our manufactures in the last long Peace, been crowned with success beyond those of any other epoch of the world*, but the perception of beauty and of truth in Art has been slowly growing up at the same time. I must not allow myself to indulge here in the charms of a controversy; but I may boldly say that a new page of nature and of art has been opened to us through the works of Ruskin; and that the analytical powers which he has brought to the investigation of the artistic aspect of Nature has at once illumined her book, and given eyes to the Reader. Nor does this conviction remove one tittle of my gratitude to the Great Practical Teachers of Art, who, in Greece, Italy, and Germany have shown, in former ages, how Genius may create for common men, a world, which but for their revelations must have lain unknown. To these gifts from Art to Man, England bids fair to offer her full part.

How much the Physician and the Philanthropist must desire the success of Schools of Design, and Schools of Art, and the exercise of the faculties which they can cultivate, whether for the purposes of trade or as the means of enjoyment, these few words must testify. I add only that when a Professor of Art resides in our University, as I trust will ere long be; and when we have, as he would make, an Historical series of Art, no City will be more happily placed, in these particulars, than Oxford.

The desirableness of more thorough and systematic attention to mere Physical Recreation is not perhaps sufficiently appreciated. Indeed, for professional men, however hardworked, to expend half an hour upon joyous bodily exercise, away from a dusty road, almost brings them into discredit. A Surgeon may dine out daily, expending four hours of time, and injuring his digestive organs; but should he seek health, elasticity, and vigour—of body and mind—by one half hour a week at Quoits or at Tennis, half his patients might desert him; not seeing that what improves the bodily health of an intellectual man, improves his mental powers, to the great advantage of his employers. By this fashion, it can be called nothing

* This remark may be justified, if by no other instance, certainly by one recent modification in the way of applying Steam Power to Ships. Any one who has had opportunity for observing Naval Affairs as, through the almost parental kindness of Admiral MORESBY, I had, several years ago in the Mediterranean, cannot but consider the change from the Paddle to the Screw as in its results one of the most striking of all improvements upon applications of power previously known. Any one who doubts this should study such a Ship as the Duke of Wellington, on the one hand, and one of the new Gun Boats on the other. I may be forgiven for respectfully saying, by the way, that any man, who has never lived among English Sailors, has not seen one of the noblest aspects of human life.

else, I have no doubt, many valuable lives have been lost. Besides its immediate effects, it engenders a certain stiffness in the whole deportment singularly unfavourable to the life of a man much employed within doors in intellectual occupation. There can be no doubt that the maintaining the occasional habit of boyish exercises to a late period of life might prolong the health of youth, unless resorted to with too little frequency, and too freely indulged in when enjoyed. It is moreover to be observed that this remark is of the more consequence as the educated and intellectual classes increase in proportion to the whole population: for otherwise, as a greater number of minds become overtasked, and the muscular development is impaired by the more intellectual life of the many, more nervous diseases will be engendered; and more weakly children will be born. Thus, in a physical sense, we might have to say,

Ætas parentum, pejor avis tulit
Nos nequiores, mox daturos
Progeniem vitiosiorem.

It is given only to a few yearly to leave their work for several weeks, to scour the Continent or stalk the Highland heather. But thousands and tens of thousands need it, and might in a more considerate state of society find their repose, and gain their elasticity by their own Town-side, as of old by the Village-green. It would be impertinent trifling in me to say this, did I not believe that men's true work would be better done with a more elastic frame and ruder health; and that their families and their employers might find some to be happier and wiser men who are now, morally and physically, victims to accidental custom.

But childlike gambols are not beneficial to the mind-workers only. It is, at first sight, remarkable that even the hand-workers will rush to cricket and to games of strength, when they have the time and place allowed to them. Labouring men, if they dine at their works, as ours do in the dining-room of the New Museum, will often give half the dinner-time to a game of strength and of bodily skill.

Our favourite national game of Cricket is a bad one for Towns, because it occupies much space, and can engage therefore but few persons, and is dangerous to children and bystanders. There are many others quite as good: Quoits, Foot-ball, and a score that might be made and devised; inexpensive, occupying small space, healthy, suitable to all strengths and all dispositions. Oh! that some of the Games of Delphi, the Stadium of Laodicea, the Palæstra of Athens could be by our Warehouse sides: then some hearts would be lightened, and the parching need of ardent spirits to stimulate some wearied nervous systems might be lessened in our streets. We are, in Oxford, surrounded by the blessed elasticity of youthful spirits, that pass by every year to leave us, alas! too soon: we—who yearly see their joy in our Cricket Matches, our Boat Races, our Games, shared in by our best and our ablest men,—we think not of the sickness of heart and the sin that some of these means might spare to larger and less happy Cities.

It is not too much to expect that the University ground, North of our Museum, may be saved for this purpose. If, at our Encænia, the stranger might see a public holiday, with our working youths racing, or throwing, as 'Discoboli,' their discs for a prize, it were a sight not unworthy of the place, or the people. "Striving for the mastery, being temperate in all things, keeping under the body, bringing it into subjection," they might do no dishonour to persons who spend so much time in the contemplation of the people of Athens, and so little in the exercise of some parts of their wisdom, and some means of their greatness. The University, by giving prizes for these Athletic Games, and by imposing its own regulations on the use of its own ground, would show that public concourse does not necessarily mean public revelling, nor games imply idleness.

The General Considerations which have been advanced in the preceding Chapters, will, I trust, tend to confirm those who seek the physical well-being of their neighbours, in the opinion, that attempts in that direction must also be attended by the promotion, of intellectual culture, and of increasing purity in the moral and the religious sense—that practical conviction of their duty to others, and towards God, is as indispensable to them as is a knowledge of the material world, and of the laws of their own organization—that though it is our duty to do all we are able for ourselves, it is no degradation to receive the help of mutual and voluntary associations, but rather an inestimable benefit to us, to our people—that we must accept, and are bound to further to the utmost, such legislative enactments as will ensure the useful and systematic action of voluntary efforts—and, lastly, that we bear in mind that many Institutions, however good and perfect in themselves for the wants of the people at the time of their foundation, require Changes, which often are improperly construed into censures upon the past, but which are in truth *Additions*, the need of which could not have been foreseen.

CHAPTER VI.

The Summary.

The object of the whole of the inquiry which has been made, has been to determine, as far as was possible, the Cause of Cholera in Oxford and the District which surrounds it; and to elicit from the general result what can be effected by way of prevention of the Disease, or of preparation for meeting it.

The First Part was occupied in stating the Facts of the Disease; and the Second in describing the plans which the Board of Health adopted for the welfare of the City.

It seemed the fitter course with respect to the Third Part, to sketch in a broad manner for general consideration certain aspects of Civilized Society, as its masses stand in relation to physical and moral causes, in a City which contains a moderate

population; and which has some, and is exempt from other, evils dependent on life in a town. This has been done with the utmost brevity; and will necessarily appear inadequate to the greatness of the subjects. The sketches, however, can readily be filled up in the minds of many; but may perhaps open up a new field of contemplation to some hitherto unaccustomed to consider the larger exigencies of human life. If so, their object is fully attained.

It remains now to make a summary of certain purely local questions which those pages have suggested.

Immediately upon the close of the Epidemic, I was able to procure from many of my Medical Colleagues their opinions on the chief Sanitary deficiencies of the City: a summary of these, with their usual kindness, which indeed I cannot in any manner adequately acknowledge, they permit me to make public. The following is the Question that was put to them.

What sanitary improvement are you most anxious to see at once carried out?

Mr. FREEBORN states, in answer to this question—"I think it of paramount importance, that in attempting to improve the drainage of Oxford, the City should not be deprived of the wholesome water which is supplied through the gravel soil. This accident has happened in some parts of the Town, and people have been obliged to sink their wells into the clay, the water from which is bad and quite unfit for drinking or cooking.

"I think a great sanitary improvement would be the covering in of the Trill Mill Stream.

"When the rivers are low, and the water in the sewers very scanty, noxious gases accumulate in the sewers, and find vent through the water-closets which are drained into them. I have been lately forcibly struck by the offensive condition of some of the better houses of the City from this cause. Cases of Choleraic Disease have occurred in these houses, in close relation with the intensity of the offensive smell. I think this evil might be remedied by adjusting shafts to the sewers."

Dr. GILES says:—"I think we are not sufficiently aware of the distance through which fluids, retaining their peculiar properties unimpaired, may percolate into the wells, &c. As an example, I may mention the circumstance of a large heap of salt dissolved by the bursting of a water-pipe at the top of the High Street, influencing the taste of the water in various wells for six weeks or two months, as far as Castle Street."

Mr. HANSARD strongly urges "that the Trill Mill Stream should be covered in, through its entire course to the bed of the river." He is also anxious to see carried out "the naming and legibly posting up the names of the numerous courts and alleys in the poorer districts of the town. In London," he says, "this has been found of great service, both in a moral and in a sanitary point of view; for it calls attention to those hidden and otherwise forgotten spots, first and most severely affected by Epidemics."

Mr. HESTER deems "the flushing of all the streams into which so many abominations empty themselves, one of the most important of the required sanitary measures. I would name," he says, "the Trill Mill Stream more expressly as an example."

"I consider likewise that all persons keeping horses, and having large quantities of manure, should be compelled to carry it off frequently. No one can have passed Inn yards, when the

manure was being taken away, without being struck by the dreadful smell arising from it. It is a fact worth considering, that three fatal cases of Cholera have occurred in the immediate neighbourhood of the Mitre and Maidenhead Inns."

He dwells on the importance of "a more efficient system of drainage, and the removal of all cesspools. An inquiry should be instituted as to the state of every house in the place, and as far as possible every nuisance of this kind removed, and by having water-closets constructed with a fair communication to the external air."

Mr. HITCHINGS considers it among the most important of sanitary measures, "that windows be put at the backs of houses where there are none now, or that some such means should be adopted for free ventilation.

"That whitewashing be strictly enforced. And overcrowding of houses prevented."

Mr. HUSSEY wishes that all cesspools connected with water-closets and privies, should be made to empty into the main sewers.

He remarks, "that when the City is supplied with water from the large pond of the Railway, it should be made a punishable offence to throw offensive things into it, as in the case of the New River in London."

Mr. LEAPINGWELL says that in the district in which he has been chiefly engaged, (i. e. St. Thomas's), "nothing short of clearing the ground of the present buildings, and reconstructing proper dwellings, will be sufficient."

"The state of the river, from Pleasure-boat Row to the Castle Mill, should be entirely altered."

"The other streams are equally in need of improvement."

Mr. OWEN considers the most important sanitary requirement to be "a better drainage. All the open ditches passing through the city should," he says, "be bricked over, and

"The dwellings of the poor should be examined, especially with regard to the situation of the privies."

Mr. WOOD thinks it especially important to have "a better supply of water," and

"A large increase in the number of what ought to be water-closets, particularly in the courts and smaller streets, where it is not unusual to find from six to ten houses with only one privy amongst them, and that one scarcely ever in a state fit to be used."

There is little occasion to enlarge upon these brief but luminous statements. The Town, they say, wants drainage; the streams want purifying; the waterclosets and privies need improvement; the houses of the poor require inspection. The dwellings of St. Thomas's can only be cleansed by removal: in short, faulty dwellings, faulty ventilation, foul streams, inadequate drainage, are by united testimony to be found even in this City of Palaces.

A general retrospect of the Sanitary improvements in Oxford during the last few years, may aid us to the decision of what remains yet to be done*. I shall in few words recapitulate them. By this course also the Reader will feel thoroughly satisfied that the Authorities have not been unobservant of the wants of the City.

1st, Since the Cholera Epidemic new Water-works, far more efficient than the

* It seems unnecessary to attempt to enumerate all the evils, whether of slaughter houses, or other undesirable tenements, against which the Authorities have power to proceed.

old, and capable of supplying more than the present wants of the Town, have been erected. They are, as all know, removed from the river, being supplied from an excavation in the gravel to the south of the City, of more than eleven acres in extent. The water is therefore filtered through the gravel bed. Sir William Cubitt's recommendation to take the water from above stream, has been departed from, for the sake, it is to be presumed, of using this natural filter. I may well leave the merits of a difficult case in the hands of those authorized to decide upon it. At all events, I am happy to believe the supply bids fair to be plentiful and good.

2dly, A reference to the Map at the beginning of the Memoir, shows in a general manner, as has been before stated, the partially drained, or the undrained portions of the City. But it is not to be understood of Localities that are shaded green on the Map, that they have undergone no improvement. The largest tract so coloured, is that of St. Aldate's and St. Ebbe's. But in that district a foul ditch has been filled up, a sewer substituted, and various drains have been constructed, both in the upper and lower parts of the area. The drains, however, empty themselves into the adjoining branches of the river. The foul channel, called the Trill Mill Stream, is uncovered; and the surrounding country is liable to floods, by which the water is from time to time pressed through or over the banks into the adjoining soil, and some of the cellars of a part of the district.

St. Thomas's has been greatly improved in the last ten years; indeed any one familiar with the course and state of its ditches in 1846, would hardly recognize some parts of it. It has appeared however in the previous pages, that St. Thomas's still contains some of the worst blots on the City.

In other parts of the City, additions of lesser drains discharging into some main drain have been making. Complaints are occasionally made that the consequence is a change for the worse, in consequence of the reflux of noxious gases from the main drain. This is a result which, in the existing state of sewers, is probably of frequent occurrence.

Various cesspools have been removed*: during the time of the Cholera, cottages and rooms were cleansed and whitewashed by order of the Commissioners: the lodging-houses are in much better condition than they formerly were: no one could desire to see a better example of the condition in which a poor tenement under good management can be kept, than by inspecting the apartments of the Society for the relief of distressed travellers.

* During the time of the Cholera of 1854, about 450 Privies, 150 Piggeries, 50 Drains were removed or cleansed: not more than 30 of the Privies were however converted into Water-closets.

Some of the Cesspools were large: one was emptied which contained from 40 to 50 tons of ordure. It was nearly 14 feet deep. In another the superficial area was over 300 feet.

No work of this kind was done during the Cholera, but what seemed to be really necessary.

I am indebted to Mr. Galpin, the City Surveyor, for detailed information on these and kindred subjects.

Public Baths and Washhouses have been established, in great measure, through the exertions of Mr. Duncan, aided by Mr. Alderman Butler. A Free Library is open, and largely used; one of many benefits which Mr. Alderman Sadler has procured for his native city. And though our Workhouse is no model for any public institution, perhaps the Guardians' Industrial School at Cowley may ere long be so esteemed. Three Cemeteries have been prepared outside the City.

We want then, for the remedy of the Social and Physical Evils which in common with other towns we have, first, the thorough use of the Powers we possess; then, the addition to our present Acts of certain Powers which we do not possess; or the placing ourselves under the Health of Towns' Act. Above all, whatever is done, should be done as part of a carefully prearranged plan, of which some is yearly executed till the whole is complete.

For these and all our common interests, we require the united, but unshrinking action of the best and ablest minds that dwell within our walls: the beginnings of this union we have already witnessed, and may hope to see it increase yet more and more.

With respect to the Arrangements, in the event of another Cholera Epidemic visiting Oxford, it has only to be said, that probably none could be better than those adopted in 1854, and described in Part II., with the following exceptions: that—

1st, They should be determined upon, whenever a decided Cholera Epidemic appears in any town in England: though of course salaries need not generally commence till the Epidemic appears.

2dly, The Authorities should certainly be able to command, at any moment, adequate space for a House of Observation.

3rdly, There should certainly be at once provided Wards for Contagious Diseases, if not by the Infirmary, by some other Body.

4thly, In any Diarrhœa Epidemic, the Public should be earnestly cautioned to destroy by Acids, or Caustic Alkalies, all Diarrhœa Evacuations, before they are cast into Drains or Cesspools; and to destroy them as soon as they are passed *.

The convenience, economy, and wisdom of making these provisions beforehand, cannot be too earnestly insisted upon.

* None who are unacquainted with the ordinary habits of mankind on a large scale, can be expected to credit the difficulty of ensuring the observance of any prudential conduct. I saw under the bed of one Cholera Patient, the accumulated Cholera linen of the deceased child of the sufferer: it had lain for some days unwashed, and reeking. In a quiet respectable house, the saturated linen of a Cholera Case was kept in a room in a large heap for the next washing-day. The mistress of the house had Cholera (in consequence?). No doubt such things were of constant occurrence, notwithstanding the provision made for washing all Cholera Linen, on the premises of the Board of Health.

APPENDIX.

APPENDIX A.—See p. 90.

Danger attending certain localities at WITNEY.

The following brief statement connected with the late Epidemic may be not unacceptable to persons interested in the state of this industrious town. I may be permitted to express, by the way, my sincere thanks to the various gentlemen who aided me in my inquiries, when I was called upon by the Board of Guardians to advise them concerning the most efficient means of meeting the Epidemic, and to supply them with Nurses.

Cholera commenced in Clark's Yard, West End, *in the same house* and *in the same yard* where it broke out on its last visitation. I am informed that it followed the same course as in the first Cholera Epidemic, appearing almost simultaneously in the lower part of Corn Street (where indeed the first death occurred.) *Eighty-five* of the *one hundred and two cases* of Cholera and Choleraic Diarrhæa belong to these two localities. In them nearly all the deaths occurred; they were equally conspicuous in the last visitation.

The said *Clark's Yard*, in West End, lies low; it is rather damp; it receives into an ill-constructed drain a large quantity of offensive sewage; the drain runs near the well, which it pollutes; a few yards from the Houses it is uncovered and partially stagnant. It had, when I was there, one of the most sickening smells I ever perceived. In the lower part of Corn Street a large stagnant sewer approaches and crosses the street; it is altogether uncovered; from it proceed, after rain, and changes of temperatures, gases most offensive to the smell. It takes its origin in the High Street; in the first part of its course it is known by the name of Guns Hole, lower down it is called Emma's Dyke. It requires no medical knowledge to feel this to be a spot quite dangerous to the Town. In fact, with such spots in the centre of a population, no one should be surprised at the outbreak of Typhus, or any Virulent Disease.

APPENDIX B.—See Part iii. Chapter iii. p. 116.

Having been very desirous to know what were the ancient habits of the Chinese with respect to drainage, I was enabled, through the kindness of my learned friend Professor Max Müller, to obtain the following interesting particulars, from the well-known ABBÉ HUC. The questions which I transmitted are printed in Italics.

Extract from a letter of M. STANISLAS JULIEN, Member de l'Académie (le 30 Dec. 55).

"Mais comme je tenais beaucoup à vous satisfaire j'ai eu recours à une personne qui a résidé et voyagé 15 ans en Chine, au célèbre abbé Huc, auteur du voyage au Thibet.