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PUBLIC HEALTH MAGAZINE.

Vol. I.]

DECEMBER, 1875.

[No. 6.]

Original Communications.

SHORT SANITARY PAPERS FROM THE "SANITARY REVIEW."

By DR. ALFRED J. H. CRESPI.

No. I.

The science of health has two great objects ; one—and by far the more important—is to teach man how to maintain himself, mind and body, in vigor, so that he should be in the best possible condition for successfully doing the work of life ; the other—easier and less important—is to remove the causes producing and encouraging sudden and fatal outbreaks of infectious diseases. The former may appear to include many matters not generally supposed to come within the province of the sanitarian. It certainly comprises the training of the bodily powers in childhood and in more advanced life, the formation of habits of industry and temperance, the avoidance of defective hygienic conditions, and perhaps too it includes many of those subjects to which the term education is generally applied. But surely, whether education is or is not a part of sanitary science, there can be no question that it must be based on a sound knowledge of the latter, for, from the intimate union of mind and body, no system of mental training can be scientific which does not take account of the development and preservation of the physical powers. In its broadest sense, sanitary

science applied to purposes of education, made practically useful in short, must include everything having as its object the preparation of man for the great work of life, the preservation of his powers in the highest possible efficiency, the enabling him, during a long life, to work easily and successfully, so that he should not break down, mentally or physically, until he has triumphantly borne the heat and burden of the day. Under the second head—that of the prevention of infectious diseases, if that indeed be not a part of the first—are placed those measures, such as good drainage and an abundant supply of pure water, which diminish the danger of fever and of other infectious and epidemic complaints.

But I fear that under the most perfect hygienic conditions man will always be liable to many painful and fatal diseases, some due to unavoidable exposure to noxious gases or to inclement weather, others to the premature decay of nature. Circumstances may, however, occasionally arise compelling him to face the causes of disease, and when, as sometimes happens, the voice of duty prompts him, the danger must be calmly and bravely met, but this cannot often be the case,—far more often the danger, real enough, might have been warded off. At most, however, sanitary science only hopes to avert those diseases which interfere with the work of life, during that period when life should be a pleasure. The gradual and painless decay of the mental and physical powers must come at last, but it should not be dreaded as an evil, if it comes only after the heat and burden of a long day have been bravely borne.

No. II.

However weary the world may get of the subject of health, its importance must be insisted upon until generally admitted. It is mere folly to expect that a few bottles of medicine can produce lasting benefit on any constitution as long as the complaint for which they are taken depends on important changes in the vital organs of the body. But these changes, caused originally by long-continued exposure to unfavorable hygienic

conditions, become at last irremediable, and no power on earth can undo what has been done.

For example, it may be wearisome to be warned that rheumatism will assuredly be some day the punishment of a certain neglect of the laws of health. But the day at last comes when unnecessary exposure to the causes of rheumatism brings on an attack of it. Of course the patient's friends fly for the doctor; and with zeal untempered by discretion the latter prescribes large quantities of the various preparations of potash,—the patient finally recovers—at least he and his doctor call it by this name; but a change in his constitution has infallibly taken place, and under the most favorable circumstances he is henceforth peculiarly liable to another attack. A little exposure, which before his first attack would have been attended with no bad consequences, may bring on a relapse—nay, a trifling change of weather may cause him severe pain in all his joints, and the older he gets the worse he becomes. This, remember, is the case when rheumatism terminates favorably. Suppose it terminates unfavorably, though the first attack does not kill outright; what follows? Why, that the action of the heart is impaired and permanent disease of it is set up. No medicines have any power to retard the progress of the fatal changes which will then go on; slowly at first but always surely. At last, though perhaps not for many years—years of suffering and weakness of mind—death comes. In the pathetic words of the sufferer and his friends, he has never been the same man since he had that first attack of rheumatism. Of course not; for a change then came over his body, though he knows it not, and this change goes on increasing till he finds rest in the grave. If poor, he hopes that the warm weather, the dry weather, the cold weather may do him good. If rich, he goes, full of hope, to Bath, or Harrogate, or somewhere else, where he has been told he is sure to be cured. The change perhaps does him good for a time, then slowly he sinks lower than before. Would not a little care in the first place have been better than anything that could be attempted after the victim has been seized by a

tyrant, who may relax but never resigns his terrible hold? Yet the poor people who smile at prevention as foolish, think no expense or thought thrown away the object of which is that impossibility—a complete cure.

No. III.

The really able physician can follow with attentive eye every step a disease takes. But how often can he successfully interfere, how often rather are the resources of his uncertain art worse than useless?

Occasionally drugs are of service, but only when given to cut short some of the effects of exposure to the causes of disease; it is a *sine qua non* that these effects should be such that, left alone, they would speedily wear themselves out. In other words, drugs will accelerate recovery in those instances in which the restorative hand of nature would more slowly cure the sufferer. Medicine is practically powerless when the effects of disease would be, left to themselves, permanent. Medicine can do nothing when disease is slowly altering the structure of the body, and giving rise to pain and disorganization where normally should reign only health and strength.

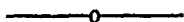
Is surgery not more powerful some will ask, who, sceptical of the powers of the physician, think that at least the surgeon can do much? No, I reply, it is not. Surgery is not more powerful than her sister medicine. Surgery is successful when summoned to nature's assistance and working as nature works. Surgery may cure an aneurism, but only when that aneurism is in the best possible condition for undergoing a spontaneous cure. Surgery may remove, quickly and surely, a gangrenous limb, but, had the sufferer's strength lasted, nature would have cut off that limb. Surgery will take out dead pieces of bone; she will open abscesses, or remove tumors, and her triumphs are brilliant; but only when she does what nature tries to do, what nature more slowly, more painfully accomplishes.

Scientific surgery and medicine help nature; they are her handmaids, they enable her to triumph when, left alone, she

would fail. It may not seem very much for them to do; but, for thousand failures have warned them not to attempt what they cannot accomplish. They cannot force nature, and therefore they can seldom arrest disease, or relieve suffering.

It is not a question of large or small doses of drugs, not one of skill and knowledge on the part of the medical attendant. The large doses of the allopathist are not more worthless than the small ones of the homoeopathist in nine cases out of ten. When there is most need of assistance the physician, who has learnt all the mysteries of his art, can only lament that, while health was unimpaired, it was not preserved as the greatest of all treasures—a treasure which, once lost, can seldom be recovered. The impotency of medicine conveys a lesson to those who will learn it. it is—study to preserve that which, if sacrificed, may be gone for ever beyond recall.

(To be continued).



NOTES ON HOUSEHOLD SANITARY MATTERS.

BY JAS. H. SPRINGLE, ARCHITECT AND CIVIL ENGINEER.

(Continued from page 141.)

Having in the last number of the Magazine described the means necessary for securing to every dwelling the blessing of properly ventilated and permanently efficient house drainage, there still remains a word or two to be said in connection with the same.

Although the greater part of the buildings of Montreal are erected on gravelly or sandy soil, pervious to water, and consequently free from any accumulation of surface water in their foundations, yet there are some parts of the city where the buildings stand on clay or retentive soils, which are *impervious* to water. Now, for buildings erected on sand or gravel, the earthenware drain piping laid down, as I have already described,

is all that can be desired for removing excreta and water waste. Such is not entirely the case, however, with buildings which are erected on impervious soils, for surface water *will* settle to the bottom of the foundations of all buildings; and in the cases mentioned, foundations are rarely free from stagnant water, even where precautions have been taken to drain it off. One of the most costly edifices in Montreal, built on a bed of clay, *stands permanently in water*, notwithstanding that a large outlay was incurred for making surface drains all round it. The natural consequence is, that in many cases such water becomes very offensive, and the effluvium from it, aided by the warmth of the basement stories of dwellings, will sometimes ascend and permeate the whole building, causing sickness which the inmates or their medical advisers are unable to account for; and it is clear that flushing drains, or ventilating soil-pipes, or using disinfectants, would have no permanent effect in removing disease arising from such a cause as this. and I have little doubt that many fatal attacks of disease which have appeared so mysterious might be traced to stagnant waters accumulated round the foundations of the dwellings in which they occurred.

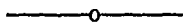
Some years ago, a case occurred in a fashionable locality in this city, which furnishes an instructive illustration of the above. A large dwelling-house, built on clay soil, was greatly troubled with effluvia which could not be traced to any defect in the drainage, but on a trench being dug down to the foundations, a quantity of black fetid water ran off, the effluvium from which was evidently the same as that experienced in the house, and the two laborers who dug the trench were so affected by it, that they were taken sick the same evening with diphtheria from which, however, they recovered.

From what has been stated in my previous notes in the Magazine, it will, I think, be clear, that the drainage there described is not adapted to receive the drainage of the foundations of buildings. It is necessary, therefore, in the case of buildings erected on retentive soils, to make, first, a "trench drain" filled with broken stone, from the house to the sewer,

placed about twelve inches below the bottom of the foundations of the same. The top of the stone of this drain should be finished to the inclination necessary for the pipe-drain, and then covered with boards to prevent the earth from falling into it. The pipe drain may now be laid directly on these boards, and the joints well secured and kept in place with puddled clay as before directed.

By this arrangement the lower drain will carry off to the street sewer any surface water that may settle into the foundations; and as the sewers of Montreal are generally built without mortars in the lower half, it will be necessary to carry the stone drain up to the outside of the sewer, to make it effectual for the purpose intended.

(To be continued.)



A SALOON-KEEPER having started business in a building where trunks had been made, asked a friend what he had better do with the old sign, "Trunk Factory?" "O," said a friend, "Just change the T to D, and it will suit you exactly."

Sanitary Reports.

METEOROLOGICAL OBSERVATION FOR OCTOBER.

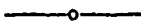
Mean temperature of month of October, 40.88. Mean of maxima and minima temperature, 41.0. Greatest heat was on the 21st, 58.0; greatest cold was on the 13th, 26.9,—giving a range of temperature for the month of 31.1 degrees. Greatest range of the thermometer in one day was 22.1, on the 14th, least range was 5.7 on the 18th. Mean range for the month was 12.54 degrees. Mean height of the barometer for the month was 29.9671. Highest reading was 30.408, on the 13th; lowest was 29.404, on the 16th, giving a range of 1.004 inches. Mean elastic force of vapor in the atmosphere was equal to .2108 inches of mercury. Mean relative humidity, 80.5. Maximum relative humidity was 99 on the 30th, during rain and cloudy weather after rain. Minimum relative humidity was 52 on the 12th, during cloudy weather. Mean velocity of the wind was 11.31 miles per hour. Maximum velocity was 28 miles per hour on the 30th. Mean of sky clouded, in tenths, 6.9. Rain fell on 20 days. Total rainfall, 4.74. Slight shower of snow on the 5th; and of hail on the 6th and 26th.—*M. Gil Coll. Observatory.*

FOREIGN HEALTH STATISTICS.

United Kingdom of Great Britain, during four weeks ending September 11th. 21,795 births and 14,717 deaths were registered in London and twenty other large towns, and the natural increase of the population was 7,078. The mortality from all causes was per 1,000: In London, 22.25, Edinburgh, 22.50, Glasgow, 25.25, Dublin, 23.50, Portsmouth, 23.25, Norwich, 28.75. Wolverhampton, 27.30, Sunderland, 24.50; Sheffield, 26.25; Birmingham, 27.50, Bristol, 25.25, Liverpool, 28, Salford, 34.50; Oldham, 22.50, Bradford, 28; Leeds, 28.50, Hull, 32.25, Newcastle-upon-Tyne, 30.50, Leicester, 34.50; Manchester, 28; Nottingham, 26.50.

Other foreign cities at most recent dates, per 1,000. Paris, 23 (typhoid fever, 15), Rome, 32, Vienna, 23 (diarrhoea, 68); Brussels, 19, Berlin, 38 (diphtheria, 22), Hamburg, 30 (diarrhoea, 35); Calcutta, 29 (cholera, 12), Bombay, 29 (cholera, 49); Madras, 30, Amsterdam, 26 (whooping cough, 14); Rotterdam, 29; The Hague, 28; Christiana, 20; Breslau, 33; Buda-Pesth, 34 (typhus, 9); Turin, 17; Alexandria, 50 (typhus, 12).

Correspondence.



To the Editor of the Public Health Magazine :—

DEAR SIR,—In your November number "A Subscriber" writes you an enquiring letter in regard to the loss of life from accident, but more especially in regard to that class from fire. He indignantly asks: "Can nothing be done to stop it?" I answer, Yes, a great deal, if we could only arouse our sleeping fellow-citizens, guardians and aldermen. The extraordinary number of accidents which take place is, as he truly says, "something appalling." Take, for instance, that fruitful source, *reckless driving*. What family has not had just cause for indignation, and too often mourned the death of some loved one, carried to an early grave from having been run over by some "Jehu" out for a holiday; or, what is worse almost, to rise from a painful bed of sickness to be a cripple for life? Certainly, Mr. Editor, our sleeping aldermen should be aroused to a sense of their duties, and cause watch to be made to arrest and impose heavy fines upon the perpetrators of this daily outrage upon civilization. My indignation has carried me away from the subject I had intended to write upon, but if your readers will bear with me a little longer, I shall answer fully "A Subscriber's" last question, viz. . "Would you please inform me what the particular virtues of the chemical fire-extinguisher are, and would you advise its use?" I will answer the last half first by saying that no private dwelling, public building, school or college should be without it, and my reasons for this assertion will answer the first part of your correspondent's query, "What are the particular virtues of the chemical fire-extinguisher?"

The chemical fire-extinguisher is for the purpose of generating a gas that will not support a flame of fire. Science has taught us that such a gas is carbon dioxide, or carbonic oxide (commonly called carbonic acid). This gas is very hurtful to animal life as well, even when largely diluted with air. It acts as a narcotic poison. Hence the danger arising from imperfect ventilation, the crowding together of many individuals in houses and ships without efficient means for renewing the air; for carbonic oxide is constantly disengaged during the process of respiration, which, as every one knows, is nothing but a process of slow combustion, which is an ample reason for free ventilation in crowded districts. This gas is sometimes emitted in large quantities from the earth in volcanic districts, and it is constantly generated where organic matter is in the act of undergoing fermentative decomposition. The fatal "after damp" of the coal mines contains a large proportion of carbonic oxide. A lighted taper plunged into carbonic oxide, or thrown upon it, is instantly extinguished, even to the red hot snuff. When diluted with three times its volume of air, it still retains the power of extinguishing light. It is upon this principle that our extinguisher was invented. It can be made in several ways, but that used in our Babcock extinguishers is by decomposing a carbonate with one of the stronger acids. A copper jar is filled with water, and a quantity of carbonate of soda is thrown into it to dissolve. When you wish to generate the gas, a small quantity of diluted sulphuric acid is thrown into it, and at once the generation begins, and by its own forcible decomposition it can be emitted through a pipe or hose upon a flame, which is immediately extinguished by it.

I am, sir,

Yours obediently,

HOMER BAKER.

22 Victoria Square.

Rebivus.

—o—

DRESS AND HEALTH; OR, HOW TO BE STRONG.

Messrs. John Dougall & Son have sent us the above exposé of the evils of the present mode of dress on ladies. It is a compilation from many sources, well culled and admirably arranged to make the "disagreeable" subject "agreeable." The object of the work is reform in dress, and we most readily endorse everything that will tend to make our young mother more healthy, and so improve their offspring. The female dress has certainly arrived at an anomalous stage, everything worn seems to have been invented for the purpose of deforming if not of destroying life. There is a perfect disregard of health in everything appertaining to fashion. Parts that ought to be kept warm, remain unclothed, the upper portion of the chest, most prone to consumption, is completely exposed, the feet, great inlets to cold, are covered with thin stockings, and with shoes as thin as paper. Parts that should have full play are cramped and hampered. The chest is cribbed in with stays, the feet with tight shoes, hence causing deformity, and preventing a free circulation of blood. We have had the question asked, *When should a girl begin to wear stays?* Never!! They weaken the muscles. The pressure upon them causes them to waste; so that, in the end, a girl cannot do without them, as the stays are then obliged to perform the duty of the wasted muscles.

2nd. They weaken the lungs by interfering with their functions. Every inspiration is accompanied by a movement of

the ribs. If this movement is impeded, the functions of the lungs are impeded also, and, consequently, disease is likely to follow, and either difficulty of breathing, cough or consumption, may ensue.

3rd They weaken the heart's action, and thus frequently produce palpitation, and, perhaps, eventually, organic or incurable disease of the heart.

4th They weaken the digestion by pushing down the stomach and the liver, and by compressing the latter induce indigestion, flatulency, and liver disease.

5th They weaken the bowels by impeding their proper peristaltic motion, and thus might produce either constipation or a rupture. A young girl tightened in at the waist, is like a wasp; she is anything but beautiful, it is unnatural, and if unnatural she cannot be beautiful.

The Almighty has made the female figure of the most exquisite symmetry, but still He has not made it ridiculously small. That would not be beautiful, no more so than are fashionable Chinese feet. God has made the figure lithe and graceful, and sufficiently large for the lungs to play, for the heart to beat, for the blood to circulate, for the stomach to digest the food; and poor ignorant human creatures step in to interfere with these all-wise arrangements. Much more might easily be added on this all-important subject, but in a review our remarks must necessarily be short. The little volume contains the best advice on all matters of dress, and we heartily recommend a careful study of it.



GLEANINGS FOR THE CURIOUS FROM THE HARVEST FIELDS OF
LITERATURE. A Melange of Excerpta. Collated by
C. C. Bombaugh, A. M., M. D.

We do not know when we have reviewed a work that has given us more general satisfaction.

From the beginning of the first chapter on "Alphabetical Whims" to the end of the last, entitled "Life and Death," there is every shade of thought for thinking man. It may truly be said to be "A drawer of fragments," &c., &c.

"In winter you may reade them *ad ignem*, by the fireside, and in summer *ad umbrum*, under some shadie tree, and therewith passe away the tedious howres"—(Saltonstall).

As is stated in the introduction, the aim of this collation is not to be exhaustive, but simply to be well compacted. The restrictive limits of an octavo require the winnowings of selection in place of the bulk of expansion. Gargantua, we are told by Rabelais, wrote to his son Pantagruel, commanding him to learn Greek, Latin, Chaldaic, and Arabic; all history, geometry, arithmetic, music, astronomy, natural philosophy, &c., &c.; "so that there be not a river in the world thou dost not know the name and nature of all its fishes; all the fowls of the air; all the several kinds of shrubs and herbs; all the metals hid in the bowels of the earth, all gems and precious stones. I would further have thee study the Talmudists and Cabalists, and get a perfect knowledge of man. In brief I would have thee a bottomless pit of all knowledge." While this book does not aspire to such Gargantuan comprehensiveness, it seeks a higher grade of merit than that which attaches to those who "chronicle small beer" or to him who is merely "a snapper-up of unconsidered trifles." We cannot conclude better than by quoting from Shirley, "Read, and fear not thine own understanding; this book will create a clear one in thee; and when thou hast considered thy purchase, thou wilt call the price of it a charity to thyself."

PUBLIC HEALTH MAGAZINE,

DECEMBER, 1875.

INFANT LIFE AND THE PROTECTION DUE TO IT.

It has been well said that Death is a terribly hard fighter, giving blows, but receiving none. He is remorseless and cowardly as well, never hesitating to strike his victim when he is down, and least able to defend himself. His challenge to the human race is perpetual, and admits of no reservation in favor of sex, age or condition. That he is sure to be victor in the long run, we freely admit; but the poorest and weakest mortal, if only properly trained, can hold him at bay for a considerable time, and make the fight a prolonged one. A healthily born baby, for instance, at one hour's notice, having careful seconds and judicious bottle-holders, can (bar accidents) often worry through seventy rounds, each round occupying $365\frac{1}{4}$ days. In some cases, second childhood (like the second wind of which pugilists talk) may still further prolong the contest until even the 100th round, and then fall beneath the scythe of Time, Death's backer, before the great principal can put in his final blow.

In New York some years ago (according to the report of the City Inspector) out of 22,710 deaths in one year, 13,254 were enumerated as infantile. Quêtelet, who is one of the most trustworthy authorities on the subject, writes as follows: "To have a just idea of the great mortality of infants soon after

birth, it is sufficient to note that, in towns as well as in country districts, there die during the first month after birth, *four* times as many children as during the second month after birth, and almost as many as during the entirety of the 40 years that follow the first year, although even then the mortality is very high. The tables of mortality prove, in fact, that *one tenth of the children born into the world die before the first month of life has been completed.*" Now, by natural law it would seem that an infant has a better right to live than an adult. The latter has to a certain extent had his turn, and played at least a portion of his part, while the former has just made his *début* upon the stage. There must be foul play somewhere when occasionally, as in the case of New York above cited, more than half the mortality is confined to little children.

The fault lies mainly with the trainers of our little ones. They do not seem to know how to bring their young charges in proper condition into the field of battle. The speechless victims are fed with adulterated milk, and deprived of pure air and health-giving light. In mid-summer, they are driven in perambulators or carried in their mother's arms about the dusty streets, beneath the pitiless glare of a brain-scorching sun, and in winter they are exposed to piercing cold with necks, arms and legs insufficiently protected. They are put to sleep with murderous opiates, cramped in tight dresses, choked in the vitiated air of unventilated rooms, and persistently maltreated, and hustled to the grave in various scandalous ways, too numerous to mention.

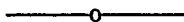
The rearing of children—which should be for all mothers the most important business in life, and the best understood—is a subject on which most people are almost criminally ignorant. We seem to improve in the knowledge of how to rear inferior animals, and even fruits and vegetables, but are lamentably deteriorating in the solemn duty of rearing our own flesh and blood. Some excuse may be pleaded in the case of extremely poor people. Living as they are often compelled to

do—in some foul den or in cesspools and sewage, with little or no ventilation in their stifling rooms—with no pure water at hand either for washing or drinking purposes—and subsisting from year to year on the cheapest and most innutritious food, it is no wonder that they fail to rear a healthy progeny, or look upon a new mouth to feed rather as a curse than a blessing. Too often in the case of these persons, dissipation and drunkenness combined with unavoidable circumstances to keep them abjectly poor, and the offspring born under these conditions—diseased and puny specimens of mortality—can only survive by a special miracle. No woman, whose daily life is passed amid the surroundings that we have described, can possibly produce a healthy infant, or provide it during the first months of its frail existence with that which alone it needs, pure and nutritious milk.

But what shall we say of those mothers who have no excuse to urge for their neglect of their infants—who are amply able to nourish them with their most natural food—but in whom the instinct of maternity is so deadened that they refuse to nurse their own children, and transfer, in cold blood, a mother's holiest and most important duty into the hands of a mere stranger, hired by the month, and never thoroughly known? It is true that a fashionable woman is frequently *unable* to nurse her children; but in nine cases out of ten, this abnormal bodily condition is due to her own unwholesome and unnatural state of life.—Late hours, high living, heated blood and vitiated atmosphere, are some of the many causes of this alarming physical defect. “What shall I do to improve the condition of France?” said Napoleon one day to Madame de Campau. “Give us good mothers,” was the reply. Her request (as it has been truly remarked) is now the cry of the world; for there is a growing conviction that, at any rate among what are called the upper classes, women are becoming more and more indifferent to their maternal duties and their proper position in the social economy of the world. Whether women like to hear it or not, says a

late writer, it is none the less a truth that part of the reason for their being born at all is that they may in their turn bear children. The unnatural feeling against maternity existing among fashionable women, merely because it involves increased domesticity, and checks a career of feverish excitement, is one of the worst mental signs of this state, as their frequent inability to be mothers at all is one of the worst physical results. In France and America, and to a less extent in England, but let us hope not in Canada, society has voted maternity unfashionable; and the vulgar act of suckling an infant is neglected as a duty, or rather regarded as a degradation.

In a future article we shall attempt to show that the alarming rate of infant mortality, both in cities and in the country, arises in a great measure from causes which can be prevented, that is to say, from the improper manner in which children are fed, clothed, lodged, physicked and otherwise generally mismanaged.

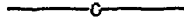


SUBURBAN RESIDENCES.

It seems like a law of nature, that there should be provision made for the purification or resuscitation of every thing. All things require recuperation; the very elements themselves undergo changes needful for the restoration of their normal condition in purity, and no being more exemplifies this necessity than man. His physical powers are only good for a certain period of labor, and he requires restoration. There is no such thing as perpetual motion; to decay, to impair, to wear out, is the law of nature, as it is written "Waxeth old and is ready to vanish away," of the world itself. Man yields to this claim and seeks daily rest, and covets change. The more thickly as a gregarious being he congregates, the more he longs for the relief of dispersion, and hence it is that every town seeks the provision of a suburban outlet. Railways have afforded immense facilities to the supply of this want, and in the great cities of

the Western world the suburban outlet has been sought for ten miles around about the centre of the human hive. Nothing adds more to the real value of a town and to its attractions as a place of business, than facilities to reach a healthy environ. Nothing more thoroughly secures it than a fine flowing river dividing a town from its suburbs. There is always a natural breeze created by a running river, and this gives generally a healthy vicinity. Our town of Montreal is wonderfully well adapted to afford the great lung to its community by the easy access to the shores on the opposite side. You could scarcely find a more beautiful suburb than the shore on which Longueuil, St. Lambert and Laprairie stand, and the time is not far distant when these shores, so easily reached, will be full of delightful summer residences. The air on that side of the river is peculiarly invigorating; open as it is to the constant prevailing nor'-western wind, it is fairly fanned by the summer breeze. What an immense comfort all last summer was the Island with its beautiful walks, and woods, and fresh air that seems day and night to sweep it. That Longueuil will be a favorite suburb to the town, there is no doubt; and the Corporation of Longueuil are laying down pipes for the supply of water, in the expectation of its being frequented largely by visitors next summer, a detailed account of which we will give our city readers in our next number. There have been some parties who have joined into a company, and are in treaty with the Canadian Gas Lighting Company, to light the town with their coal oil gas works,—a most desirable improvement. For situation, one can hardly find the place surpassed; since it has a commanding view of the City and Mountain of Montreal, with St. Helen's on the west, and that fine beach that the river has opposite the town, and which is traversed every half hour by a ferryboat, making access certain and easy. For a thorough change of air, we do not know of any town that possesses so complete and so delightful a suburb as these pretty shore villages make for Montreal; and while emplacements and

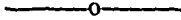
lots are being sold at a moderate rate, it is almost within anyone's means to procure a residence that must prove an advantageous investment.



INFECTION FROM OLD RAGS.

A more glaring instance of infection from handling clothes that were once the property, and in use of diseased persons, was never more sorrowfully exemplified than in the paper manufactory of Napanee. A quantity of rags and linen were collected in Montreal and sent to that establishment and received without any question or misgiving. It was the duty of one of the factory girls to sort these, and on the second day the young person was so ill that she did not return, and typhoid fever had set in; another girl took her place, and immediately was taken ill like the former. It was not till the fourth victim had fallen, and the alarm fairly spread, that the dreadful fact was too apparent that infected clothing was in the building. By this time the disease had rapidly spread, and these who died numbered some ten persons. The whole consignment was committed to the flames, and not until the building was disinfected and the place purified, did the contagion cease. Is it possible to denounce in too strong and abhorrent language, the cruelty of those who, for the sake of a few shillings, thus killed so many of their fellow creatures; caused such infinite damage to a thriving establishment, and created such a panic in a business that till then had never experienced any check to its usefulness and success? Is there no law that can meet such homicide? Is it possible such a nefarious traffic can be carried on and is there no power to give the just reward to such iniquity? How careful should persons be who purchase second-hand clothing, which their economy may commend, but which may be disastrous in its consequences. The straitened means of some may induce

them to avail themselves of bargains, but where this is done do not let them use them till thoroughly purified—which is not difficult, as has been shewn under the several articles of disinfectives.



PROCESS OF DIGESTION.

The actions to which food is submitted are performed within certain mechanical limits ; they may be classified under four heads, viz. :

The actions of the mouth and gullet.

The actions of the stomach.

The actions of the small intestines.

The actions of the large intestines.

In the first we may include mastication and insalivation. Mastication consists in the cutting and tituration of the food by the teeth ; during this process the food is mixed with the saliva. This substance is a mixture of four fluids of different properties secreted from the parotid, submaxillary, sublingual and buccal glands. The saliva is a slightly viscid transparent fluid, alkaline in reaction. It possesses the important property of converting *starch* into *sugar*. It also serves to soften the mass of food in the mouth during mastication ; it lubricates it, and thus facilitates its passage down the œsophagus to the stomach. The mass is propelled down by a series of relaxations and contractions to the stomach.

In shape, the stomach resembles the pouch of a bag-pipe ; it is capable of great alterations in size. The capacity of the dead stomach is about two quarts ; the walls consist of three coats, viz : Serous membrane, muscular layer and mucous lining ; all three are not thicker than card-board. It has two openings, the cardiac where the œsophagus enters, and pyloric, the commencement of the small intestines.

On reaching the stomach the food meets with another secretion, the gastric juice. When the stomach is empty no fluid is secreted, but immediately on the entrance of food or other foreign substance into the stomach, the mucous membrane, previously pale, becomes reddened and slightly turgid. The gastric glands begin secreting actively, an acid fluid is poured out in minute drops, which gradually collect and run down the walls of the stomach and soak into the substance introduced. The quantity of this fluid secreted daily is about twenty-four pounds. This amount may seem rather much, but we must remember a great quantity of this fluid is re-absorbed with the substance it keeps in solution. The food on entering the stomach immediately commences a series of revolutions from right to left, making a complete revolution in from one to three minutes; they become quicker as the reduction of food goes on. During these revolutions the pyloric extremity is in a state of contraction, but allows the passage of the reduced food (the chyme) into the small intestines. This solvent or gastric juice, is a clear, colorless and slightly viscid fluid; it is acid in reaction during digestion, but neutral or alkaline when the stomach is empty or at rest. The active principal of this juice is an albumen-like substance called pepsine; it dissolves the organic substances of the food, but not the oil, fat, sugar or starch; by its action the organic matter is carried into a substance called albumenose; then it is ready for absorption. Besides the gastric juice proper, the stomach especially when empty, secretes a tenacious mucus which forms a thick protective sheeting for its internal surface. The food, now reduced to a putty mass, passes through the pylorus, and into the small intestines, and is propelled through this narrow and tortuous tube by alternate dilatations and contractions of successive portions of the intestines. It is about twenty-five feet in length, and is divided into three parts, viz.: The duodenum, jejunum, and ileum. The duodenum extends for about eight inches beyond the pylorus; the jejunum is about three-fifths of the small

intestines, and the ilium two-fifths ; the small intestines, like the stomach, have three coats, serous, muscular, and mucous.

The food coming through the mouth and stomach has had its starch acted on by the saliva, and its organic matter by the gastric juice, and been reduced to a fit state for absorption, but the fats have not been acted on as yet.

This puttaceous mass, or chyme, which has been constantly squeezed through the pylorus into the intestines, consists of albuminous matter broken down and half dissolved, and fatty matter broken down but not at all dissolved. This chyme, on entering the duodenum, is subjected to the influence of bile and pancreatic juice, which flows into the upper part of the duodenum, on being irritated by the chyme. Here the chyme is called chyle ; it is colored by the bile, and the fatty portions are now acted on by the pancreatic juice, are dissolved and reduced to a state fit for absorption by the lacteals. This tube must be regarded as essentially a medium for absorption.

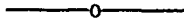
Water and the soluble substances are absorbed directly by the blood vessels of the stomach, but here we find in addition oily chyloric matters in general, taken up with a like facility. The intestines, besides receiving the several digestive fluids, secrete a proper solvent fluid which is alkaline in reaction ; its solvent power is not interfered with by the presence of bile as the gastric juice is. Its amount secreted daily is about eight pounds ; its property is that of dissolving albuminous substances and of converting starch into sugar. It is most probable that the bile and pancreatic juice are the main agents in emulsifying fats and rendering them fit for absorption by lacteals ; as is seen, the function of the small intestines is the digestion of fat. It must not be forgotten that all the other constituents of the food are by no means completely digested when it leaves the stomach, but continue to be dissolved by the gastric juice which passes into the smaller intestines with them, and the starch having been completely converted into sugar by the action

of the saliva and pancreatic juice is dissolved by the intestinal juice and absorbed by the blood vessels chiefly.

The chyme now passes into the large intestines through the ilcoecal valve, which prevents the return of chyme into the small intestines. The large intestines are divided into caecum, ascending transverse, and descending colon and rectum. The changes which take place in the chyme after it passes into the large intestines, are probably a continuation of the process in the small intestines; food may pass undissolved into the large intestines, may be digested in the upper part and absorbed. However, in ordinary, healthy digestion, the changes which ensue are, mainly, absorption of the more liquid parts, by this means the contents of the large intestines as they proceed towards the rectum, become more and more solid.

DURATION OF DIGESTION.

Time occupied in the stomach is three to five hours; time occupied in small intestines, thirty to thirty-six hours; time occupied in large intestines, twelve to eighteen hours.



TO OUR SUBSCRIBERS.

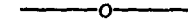
It is now the sixth month since we issued the first number of the "PUBLIC HEALTH MAGAZINE," and we have every reason to be satisfied with the success of our efforts. We have supplied an acknowledged want—and the best proof of the truth of our assertion is the fact, that wherever our periodical has made its way, it has been cordially welcomed and kindly criticized alike by the Press and the People.

We shall pursue the same path that we at first traced out for ourselves. We shall endeavor to convey valuable information on vital points of interest in a simple, popular, but, we trust, not unscientific manner; we shall continue to point out

to our readers how, by strict obedience to unerring laws of hygienic science, health may be preserved, disease be baffled, and life be prolonged to its utmost limit.

So much for our future course. But there is one other point, upon which, in justice to ourselves, we are compelled to touch. Christmas is at hand—Christmas the genial, Christmas the festive—but alas! Christmas in his train brings—bills. It is both a privilege and a pleasure to us to meet our own share of these—when we can; but unfortunately we cannot do so fully, unless we ourselves are paid by those who are indebted to us. For our outlay, literary and pecuniary, upon the “HEALTH MAGAZINE” we have hitherto received no remuneration whatever. But, as the labourer is worthy of his hire, we respectfully ask our subscribers to pay us promptly when they receive our accounts. We are only in the first year of our literary existence, and need, like an infant, all the nourishment that we can obtain.

With these few necessary words, we sincerely wish our numerous friends a MERRY CHRISTMAS AND A HAPPY NEW YEAR!



ADVICE GRATIS.

Remember, remember
 The chills of December,
 And wrap up your thorax (or chest);
 Beware of bronchitis,
 Avoid laryngitis,
 And money in sealskin invest.

Miscellaneous Selections.

THE MENTAL EFFECTS OF THE COLD.

The mental effects of the severe cold on social and individual character, are discernible enough in one or two different directions. We are told that what the body really does in this cold weather—say, when we are breathing air at the quite moderate temperature of 28° Fahrenheit,—is to raise the temperature of all the oxygen in it which passes into the blood, from 28° to 98°, or thereabout, which is the temperature of the blood; in other words, though 70° Fahrenheit, or a good deal more than a third of the distance between the freezing and the boiling point of water. No doubt the automatic effort which is necessary to effect this change of temperature in every element of air which passes into the blood is a considerable one, and those who are conscious of winding-up and setting in motion the machinery for this elaborate manufacture of heat, might perhaps sympathize with Mr. Pecksniff's expression of pride in reference to the not less elaborate digestive machinery of the body, that it makes them feel as if they were "benefactors to the race." Unluckily for most Englishmen, very few of them are conscious that they do achieve this feat. But like M. Jourdain when he discovered that he talked prose, they will probably be elated when they learn that they are the theatres of a functional activity of which they had never heard. But in spite of this ignorance, it is quite obvious that, after a dumb, inarticulate fashion, as Mr. Carlyle would say, men are well aware of a certain considerable addition to the draft on their energy in the severe weather over and above that which is made in ordinary weather. And this consciousness shows itself in

a very different fashion in men of different constitutional type and moral temper. In some—chiefly delicate persons, or persons past middle age and without a very large fund of energy, the chief effect of this dim consciousness of a steady draft on their organic resources, is to exaggerate the economical reserve and frugal parsimony of their character. More than ever they lurk within themselves and calculate anxiously the mode in which they may use their little store of energy to the best effect. They economize their moral fuel, by watching opportunities more keenly than in ordinary seasons, and taking care never to do anything superfluous, or which, from its inopportuneness, may need to be done over again. They approximate indeed, to the type of character which we may suppose to be impressed on the besieged inhabitants of a great city who are aware that the race between their resources and their needs will be a very close one indeed, and that every condition of life must be finely calculated, instead of leaving as usual a large margin to cover mistakes. There is a sort of feeling in such people that every day the severe cold lasts is a day needing sharp moral and intellectual discipline to get through their ordinary tasks. Getting up itself is a great expense of energy; the cold bath, for those who take it, involves about double the shock of ordinary days: it is quite a dispensation to get the goloshes on for the snow, or the extra time needed for a slippery walk, or the extra care needed for a slippery drive; then almost all the clocks lose, owing to freezing oil, and it takes another moral effort to resist the false testimony of the clocks and to compute the real from the apparent time; again the cold of the carriage or railway train takes out a good bit in the way of fortitude; the strong attractions of the fire, if not resisted, dissolve away a large amount of disposable time; cold feet make a serious draft on the temper; cold bedrooms are apt to keep you up late at night over the fire; cold beds cause a dreadful dwindling in the stock of sleep; all this is without counting the resisting medium of real indisposition, from cold

in the head, or in the teeth, or in the liver, which aggravates every difficulty twofold; so that one way or another, a man of delicate health who really manages to get through his ordinary duties in the cold no worse than in mild weather, is compelled to be twice as crafty, and shrewd, and frugal in his management of himself and the distribution of his energies. But the total moral effect is very seldom to make himself satisfied. The physical effect of the cold is far too humiliating for that. It makes him shrink into himself and feel of no account. He is issuing orders from a citadel which he thinks may have to capitulate every day. A man cannot feel very bumptious who is doing that. The sense of a dwindled existence takes down his pride. He ekes out his moral resources frugally, but has no joy in his frugality. He is holding out,—that is all,—not winning glory for himself. There is no elastic pleasure in the sense of a minute economy of power. If you have to say to yourself, "There will be great complexity in this division of the investments which I ought to make; it will take energy; I must put it off till it is warmer and I have more margin of strength," you feel intensely what a limited creature you are, and that the moral rations on which you are living so parsimoniously would hardly be worth consuming at all, if you did not hope for a time of more affluent power, after the siege is raised. There is nothing which produces intellectual modesty so effectively as feeling *just* equal to life, and no more, and that is the effect the cold produces on a good many people. At the same time, it is apt to make them calculating and in a moral sense frigid. When they read of a great calamity like the burning of the emigrant ship or the railway slaughter at Oxford, they are apt to say to themselves, "I can do no good there; can I afford to subject myself to the pain of reading about all this suffering? Better pass it over and hear of it only what I must." Now, that is hardly an attractive state of feeling. Tenuity of moral resources is always unamiable and seems to mark an *un-generous* nature, whereas it really only implies one with a somewhat niggardly supply of the requisite force for living.

But there are people on whom the cold seems to have quite a different kind of effect. Either because they are young, or, if not young, because their organization is one which supplies heat freely at small expense to the supply of nervous force, they find the cold simply a novelty, which gives a fillip to their energies and adds a zest to life. Mr. Alfred Garrod threw out not long ago in a scientific journal a suggestion that perhaps it is the difference in temperature between the external skin and the heat of the blood, which supplies the springs of those magnetic currents of which nervous action in a large degree possibly consists, and that the greater that difference of temperature, the more lively is the action of the batteries of which the nerves are the conducting wires. If that were so, that would certainly account for the sort of abounding self-gratulation which seems to possess some men in dwelling on the mere fact that "the thermometer showed 18° of frost last night;"—only it would make it still more difficult to account for the apparently frozen up energies which cold causes to the people of whom we have already spoken. But to the people who exult in cold, the human race appears all the nobler for sustaining so many degrees of frost; and as for them, they treat the low temperature as a gospel of great joy. Indeed, their bearing seems to indicate something more like the deep well-spring of satisfaction arising from a good conscience than anything else. You see the traces of this state of feeling in Dickens's Christmas stories, where frost and benevolence always flow together in great spring-tides. If feeling does not gush when water is frozen, it is always, with Dickens, the sign of deliberate malignity of heart. And unquestionably there are a good number of persons to whom severe weather brings a self-satisfaction and a desire to overflow benignity over other people which you never see at other times. They go about saying either literally or by smiles and lavish rubbing of the hands, "Here is the thermometer more than half-way between freezing-point and zero, yet I exult in it; I walk, I skate. I

ride; I beat my breast heartily; I restore circulation to my feet by jovial stamping; I have for the first time in life a purpose to fulfil to which I am quite equal; I eat and drink all the more heartily for the severe weather; I make a joyful noise in everything I do, to attract the attention of the world to my great success in defying the cold; I smile jubilantly, and return jubilant smiles jubilantly, for I feel a successful man, and without any mean envy I recognize all comrades who are successful in the same way. Heroes should support each other, and they are heroes who find nothing but new stimulus in such cold as this."

For our own part, we believe that this condition of mind can be accounted for better than this by Mr. Garrod's physical theory of the genesis of strong magnetic currents. We suspect that people who feel warm inside when there is great cold outside, regard themselves as having in some sense triumphed over circumstances, like the virtuous man who holds his own when weighed down by calamities, or like the poet who makes a witty verse out of what seemed impossible rhymes; and they infer that their fertility in resource deserves the appreciation and approbation of mankind. It is said that a man who recovers from what his physicians tell him is a very fatal disease always holds his head a little higher for the achievement, and thinks (truly, perhaps,) that there is encouragement to his fellow-creatures in the fact,—encouragement for which they owe him admiration and thanks. If so, the state of mind of the man who rather likes cold is essentially analogous. He thinks of himself as leading a forlorn-hope which refuses to succumb to hostile influences,—nay, which only feels the hostile influences as agreeable excitements. That this is a distinguishing part to play, and as so many can play it who can play no other distinguished part in the world, they naturally feel something of the glow of heroic achievement, when they become conscious of their position. They have always been taught that the pursuit of knowledge under difficulties is praiseworthy. Perhaps so, but the result is certainly apt to appear in too

buoyant and even blatant a conceit. If cold unduly depresses the self-love of the modest man who retires before it into his inmost citadel, it certainly unduly lifts up the horn of the man who successfully defies it. And on the whole, we doubt if in either direction cold can be said to improve the character of the Saxon race.—*London Spectator*.

COOKING FOR THE SICK.

We have heard a great deal of late about the need of better cooking for the poor. It has been shown that improved results, as regards the quality of food, can be obtained with greater economy by new processes. The value of these suggestions cannot be exaggerated. Meanwhile the needs of the sick and convalescent ought not to be overlooked; they are urgent and special. Nothing so much conduces to the successful treatment of patients in all stages of a malady as good nursing, and cooking plays a prominent part in the *régime*. Notwithstanding this circumstance, which must be universally recognised, it is the exception to find a cook who can serve up a basin of gruel or arrowroot, a cup of beef-tea or broth, or any simple beverage suited to the sick chamber, in a fashion likely to tempt the failing, whimsical appetite, and honor the digestive powers of an invalid. So apparently simple a culinary process as beating up a new-laid egg in a cup of warm milk or tea without curdling it, is a feat which can rarely be accomplished. Every practitioner who has looked into these matters carefully must have felt the need of a system of special cookery for the sick. If some one would devote sufficient attention to the subject to produce a clear, explicit, and yet concise manual of cookery for invalids, with intelligible recipes and directions, the gain to patients and medical practitioners would be considerable, and the appearance of such a brochure would be hailed with pleasure and attended with success. At-

tempts have from time to time been made to supply the need, but they have failed from being treated as complementary to some general effort to improve the art of cookery, or adapted only to a class of society in which every want can be supplied without stint or trouble. The object to be obtained is more simple and yet not less difficult. It is to show persons of ordinary intelligence and with limited means how to compound and serve up the common necessaries of the sick diet with cleanliness, taste, and delicacy. For such a boon everybody concerned would be exceedingly thankful.—*The Lancet*.

Opinion of the Press.

From the Volunteer Review.

* * * * Is neatly got up and well printed on good paper. * * * *

From the Daily Enterprise.

NEW MAGAZINE.—The number before us is very neat in typographical appearance and contains a number of carefully written articles on health, &c.

From the Herald, Carleton Place.

It contains a number of important articles and communications. * * * * It is well worthy of circulation, as the subjects on which it deals are of the gravest importance.

From the Lindsey Post.

LITERARY. * * * Such a publication is much needed; and if properly conducted, will do much good. The initial number before us is very fair and promising in every respect.

From the British Whig.

"PUBLIC HEALTH." * * * * It is neatly printed, and will doubtless meet with the success it deserves, and that success is a monthly visit to every family which values health and bodily comfort. * * * *

From the London Daily Free Press.

A USEFUL PUBLICATION. * * * * * Montreal has been singularly unfortunate in its death rate, a condition of things arising to a very great extent from an absence of knowledge among the masses of what they should do and avoid in connection with their food, lodgings and occupations. Every effort which tends to remove ignorance concerning these important matters is a step in the right direction, and it may be hoped that the citizens of Montreal will amply sustain this endeavor to communicate the useful information. Among other useful matters the editor promises articles upon the preparation of food, its qualities and nutritive properties.