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THE SEED-TIME OF HEALTH.

By BENJAMIN WARD RICHARDSON, M.D., L.L.D., F.R.S.

The following is an Abstract of an admirable Address delivered at the recent Brighton Health Congress :—

The Greeks knew that life ought to be a perpetual feast. They not only knew the fact, they acted up to it. They were equally well aware that a long and perfect life could alone be attained by perfection of life at its opening, in the seed-time of health. To die at that time was, therefore, an offence against natural rule, against reason, against sentiment. The knowledge of such an event was death to the brain, death to the heart. In this seed-time of health the life was to be made, the life that was to be in truth a life worth living. Animals beneath men, that are worthy of going through their appointed time, and of being made both useful and beautiful, must have their seed-time of health. Shall their human masters be less cared for? If the masters are to be mere slaves, yes; and then it were a pity and a danger; for they who have no respect for life and beauty, who drag through existence and grow weary of it, are to be trusted neither with life, beauty, nor fame.

In the history of great truths derived from the Hellenic wise times, there is not one truth so great as this, and not one so completely missed. It is the secret that was lost. In our day we have lost it so severely that it might never have been in existence for ought we seem to care. The key to all we would have, the key to the gates of health and happiness, has been lost as if it had never been found.

In point of health our children in these times, proud as we are of these times, are a reproach. Where is there a healthy child? I have never seen one. You may put before me a child in all its innocence. It has done no wrong that it should suffer; it may show to the unskilled mind no trace of disease; and yet I know that if I, or any skilled observer were to look into the history of the life in question it cannot be found intrinsically sound. It will have to battle with future dangers sufficient for the soundest to meet; but it is not itself free from dangers other than those that are prospective and avoidable. It is sure to have some inherited failure, and too likely some that will help to increase the independent risks that lie before it.

So our children under five years are expected to die in what may almost be called a definite proportion. He is a fortunate man who, having four children born to him, retains three alive. Later on, for a short time, the danger is reduced; with adolescence it recurs. Again it retreats, but with such failure all along the line, that one-third of the allotted life, the life that would be, were it planted in sound health, is only attained. And for this we have no shame. There is an assembly of learned men who are bent on understanding to the full these human failures from health. These men spare no pains, and to gain a spark of light will labour like miners in a mine. When last I visited them a puny feeble spark of life was in their presence undergoing their searching yet kindly scrutiny. Except that it cried a

little and laughed a little in changing mood, this spark of life might have been considered a pathological specimen, and in truth it was discussed as such. No one there had a thought of that small life developing into wholesome life and passing through its natural term; not one life were impossible, and that nothing could be done to save it. The intent was to study the pathology and fix that by name. They said, when their technical language was translated, "this child is suffering from the error, some would say the sin of its parents." How deep did this error go? In what strange forms did it appear? How singular that the nervous system, once impressed with the poison of that error, should impress another nervous system, and so modify the nutrition of the organism to which it belonged as to cause false nutrition of internal organs and of the very bones themselves! In a whisper one of the learned expressed to another one the pity "that such a specimen of humanity should ever have been born, to breathe and take notice, and smile, and cry, and love, and suffer, and die, and we be able to do nothing for it except hope for the relief that should end in the earliest death."

I belong to a committee which takes under its care another class of sad childhood. The members of this community pass before us deaf and mute. We try to give them the powers of intelligent converse by laborious and artificial means, and we do some good; but the train of sufferers passes by, and we know that full half are mute from the undeveloped brain; that they are practically lost to life. It is not that the one sense is lost, and thereby the means of expression by intelligible language; it is not even that the nervous organization which ministers to intelligence is low; it is that these deficiencies are some of the outward signs of a general deterioration of body, and that there is scarcely a structure which the eye of science would recognize as moulded in health.

Passing from the sphere of general observation, from modified to destroyed vitality, I find more startling effects at hand. A short essay reached me not long ago in which the writer epitomises the facts he has collected respecting the attainment of maturity in peoples of different nations. He tells us that of ten children born in Norway a little over seven reach their twentieth year; that in England and in the United States of America somewhat less than seven reach that stage; that in France only five reach it; and in Ireland less than five. He tells us that in Norway out of ten thousand born rather more than one out three reaches the age of seventy; in England one out of four; in the United States, if both sexes be computed, less than one out of four; in France, less than one out of eight; and in Ireland less than one out of eleven. And he adds this significant computation, based on what may be called the commercial view of the vital question. In producing dead machinery the cost of all that is broken in the making is charged to the cost of that which is completed. If we estimate by this same rule the cost of rearing children to manhood, if we calculate up the number of years lived by those who fell, with the years of those who passed successfully to manhood, there would be found between the two extremes presented in Norway and Ireland,—both, be it observed unnatural,—a loss of one hundred and twenty per cent. greater in the first year of life, seventy-five per cent. greater in the first four years of life, and one hundred and twenty per cent. greater in the years between the fifth and the twentieth, in Ireland than in Norway. In Norway the average length of life of the effective population is thirty nine and rather more than a half years; in England, thirty-five and a half years; in France, not quite thirty-three years; and in Ireland not quite twenty-nine years. Thus, again comparing the best with the worst of a scale of vitality in which both are bad,

in Norway the proportion of the population that reaches twenty survives nearly forty years, or four-fifths of the effective period, to contribute to the wealth of the community; while in Ireland the same proportion survives less than twenty-nine years, or considerably under three-fifths of the effective period.

When we speak of families that lie within our cognizance, we estimate the happiness of the families by the health they represent. If one out of every two of the offspring of the house have died, if some who have not died are mute to the world or otherwise stricken, we soon fall into a thoughtful mood, and say that this home is not a possible home for happy life. Pleasures there may be, happiness there cannot be.

What is true of family circles is equally true of nations. Rest, quiet of nations, repose for cultivation of refined arts and sciences, happiness derived from healthy and vigorous minds and intended for healthy, vigorous, and wholesome purposes, there cannot be, when one or two of life can only reach maturity with a survival of three-fifths of effective population. In such a national family there is persistent mourning. State physicians tender their remedies for such families of nations and call themselves curers, as if that could be cured which is Nature pursuing her merciless course towards her merciful dispensations, in correction of those who have outraged her.

I have named this discourse "The Seed-time of Health," and in the sentences foregone I have tried to strike a contrast, and thereby to give to sanitation a broader meaning as a practical science than is commonly connected with it as a system of details respecting ventilations, sewer traps, and the like.

I want to point to health as the all-in-all to man; the gate of health, leading to the truly good in politics, art, science, letters,—aye, and religion, not less than the least of everything. The strain of my argument is, that, unless we make the early life of our children a seed-time of health,—unless we, from the root of life, so change the conditions which now exist,—all our other measures are practically valueless.

At this moment we have not, as a nation, got this notion set in our minds in such degree as even to accept it, basic as it is, as worthy of serious thought. We have no shame when our young fail and die. Grief we have, fond memories we have; but shame, none. We bury our young as if the act were natural, and erect memorials of it. We read obituaries of the young dead; we read the terrible obituaries of the Registrars General; we discuss in Congresses like these the cost of young life; but the shame of the Greek touches us not. The knowledge of the troubles which flow from the lack of the shame reaches us not.

We sanitarians are, however, only bound to treat of that which belongs to our own labors, and acknowledging the perils incident to early life, and it may be even recognizing the shame of them, have before us the question of their prevention from its health side alone.

That we may approach this task with intelligence, let us for a short time glance at the nature of the perils which beset the spring-tide of human life, and the period bounded by maturity.

The perils are of four kinds:—1. Those that are inherited; 2. Those that are incidental; 3. Those that are inflicted; 4. Those that are acquired.

Inherited Perils.—Foremost among the perils to life, in all its stages, but especially in its early stages, are the inherited. We may safely say that no one is born free from taint of disease, and we may almost say with equal certainity, that there is no definable disease that does not admit of being called hereditary, unless it be accidentally produced. To what is known as specific disease, the disease of diseases; to struma, or scrofula, and its ally, if not the same, tubercular affections; to cancer; to rheumatism and gout; and to alcoholic

degeneration, the grand perils of life are mainly due. These are the bases of so many diseases which bear different names; these so modify diseases, which may in themselves be distinct, that if they were removed the danger would be reduced to a minimum. These diseased conditions do not, however, exhaust the list of fatal common inheritances. On many occasions, for several years past, I have observed, and maintained the observation, that some diseases, which are to be noticed in a coming page, as communicable, infectious, or contagious, are also classifiable under this head. I am satisfied that quinsey, diphtheria, scarlet fever, and even what is called drain fever, typhoid, are often of hereditary character. I have known a family in which four members have suffered from diphtheria, a parent having had the same affection, and probably a grand parent. I have known a family in which five members have, at various periods, suffered from typhoid, a parent and a grand-parent having been subject to the same disease. I have known a family in which quinsey has been the marked family characteristic for four generations. These persons have been the sufferers from the diseases named, without any obvious contraction of the diseases, and without having any companions in their sufferings. They were, in fact, predisposed to produce the poisons of the diseases in their own bodies, as the cobra is to produce the poisonous secretion which in its case is a part of its natural organization.

Accidental Perils.—Next amongst the perils which beset the early life are the accidental dangers to which it is exposed. I do not mean by this the mere physical accidents, the troubles and blows to which childhood is subjected. Not these alone, but the subtle accidents which are incurred through exposure to vicissitudes of season, and to the influence of those particles of the communicable diseases, which being introduced into the body, incubate there, and transform the secretions of the body into poisons like unto themselves. A long list of diseases incident to the spring-time of life is found in these two classes of causes of diseases, those due to the contagious particles, numbering from twenty-five to thirty alone.

The grand mortality of the child period is indeed due to the two classes of causes now under our consideration. From exposure to the vicissitudes of season comes, foremost of all, that first step into so wide a universe of evil, the common cold, or catarrh. Upon that comes the continuous visitation which, extending to the pulmonary surface, causes bronchitis, croup, pneumonia, tubercular inflammation; or, extending to the mucous surface of the intestine, causes irritation there, diarrhœa and choleraic affection. From exposure, again, to the poisons of the communicable diseases there are produced the long and fatal calendars of diseases of shortest incubation, like cholera; of short incubation, like scarlet fever, diphtheria, erysipelas, influenza, whooping-cough, and croup; of medium incubation, like relapsing fever and cow-pox; of long incubation, like small-pox, chicken-pox, measles, German measles, typhus, typhoid, mumps, and malarial fever; and of longest incubation, like hydrophobia. The returns of the Registrar-General will show, weekly, how in persistent procession these diseases march through the land.

Inflicted Perils.—Third amongst the perils incident to early life are those inflicted by reason of ignorance, or false knowledge and practice, or hard necessity, or all combined. These perils begin with the earliest days of infancy and continue onward. The tight swathing band in which the helpless infant is enrolled, as if it were an Egyptian mummy; the frequent error that is made in depriving it of its natural food, its mother's milk, and in substituting for that true standard of food, foods having no proper arrangement nor proper assimilable

quality; the too hasty introduction to it of foods in common use in adult life; the not uncommon introduction even of stimulants to these young; the imperfect feeding of the mother, and pampering her with stimulants when she undertakes the maternal duty of being nurse to her own child; the poisonous method of giving soothing or narcotic quieteners to children; the almost as injurious plan of taking up children from their gentle life-giving sleeps, and exposing them to shocks, surprises, and excitements, that are injurious to every function of nutrition and mental repose; the confinement of the child in close rooms, away from the fresh midday air; the evil plan of taking it out into the night air and into crowds and noisy places, like the railway-station or busy thoroughfare; the worse plan still, of scolding, frightening, and even slapping, the helpless thing, and thereby implanting in it a nervous, irritable nature which it will never lose. These are the truly crying evils, which in earliest, dreamiest, and most eventful days and months of human life, plant imperceptibly their accursed stings into every day of life that is to follow.

These evils inflicted on childhood in its first estate are, morever, followed later on by other evils not less reprehensible, and by one worse than all, I mean the evil of endeavoring, during the time when all the nervous force the growing frame demands is barely sufficient to sustain the natural wants of nutrition, to tax that growing frame beyond the powers that belong to maturity, with competitive mental and physical labors. Both good in their way in moderate form, both necessary for health in moderate form, mental and physical labors are, in these days, made the bane of the nation. The false and useless efforts which crumple up the animal and spiritual natures, making distaste for all labor an early disease, and blighting every flower of genius so soon as it begins to bud, is equal in falsity only with the conviction it engenders, that men and women are made but to learn up to the time of maturity, and that an education which is not what is called "finished" when the school or college is left behind, is an education that can never be made up in after life. I know nothing so deathly to mind and body as this anxiety, now all but national in its acceptance, to complete education within twenty-one years, when the fact really is that length of life, and length of happy life, depend on the continued cultivation of mental and physical existence beyond all else.

And still to this grand evil inflicted on youth there is a supplimental evil which adds physical to mental scathing, viz. the commission of corporeal punishment on the helpless young before they know why that is wrong for which they are punished, and often when no wise man or woman couid detect any wrong in any part of the savage performance save the wrong done by the one who punishes. To me, as a physician, nothing is more tainted with iniquitous injury than that corporeal punishment of children which proceeds to teach what is believed to be wrong by the instant infliction of physical pain.

Acquired Perils.—The perils acquired by the young themselves, acquired as a rule from imitation of the habits of their seniors, form a last part of the dangers incident to this seed-time. In boys, late hours, smoking, resort to the use of stimulants, indulgence in the games of chance, and self-infliction of early worry, are special acts ruinous to the foundation of a long and healthy life. In girls, the passion for unhealthy systems of clothing; for compression of the too yielding chest in tight unyielding band and corset; the carelessness about clothing in cold weather; the desire to appear in late evening assembly; the recklessness about food and regularity of meals; the neglect of exercise, and the too frequent fondness of affectation in regard to good common-

sense rules of manner and life, are, in their way, as mischievous as the errors committed by the juvenile male community, and in some respects lead more immediately to serious consequences.

I will here give a contrast of good and evil, of health and disease under human direction, and, I may say, under human control. There were, some years ago, two communities existing at one time, and noted by an able observer. One community was at Montreux, a parish in the Canton of the Vaud, in Switzerland, a parish of two thousand eight hundred and thirty three souls. The pastor, M. Bridel, kept a life-history of his charge, and during a long series of years recorded births at the rate of one in forty-five, and deaths one in sixty-four annually, a death-rate of 15.62 in the thousand. The other community was a Russo-Greek, existing at the same period of time. In this community the births were one in seventeen, the deaths one in twenty five, or at a rate of forty in the thousand. In the Switzer parish one sixty-fourth died per year; in the Russian, one twenty-fifth, or more than twice as many. In Montreux four-fifths of those born reached twenty years; in the Russian class, six hundred and six out of one thousand perished ere they attained their fifteenth year, the nuptial garments of the mothers becoming, as it was said, the shrouds of the first-born. In the Swiss community the march of life, seemingly slow, was towards health and an improving life; in the Russian the march of life, seemingly so fruitful, if it had been calculated by the birth-rate alone, was the most fatal in Europe.

I would not, for my part, set up this Swiss parish as perfect—far from it; it was but half perfect. Still, the contrast is before us. Why did it exist? The answer was clear. The Swiss success was due to simple forethought and the virtue of continence. Those civilized peasants of the Vaud conserved their health, their happiness, their life, by the comparative slowness and circumspection with which their successive races were brought upon the scene of the world. Those uncivilized Russian-Greeks, reckless as to birth—not much more reckless than some great English towns have been in our time—lost their health, their happiness, their life, by their mad growth of life. With them death was the shadow of birth, and they had no shame. In our present day, in our best communities, though the reason for the shame is less than it was, yet still it is double in the seed-time of health, what it ought to be, or what it need to be. That the reason for it diminishes is proof enough that it may diminish more; nay, become refined to the delicacy of susceptibility of those Greeks who dared not let the sun behold their young dead.

How towards this perfection shall we wend our course?

We have seen that, in the seed-time of youth, there are four influences at work, sustaining the perils that bring the cause of shame. It is by carefully and earnestly correcting these that our course shall be towards success and honourable vitality.

To those *inherited* perils of which I have spoken our minds must first be turned.

I know, and it is hopefullest knowledge, that I shall be listened to by thousands with attention and respect when I urge that, in regard to these inherited perils, wise men and wise women will soon begin to think, even in relation to the marriage tie, before they of a certainty inflict those perils on the world. And with this hesitation such good will come as I dare not express. Let it be known that there are certain marriages which must lead to intermarriages of disease of body or mind; let it be known that results of combinations of this kind are inevitable towards premature death; let it be known that results of combinations of this kind are as inevitable towards sickness and death as combinations of health are inevitable towards health and long life, and we

cannot but feel sure that no perversity of folly can long continue to produce through birth the most fatal types of all fatalities. Let hereditary death be once recognized as an element of the marriage contract, and the health and life of the nation will receive a lease that shall double the value of one and the duration of the other. I speak on this point not from simple enthusiastic hope, but, happily, from a knowledge singularly cheering. A short chapter of mine in 'Diseases of Modern Life,' entitled 'The Intermarriage of Disease,' has itself during the last six years been the means of checking many of what would have been most deplorable instances of these intermarriages.

While this reform lingers we have some direct means in our hands for lessening the extent of even propagated perils. By beginning early in life to place those who are born to peril in conditions for good life, it is astonishing how much can be practically done for them in their bad if not in their worst estate. Take as an example of this reforming service the Anerley Schools, where waifs and strays of society, born to all kinds of physical perils, are tended and trained in mental and physical arts. It is like a regeneration. The bloodless, the scrofulous, the rachitic, the rheumatic, predisposed by birth to these afflictions, burst out into such active life that the diatheses seem in abeyance.

In this cause and course the schoolmaster becomes the physician, and the more we have of this branch of the healing faculty the better for us all.

In the removal of the diseases by inheritance there are, then, two modes of treatment, the preventive and curative; preventive in wisdom of selection of parentage; curative in training those whom no prevention has blessed, into the choicest conditions for health in the seed-time of health.

There is yet another removable cause of these perils which I dare not, though I touch it with lightest finger, omit. It is indicated on the chart of sin and shame in dark, black, pall-like blot. It is the physical crime which men and women commit when in days of responsible life they acquire to themselves, by intemperance and other terrible indulgences, those inheritances of crime which pass to their children and proclaim their shame through them. If we could take the world, drowsy in ignorant lusts, and shake it into knowledge here, what crime and shame were saved in one generation, none can tell.

The accidental perils which beset the young in the seed-time of health, and which we accept as evils which sanitarians are bound speedily to combat; those serious perils which spring from the exposure of the body to the poisonous particles which produce disease by contagion or infection, come next before us for removal. We call these perils contagious diseases; we know the number of these diseases, we know that their number is limited, that it is confined to thirty at the most, and practically to little over half thirty. We know that the members of this class have different periods of incubation, that is to say, of period intervening between the reception of the poison and the development of the symptoms produced by the poison. We know that the symptoms of the disease, once developed, run a regular course. We know that some persons are more susceptible to them than others. We know, that to a certain extent, one attack of suffering from many of the diseases is a cause of exemption from future attack. We know that the diseases assume an epidemic or spreading character, and that each of them has its season in which its spread is so remarkable that its general course may be charted or outlined as connected with the time of weeks or months or years. And if, regarding the nature of the poisons which produce the diseases, we know least and are most divided, we have, at all events, this precious knowledge, that the poisons themselves are re-

moveable and destructible, so that they lie within the range of human control.

What is more, we have the clearest demonstration that while the poisons or diseases can be generated, cultivated and disseminated, when the conditions for such generation, cultivation, and dissemination are present, they can also be prevented to such an extent that places which were their favored homes can be made the places in which they cannot live.

When you enter a court of justice, to this day, in some old country assize town, you see lying before my Lord Judge a bunch of rue. That bunch of rue was once, not very long ago, the supposed antiseptic or purifier which interposed between my Lord Judge's nose and the fever-stricken prisoners at the bar before him. Once not very long ago, the gaols from whence those prisoners were brought were the centres of the great pestilent disease, typhus. The men, stived up in those horrid dens, fed with air charged with their own emanations, and fed with food on which they starved, generated the contagion of disease. The gaols then were the foci of fever. But a change took place. Howard, who was as good a sanitarian as he was a philanthropist, and whose rules for the construction of sick hospitals remain model rules to this hour, proclaimed his mission. The gaols began to improve; one improvement of a sanitary kind followed upon another improvement; the results began to arrest attention, and the good that was being done increased and increased with every year. The triumphant result is that in the gaols, the foci once of disease of the spreading kind and of worst types, spreading diseases cannot practically exist at all. We might lay roses before my Lord today instead of rue, or lay the rue on the dock instead of the bench, for the prisoner, in matter of risk from contagion, is actually safer than his judge.

I cannot overstate this lesson. If the homes of those who live in the seed-time of health; if the nursery, the school-room, the school dormitory, the play-ground, were only kept in the same state of physical purity as the model prison, the perils from the accidental diseases caused by infectious particles of diseases were soon removed, and the *immortelles* we see on the little graves so thickly laid in cemetery and churchyard were as little called for as the rue on my Lord's dais.

By the few rules, in short, which all prudent and wise people may carry out in their own homes, the accidental perils of the seed-time may be kept from the homestead as easily as from the prison house. Let every man and wife be their own sanitarians and make their house a centre of sanitation. Let in the sun; keep out the damp; separate the house from the earth beneath; connect the house with the air above; once, nay twice, a year hold the Jewish Passover, and allow no leaven of disease to remain in any corner or crevice; let the house cleanse itself of all impurities as they are produced; eat no unclean thing; come back to the first-fruits of the earth for food; drink no impure drink; wear no impure clothing; do no impure act; and all the good that science can render you is at your absolute command.

The perils incident to the seed-time of health which I have called *inflicted*, come before us as altogether removable. To remove them skill even is not demanded; nothing is demanded but common human nature and common human sense. That every mother should nurse her own child; that in the early days of life, before the consciousness is naturally developed, the blessed sleep of infancy should be allowed its natural course; that the senses should not be oppressed until they are duly developed; that the quickly breathing lungs should be fed with fresh air; that the yet feeble digestive organs should be supplied with simple food; that the growing body should be clothed in warm and loose

garments; these, surely, are practices the simplest people can carry out, practices easier than most which now prevail. Again, that gentleness should be law of treatment to the young, and that the mind should be taught to know before the body is taught to suffer, that, surely, is a practice which all can carry out. Once more, that the growing bodies of our youth of both sexes should be permitted to enjoy the full force of the growing power allotted to them; that such power should be permitted to play its part for their nutrition, so that the body may be endowed with its full maturity; that, surely, is a practice of letting Nature have her free course,—in other words, let well alone,—which all can follow much more easily than most practices that now prevail. Lastly, that the growing mind should be permitted its free and natural course to grow and grow throughout the whole term of its earthly life, and not be killed in its early career by the insane pressure of labors it is utterly unable to bear, or to apply if it could bear them; that, surely, is a practice simplest of all, and most certain for the promotion of intellectual and social advancement.

The fourth series of perils incident to the seed time of health,—those which I have designated the *induced*,—are, like the last, entirely under human command. For them to be removed, however, a reform beginning with those who have passed the seed time is the absolute necessity. These perils must cease, and can only cease by the process of the younger learning what is right from the examples of the older and the wiser creations of humanity. While middle-aged and old men and women indulge in low and injurious luxuries and pleasures, which inevitably shorten and embitter existence; while these revel in intemperance, and break every sanitary law in the Decalogue and out of it, it cannot be expected that imitative youth will do less than follow in the staggering and bewildering footsteps. I say nothing but what is good of physical exercise; I would that every school were a gymnasium; I would that every man and woman could ride well, walk well, and skilfully exercise every sense and every limb. I urge only that this example be set, that all exercises, whether of body or mind, be carried out in purest habitude and in accordance with the enlightening progress of the age.

Approaching now the close of my discourse, I find two applications of thought with which briefly to trouble you; one general, the other local and connected with this passing hour. I have tried to bring before you the seed-time of health, the time when this humanity of ours, in body, mind and spirit, is learning either to live well or to live ill, to live long or to live short, according to its life in the seed-time. I have shown how bad is the seed-time, how pressing the shame of it, and how shameless nevertheless. I have tried to show what are the elements of reform which in that seed-time are required. In general expression of thought I would, respectfully as earnestly, ask those who rule and govern us to look at this period of life as it is; to make it their test object of good or bad government; to assure themselves that when the death-roll of this period reports itself filling, filled, the government is bad, happiness out of the question; peace, order, national greatness all impossible; that when the death-roll of this period is emptying, is emptied, all is well; that life then promises to run its completed course, and peace, concord and prosperity to accompany the health that is ensured.

A DAIRYMAN in Halifax had five children down with scarlatina. He, however, continued to dispense milk to his customers, and of eighty two families he thus supplied, forty-five were attacked with scarlet fever.

SEWER AIR.

By John Spear, Inspector, Local Government Board, etc.—*From the Sanitary Record.*

The movements of air in sewers is the subject of an interesting communication presented by Professor Pettenkofer to the Bavarian Royal Academy of Sciences. The Professor, as is well known, has done excellent and lasting service to the cause of sanitary science, by his inquires concerning the relation between ground air and water, and the prevalence of typhoid fever; inquiries, valuable not only in themselves, but for the stimulus and direction they have given to other observations; and his views upon this and cognate subjects are worthy at all times of the utmost attention and respect. Attracted, he tells us, by the widely prevailing belief that sewer-air may be the bearer of contagious matter, especially of contagia such as typhoid fever, which have their principal seat in the intestines, he, with the object of putting this belief to the test, induced his friend Dr. Von Rozsahegyi, of Buda-Pesth, to carry out certain experiments regarding the behaviour of the air within the sewers of Munich. Having regard to the purpose of these experiments as thus stated, their conduct and result, it must be confessed, are not a little disappointing. The statement that has been made in reference to epedemics of fever in certain English towns, and especially (so says Professor Pettinkofer) with respect to the typhoid epidemic at Croydon in 1875, that the greater prevalence of the disease in the more elevated quarters of these towns is attributable to the tendency of sewer air to travel to the higher levels of a sewer system, is adverted to as occupying an important position, if not indeed as one susceptible of crucial test in the major subjects, and, by reference to the ascertained movements of air in the Munich sewers, subjected to adverse criticism. But such observations, it will be seen, barely touch the fringe of the larger question proposed—the potency of sewer-air as a bearer of disease germs; while as regards the more limited one, it is obvious that the air-currents found to be developed in one sewer can afford no trustworthy criterion of those prevailing in another of different calibre, gradient, and circumstances of ventilation. Nevertheless, the explanation above referred to is of the occasional greater prevalence of fever in the higher parts of a town, has, it has seemed to us, often been advanced on insufficient grounds; for while it is undoubtedly true that some sewers of small calibre, steep gradient and defective ventilation, may act at times as shafts for the passage of the contained air, so that concentration in the upper level may to an extent be brought about, yet such a condition is wholly exceptional and the investigations of Dr. Von Rozsahegyi, if containing little that is absolutely new, will yet do good service in conveying a lesson of caution to observers of epidemic disease, as insisting upon the necessity before observed phenomena are ascribed to the effects of sewer air-currents, of determining the actual existence of such currents by direct observation.

The Munich experiments were carried our on the sewers of the Louis and Maximillian suburbs, and of the new slaughter-house, during the summer months, when the temperature of the sewers averaged from 3.5° to 5.5. lower than that of the open air. Various chemical fumes—the mixed fumes of ammonia and hydrocholoric acid, the fume of a burning cigar saturated with tincture of benzoin, and large quantities of sulphuretted hydrogen gas—were developed in different parts of the sewers, and at several of the sewer openings in streets and houses, for the purpose of ascertaining the direction and velocity of the air-currents; and the *italic* anemometer of Recknagal was used to determine the force of the latter. The

conclusions arrived at may be stated briefly as follows: (1) air-currents within these sewers are prevailingly downwards, that is to say, in the direction of the flow of the sewage; that such currents (their direction and force) are apparently determined by the sewage stream; and thus it happens but very seldom, and then for very short distances, that the draught is in the stream; (2) that these currents are stronger in the lower and deeper-laid sections of the sewers; (3) that the prevailing direction and force of the wind and open air have little appreciable influence in the direction and velocity of the sewer air-currents, nor do differences of temperature explain in any considerable degree the movements of air observed; (4) that by the mouths of house and street drains, air passes more frequently outwards than inwards, but the direction at one and the same time at adjacent openings may vary, so that the air of different houses and courts situated near each other, and communicating with the same drain may, by this channel, in the absence of efficient trapping, be directly co-mingled.

These observations, confirmatory of many similar ones made in England, can throw, we repeat, no doubt upon the validity of that general belief in the potency of sewer air as a bearer of infectious matter. We should have been surprised had the result been otherwise. The mass of circumstantial evidence that has been collected, all tending to confirm the belief above expressed is enormous; and we know by actual observation, that sewer air is largely impregnated with particles, larger and heavier, probably, than those which constitute the contagia of disease. Whether such particles are raised into the air of the sewers by the ascensional power of the watery vapour, or given off as dust from the alternately wet and dry sewer walls, or projected into the air by the bursting of the bubbles of decomposition, may be to some extent a matter of conjecture; but of their actual existence, and of the possibility of their conveyance by gentle currents for long distances actual observation, as has been said, leaves no room for doubt.

The adoption of appropriate measures for preventing the invasion of dwellings by the germ-laden air of the sewers is becoming in this country day by day more general. In an interesting report recently presented to the Greenock Board of Police, we find Mr. Turnbull, C. E., describing the methods of sewer ventilation adopted in thirty-three large towns from which he had obtained special information. In thirty of the thirty-three towns free and open ventilation in the streets is practised; and in three cases only, as regards the towns of Ipswich, West Hartlepool and Gateshead where the streets are narrow and confined, and the sewers themselves probably defective, is any doubt expressed as to the efficiency and innocuousness of the system. Such indeed, is now the teaching of abundant experience. Elaborate systems of ventilation, whether by exhaust shafts, or by special outlets and inlets, or by other means, are not necessary; nor are they found in any case to answer their full purpose; but, by the provision of free and direct openings, communicating with the open air at points not in too immediate proximity to houses, sewers, by the numerous natural forces at work between them, will ventilate themselves.

THE ALABASTER BOX OF LOVE.—Do not keep the alabaster box of your love and tenderness sealed up until your friends are dead. Fill their lives with sweetness. Speak approving, cheering words while their ears can hear them. The things you mean to say when they are gone, say before they go. The flowers you mean to send for their coffins, send to brighten and sweeten their homes before they leave them.

PREVENTION OF SCARLET FEVER.

At the meeting of the International Congress last year, in the Section on State medicine, Dr. David Page, Medical Officer of Health, Westmoreland, read a paper on the above important subject. He said: It may be stated at the outset that those precautions which, in respect of scarlet fever, prove successful for the protection of a neighborhood or a household, must also be the real defences for the community which is immediately concerned; and therefore for other and more distant communities. All national or international preventive measures against the diffusion of such a disease as scarlet fever must, in their essence, be measures for effectual individual control. These measures ought to give practical efiect to the questions:—1. What ought to be done with the infected individual or patient. 2. How long may the patient continue to be a possible source of infection. 3. What is the latest period, after exposure to infection, at which the disorder will show itself in a person who has received the infection into his system? 4. How soon may a person who has been exposed to risks of infection be pronounced safe against attack? Two main clinical facts are involved in these questions:—1. The duration of the incubation period of scarlet fever. 2. The modes of exit from the system of the fever poison. A knowledge of the incubation period essential in disposing, for the time, of a person who, having been exposed to chances of infection, may have contracted the disorder. In this case an appreciation of the maximum period of latency required. The author's observations coincide with those of the late Dr. Murchison, and may be summed up:—1. The common duration of the incubation period in scarlet fever is from twenty four to forty-eight hours. 2. The period is occasionally longer, lasting from three to five days. 3. In rare instances, practically absent, the symptoms following quickly upon exposure to infection. Based upon these conclusions, the author requires that a person who has been exposed to infection should, before being pronounced safe from its probable consequences, be kept under surveillance for a week, and only then, after change of clothes, and baths, be set at liberty. Of even greater importance than this, is the action which ought to be taken in regard to the fever patient himself. The author's experience points to the necessity for isolation of the scarlatinal patient for a period of not less than eight weeks; and he would state the rule of Nature to be, isolation for this period as a minimum, and in cases of protracted desquamation ar of relapse, until entire cessation of the process, *and for a fortnight afterwards.* For the rest, official action should include:—1. Due provision for the separation of the sick from the healthy in the way of hospitals and convalescent homes. 2. Notification of the occurrence of cases of infectious disease. 3. Continuous supervision of all scarlatinal canvalescents. 4. Control of school attendance of children belonging to infected families. 5. Disinfection and purification of infected houses and things.

THE *Kingston Daily News* says: "Health is the most important consideration of this mundane sphere, but there is no important subject on which popular ignorance is so dense. The *Canada Health Journal* aims at enlightening the multitude on sanitary topics, in order that they may learn how to become healthy and how to stay so."

ILL EFFECTS OF TOBACCO USING.—Dr. Dodge, of Marlette, Michigan, reports a case of irregularity and debility of the heart's action, indigestion and dizziness, in a man who used tobacco freely. The tobacco was stopped, and in two weeks the heart's action was regular, the patient was feeling much better and he soon gained in weight.

SANITARY PROGRESS IN GREAT BRITAIN.

The following is a copy of a letter upon the above subject written by that eminent veteran sanitarian, Mr. Edwin Chadwick, C. B., and addressed to the Sanitary Section of the Society of Arts. Mr. Chadwick has been one of the earliest and most effective workers in the development of Modern Sanitary Science:

The extent of the excellent papers, and of the discourses on purely medical or curative science at the International Medical Congress, precluded more than very slight attention being given to sanitative or preventive science, and prevented a notice of the means of the reduction of a percentage of sickness or death rate by it, or by curative science. Since the Congress was held the report of the Local Government Board has appeared, and contains a statement of the progress of sanitary work in England and Wales, to which public attention may now be well directed, both in justice to the subject and to the services of the new local health officers appointed, and acting, yet, with very imperfect attributions and functions. The statement of the report is as follows:

Before concluding the part of our report which relates to sanitary administration, it may be useful to draw attention to the annual death rate for some years past, as indicating the effect which recent sanitary measures would appear to have had upon the public health.

The following table shows the death rate for each of the four last decennial periods:

ENGLAND AND WALES.

Annual death rate per 1,000.	1841-50.	1851-60.	1861-70.	1871-80.
All causes,.....	22.4	22.2	22.5	21.5
Seven zymotic diseases.....	..	4.11	4.14	3.36
Fever.	..	0.91	0.88	0.49

From the above figures it will be seen that, speaking generally, the death rate of the country remained stationary from 1840 to 1870, but that in the period 1871-80 it fell from 22.5 (of the previous decade) to 21.5, a reduction equivalent to nearly 4½ per cent. It may, therefore, be roughly estimated that about a quarter of a million of persons were saved from death in the ten years 1871-80, who would have died if the death rate had been the same as in the previous 30 years. If 12 cases of serious but non-fatal illness be reckoned for every death, it follows that about three million persons, or over one-ninth of the whole population, have been saved from a sick bed by some influence at work in the past decade, which had not been in operation previously. The case, indeed, is still stronger than this. The death rate of rural districts is habitually lower than that of urban districts; and as the population is steadily concentrating itself more and more into the towns, the death rate of the whole country would tend to increase, if the other circumstances affecting it remained the same. When we find that this tendency has been so much more than merely counteracted, it becomes interesting to see where the gain has been, and to endeavor to trace some of the causes to which it may be due.

Comparing, then, 1861-70 with 1871-80, it will be seen from the foregoing figures that of the entire reduction of 1.0 in the death rate, more than three-quarters (4.24—3.36=0.78) comes under the head of "The Seven Zymotic Diseases," of the diseases, that is, which are most influenced by sanitary improvements, and most amenable to control by the action of sanitary authorities. And of this three-quarters, just half (0.88—0.48=0.39), or three eighths of the entire reduction, is in "Fever," the disease which, more than any other, shows itself in connection with such faults of drainage, of water supply and of filth accumulation, as it is within the province of good sanitary administration to remove.

It is particularly significant that, since the year 1870, when the fever death rate

was 0.80 per thousand, it has fallen pretty steadily, year by year, as follows, down to 0.32 in 1880:

1871	70	1876	42
1872	61	1876	44
1873	58	1877	41
1874	59	1878	32
1875	55	1879	30

Thus in the five years 1881-5, the fever death rate was 0.61; in the five years 1876-80 it was 0.38.

During the decade from 1861 to 1870 there appeared to be no gain from the outlay on sanitary works or on sanitary service in England and Wales; but since then the service appears to have made an effective start, and the pecuniary gain may be thus stated: Under the inquiry as to interments, the cost of funerals—all around --was ascertained to be £5 each. The gain under that head will, therefore, be about one million by the quarter of a million of funerals saved during the last decade. The direct cost of sickness has been estimated at about £1 per case. The gain under that head during the decade will therefore amount to about three millions; a gain, that is to say, of medical treatment and other expenses. But the gain to the wage classes, from the saving of lost labor, will have been far greater. Dr. James Watts, who has had great experience in friendly societies, states the average loss of working time at 2½ working weeks per member between 21 and 70 years of age, and he estimates the total loss to the wage classes by the loss of work through sickness at upwards of thirteen millions per annum. The gain derivable from sanitation may be further illustrated from its advance in military service. The first British army went out to the Crimea under the established curative or medical service, and it was lost. Sanitary Commissioners, trained in service under the first General Board of Health, were then sent out to reform the condition of hospitals and camp, and within three months reduced the sickness and mortality from a plague-rate down to an ordinary standard of health, and by the end of the summer of 1835. to a rate lower than that of the best hospitals at home; and the War Minister declared in Parliament that by the application of their science the second army had been saved. Since then the Army Medical Department has applied extended sanitary operation. Their exercise under great difficulties, is best shown in India. Formerly the death rate in the Indian army was 69 per 1000 per annum. The average mortality from 1869 to 1878 was only 20.41. There was, therefore, a gain of 48.59 per 1000; or, on the present force out there, a gain of 2,350 men. The death rate of the army at home was formerly 18 per 1000. In the year 1879 it was 7.55, being a gain of 10.55 per 1000. As the strength of the army in 1879 was 80,700, the gain was 843 per annum. The total gain to the army in India and the army at home and the rest of the army will be 3,343 men per annum. As each soldier is estimated at £100, this represents in money value £334,000, or more than a third of a million. It is not very easy to get at the real amount of sickness, but the total gain, including the diminished death rate, is considered to be underrated at half a million per annum.

The total number of men killed on the battle-field and on the deck, including those killed at Trafalgar, and the most severe battles during the twenty two years' war, was, according to the Army Returns, 19, 796. The lives saved from premature destruction by the civil sanitary service during each of the ten years of the decade was 25,000. The wounded during the twenty-two year's war was 79,709; but taking a serious sickness as equivalent to the wound, the achievement of the sanitary service has been, during the same period, some three millions of cases saved by the civil sanitary service. The deaths by steam explosions, in mines and on railways, amount to about five thousand annually. but the lives saved by the civil sanitary

service in England and Wales are five-fold greater than the lives thus destroyed by civil accidental violence. A reduction of the death rate by 4½ per cent. is only an installment of sanitary progress. Thus, in the instance of Croydon, visited by the delegates of the Congress, the death rate has been reduced from 24 to 16 per 1000, chiefly by the methods introduced by the first General Board of Health, by which spring supplies of pure water are carried into the houses, and the fouled water carried at once out of the houses and out of the town, by one Local Board authority, while all putrescible matter, instead of remaining for months and years in conditions of putrefaction, is undecomposed, and flows upon the land within two hours. So in Salisbury, Leamington, and a number of other places. At Croydon it has been stated by Dr. Alfred Carpenter, that by complete sanitation, the death rate might be reduced to 10 in a thousand. In the metropolis the death rate among the wage classes in their common dwellings is upwards of 30 per thousand. In the model dwellings in London, it is, however, about 16 or 17, even with surrounding deteriorating conditions. On the demonstrations of various model instances, it may be held that the reduction of the general death rate by 4¼ per cent., as reported, satisfactory as this is, cannot be considered more than one-third of the results obtainable by advanced sanitary administration and further sanitary works. The pain and misery and the social disorder occasioned by excessive sickness and premature mortality, are generally beyond pecuniary estimation. Such estimates as those given serve to show the money loss incurred, by inattention to the continuance of preventible physical evils.

George Eliot said: "Ignorance is not so damnable as humbug, but when it prescribes pills it may happen to do more harm."

DRAINAGE LOWERING THE DEATH RATE.

At a recent meeting of the Yorkshire Associatton of Medical Officers of Health, Dr. Britton, Health Officer of the Halifax Union, gave some statistics on the beneficial effects of improved drainage in lowering death rates, selecting the Hipperholme Local Sanitary District as an example. For four years, including 1873-6, the death rate was high, but during that period steps were taken to obtain a complete system of drainage, and the water supply was "all that could be desired. Zymotic diseases ranged from 2 to 3·9 per 1000 per annum. In 1876 the death rate was 23·9. In 1877 the drainage scheme was commenced, and the death rate dropped to 18·1. In the following year, 1878, the schemes were completed, and the death rate fell to 12 per 1000. In 1879 the death rate rose to 22·5; but this he attributed to the fact that the district was visited by three epidemics of zymotic diseases. The next year, 1880, the death rate again fell to 16 per 1000. The average rate for the three years prior to the drainage scheme was 24·9, and for the three yerrs after the scheme was finished was 16·8, or a fall of no less than one-third.

SLEEP AND SLEEPLESSNESS.

Dr. Granville, in a work on this subject, says, with reference to the difficulty some persons have in getting to sleep: "Habit greatly helps the performance of the initial act, and the cultivation of a habit of going to sleep in a particular way, at a particular time, will do more to procure regular and healthy sleep than any other artifice. The formation of the habit is, in fact, the creation or development of a special centre, or combination, in the nervous system, which will henceforward produce sleep as a natural rhythmical process. If this were more generally recognized,

persons who suffer from sleeplessness of the sort which consists in simply being 'unable to go to sleep,' would set themselves resolutely to form such a habit. It is necessary that the training should be explicit and include attention to details. It is not very important what a person does with the intention of going to sleep, but he should do precisely the same thing, in the same way, at the same time, and under as nearly as possible the same conditions, night after night for a considerable period, say three or four weeks at least."

PREVENTING THE SPREAD OF CONTAGIOUS DISEASES.

Wisconsin has recently passed a law *(Sanitary Engineer)* to prevent the spread of contagious diseases, which makes any person suffering from smallpox, diphtheria, scarlet fever, and other contagious diseases, who willfully enters any public conveyance or public place, liable to a fine of $50 to $300, or imprisonment for 20 or 100 days. The same penalties are exacted of anyone in charge of a child or irresponsible person, who allows similar exposure. The conveyance of corpses into any city or town of the State is forbidden, except when accompanied by certificate from a physician, stating cause of death; and in case of disease from the infectious diseases, a certificate must be shown from the health authority that proper precautions, by use of disinfectants or enclosure in air-tight coffins, have been taken. The penalties are the same as in the preceding case.

A similar regulation of the Iowa State Board of Health provides that bodies of patients dead from diphtheria, scarlet fever, and typhus or typhoid fever, shall be placed in a wooden or metalic coffin, which shall be inclosed by a tight wooden box closely wrapped in a carbolated cerecloth, or effective substitute. Bodies not dying from the diseases named may be transported without restriction from November 15 to March 18, but the rest of the year are to be prepared as above described. Every body must be accompanied by a physician's certificate of death, transportation permit from the clerk of the local health board, and written certificate from the undertaker. The transportation of bodies dead from Asiatic cholera, yellow fever, and smallpox, is absolutely prohibited.

WHY BRAIN WORKERS LIVE LONG.

Dr. Beard claims that brain workers live the longest for the following reasons:

When unaccompanied by worry, brain-work is essentially and inherently healthy.

Brain-workers have less worry and more positive comfort and happiness than muscle workers.

Brain-workers live under better sanitary conditions than muscle-workers.

The nervous temperament, which usually predominates in brain-workers, is antagonistic to fatal, acute inflammatory disease, and favorable to long life.

Brain-workers can adapt their labor to their moods and hours.

The causes of exceptional lovgevity in great brain-workers he gives thus:

Great men usually come from healthy, long-lived ancestors.

A good constitution usually accompanies a good brain.

Great men who are permanently successful have correspondingly greater will than common men, and force of will is a potent element in determining longevity.

CHOOSING A DOCTOR.—Dr. S. Turner says (Louisville *Nedical News*): "As a matter of fact, people select their physicians as they do their sweethearts, by some law of affinity, which laughs at charges or qualifications. True, the idea of qualification is uppermost in their minds, but it has no more solid foundation than the pleasing fancies that paint each one's sweetheart as superior to all others."

VALUE OF DISINFECTION.

The Sanitary Inspector at Leek (Mr. Farrow) writes:—"I know of no other agent that can be compared with the Carbolic Acid (Calvert's No. 5) in point of efficiency and price. In disinfecting rooms, bedding, and clothes, I use a small convenient apparatus which will evaporate from 1 to 20 ounces of Carbolic Acid in about 5 minutes. I have never known an official attending upon or engaged in removing persons suffering from small-pox, &c., or infected articles, whose clothes were dealt with in the manner described, to convey infection to his family or others. We have no instance here of a person suffering from small-pox being removed to the hospital, and the house, bedding, &c., disinfected in the manner referred to, where a second case of disease occurred." Rev. J. H. Timins, Vicar of West Malling, Student of St. Thomas's Hospital, Hon. Treasurer Kent Nursing Institution, in a pamphlet on disinfection, says:—"Calvert's Carbolic Acid has been thoroughly tried, by the nurses who attend infectious cases, in numerous outbreaks in Kent of small-pox, scarlet fever, and diphtheria, and I have *never known it to fail* to destroy the specific poisons of infection; it is the most perfect disinfectant." A. Schiffmann, from M. Menier's Chocolate Plantation, Nicaragua, writes:—"In 1867 Cholera spread rapidly in this country, and decimated all the 'pueblos' one after another. M. Menier sent me 600 bottles of Carbolic Acid (Calvert's No. 5), with which all corriders and interiors of our houses were watered every day (a tumblerful of acid in a garden can of water), and we were *without a single case* amongst our population, which is never less than 300; whilst at Nadaime, a village half a league from Valle Menier, several inhabitants were each day interred. The period of my using the Carbolic Acid coincides with the disappearances of intermittent fever (ague), which attacked us four or five times yearly; and all fleas, chiques, flies, &c., have disappeared completely from here."

HOLDING THE BREATH TO AVOID CONTAGION.

Dr. Henry MacCormac, consulting physician to the Belfast Royal Hospital, at the meeting in August of the International Medical Congress, read a paper on the way "to limit and more or less practically to nullify the force of contagion and infection by holding the breath while in immediate contiguity with the patient." The author said:—Diseases termed infectious, and propagated by miasma from man to man, are communicated, and only communicated, as I believe, by inhalation. Avoid the inhalation of the miasma of disease, and you may prevent the transmission of disease. If we assume the aggregate area of the lining of the lung air-cells to amount to 40 square feet, we see at once what an enormous avenue to the admission of the germs of the disease is thus furnished when brought into such close proximity with the circulating fluid. If we arrest for the moment the acts of respiration, we may also, in so far, arrest the transmission of disease. If the proposition I set forth, namely, that infectious disease is communicated by inhalation, be proved correct, a greatly increased measure of safety for all who have to deal with such, that is to say for physicians, nurses, relatives, and, in a sense, at one time or other, the entire community, is obtainable. The poison of infection, when adequately diluted, does not by inhalation communicate disease. Take, for example, a case of plague or typhus, or Asiatic cholera, or scarlet fever, or diphtheria. In the immediate proximity of the patient, the poison is highly concentrated and highly communicable. At a certain distance, so that the poison shall be adequately diluted by admixture with pure fresh air, it ceases to be communicable. By sufficient ventilation, the poison of infectious disease is rendered,

in fact, incommunicable. In a long experience, I never saw the poison of fever, when I had the control of the ventilation, transmitted from the sufferer to another person. I have seen typhus fever actually extend to nine persons in one household, when ventilation, or air renewal was not attended to. Dr. Jackson, when dealing with the plague in Morocco, prescribed for the patients with entire personal immunity, from an open window, elevated but a few feet above them. I have myself had much to do with Asiatic cholera, and always held my breath when in immediate proximity with the sufferers. I never experienced the malady, though everyone associated with me, nurses and medical men alike, suffered more or less. For years I had charge of a fever hospital, and was never attacked by typhus fever, though all the doctors, whether predecessors, associates, or successors, had it. The hospital nurses, without exception, suffered. In private practice I enjoyed the same security, and I have attended typhus fever in the severest forms, and in the vilest and worst ventilated abodes. A French physician, M. le Dr. Laval, medicin major des hopitaux, it is stated in the *Moniteur de l' Armee*, August, 1874, finding himself on leave in the regency of Tripoli, and hearing that the plague was raging at Merdj, about twenty hours' journey from Bengazi, repaired thither, and without medical cooperation, devoted himself without remission to the aid of the terrified population, preventing the melady indeed from spreading, but, to the infinite regret of everyone, falling at last a victim to his own superb humanity. This admirable person, I believe, would not have perished, and multitudes of others might have escaped likewise, had he and they, as I did, held in the breath, taking in a good chestful beforehand, while imme diately contiguous to the sick. I am anxious not to exaggerate the value of the precaution whose adoption I urge. I have waited thus long in order, if I could, only to realise fresh assurance. I simply state my own convictions and experience, and leave them for the consideration and adoption, should they haply approve, of the noble profession of which I am an humble member.

REGISTRATION OF PLUMBERS.

A bill for the registration of plumbers and the supervision of all plumbing by the Health Departments of New York and Brooklyn has been passed by the Legislature at Albany and approved by the Governor.

The following rules, drawn up by the New York Board of Health, after consultation with intelligent plumbers and sanitary engineers, will probably be substantially adopted under the new law.

When the [plumbing] work is completed and before it is covered from view the Board of Health is to be notified, that it may send inspectors, upon whose report the Board will act upon its final approval.

All materials to be of good quality and free from defects; the work to be executed in a thorough and proper manner.

All the plumbing in the house so placed as to be readily inspected.

Every soil-pipe and waste-pipe of iron, and extending through and at least two feet above the roof, of undiminished size.

No traps on vertital soil-pipes or vertical waste-pipes.

The house drain of iron, with a fall of at least half an inch to the foot, and provided with a proper trap near the street, and with an inlet for fresh air just inside the trap. It should run along the cellar wall, and never be hidden under ground.

These iron pipes are to be souud, free from holes, and of uniform thickness of not less than one eighth of an inch for a diameter of two, three, or four inches or five-thirty-seconds of an inch for a diameter of five or six inches. Before they are connected they should be thoroughly

coated inside and outside with coal-tar pitch, applied hot, or with some other equivalent substance.

All joints in the soil-pipes and waste-pipes so calked with lead, or with cement made of iron filings and sal ammonic, as to make them impermeable to gases.

When lead pipe or trap is connected with an iron pipe, the joint should be made through a metallic sleeve or ferrule and calked with lead.

Every sink, every basin, every water-closet, and every tub or set of tubs separately and properly trapped.

All traps ventilated by a special pipe extending above the roof.

Every "safe" under a basin, refrigerator, or other fixture, drained by a special pipe not directly connected with any waste-pipe, drain or sewer.

Every watercloset supplied with water from a special cistern and not by direct connection with the Croton supply.

No overflow pipe from a cistern to be directly connected with any soil-pipe, waste-pipe or drain.

When the pressure of the Croton is not sufficient to supply the cistern a pump should be provided.

No cister for drinking to be lined with lead.

A CHEAP AND EFFECTIVE PLAN FOR DISINFECTING A ROOM.

Calvert & Co. of Manchester, Eng., original makers of Carbolic Acid, give the following as a convenient and practical method for disinfecting a room :

Place an ordinary house shovel over the fire until it becomes thoroughly hot (but *not red-hot*); then take it to *centre* of room and pour an ounce—by measure on bock of bottle—of No. 4 or No. 5 Carbolic ; lean the shovel *so that no fluid can run on the floor* and the Carbolic will be readily thrown into vapor sufficient to fill an ordinary room. This will thoroughly disinfect the air of the room, and as Carbolic (more properly called Phenol or Phenic Alcohol) is not a mineral corrosive acid, the vapor will in no way injure pictures, metals, or fabrics. It is highly beneficial in many infectious diseases, and having been scientifically proved to benefit lungs affected by tubercle, it may be safely inhaled to a reasonable extent. The No. 4 fluid can be more easily tolerated because of its extra purity, and to many persons its odour is decidedly pleasant, if not execessively employed. *Daily* use of this process is strongly recommended when infectious diseases are present or feared. The vapor is not at all inflammable unless it be held within two feet of fire or light, and the fluid will not injure carpets ; but it should not be allowed to run off the shovel upon oil-cloths, woodwork, nor furniture.

If any raw Carbolic Acid should fall on the skin, it must be promptly rubbed off with a dry cloth, and the affected parts well rubbed with oil. If taken internally by mistake, sweet oil and caster oil should be at once administred in large doses.

WHAT IS KNOWN OF BACTERIA.

Dr. Antoine Magnin, in a work on "The Bacteria," Sums up our present knowledge relating to these organisms as follows :

1. Bacteria are cellular organisms of vegetable nature.

2. Their organism is more complicated than was for a long time believed. The principal points brought to light are: their structure, the presence of cilia, the nature of the substances contained in their protoplasm, copper colored granules, grains of sulphur, etc.

3. The forms of torula, zoogloea, leptothrix, mycoderma, etc.

4. The multiple affinities of the bacteria, on the one hand to the algæ, on the other with the fungi, differently understood by authors, and their development still unknow for the greater number of species, make it impossible to classify these beings except in a provisional manner.

5. This developement, well studied in several species of bacillus, has proved that

bacteria may multiply not only in fission, but also by formation of spores, and even by veritable sporangia.

6. These spores or permanent germs are the principal means by which these inferior organisms are disseminated.

7. As to their role in fermentations, in putrefactions, in contagious diseases and in surgical lesions, notwithstanding the considerable number of labors of which the bacteria have been the object in these different points of view, it is not yet possible to define it in a certain manner.

THE LANCET ON TAKING "COLD"—THE MENTAL ELEMENT IN THE PROCESS.

A large amount of sickness is caused by taking a "Cold." The precise nature of the physiological or pathological process by which one becomes the subject of a cold, or why in exactly like circumstances one will take a cold and another will not, is not very well understood. The following on the subject we extract from the Lancet, London, Eng.:

Few persons take cold who are not selfconsciously careful or fearfull of the consequences of exposure. If the attention be wholly diverted from self as in efforts to save life at a fire, or in the water, the effects of chill are rarely felt. This seems to indicate that the influence exerted by cold falls upon the nervous system. If the immediate effects of the contraction of the surface vessels by cold and the coincident dilation of the internal vessels sufficed to produce an inflammation, then surely we would have such inflammations all of the time. But as a fact, when the vascular system is healthy and that part of the nervous appararus which controls the colibre of the vessels acts properly, then any disturbance of the equilibrium of the vessels, which may have been produced by cold, will be speedily re-adjusted. This being granted, every thing depends upon the nervous system. Now, consciousness is one element in the production of cold, and when this is wanting the phenomena is not likely to occur. Hence is it that persons who do not cultivate the fear of cold-catching are, as a rule, not subject to this infliction. This also explains why the habit of wrapping up tends to keep up a morbid susceptibility. The mind, by thts fear-begetting precaution, keeps the nervous system on the alert for impressions of cold and the centres are, so to speak, panic stricken even when a slight sensation appears. Many of the sensations of heat or cold which are experienced by hyper-sensitive persons have not external cause. They are ideal in origin and ideal in fact."

GIVE THE BABY A DRINK OF WATER.

A city physician, says the *Scientific American*, attributes a large part of the excessive mortality of children in hot weather to the failure of nurses and mothers to give them water; indeed more children are said to die (directly and indirectly) from deprivation of water than from any other cause. Infants, he says, are always too much wrapped up, and in any case would perspire very freely. The water lost by perspiration must be supplied. As Dr. Murdoch stated in his paper on cholera infantum, "The child is thristy, not hungry; but not getting the water, which it does want, it drinks the milk, which it does not want." The consequence is that the stomach is overloaded with food which it cannot digest, and which soon ferments and becomes a source of severe irritation. Then follow vomiting, purging, and cholera infantum.

To prevent this, the principal scourge of infancy, the doctor says: "Have water —without ice—always accessible to the child, who will then refuse sour milk and will eat only when hungry. Water is the great indispensable article for the preventive treatment of children in hot weather. It is important enough to nursing children, but is life itself to those reared on the bottle."

REPORT ON CONSUMPTION IN ONTARIO.

It has been found, from the returns of deaths to the Department of the Registrar-General, that there has been for many years a much larger proportion of deaths from consumption in some counties in Ontario than in others. In the County of Prince Edward, for example, the proportion of deaths from consumption, as compared with the total number of deaths from all causes, has been nearly three times as great as in the County of Grey. In Hastings, Lennox and Addington, Fontenac, Northumberland and Durham, Leeds and Grenville, and Haldimand, it has been much above the average. With these facts in view, we sent circulars some months ago to a large number of the physicians practicing in these counties, asking their opinion, based on "careful observation and consideration of cases," as to the cause or causes of this greater mortality from this disease in these localities. Though many have not yet replied to the circular, many have done so, and we have gathered therefrom the following facts :

1st. That in these older settled counties intermarriages have taken place to such an extent that there are in some sections but few families who cannot trace a relationship to a family or families in which consumption was common. Hence hereditary predispositions are common, especially amongst the older families.

2nd. Habits of life help greatly to give rise to the disease in those inheriting a strong predisposition, and to even develop it in others with less or even no predisposition, to the disease. Families are mostly well-to-do, and luxuries are much more abundant than they were many years ago. Dwelling houses are kept too close and warm, and with furnaces instead of fire-places, and the people sleep in close, unventilated bedrooms. Pork and pastry are very common articles of diet.

3rd. The possibility of contagion is not regarded, and consumptives sleep and mingle with others of the family.

4th. The nature of the soil in many localities is favorable to consumption, being heavy and lying flat, with bad natural drainage. In Prince Edward, especially, there is a good deal of dampness of atmosphere and sudden changes in temperature. Here, too, the "coast-line is made up of alternate points and marshes."

We have here, then, all the recognized causes of consumption existing much more generally than in the newer counties, and as effects invariably follow causes, we should expect consumption to be prevalent in these counties.

These causes, as any one can see, are all removable, if we except the excess of humidity in the air of Prince Edward County, from surrounding water, and the sudden changes in temperature. Much of the humidity could be removed by drainage. In vigorous constitutions the sudden changes would not usually give rise to any serious effects. With a vigorous practical application of public and private hygienic knowledge, the disease might doubtless be almost entirely eradicated in a few years in these as well as in other counties. Shall such a desirable consummation ever be reached ?

PUBLIC HEALTH LEGISLATION.

To the Ontario Government must now belong the credit of being the first in Canada to legislate on State Medicine and provide for the organization of a Central or Provincial Board of Health—a Government Board, for the promotion of the public health in the Province. A bill for this purpose has passed the Legislature, and has become a law of the Province. Such legislation has been looked for by many from session to session for several years past, but it appears that the Government thought the

people generally were not until now prepared to receive it.

The medical profession has been for years prominent in urging upon the various governments of the day the great need of legislation for establishing Provincial boards of health in the provinces, and a Dominion or Central bureau or department of health and vital statistics at Ottawa; and with the great majority of the profession this action could only have proceeded from purely philantropic motives.

In Quebec there is a bill before the legislature of that Province for the establishment of a board of health and vital statistics; and as the Attorney-General of Quebec has expressed himself as decidedly favorable to a bill of the kind, it will most probably pass the Legislature. Friends of the work—sanitarians—in Nova Scotia are active, and we expect to learn in due time of health legislation in that sister province.

There are no indications of any action on the part of the Federal Government toward making provisions for a Central Board for the Dominion. This is to be much regretted. After the action taken by many prominent physicians last session, much encouragement was given that the Government would make such provision, if not last session, certainly during the present one, after the census were taken. It is not yet, however, too late, and we still have a strong hope for some movement in this behalf by the Dominion Government before the close of the session, and that the Dominion will not be far behind Ontario in this vital question.

There are doubtless medical practitioners not a few, as well as others, who are influenced in their choice of representatives for the Legislatures rather by measures for the public good than by party: and the Governments will make friends by acting promptly upon the disinterested, philanthropic advice of the medical profession in reference to the public health.

THE PUBLIC HEALTH BILL.

We have received from the Provincial Secretary a copy of the public health bill, entitled an "Act to establish a Provincial Board of Health." We have examined it carefully, and so far as it goes approve of its provisions. It consists of twenty sections. The first ten provide for the establishment of the Provincial Board, and the last ten are to be read in connection with, and form a part of, or an amendment to, the present existing public health act—which confers powers upon the municipalties to deal with causes of disease, when they see fit to act upon it.

Section one provides that the board shall consist of not more than seven members, four of whom shall be duly registered medical practitioners, appointed by the Lieut.-Governor in Council.

Section two provides that the chairman shall be appointed by the Lieut.-Governor in Council, and shall receive a salary; and that the services of the other members of the board, except the Secretary, shall be honorary, though traveling and other necessary expenses are to be paid. It is not stated how long the Chairman shall hold office, nor does it define, nor say anything about, his duties.

Sections three to six define the duties of the board—which, in brief, are to "take cognizance of the interests of health and life among the people of the Province," to make sanitary investigations, especially as to the cause of any special epidemic, and to advise officers of the Government and local boards of health, and provide that the board shall meet quarterly in Toronto, and at such other times and places as deemed expedient.

Section seven provides for the appointment of a Secretary, who shall be the chief health officer of the Province. Section eight defines his duties, which if properly attended to will require all his time; one of the most important is to employ such means as are practicable to induce municipal

councils to appoint health officers or local boards of health within their municipality.

Section nine provides that the board shall always keep an adequate supply of vaccine matter for medical practitioners.

Section ten provides that in case of threatened epidemic the Provincial Board may, as it were, take the place of a Central Board, which the previous public health act provided might be appointed by proclamation of the Lieut.-Governor.

The bill does not provide that the board shall make an annual (or other period) report of its proceedings, &c., to the Lieut.-Governor nor Legislature. It appears that this may be an oversight; such report would be very desirable.

The remaining ten sections will form a valuable addition to the previous public health act. They provide chiefly for the establishment in municipalities of hospitals, and the isolation therein, or otherwise, of cases of contagious diseases; and for the giving of notice to the local health officer by the householder or attending physician, under a penalty, of all cases of contagious disease.

This giving of notice in this way of cases of contagious diseases has frequently been referred to and advocated in this journal, and is of the first importance in preventing the spread of such diseases. In Great Britain, where municipalties or burroughs have been given the power to provide for this procedure, much opposition has been manifested to it, and this chiefly by medical practitioners, who want to confine the responsibility of giving the notice entirely to householders. We are pleased to find that members of this profession in Canada are more liberal, and we trust there will be no opposition to this part of the bill.

We think it would be better if there were some provisions in this part of the bill relating to the disinfection of patients, bedding, clothing, &c., as well as to isolation, and that this should not be left altogether to the discretion of the local health officer or board. Isolation may be continued for a very long period, but if careful disinfection be not put into practice, the patient or clothing may long after become a centre for the re-spread of the contagium particles.

However important and necessary a sanitary precaution or measure vaccination may be (with all due respect to Jenner and Pasteur) they never should take the place of or lessen vigilence or care in regard to isolation and, equally important, disinfection.

NERVOUSNESS.—Dr. Beard, in his work on "American Nervousness; its causes and consequences," says:

Nervousness is lack of nerve force, and is to be distinguished from simple excess of a motion and from organic desease.

The chief and primary cause of the development and very rapid increase of nervousness is modern civilization, which is distinguished from the ancient by steam power, the periodical press, the telegraph, the sciences, and the mental activity of women. The philosophy of American Nervousness may be expressed in algebraic formula as follows: Civilization in general plus American civilization in particular (young and growing nation, with civil, religious, and social liberty), plus exhausting climate (extremes of heat, and cold, and dryness), plus the nervous diathesis (itself a result of the previously named factors), plus over work or over worry, or excessive indulgence of appetites or passions—an attack of nervous exhaustion.

GIVING UP THE USE OF THE GERMAN LETTERS.—In view of the opinions expressed by eminent oculists, that the reading of German text is injurious to the eyes, the Bernese Government have resolved as much as possible to discourage its use, and all their official announcements and reports will henceforth be printed exclusively in Roman characters.

PARIS CLAIMS to be the healthiest of the large cities. The death rate is stated to be only 20 per 1,000, against 22 per 1,000 in London, 24 in Berlin, and 30 in Vienna. In New York it is 27 per 1,000. No longer ago than 1856 the death-rate in Paris was 25 per 1,000.

Book Notices.

ARTIFICIAL ANÆSTHESIA AND ANÆSTHETICS. By Henry L. Lyman, A. M., M. D., Professor of Physiology and of Diseases of the Nervous System, in Rush Medical College, Chicago, Ill., and Professor of Theory and Practice of Medicine in the Woman's Medical College, Ill. New York: Wm. Wood & Co. Toronto: Willing & Williamson.

This is the September number of Wood's Library of Standard Medical Authors for 1881, and is written by a well-known and learned member of the medical profession. In his preface the auther says he has "endeavored to distill all the excellencies of the writers who have investigated the subject of Artificial Anæsthesia;" and he has, we think, done his work exceedingly well, and completed an excellent compilation, which would form a valuable addition to a medical library. The author gives the history of Anæsthesia; its physiology; the administration and methods of producing anæsthesia; the different forms of inhalers; the accidents and treatment of the accidents of anæsthesia; the different mixtures —their use in obstetrics and in dentistry; how to produce local anæsthesia; its mortality; its medicolegal relations; also a complete list of all the anæsthetic agents and their compounds, together with the dangers attending each, and their relative values. All who take the responsibility of bringing a patient so near to death as a state of perfect anæsthesia is, should certainly take advantage of every available means of bringing the patient safely out of that state.

A TREATISE ON FOOD AND DIETETICS; Physiologically and therapeutically considered. By F. W. Pavy, M.D., F. R. S., Fellow of the Royal College of Physicians, Physician to and lecturer on Physiology at Guy's Hospital. Second edition. New York: Wm. Wood & Co. Toronto: Willing & Williamson,

This is the October, or 10th, number of Wood's series for last year, and forms another valuable addition to the previous volumes. "From the fact that the subject of food is one of deep concern, both to the healthy and the sick—that the information which has been obtained during the last few years has completely revolutionized some of the cardinal scientific notions formerly entertained—and that no modern systematic treatise of the kind here presented exists in the English language," the author was encouraged to write the work under notice. The fact that the first edition was exhausted in less than a year is sufficient evidence that the work supplies a want.

THE OPIUM HABIT AND ALCOHOLISM. A treatise on the habits of opium and its compounds; alcohol; chloral hydrate; chloroform; bromide of potassium, and cannabis Indica, including their therapeutical indications; with suggestions for treating various painful complications. By Fred. H. Hubbard. New York: A. S. Barnes & Co.

This appears to be a very useful, practical work, of over 260 pages, of which the publisher has made a handsome volume. The pernicious habit of taking one or another of the various compounds or alkaloids of opium has rapidly increased of late years, it appears, especially, it is said, since the hypodermic syringe came into use, and particularly in the United States, where the victims of the habit may be counted by thousands. There is probably hardly a practicing physician in Canada who does not on occasions, if not frequently, meet with patients who suffer from this degrading habit; and we think this little book ought to find a place in every physician's library.

In treating of chloroform intoxication the author gives valuable preparatory hygienic treatment for pregnant women; for modifying or entirely allaying the pains of parturition, and thus obviating the necessity for anæsthetics at this period.

The author says, "it is within the power of the profession to mitigate, if not entirely relieve women from the throes of labor. This fact has been actually determined by actual demonstration; and the only barrier standing in the way of the accomplishment of this result can be removed by the mother, by not waiting till the eleventh hour before calling the doctor, but by giving him a timely opportunity to carry out a preparatory treatment." This treatment requires attention to dress, exercise and general surroundings, bathing, diet, etc. A non-calcareous diet of fruit, game and vegetables is recommended, with lemon-juice or oranges. Wheaten flour and hard water are to be avoided. By which the ossesus structure or frame-work

of the fœtus (and possibly of the mother) is rendered more pliable and yielding. After parturition the diet is to be changed to such articles as fully supply the wants of the osseous tissue of the infant.

A Practical Treatise on Hernia. By Joseph H. Warren, M.D. Second and Revised Edition, Illustrated. Boston: James R. Osgood & Co. Octavo, pp. 428.

The author aims to give a short sketch of the various operations for the cure of hernia that are most worthy of mention, "in order that the busy practitioner could refer to them without wading through whole volumes." He has well accomplished his object. The illustrations are very practical and valuable. Very many authors are consulted. The Lancet says of the book: Everything of value and importance connected with this subject has been embodied in it.

Report on the Sanitary State of the City of Montreal for 1880. By A. B. Larocque, M.D., Health Officer.

We are indebted to this very active officer and co-worker for the above report, which consists of 45 pages of useful matter. According to the report, while the death-rate in Montreal of those under the age of 5 years is more than double, per 1,000 of the population, that of Toronto (18.6 and 8.5, respectively), the proportionate mortality amongs those above 5 years of age is much greater in Toronto than in Montreal; it being in Toronto 58.8 in each 100 of the total number of deaths, and in Montreal only 39.2 in each 100. The mortality amongst the French Canadians was, for 1880, 32.61 per 1,000 of population; amongst English-speaking Catholics it was 23.44 per 1,000; and amongst Protestants only 18.09 per 1,000. The healthfulness of the city has, it appears, improved much of late years.

A Thoughtless Word.

Oh many a shaft at random sent,
Finds aim the archer little meant;
And many a word at random spoken
May soothe or wound a heart that's broken.

At a Recent Meeting of the Farmer's Club of Oxford, Ohio, the session was given to the reading of papers on ventilation, heating, water supply on farms, and similar topics.

ON A LOCK OF HAIR.

Oh! precious tress of glossy brown
Wrapped tenderly in satin white;
Which one time wreathed a fair, wise brow,
And waved o'er eyes so blue and bright.

I touch it now with rev'rent lips,
This lock that once to me she gave,
For oh! of her so fair and pure,
'Tis all I have this side the grave.

It once had life, once coursed her heart,
—Still lives to me—a mystic life;
Through it her spirit breathes my name,
And "darling, I am still your wife."

Editor's Special Corner.

Once again I am enabled to send forth, after a long and much regretted suspension, the Journal itself to answer "in propria personæ" the many notes and cards of enquiry received from time to time from various readers of it as to the cause of its non-appearance. When volume five was commenced it was thought that the Journal was on such a basis that it would certainly be continued without any more interruptions, but though with the commencement of that volume, and at the reduced price, there was a large addition to its subscription list, and much encouragement was given that the enterprise would be much more remunerative, I was forced by circumstances to give my time and attention more to other work. Then, to do properly and in a successful manner the editorial work of such a journal, and also attend to all the peculiar duties involved in publishing the same, is beyond the natural adaptation and power of any one man. No editor, I am convinced, ever should publish his own work.

At first, now many months ago, it was intended to suspend the publication of the Journal for only a short time, but many circumstances conspired as it were to pro-

long the time greatly beyond what was then anticipated as possible.

In future the JOURNAL will be published by G. C. Patterson & Co., No. 4 Adelaide Street West, Toronto. The editorship will continue to be under precisely the same management and control as heretofore: that is, under my own soley. I need hardly say that I shall strenously endeavor to do justice to the important subjects of which the JOURNAL treats, and therefore to its readers, which heretofore, chiefly owing to the many duties in connection with its publication, I have been unable to do.

The JOURNAL has accomplished its great and chief object so far as this Province is concerned—awakened such interest in the publlc health question that sanitary legislation and a Provincial Board of Health has resulted, and with this it has opened a wider field for itself, and, it is hoped, created a greater demand for a publication of this kind.

I am quite cognizant of the fact that there have been in the JOURNAL in the past many defects, but the many very flattering notices by the press and by members of the profession lead me to believe it has been notwithstanding worthy of support, and in conclusion, while cordially greeting all its "old" readers, and hoping to become acquainted with many "new" ones, I can only say I shall do my best in the future to make it both instructive and interesting to an intelligent public.

THE TURKISH BATH.—Dr. George Logan, of Ottawa, has been enlightening the people of that city on the Turkish bath, by means of papers in the Free Press. The doctor has a very complete establishment in Ottawa for administering this health-giving luxury. Through his courtesy we have had the pleasure of visiting all the different compartments in it. Dr. Logan says, what we fully believe to be true, that "in a hygienic sense the bath is one of the greatest luxuries of the age, and is a preventive of disease;" and that "the objections commonly raised against the bath . . . are founded on the absence of a knowledge of its real nature."

THE TYPHOID EPIDEMIC IN TORONTO.—All the evidence made puplic in reference to this Epidemic but confirms what has been from time to time stated in this JOURNAL to be the chief cause of typhoid fever in the city, namely the accumulations within its limits of human exereta in the ten or twelve thousand privy vaults. It is our intention to refer to this subject again and more at length on another occasion.

DR. F. R. DUPUIS, of Kingston, has been by way of a practical paper read after the holidays, enlightening the teachers of that locality in the very important subject of hygiene, especially as relates to the school. This is just the sort of work which will teach people to preserve their health, which will prevent sickness, and prolong life. We are pleased to hear, much more frequently than we did two or three years ago, of papers of this sort, and we trust the frequency will soon increase to a much greater extent.

TWO VERY STRANGE BOOKS.—We have received for review two strange religio-scientific works, of which we shall endeavour to make a more thorough and careful examination before our next issue, giving our readers the benefit of the same.

One of them is called "The Problem of Human Life," a book of over 500 pages, 8vo. The author, A. Wilford Hall, argues that the soul is highly attenuated matter, and that sound and light are, like odors, of the same character. The book is of a rather startling character, and ridicules the wave theory of sound and the theory of spontaneous generation and evolution, propounded by Haeckel, and in a somewhat modified form by Darwin.

The other book, much smaller, is upon the "The Soul and Resurrection," by Dr.

J. H. Kellogg, Member of the State Board of Health of Michigan.

The author takes the ground that all that survives of men and women here below is their "record in heaven," complete and perfect in every detail, a 'photograph,' a perfect pattern of the organization of each individual. The character of an individual, as pictured by his acts—including, of course, words and thoughts—bears the perfect impress of his organization. In the resurrection the same organization, the same character, being restored to a material body, the person is the same, and thus the present life is linked with the future.

Both books are decidedly anti-atheistic, and will we believe prove on the whole an aid to christianity, the first mentioned may be obtained from Hall & Co'y., 29 East Ninth Street. New York.

Dress Reform. — A Rational Dress Society has been organized in England, and is likely to prove a success. It appears evident that great numbers of English women heartily desire a dress reform. "That they are heartily disgusted with the folly, or worse than folly, of the fashions they see around them, and are anxious to make a stand against them, so that they may not be forced into adopting them, often at the sacrifice of health, comfort, and good taste, and a waste of time and money which might be devoted to better purposes." It is to be hoped that such an influence will be exercised by it that the abominable, disfiguring crinoline will never again come into use.

An Example Worthy of Imitation.—In the City of Brussels, according to the (Canadian Journal of Medical Science), whenever a birth is registered the Registrar hands to the parent, gratuiiously, a little pamphlet of five pages containing short and plain directions for the management of children. In Paris the mortality amongst infants is so enormous that it is proposed to introduce a similar practice there." We would suggest that the Provincial Board of Health of Ontario, when organized, provide that every Registrar in Ontario shall supply parents with similar directions.

The Census of Great Britain.—On the night of April 4th the population of the United Kingdom of Great Britain and Ireland, so says the *Scientific American*, including the islands, in British waters (the Isle of Man and the Channel Islands), together with the army and navy and merchant seaman abroad, was found to be 35,246,562, an increase of 4,147,236 as compared with the returns of the census of 1871. The females exceed the males by a little over 700,000. The percentage of population for England was 69·8; for Wales, 3·8; for Scotland, 10·6; for Ireland 14·6. The remainder, 1·2 per cent. was distributed between the Isle of Man (0·2), the Channel Islands (0·3), and the army, navy, and seamen abroad (0·7).

The density of population in England and Wales is 440 to the square mile. The greatest density is in the mining and manufacturing counties. Lancashire has over 1,7000 to the square mile, and Middlesex (outside of London), 1,364. Six counties in England and one in Wales have over 500 to the square mile. London has 486,-286 houses and a population of 4,814,571, having increased over half a million in the past ten years. The density of population in London is now 32,326 to the square mile.

Liverpool ranks next London in England, with a population over 550,000; Birmingham has over 400,00 , Manchester and Leeds each exceed 300,000; Sheffield and Bristol have over 200,000 inhabitants each. Curiously the population of Manchester has fallen off 10,000 since the census of 1871.

FUNGOID ORIGIN OF DIPTHERIA.—Dr. Michael Taylor in an article puplished in the British Medical Journal (Canada Lancet), expresses the belief that this disease may spring from fungoid growths. Three children were taken with the disease and on examination the water supply was found all right, but in their bedroom a large number of toadstools (Caprinus) were growing from the wall of the sleeping room, as well as a fine bluish mould. This belief is shared by Pro. Laycock, whose theory is that diptheria depends on oidium, or potato fungus.

DENVER, COL., has been sewered on the same principle that was adopted in Memphis. Mains are laid from north to south on every other street, while laterals run from East to West down the alleys, a true 'separate system," with man-holes and with flushing apparatus. The house drains are restricted to 4 and 5 inches. A correspondent writes: Our sewers are working nicely, and the general good health of Denver during the heated term of unprecedented severity is in marked contrast to the sickness that prevailed this time last year.

Referring to medical expert testimony, Guiteau says: "If I had the money I could get fifty of the best experts in the country to swear that I was as crazy as a loon." Who doubts it? says the Detroit Lancet.

EPITAPH "ON A QUACK."

"I was a quack, and there are men who say
That in my time I physick'd lives away;
And that at length I by myself was slain
With my own drugs, ta'en to relieve my pain
The truth is, being troubled with a cough,
I, like a fool, consulted Dr. Gough,
Who physick'd me to death at his own will,
Because he's licensed by the state to kill:
Had I but wisely taken my own physic,
I never should have died of cold and 'tisick,
So all be warned, and when you catch a cold,
Go to my son by whom my medicine's sold."

For good or ill, from day to day,
Each deed we do, each word we say,
Makes its impress on the clay
Which moulds the minds
-Of other men.

And all our acts and words are seeds
Sown o'er the past, whence future deeds
Spring up to form our wheat or weeds;
And as we've sown
So reap we then.

THE SECRETARY of the Michigan State Board of Health, Dr. Baker, stated in a paper read at a Sanitary Convention that diphtheria and scarlet fever had in many instances in that State been "stamped out of existence in localities where they had appeared" by the practical application of sanitary knowledge.

WORKINGMEN AND SANITATION.—A local Rights Association, of Soho, London, Eng., has been organized in order that workingmen may "do something to prevent their fellow-beings growing up in the wretched condition in which they were constantly found in the quarters inhabited by the working classes."

THE TRADES UNIONS, too, of England are awakening to the necessity of doing something to improve the sanitary condition of the working classes. At their recent Congress attention was directed to the over-crowded and general insanitary condition of the small work-shops and rooms of dwelling-houses.

Dr. West, formerly regarded as the great opponent of the identity of croup and diptheria, says the Detroit Lancet, now declares his conversion to the opposite view. Membranous disease is one and the same, sometimes local and sometimes septic.

A DOCTOR who had continued his visits on a wealthy lady for an inordinate time after convalescence had set in, was somewhat surprised one day at being told by the servant that madam could not see him that day as she was ill.

A Philadelphia Quack tells the public, "If a patient wants it gentle and mild, I'm a homœpath; and when any body wants thunder and lightning, I'm an allopath."

A CONSULTATION.

A single Doctor like a sculler plies,
The patient lingers, and by inches dies.
But two Physicians, like a pair of oars,
Waft him with swiftness to the Stygian
shores.

SPECIAL NOTICES.

All literary communications, books for review and exchanges should be addressed to the Editor, Dr. Playter, Toronto.

All business communications in reference to advertisements, etc., and remittances should be addressed to G. C. Patterson & Co., Publishers, 4 Adelaide Street West, Toronto.