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Blackwell, Elizabeth, 1821-1910.
University of Glasgow. Library

Publication/Creation

Edinburgh : John Menzies, 1878.

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THE
RELIGION OF HEALTH.

BY
DR. ELIZABETH BLACKWELL.



EDINBURGH AND GLASGOW:
JOHN MENZIES & CO.

—
1878.

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THE RELIGION OF HEALTH.

THE words "The Religion of Health" convey a profound meaning to the physician who has spent a life-time in relieving physical suffering. I will try and state what those words seem to me to imply.

Obedience to divine law is the highest wisdom of the human race.

Wherever God's laws are clearly visible, stamped in immutable characters, so plain that every human being who is willing to read them can do so, then the wisdom, the happiness—nay, the simple common sense of the race, lies in obeying them. The first lesson every one of us has to learn profoundly is his subjection to law. There is no escaping this inexorable destiny. Although each one is born with freewill, his type, the plan and pattern of his being, is born with him also. This type is a limitation to the nature, but it is also a guide: it is the finger of Providence showing him the road to follow in the great wilderness of creation; it is the divine order, according to which each one can freely grow and expand in body and soul to the finest proportions. True freedom consists in the voluntary choice of this type, in the full acceptance of all its conditions, and in the endeavour to unfold its capacities. The will may refuse this type, may deny the laws that govern it, may seek for license in a lawless rejection of divine order; but it is soon arrested by endless obstacles; and persistence in the unequal struggle will only end in degradation and self-destruction.

We recognise a divine law when we see it existing age after age unchangeably, carrying order and beauty in its fulfilment; penalties, discord, desolation, with infringement. These laws are grand in design, beneficent in their effects; equally so, whether we observe the marvel of parental love, or explore the wonders of the skies; whether we clothe them in warm human garments indispensable to the simple, loving heart, or frame them in the clear precision of scientific formulæ, indispensable to the truthful mind.

If there be one law that all can clearly recognise in the existence of the material world around us, it is the unvarying method of human development from infancy to old age. A certain plan exists, according to which the infant expands through childhood and youth into manhood, and thence changes through elderly life into old age.

This plan never varies in any epoch, or race, or country. It is the same for the lowest savage tribe as for the most cultivated race. No effort of ours can change this unvarying sequence in human life.

This is a wonderful fact. It is so common that we hardly notice it. Yet it is wonderful, because it is so common—so common as to be universal. It rises, as we regard it, into the dignity of Law.

Reverence for this unity of life increases the more carefully this strange fact called the human body is studied—the more fully we understand what it is, that thus remains unchanged age after age. We speak of the body as if it were a single, simple thing, to be used as a tool and then laid aside; but its complicated structure is a little world in itself. As a machine, it is such a model of compactness and ingenuity that no human skill can approach its perfection. It possesses a two-fold life—a life for itself as well as a life for our use. In its own proper life it carries on a thousand curious operations necessary for its growth and maintenance, quite independent of our volition or consciousness. It contains extensive manufactories, full of complicated and delicate machinery for the production of sugar, oil, milk, acids, alkalies, salts; it has storehouses of iron, lime, and other chemical substances; there are magazines where it lays up supplies against a time of scarcity; it has its refiners and scavengers; apparatus for warming and ventilating; it has pumps and propellers constantly at work; and a more perfect electrical apparatus than has ever been invented. All these remarkable operations are directed by intelligence, working according to a plan and combining these manifold energies for one purpose—viz., the maintenance during a certain period, of a healthy human body. Besides this independent existence of its own, the body possesses a life of relation, by means of which it is fitted to the uses of individual and social existence. Its powers of locomotion, its active senses, its faculty of feeling, its wonderful human hand, and its still more wonderful human brain, all belong to this other use of the body, as an instrument for the expression of intelligence and emotion.

Equally remarkable is the system of general unvarying laws by which this living structure is governed. The first law we notice in human growth is the precedence of physical over mental growth. We observe that physical development, though never separate from mental development, is always in advance of it. This is shown by the wonder and delight with which the parent receives the first sign of awakening intelligence in the young infant, the first smile, the first indication of observation. It is the awakening mind. But every physical function essential to life has been perfectly performed from the first moment of birth, as perfectly, according to its wants, as it will ever be performed throughout life. This precedence of physical life continues throughout the whole period of

growth, though it strikes us less as the years roll on, and the mind gradually assumes that mastery over the body which should be the condition of adult life. The brain is the last part of the body to cease growth. Every other organ is perfectly formed, every bone consolidated, the physical organisation complete, while the mind, with its necessary organ of expression, is still growing. I place this important fact first, amongst the rules which govern the human economy, because it strikes the key-note of education; and it is only through a thorough appreciation of this principle that we shall beneficially change our present systems of education.

Each age has its own special method of existence; thus there are laws for growth, for maturity, for decay. There are the great facts of growth by exercise or use; the necessity of maintaining a just distribution of force amongst the various parts, lest one grow at the expense of another; the alternations of action and rest required in every part of the economy; the varied life of different functions, which give to each its individuality and special rule; the varieties of race, of temperament, of individual peculiarities—these will rightly indicate the extent and variety of these unchanging laws, by which our human nature is moulded. Their importance may be realised more fully by dwelling for a moment on one or two of them.

What may be termed the balance of power or just distribution of force in the various parts of our physical and mental nature—according to each individual type—is essential to the perfection of the organisation—it is indeed the measure of health. It is attained and preserved by the due exercise of all the functions of our nature. In ascertaining what is this due exercise, we observe that the different functions of the human being are subject to varying laws of constant or occasional action. The higher the object of a function, the wider its scope—the longer are the intervals of rest required, and the more direct is its subjection to reason; it is taken from under the control of the automatic vegetative life of the body, and placed under the direction of the central authority—Reason—Conscience. Thus, we see the lungs, whose sole object is the physical life of the individual, breathing day and night unceasingly, with alternate rest and action every moment. The digestive apparatus, with longer intervals of rest and a wider range of objects, connected with the preparation and enjoyment of food. The senses, with their great use, both to the individual and to society, locked in slumber every night. Thus step by step the plan rises to the highest functions of human nature—those which concern the race—which, above all others, are under the dominion of reason, and not subject to that law of constant action which controls the lower functions.

Equally interesting is that law of our nature which determines growth by exercise. It is a fact clearly demonstrated by modern science that the governing organ of the human body, the brain,

has distinct portions of its structure devoted to the service of distinct faculties of the mind. Thus the intellectual, the emotional and the locomotive powers work through corresponding portions of the highly-organised brain. Each faculty grows by exercise. Not only does the mental faculty become stronger by use, but its physical organ of expression in the brain, with its dependencies in the rest of the body, become larger and stronger with a richer supply of blood, and greater aptitude for instantaneous action. This condition of the physical organ reacts upon the mind, which takes greater pleasure in acting in a certain direction, when it finds the brain so keenly responsive to its impulses. If the proper distribution of force is disturbed in any individual by the neglect to exercise important portions of our nature, an antagonism of faculties springs up, one part growing at the expense of another part. Thus the emotional may destroy the intellectual life in an individual who is subjected to undue excitement of the passions, particularly if the type of the nature is not largely emotional. The other faculties will rapidly lose their power. The intellect suffers, judgment is lost, and mental confusion produced, which is really a species of insanity. Those organs of the body, also, which are most intimately connected with the excited portion of the brain become involved, and their functions may be entirely deranged. The automatic power of the human body may also assume undue control in those who yield to fancies and caprice, and lead an unnatural and sedentary life. There is an antagonism between this automatic force, and the life of relation or brain-life of the individual. The more the balance of powers is lost in the human brain, reason being no longer the controlling force, the greater becomes the power of this instinctive life of the body, the greater its capability of answering every fanciful suggestion, and even of exciting those suggestions. The individual may thus become the sport of his own unbalanced faculties, and a prey to every species of morbid hallucination.

An organisation so complicated (as this human body), designed for such manifold uses, and at the same time drawing the elements of its existence from the external world, must be powerfully influenced by all the circumstances which surround it. Certain physical and mental conditions are essential to human growth—to Health. Hence the question of food and clothing, of drainage and ventilation, of human habitations, of exercise and occupations, attain equal importance and dignity, as essential to the fulfilment of the great changeless plan of life.

Thus we are brought face to face with a great fixed fact—a fact which concerns every human being during every moment of life, viz., God's unchanging law of human growth. This law we are called on to study—to obey, and the obedience to it is placed first in the order of human duties. Obedience can only be rendered by

study of the objects of physical life—of its structure, its conditions, its rules. Its learning, thus regarded, becomes sacred learning, and ignorance is criminal.

The folly and wickedness of our practical contempt for the great laws of human growth, may be measured by the penalties of suffering, illness, and premature death attached to this neglect. This is rendered more striking by observing, first of all, the great force of the principle of vitality—the strong tendency to live and resist injurious influences, which we all possess. Nothing is more remarkable in the history of the human race than its great power of adaptability. Scattered all over the surface of the globe, under the most varying conditions, men still live and thrive. The cities of Oenipia and Quito, at a height of 9600 feet above the level of the sea, possess large and flourishing populations; so also do the cities of Holland and New Orleans, which lie below its level. Multitudes of workmen live in the galleries of the deepest mines, many hundred feet below the surface of the earth, deprived of light, breathing air much more condensed, living under a much stronger pressure than that of the ordinary atmosphere. And, on the other hand, scientific observers have taken up their residence for a long period on the crest of Pichincha, at an elevation of 14,826 feet. Agassiz spent some weeks in investigations on the Jung-Frau. Gay Lussac attained the highest elevation ever reached by man in his balloon, 28,000 feet. All can recall the thrilling narratives of Arctic voyagers, where the thermometer has been known to measure 91° below zero. Contrast this with the burning sun of India, where 120° Fahrenheit is observed; where glass is cracked by the heat. A wide range of more than 200° of temperature, and yet the heat of the human body maintains its steady and necessary amount, never materially wavering under the two extremes. Similar illustrations of the power of human nature, to adapt itself to unnatural conditions might be drawn from all the other elements necessary to life.

Notwithstanding this remarkable power of vitality, which can brave such extreme variations in physical conditions and endure enormous privations, careful observation all over our country presents a fearful record of death, sickness, and physical degeneration produced by our own social arrangements—arrangements and habits so destructive to the human organisation that they overpower even this great capability of adaptation.

This is seen in the statistics of our towns, in the condition of our peasant population, in our social and domestic experience.

The statistics of all our large towns demonstrate the great and unnatural destruction of life that takes place in these centres of civilisation, where the highest medical skill is found, and placed freely at the call of poor as well as rich. The natural death-rate at present is 17 per thousand, *i.e.*, that under the most favourable

conditions, as amongst the upper classes in our healthiest cities, in the healthiest country districts, 17 out of every thousand persons die each year all the world over, a lower mortality being exceptional; but the following was the death-rate of our chief cities (1868), instead of the natural rate of 17 per thousand: Bristol, 23; London and Birmingham, 24; Dublin, 25; Edinburgh, 27; Liverpool, 29; Glasgow, 30; Manchester, 32. That means, that in London alone, in a year of no special sickness, more than 21,000 were killed, who ought to have lived; in the British Islands, an army of over 176,516 lives were swept off unnecessarily. This is not all; a much larger proportion of the population is always ill at one time—about 78,000 in London is reckoned, of whom one-third are suffering from preventable diseases. This calculation does not take into account those feeble, ailing persons who are never more than half well; who lack strength and energy for the daily fulfilment of duty. It is shown that in the whole of England the people have only a mean life-time of forty-one years; not half the term of life that seems to belong naturally to our race. Of those who died within the year, over 134,000 were in ripe manhood; but yet more noteworthy are the deaths under the age of twenty-five—over 242,000 perished in childhood and youth. The wholesale slaughter of children, in our civilised country, is truly appalling. Out of 233,515 deaths at all ages, 94,804, or 40·60 per cent., were those of children under five years of age.

To understand fully the grave import of these records, three facts must be noted; first, that the death-rate of a country is always under-stated; second, that town populations increase at a much more rapid ratio than country populations; third, that the death-rate increases in direct proportion to the density of the population.

In proof of these three propositions, let me quote from recent testimony of our most eminent statisticians:

“Wherever the population is increasing, the amount of mortality is under-rated, in consequence of there being an excess of young people in those numbers which make the mortality appear lower than it really is. The mortality of London appears much less by statistics than it actually is; it is reduced in two ways, by having a large influx of persons, at the period of age when mortality is low; and by the departure and return of patients to the country to die, as consumptives for instance. The causes of disease in London are excessively active, as is seen, for instance, in the mortality of male children under five years of age, which is about 8 per cent. (*i.e.*, 80 per 1,000), while in some of the more healthy districts it is not more than 4 per cent.” Again: “Of the 20,066,224 persons enumerated in England in 1861, nearly 11,000,000 were in the towns, and 9,000,000 in villages and country around the towns. The total population in London and 71 of the largest towns in England was over 7,667,622, and the population in the country and

in smaller towns was over 12,398,602, so that there are nearly eight-twentieths of the population in those 72 towns. The total increase from 1801 to 1861 in the population of England was over 11,173,688, and one half of that increase was in those 72 towns. It will thus be apparent that the town population is increasing at a much more rapid rate than the country population." "The country population now is very nearly the same as it was in 1801. By a law which at present is very constant, the mortality increases rapidly with the density of the population. In our thinnest districts the mortality is about 15 per 1000; in our densest districts it ranges from 28 to 33. This relation is a constant law; where there are 179 persons to a square mile, there the mortality is from 17 to 19; where the density of population varies from 3000 upwards, the mortality ranges from 26 to 33; so that, under our present arrangements, there is a constant connection between the density of population and its mortality. That connection is not necessary; our towns might be made nearly as healthy as these country districts, having a mortality of 17 to 20." Of the circumstances under which large masses of our population grow up, another distinguished physician writes: "They create special diseases, demoralise the population, and, in course of generations, completely overthrow the physique of the people. It is impossible to walk through the central streets (of this large town) without observing that you are in contact with a population awfully degraded, both in physical and moral attributes—a population whose mere external characteristics impress you at once with the idea of a depth of degradation, of bad habits growing for generations, in consequence of these arrangements." "Thousands and hundreds of thousands are thus brought up."

Turning from the towns to the agricultural population, where we have the right to expect the fullest measure of health, we find a condition of things which strikes an observer with dismay. The cultivators of the soil constitute the back-bone of a nation. I have carefully observed them in America, and have learned to consider them the ruling force of the nation; independent, thoughtful, exercising judgment and common sense. Again and again I have seen the corrupt or mischievous vote of the large towns reversed or overwhelmed by the country majorities. The condition of the peasants who cultivate the soil, all over our country, presents a terrible contrast to this picture. Fever, produced by extreme misery, seems to be endemic amongst them, sapping their strength and stupefying their minds, when it does not kill; they are crippled by rheumatism and destroyed by scrofula; their miserable cottages are damp, dark, close, and overcrowded; their pitiful wages will not supply them with decent dwelling, sustaining food, or other necessities of life.

Let me quote testimony from high authority, given within the

year: "As many as ten persons are often crowded into a sleeping room not twelve feet square;" "the external walls are too thin, the rooms too small, no ventilation, brick or tile floors;" "cottages are frequently built in marshy situations, and by stagnant water, or at the foot of hills where there is no free circulation of air; the spot is chosen on account of the small value of the land, and its uselessness for agricultural purposes;" "they are not able to pay what would be a fair interest on a decent cottage." "If a new colliery is opened in an upland valley, 200, 300, or 400 cottages are built very rapidly, and they are inhabited long before they are dry. The foundations as a rule are simply upon the sod, which is merely turned over, and a flag is put on that sod. There is no drainage of any kind; 40,000 to 50,000 persons will live in houses of this kind, in one valley." "There are numbers of villages throughout England where the people are drinking polluted water." "I have seen no place in England in a worse condition than this village. I have seen many native villages in South Africa, but none so bad as this!" Volumes might be filled with similar testimony as to the physical state of our country population—a population whose condition is the truest measure of a nation's substantial strength.

There is no error so dangerous in national life as the discouragement of honest labour. If the conditions of labour are injurious and repulsive, whether from exhausting hours of toil, unhealthy work-places, squalid homes, or dreary monotony of toil, the workers of either sex will inevitably seek relief from hopeless drudgery in the excitement of vicious indulgences.

Our social experience joins its testimony with these statistics of town and country, to show how wide-spread is this destruction of health. Every housekeeper knows the extreme difficulty of obtaining a healthy servant; nine-tenths of those who apply for a situation are suffering from some chronic form of disease, which, if they belonged to a different class of society, would place them in the list of permanent invalids. There is no more frequent cause of the ill-health of domestic servants than the damp and sunless rooms in which they pass so much of their time, owing to the injurious practice of building dwelling-houses, both in town and country, without a cellar under the whole house, drained, and ventilated from side to side. No room is fit for human habitation which has not a six-foot cellar, dry, with ample through ventilation, underneath it. It seems surprising that, in a damp climate like ours, with rheumatism and scrofula prevailing everywhere, this necessity has not been perceived.

It is often thought that sanitary knowledge means chiefly ventilation, food, and drainage, that it applies only to the lower classes, and that we must await the action of Government to build better houses, and otherwise deal with the gigantic question of pauperism. This is a profound mistake. Health depends upon the

observance of all the laws of our complex nature; it applies to the mind as well as the body. A deteriorating influence which proceeds from within is more to be dreaded than one that comes from without. The nervous system (from mental or physical causes) may be completely shattered, leaving the individual a wreck. The senses (from mental or physical causes) may be rendered so craving and irritable that the noble proportion of the nature is lost. An hysterical, feeble person is an unhealthy one; equally unhealthy is a coarse brutal one. In either case, health, in the true meaning of the word, is thoroughly impaired. Those classes of society who are able to command every physical appliance that wealth will purchase are often, from their kind of suffering, more dangerously diseased than the labouring classes. I need only mention the spread of luxury, the delay of marriage, the frail progeny of unsuitable unions, to show how inextricably the mind and body are blended in all that concerns health.

The highest authority on this subject thus condenses the lessons of his great work on health: "Hygiene is based upon the physical and moral perfectibility of man, of which it furnishes the proof." "Health may be described in two words—morality, competence."

The general deterioration of health prevailing in all classes and both sexes is most strikingly seen among women. It is proved by the increase of nervous and special diseases, the prevalence of scrofula by general fragility of constitution, and inability to bear the unavoidable burdens of life.

The health of the mass of educated women is a matter of serious national concern. These women form the heart of the nation: they mould its family life; they create society; they exercise an unbounded influence on the lower classes. If the health of the mother breaks down, family happiness is destroyed; so if the health of this class of a people is deteriorated, the welfare of the nation is imperilled, both in the present and the future.

Young parents enter upon the heavy responsibilities of family life, in deplorable ignorance of their duties to one another, and to their children. As parents it is their first duty to secure right conditions of health for the infant, for the child, and for youth, until they leave the parental roof. Each age demands a varying set of conditions, which become continually more complicated as the necessities of the mind increase in proportion to the physical wants. The conditions that will keep an infant in perfect health will not suffice to secure the health of the boy or girl of fifteen. As a weak stomach will impair the temper, so a vacant or corrupt mind will injure the body. Comprehensive knowledge is needed to embrace the wants of every age, and such knowledge all parents should possess.

In seeking the cause of this destruction and deterioration of life, thus briefly stated, we find it in the universal ignorance or neglect

of the divine laws of human growth. We find this neglect and disobedience equally among rich and poor, learned and unlearned, religious and worldly, in individual life, in business enterprise. The fevers of the poor, the hysteria of the luxurious, the indigestion of the learned, the devastation of our mining districts, equally show contempt for the wonderful organisation which God has made,—indifference to the conditions which He has clearly laid down as essential to its welfare.

One of the most important problems of the present time is how to embody the sanitary knowledge which we possess in the life of the nation, so that a higher standard of health may be gained by the present and succeeding generations.

The solution of this great problem must be attempted in many directions. It must be sought in the power of legislative action; in the wide-spreading influence of education; and in the strength of social combination.

The part which legislation should take in promoting national health demands serious consideration. Legislation is the human imitation, or visible representation, of the greatest fact in the universe—law; and it derives from this representative character, its immense power in moulding the spirit and habits of a people; for, as the divine laws of the human organisation limit its powers, and direct its modes of action, so the human laws which rule a people, determine their modes of thought, and their relations to one another. Legislation, therefore, not only represents the life of the present generation, but is the most powerful educator of the rising generation. Every law contains this latent power hidden within it, and so often overlooked. In every subject of legislation, whether it be the most trifling village regulation, or the gravest international question, there are principles, hidden behind the facts which induced legislation; and it is the attitude that legislation assumes towards those hidden principles, which stamps its character as good or evil, which makes the human law obedient, or disobedient, to divine law.

The health of a nation is a most important concern of a wise Government. No other agency can act with such extensive and combined power. But much wise caution is needed in dealing with such a subject as national health. Human agencies are very imperfect, and much has to be learned as to the right way of dealing with most important subjects of health legislation. If the authorities introduce a supply of pure water into a village suffering from typhoid fever, they do a righteous thing. They deal with causes. By careful investigation they have collected a body of facts which prove that impure water will produce typhoid fever. In this act of introducing a supply of good water there are many principles enfolded. Thus they destroy the cause of a great evil; they express approbation of that good thing—pure water; they

educate the people into liking it; they show them, through experience, the blessings that flow from it. They thus render obedience to divine law by their legislation. But it is very different if they attempt to regulate a village gin-shop. Gin, as a drink, is always bad, whether adulterated or not; and, in dealing with the greatest evil that afflicts our country—the curse of drink—legislation must adopt the same course that it did for typhoid fever; it must patiently and persistently accumulate the facts, which will show what produces this dangerous disease of drinking.

Divine law rewards the good (*i.e.*, the obedient), punishes the bad (*i.e.*, the disobedient), swiftly, surely, inexorably, no matter at what cost or pain; and human law must never temporise with evil, neither directly nor indirectly sanction it. Every act must mark disapprobation, or it loses its character of law, and becomes simply blind or blundering expediency. In dealing with evils, legislation is bound to investigate the causes of evil, and attack them. Herein lies the superiority of legislative over individual effort—that it is able to accumulate that body of varied facts through which causes can be clearly ascertained, and the attention of the community directed to them. It is only on this sound basis that wise legislative measures can be framed; only in this way that great questions of national health can be judiciously dealt with.

Our English Government—in advance of every other nation—is learning to recognise this great function of legislation, and is gradually accumulating such a store-house of facts as will render comprehensible measures of wise statesmanship possible. The mass of the people, however, must become sufficiently intelligent to support such measures. The difficulties which now stand in the way of health-improvements from want of this intelligence, are inconceivable to those who have not considered the subject. No matter whether the health-improvement suggested be great or small—whether it be the redemption of a lovely mountain river, whose sparkling waters have been turned into a black source of pollution, a swamp that ought to be drained, or a poor cottage that needs the introduction of fresh air—there is always the same opposition and misconception. Thus a short-sighted view of expense will excite furious opposition from small ratepayers and ignorant farmers, even to the most necessary measures—measures which would rapidly diminish the poor-rates and increase the prosperity of a place. Incompetent men or poorly paid men are appointed to carry out Health Acts—or timid men, afraid to excite ill-will in the neighbourhood. The Acts thus become a dead letter, or law-suits are instituted against improvements, harassing and even destroying local health boards. Large proprietors enclose the commons, farm out their estates to agents, and thus neglect the duties which are inseparable from rights. The same ignorance which opposes such endless obstacles to the establishment of sani-

tary improvements, often defeats the best-laid plans, when they are carried out; and proves, if proof were necessary, that a people must be educated to appreciate laws, before the objects which those laws were intended to effect can be accomplished.

Much confusion also at present arises from patch-work legislation, that has not been based on sound principles. This is shown by the present Acts regulating towns: "A recent edition of the laws affecting health and sanitary affairs gives the text of fifteen Acts relating to health, diseases prevention, nuisances, local government, sewage, and kindred subjects; twelve Acts consolidating provisions as to towns, lands, markets, police, loans, bakehouses, etc.; the public health and local government supplemental Acts are twenty-nine in number, while the laws treated by the work are affected by not less than 296 public general statutes, which the author tabulets in the index, as being referred to in the text. No lawyer can grasp these enactments, save by great research; much less can a man who has his own business affairs to look after."

The sanitary investigations carried on by the Privy Council and other Government bodies, the labours of the Royal Commission appointed to inquire into the condition of the poor, etc., cannot be over-estimated; but none feel more strongly than the very men who are carrying on these measures, the necessity of effort in other directions—directions where the co-operation of every member of society is needed—viz., in education, and in domestic and social life.

We now possess enough sanitary knowledge to reform the physical and moral condition of the human race, if it were generally diffused and its rules systematically applied. Scientific investigations, and the knowledge of hygienic laws, are far in advance of the practices of daily life. The knowledge is within our reach which, if employed, would save the lives of tens of thousands of human beings around us, keep this army of sick in vigorous health, and make our homes the precious centres of ennobling influence that they are intended to be. We fail, however, in the means of diffusing and putting into practice the substantial knowledge which scientific observation has laid before us. The first duty, therefore, which rests upon us all is an endeavour to secure the universal diffusion of sanitary knowledge. As every human being in the British isles should know how to read and write, so every human being should be taught that health is a duty, and shown how to secure it. Sanitary teaching (varying of course in its style) should be introduced into every school and college in the kingdom, in the common school, in Oxford and Cambridge equally; into every series of lectures, whether at the Royal Institution, or the South Kensington Museum; into every Working Man's Institute, and into every medical and every theological seminary.

Above all other classes of men, it is certainly important that

physicians, and medical men generally, should be thoroughly educated in sanitary knowledge. The authority which they possess, and their opportunities for instilling this knowledge, when families are keenly alive to the dangers of illness, would give them greater success as health missionaries, than any other class of society. But medical men are not taught that it is equally their duty to prevent disease as to cure it; and their attention is not, therefore, sharpened to observe, and to deprecate the numerous habits in family life which tend to produce disease. There are but two chairs of hygiene established in connection with our medical schools, and attendance upon those lectures is not obligatory, *i.e.*, is not essential to the attainment of a degree. Every practical instructor knows that the press of studies is so great that the student always neglects whatever is not absolutely necessary to his success. One of the most beneficial changes that could be introduced into medical education would be the establishment of hygiene as a first-class chair, of equal importance with anatomy; a searching examination in its teachings being indispensable to the attainment of any degree which gives authority to attend the sick. Almost equally important is the introduction of sanitary instruction into theological seminaries. The clergy generally seem to be sadly ignorant of the laws of health. The powerful and legitimate influence which they exercise would be more valuable if it were not so one-sided. If the clergy, all over the land, who command a mighty army of parish visitors, could show those visitors the direct and positive connection between pure blood (made out of food, light, and air) and pure thought, what a revolution would be wrought in every country village! But the clergy themselves must be educated in such knowledge; for it is not simply intellectual assent, but a thorough realisation of it that is necessary. The same knowledge is as necessary to our schoolmasters. No one is fit to direct the education of youth who does not perceive the difference between the young and the old, and suit education to the child's nature, not his own. The kind of studies, their variety, frequent movement, and change; the arrangement of school-rooms, the unlimited supply of fresh air, the play-ground, etc., must all be based upon an acquaintance with sanitary knowledge, which would be a proper subject for examinations and certificates.

The education of children and youth in Health is a subject in which women are especially concerned. It is a large subject, it demands not only the introduction of sound sanitary instruction suitable for different ages into all our school-rooms and colleges; but the creation of a love of such knowledge and the habit of its practical application. But this is not all; our great need—education in Health—implies the confirming and improving the health by means of education. It is not sufficient that the course of studies laid down for children and youth should not injure them—

it is also necessary that it should do them positive physical good; they should be stronger, better, and brighter for the hours spent in technical education, or there is something wrong in the plan of education. If lessons produce headache, lassitude, inactivity of functions; if they make children pale, quiet, spiritless, then the lessons are bad; they have done the children an injury, no matter how slight the evil effect appears to be each day; and the injury cannot be remedied by sending them out to play, and repeating the same process day after day. A wrong cannot be made right by constantly committing it, and then endeavouring to repair it. It cannot be too strongly urged that, unless the plan of education adopted with children does them a positive physical good in all its details, it does them a positive physical harm—it cannot be neutral. This is also true of the youth in college or boarding-school. The same principle is applicable; if the course of study is not positively beneficial to the bodily organisation, it is positively injurious. The over-taxed brain cannot be righted by boating and cricketing. The rules which apply to the fully-formed adult organisation do not apply to the growing youth and it could be clearly shown how much moral, as well as physical, harm arises from our failure to recognise the radical difference between the youthful and adult natures.

Education in Health, therefore,—not simply theoretic instruction,—is what we need to make our children stronger; and it requires such a reverence for health on the part of educators, that there shall be a constant endeavour to make every part of instruction strengthen the physical as well as mental nature.

In seeking the best means of imparting sanitary instruction to youth, we find that a certain preparation is necessary, before anything like a full and direct hygienic education can be given. This preparation must be laid in childhood. A knowledge of the structure and functions of the human body is indispensable; yet young women generally shrink with repugnance from physiological instruction, for which they have not been prepared. The most eloquent demonstration of a sheep's eye or a bullock's heart, given in a young ladies' school, will generally leave a feeling of disgust in the larger part of the class. All reference to bodily functions is unpleasant to them. They have never learned to respect the laws of their organisation, and they turn from the subject of physical structure as very repugnant, or a great bore. The tastes of children, however, are of a very different character; the intellect, as shown in untiring curiosity and incessant questioning, is predominant in childhood, and taste for any study may then be formed. Children will receive the elements of comparative and human anatomy and physiology, learn to handle bones and examine structure, not only without disgust, but with extreme interest; and they may thus be prepared for the fuller instruction which they should

receive as youth. Everything should be done to cultivate the taste for natural history and science that is latent in every child. Their fondness for animals indicates this taste, and the care of animals should be encouraged and directed. The manual of physiology in every school-room should be pleasantly written, well printed, and with abundant illustrations. Bright, well-drawn pictures, clean and fresh specimens, shelves and little boxes for collections, should be provided.

To the intellectual training which results in the formation of tastes, the formation of healthy habits of life must be added. These habits should be formed without, in general, giving any reason for them. Children should not be taught to reason on matters of health. They utterly lack the power of proportion which is essential to reason; and they run the risk of becoming morbidly conscientious, or hypochondriacal, if compelled to reason on these practical matters. It is very important that they should go to sleep early, eat simple food, live in fresh air, and take a great deal of out-door exercise; but it is not desirable that they should know too early why they do these things. The proper time for reasoning on these habits has not arrived; but the healthy habits, early formed, will gradually become a part of their nature. Habits of self-control, and obedience to rules, are also an essential part of the moral hygiene of childhood; they prepare the nature for the intelligent obedience to law which should come in later years. Children should not be worried with unimportant observances. The precepts which it is necessary to give them will make more impression if they are not too numerous; the rules laid down must be wise rules; children are trustful, and their trust must never be abused. If, as they grow older, they learn to recognise the wisdom of the obedience that has been exacted, they will escape that dangerous scepticism, which so often comes to youth, who find that their intellectual and moral guides have cheated their youthful trust. Intellectual tastes, healthy habits, and obedience to law being thus formed in childhood, the youth is prepared for that full instruction in health which is adapted to the period where reason is developed.

For the education of youth in Health, *i.e.*, in physical strength, and in sanitary knowledge and habits, a Training College seems to be urgently needed. The acquisition of knowledge, enthusiasm for the study, and a practical realisation of it, must go hand in hand. Modifications may doubtless be gradually introduced into the ordinary plan of family and school instruction. But if, under the present system of school-room discipline, we attempt to instruct young ladies in the laws of health, we are called on to contend with insurmountable obstacles; not only with an utter indifference to all subjects of health, and repugnance to many topics connected with it, but with enfeebled powers, from a neglected or misdirected

childhood; and with vitiated tastes, from the substitution of artificial excitements for natural healthy enjoyments; it is also impossible to find the necessary number of teachers, inspired with that respect for divine laws which would give them insight into matters of health and the true order of education. This combination of difficulties makes the task of education in Health almost a hopeless one, unless the individual be placed in a fresh educational atmosphere, where the objects and methods of education are entirely changed. Health-education should train the body—of which the brain forms part—into well-balanced strength; giving full command of the various faculties, and power to meet the demands of future life. To accomplish this work, the hearty co-operation of the individual is essential; such education cannot be forced from without, it must be accepted by the will. All the mixed motives which act upon human nature are needed to vanquish indifference and excite enthusiasm; large and beautiful arrangements in buildings and grounds; the sympathy of numbers; the stimulus of honours and rewards; the increased prospect of establishment in life. All the motives which act upon young men, stimulating their zeal in college life, are also needed by young women. The natures, if not identical, are strictly parallel. The broad rules applicable in one case are applicable in the other; and success in education can only be attained, when it is adapted to the one common human nature.

Education in Health would be best attained by giving prominence to the following subjects: 1st, The practical study of natural science, including sketching from nature; 2nd, The practical study of hygiene, which would include the structure and management of houses and households; 3rd, The direct training of the bodily powers in precision, agility, and strength.

1st, The importance of the practical study of natural science, in the education of youth, can hardly be too strongly urged. The love of nature, when strengthened by a knowledge of nature, gives occupation, amusement, mental and physical development of the best kind; it is an antidote to the morbid influences of fashion and dissipation; it hinders the premature development of function; it furnishes a basis of intellectual companionship between the sexes; and would prove invaluable to a mother in the education of her children. The power of habits formed in children by their parents are second only to the original type of constitution, and often overpower even the original tendencies; these habits are nevertheless formed by the silent working of influences, hour by hour, and day by day, that are invisible, and cannot be measured; that seem valueless, taken item by item, in the long account, and yet in the aggregate they mould body and soul. A mother may instil the love of reading, or the love of dress; she may form the habit of out-door exercise, or the habit of gossip; not by set precept or even formal regulations,

but by her own tastes unavoidably moulding the tastes of her children, and flowing out naturally into those external arrangements, that reflect the ruling spirit or affections of the individual. Did the mother possess a hearty interest in the wonders of field and forest, of sea and sky, what a treasury of delightful intercourse might be found in every country ramble. A mother's love, joined to broad tastes and knowledge, would never weary of the ceaseless questioning of childhood; the older the child, the closer and more influential would be the companionship. The holiday by the seaside or amongst the mountains, so often wasted in idleness or frivolity, might be a rich harvest-time of delightful knowledge, drawn from the treasures of land and water.

It is the out-door study of science and art that must be insisted on with the young—the cultivation of the powers of observation rather than memory—which powers compel the exercise of the muscles and senses. The guiding principle of health-education is to follow the order of nature, and place the strengthening of the physical powers not independently of, but in advance of, the mental powers. If the order is reversed, and the immature mind be allowed to tyrannise over the immature body, and disturb the proportion of nature's work, by withdrawing too much creative force to the exclusive stimulus of the mind, the true relations of mind and body can never be restored; the adult will never receive that ready and capable service that the body should render to the mind. In thus urging the paramount importance of some branches of study, particularly in a girl's education, it is not intended to exclude all others. Many accomplishments, as well as various branches of knowledge, may be taught in such a way as to conduce to physical and mental health; and all studies may be so arranged and subordinated as to be innocuous. The principle here insisted on is: that those studies must predominate and lead, in the education of youth, which most fully require the exercise of the physical as well as mental nature in their pursuit.

2nd, The direct study of hygiene involves so large a range of profoundly interesting subjects that it is difficult to display its full importance in a condensed sketch. The creation of a healthy happy home (which all will allow is the legitimate work of a woman) requires comprehensive knowledge. The structure and arrangements of a house, adapted to the climate, soil, and wants of a family, including drainage, ventilation, warming, economy of labour; the management of a household, in relation to individual wants and to society, including the subjects of food and waste, domestic service, petty trading, the care of the sick, and prevention of disease, occupations, and amusements;—these, and many other topics, belong to the formation of a noble Christian home. These are subjects that men and women have a direct personal interest in. They may be taught, in graduation, with abundant illustration.

The examination of economic museums, exercise in the inspection of houses and neighbourhoods, etc., should be added for advanced students. Every method should be used to impress facts on the memory, and excite personal interest. To this end a system of rewards would be useful, whether of prizes or honours. There seems to be no reason why honorary degrees, scholarships, and fellowships should not be bestowed for proficiency in knowledge that relates to the health of mankind, as well as for distinction in classical and mathematical study.

3rd, The third subject of education in Health is the direct cultivation of the various bodily powers in strength, agility, and grace. This culture presupposes close attention to the weak points in the health of each individual student—those tendencies to disease which exist at present in every person. All will have remarked that the same morbid cause, applied to half-a-dozen people, will produce varying effects, according to varying peculiarities; thus a current of cold air applied when the body is over-heated may cause either catarrh, bronchitis, neuralgia, rheumatism, intestinal derangement, according to the individual susceptibility. Youthful vitality masks, but does not cure, weak tendencies, unless those tendencies are known, and the exuberant vitality be especially directed to their cure. This season of life is, however, particularly favourable to such cure. Nature will never again present so valuable an opportunity of remodelling the constitution. A doctor of health or preventive medicine, who shall become acquainted with the constitution of each student, and determine how far exercise must be modified to meet individual peculiarities, is an indispensable member of the Faculty of any College that undertakes to educate in Health. With this observation and caution, modern gymnastics and exercise in various forms will become an invaluable part of education. The muscles of the body are capable of the same careful training as the senses. As the eye and hand in painting, or the ear and hand in music, require long and careful practice to acquire skill; so the great variety of delicate or powerful muscles in the human body require careful exercise to draw forth the varied powers that belong to them. The ordinary movements of life do not call forth half these powers. As the large majority of people go through life with only an imperfect use of their lungs, from the constraint of clothing and sedentary habits, which weaken the thoracic muscles, so it is with other organs; and imperfect muscular action and weakened health is the result.

The principles of education which are thus laid down are the following—viz., a constant observance of the order of human growth; the selection of studies that will carry out this order; habits and arrangements of college life that will enforce it; direct instruction in the necessary conditions of health; and careful training of the body. It is giving to education the grandest of all

objects—use ; which, if properly understood, includes the highest and most permanent culture of which the individual is capable. Were our beautiful sea-coasts studded with such Colleges, with their wonderful playgrounds washed twice a day by the Atlantic waves, furnishing endless treasures for the eager gatherers; enthusiasm for health-giving studies would grow up in the youthful mind, and a stronger generation would mould a nobler society.

The establishment of sanitary improvements by Government, and the remodelling of education, are not the only means by which we must seek to obey those divine laws which are implanted in our nature. Every class of society, every institution,—in short, our whole social life, needs to be re-born into the idea of health. The customs to which we all conform, whether rich or poor, the standards by which we measure success in life, and the means by which we seek to reach it, are all opposed to the idea of health. The hours we keep, our dress, our food, the excitements, and strain of life, are injurious alike to mind and body. The deeper we look into the structure and state of society, the more serious are the effects of the general neglect of the laws of human growth. Practical life now is a cruel foe to pure enthusiastic youth; purity and enthusiasm are alike destroyed by the corrupt and faithless society into which they enter. We preach one standard of right; we practise another. We exact a superhuman effort from our children when surrounded by temptations, we tell them not to fall into evil habits; we require an impossible thing when we expect them, as social beings, to do what is right, when society does what is wrong. The diffusion, therefore, of sanitary knowledge through all classes of adult society is as necessary as the remodelling of education. It is through the gradual diffusion of this knowledge that combinations of individuals may be formed, who will be strong enough to put down some of the senseless and injurious customs that now pervade society.

This principle of combination may wield a great and increasing power of good. Departure from any established custom by a single individual is an eccentricity; but the union of fifty for the same purpose will exercise a decided influence; and a hundred resolute men and women form a social power in the State. It is encouraging to recognise the power that might be exerted by such a band, resolved to carry out the large "Laws of Health" in their daily lives!

There is only one form of combination, however, that I shall venture to suggest, and whose utility I think will be at once apparent.

I refer to the formation of a National Health Society. Such a society seems to be much needed—needed to give combination, direction, and impulse to the efforts of individuals; to form a storehouse of information to which all could apply; to assist health legislation, by looking at this great subject from a family point of

view; and educating the community into an intelligent appreciation of wise legislative measures; to attack such a great and growing evil as that of unconsumed smoke; to suggest improvements in education; and draw every charitable institution into health missionary work. Every other subject of human interest is represented by some society, more or less active, which takes up the social side of each particular work, and urges its claims. It seems characteristic of the general neglect with which health is treated that no national society of men and women has yet been formed to promote this vital subject—Health.

Such a society should extend its branches into every town and village of the land, and form a body of corresponding members, not only throughout the kingdom, but abroad. It might, with great advantage, promote the wide application of that excellent system of instruction initiated by Mr. Twining, of Twickenham. This gentleman has devoted his life to the diffusion of sanitary knowledge. Having established a museum of domestic arts in his grounds, open to the public, he has written a series of lectures, which are read by the curator of his museum, and illustrated by his librarian,—the illustrations of each lecture being ingeniously packed in a small box; he generously sends this little establishment to any place which will make arrangements for the delivery of the lectures. Such a system, varying the lectures and illustrations, might be applied to every little village in England; for two young ladies or gentlemen might certainly be found in every place to read discourses so prepared. If a Health Society did no other work than keep in constant activity such a simple plan of instruction as this, it would do a work of immense utility. There is, however, no limit to the practical suggestions that might thus be brought before the public, to the influence that might be exercised upon family life, or to the sanitary institutions that might be formed by an energetic Health Society.

I have thus endeavoured to show,—

- 1st. That there are laws governing human growth according to an unvarying plan.
- 2nd. That neglect to study and obey these laws produces individual suffering in all classes of society, and national degeneration.
- 3rd. That obedience must be rendered through legislation, education, and social life.

It is only when we have learned to recognise that God's law for the human body is as sacred as, nay is one with, God's law for the human soul, that we shall begin to understand the Religion of Health.



