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CANADA HEALTH JOURNAL,

A MONTHLY MAGAZINE OF
PREVENTIVE MEDICINE

—EDITED BY—

EDWARD PLAYTER, M.D.

Public Health and National Strength and Wealth.

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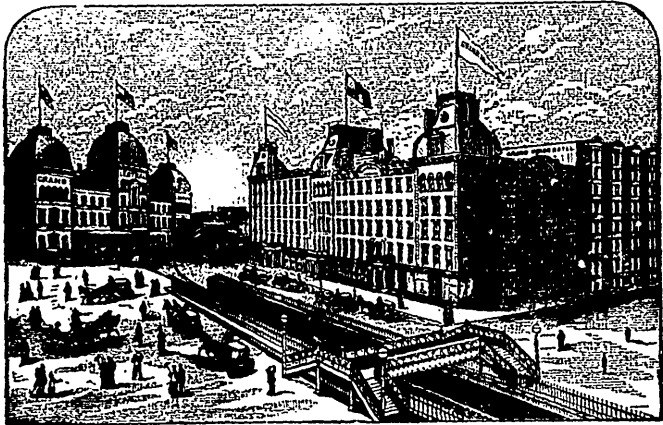
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THE CANADA HEALTH JOURNAL.

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SANITARY REFORM IN DRESS.

THIS subject is treated by the British Medical Journal in the following manner: That censure of the follies of feminine costume which was the occupation of ecclesiastics and of legislators in the Middle Ages has now become the duty of the sanitary reformer. Just as Brother Thomas Connecte, mounted on his little mule, rode through France and Flanders denouncing the then fashionable head-dress of starched linen called a *hennin*, just as Edward IV. sanctioned a clause in an Act of Parliament forbidding the wear of pointed shoes, so Dr. Jessop, in an interesting paper, censures the use of stays and long dresses, and points out the evils of constricted waists and uncovered bosoms.

Unfortunately all such attacks have hitherto proved futile. While Brother Connecte was calling out "*Au hennin!*" from his travelling rostrum, and the children, in obedience to his cry, were hunting such women as passed by wearing the forbidden head-dress, his mission was successful. "But," says an old writer, "the ladies imitate the snails, who draw in their horns, and when the danger is over, put them out further then ever; and in like manuer, *hennins* were never more extravagant than after the departure of Brother Thomas."

The sumptuary laws of Edward IV. may have drawn a few fines into the Royal Treasury, but pointed shoes remained as fashionable as ever, and even

grow to a more absurd length. Modern sanitary attacks upon objectionable fashions do not seem to have had even so great a measure of success; but remain almost absolutely fruitless.

One of the chief factors in this entire failure is the vanity and sycophancy of civilised beings, for which dress of reformers make no sufficient allowance. The most frequent cause of the invention of ugly and unsanitary costumes has been the attempts made to conceal blemishes or deformities existing in persons of exalted rank, and the new fashions have spread because they were at once imitated by courtiers who thus tacitly flattered the original wearers of them. It was to hide the short stature of Louis XIV. that high heels and towering peruques were introduced. The Virgin Queen patronised immense ruffs because her neck was not handsome. Short hair became fashionable in France when an accident to the King's head during a snowball fight necessitated the removal of his flowing locks. Full-bottomed wigs were invented by a French barber named Duvillier, to conceal the fact that one shoulder of the Dauphin was higher than the other. Charles VII. of France wore long coats to hide his ill-made legs. Henry Plantagenet, Duke of Anjou, had his shoes made with long points to screen from observation an excrescence on one foot. Crinoline was introduced by the Empress Eugénie to render her appearance when *enceinte* less noticeable.

Another reason of this failure to reform dress is a want of recognition of some laws which seem to govern both the growth of fashion and the taste of women. Fashions are almost always the result of a definite growth and natural development, and are scarcely ever the outcome of sudden inspirations of tailors or dressmakers. Those garments we attack for inelegance or uselessness can show a historical reason for every apparently meaningless peculiarity, or can give a story of forgotten use for ornaments which are really atrophied survivals from vanished needs.

Every part of the despised dress coat, for example, has a reason for its peculiarity of shape. The apparently foolish nick or slit at the junction of the collar and facings on each side dates from the time when men rode a great deal, and the coat-collar must be frequently turned up and the chest buttoned closely over to meet the severity of sudden storms. A division was made on each side of the collar to permit this to be done, and the present useless slit is the survival of this very needful predecessor.

Not even the buttons which adorn the small of one's back are mere vain ornament. In about the year 1700 it began to be the custom to gather in at the waist the sack-like coat of the period. This was done by two buttons sewn on over the hips, which were attached to loops set on at the edge of the coat. Then, as waists became a permanent fashion, the loops were discarded, and the buttons, instead of being discarded, were simply moved a little further back; here they attained to a new usefulness in supporting the sword-belt. Now that sword-belts are no longer worn, these two buttons seem merely a meaningless excrescence.

The very shape of the dress-coat, which has been so much and so often ridiculed, is not an arbitrary fashion, but a natural development. Starting from the ample square-skirted coat of the close of the seventeenth century, itself a development, we next find the same coat with the corners of the skirts buttoned together for convenience of riding; then the same garment with the lap-corners cut off instead of buttoned up—the swallow tail of the early years of the present century; finally by a very slight further degeneration the modern dress-coat was produced. Such is a specimen of the history of the gradual evolution of most articles of clothing, an evolution which is one explanation of the inability of sanitary reformers to produce violent revolutions in dress.

Another cause of their failure is that they take a standpoint of simple utility, and ignore the instinctive and inherited desire of the one sex to attract the other by a becoming costume. It is, indeed a moot point whether the original adoption of clothing by barbaric nations was not the result merely of the desire of both sexes to attract. "The pangs of hunger and revenge once satisfied," said Carlyle, "the next care of the aboriginal savage was not comfort, but decoration. Warmth he found in the toils of the chase or amid dried leaves in his hollow shed or natural grotto; but for decoration he must have clothes." The same story is told by the discovered remains of palæolithic man. Still in his caves may be found the ruddle or rouge with which his wife painted her naked body, and the necklaces, made from the teeth of fierce beasts, where-with she adorned her hairy neck. Except such simple ornaments as these, clothing was unknown to the

early cave-dweller. Naked as his mother bore him, he chased the gigantic animals of those undegenerate days through the trackless forest, or disputed with them the possession of those caves which were the alternate lair of man and beast. You may still see this early savage in some of the excellent bone-pictures he has left, semi-upright, covered with hair, innocent of clothing, creeping up with noiseless motion to attack with his stone-tipped spear the bison, the wild horse, or the elephant.

In latter days the daughters of a nomadic race sought to render themselves attractive by adopting the trapping of the camels which were there care. As they led their charges to the water by their nose-rings, the little bells the camels wore made a melodious jingle in the stillness of the desert. And in forgotten imitation of these ancient servants the stately daughters of Jerusalem came tinkling down the road, with their silver ankle-bells—the maidens of Hindostan yet wear from their nostrils a glorified and bejewelled nose-ring—the sons of the East use a sandal in which the attentive observer can still trace the tablet of undressed hide used by the camel-driver for the feet of his valuable beast.

In every age th's use of dress as an ornament to attract the other sex has rendered the censure of reformers on its extravagances unavailing. When, for instance, a mania for classicism afflicted the patriots of the French Revolution, the ladies of France adopted the dresses of Greece and Rome, or what they imagined to be such, with fatal eagerness, and with undraped bodies and sandalled feet braved the severity of a Parisian winter. Their light attire exposed them to diseases of the chest, nay, to death itself, but

they heeded not. The gold rings shining on their feet could not protect them from the cold of winter, yet they remained faithful to gauze-clad nudity. It was vain to remonstrate with them on their insufficient clothing; with French readiness they would reply with an epigram—

Le diamant seul doit parer
Des attrails que blesse la laine.

In the same way no arguments of utility or sanity are likely to induce an elderly lady to adopt the curtailed garments recommended by Dr. Jessop, if the result should be to render her an object of ridicule to man when compared with a sister dressed in the trailing garments of modern fashion.

Much may be done, much has been accomplished in the direction of more sanitary clothing, but it has been by gradual and judicious reform of material, and unseen alteration of undergarments, at the suggestion of medical men, not by sudden and violent changes of fashion and interference with prejudice. Many ladies now actually wear the woven woollen vests and the flannel knickerbocker drawers recommended by Dr. Jessop. Suspenders attached to the stays replace the injurious garter, and clothed necks and shoulders have replaced, at least in the day-time, the low-necked dresses of our grandmothers.

Much remains to be done in this matter, but it must be attempted with a complete appreciation of the difficulties of the position, and with a competent knowledge of feminine laws of thought. Flowing garments, for instance, will in all probability never be forsaken, because of the superior dignity they confer on the female figure. Indeed, in our opinion, the best hope of discarding the hateful stays rests in a gradual return to the

beautiful costume of Greece, for it is almost certain that while waists are accentuated, stays will be worn; but the change must take place in the natural direction of gradual development, directed by competent and judicious leaders of fashion, not in that of violent and inconsiderate revolutions. Until we are sufficiently educated to

accept the wise aphorism of Edward I. as our guide, a complete reform of dress is very hopeless. It was that great king who said:—"It is impossible to add to or diminish real worth by outward apparel; the only magnificence we must seek is the magnificence of noble and heroic deeds."

ANCIENT AND MODERN DRESS IN RELATION TO DISEASE.

IN continuing his discourse on this subject at the last annual meeting of the British Medical Association, Dr. Jessop dwells at much length upon the anatomical structure of the viscera of the chest and abdomen, and the evil consequences of unyielding dress about the chest and weighty garments about the hips. He then concludes in the following suggestive manner:—Unknown to the outer world, many ladies, eschewing "the wasp-like waists of the dames and demoiselles of the period," in place of the creasy stuff used by the Greeks next the skin, adopt a merino vest fitting round the neck with short sleeves. The working classes, by retaining this garment at night, lose its protective day-value. If made to open two-thirds of its extent, it could easily be withdrawn. The sherte or camise used by both sexes among the Saxons is retained, combined with pantaloons confined by hose, in place of being stuffed into the shoes. Woollen knickerbockers, thick or thin according to weather or climate, if required could be attached to the tunic. Over the vest the Greeks wore a tunic; this covered the chest and body, and was used with or without sleeves. It answers to the waistcoat of Henry the Eighth's reign, and may be made of woollen material fitting round the neck, of barrel-shape. The side seams should be cut slightly

convex and sewn together, not concave and sewn together, as in the present stays. In the former case, rib-expansion is secured; in the latter, rib-compression. Over all the British gown or dress, which, if made long to the heels, will not invite cobblers and hosiers to increased improvement in these articles of wear; but, is made short to the lower half of the calf, to avoid the dust of the road, would afford the hosier and shoemaker scope for their skill. Such a costume affords complete protection if suddenly intruded upon, overtaken by fire, shipwreck, or other disaster; there is nothing to encumber or interfere with perservation of life, whilst modesty is in no way outraged. If ladies who have not to work for their livelihood would take the trouble to instruct their poorer neighbours in these principles, much disease would be avoided and decorum better observed. Head-covering, gloves, socks, and shoes are matters of comfort, and differ in custom in various countries. In the tropics various plans are used, from mud to turbans or straw and felt. The Chinese and Japanese use straw hats in working costume; the better classes, only fans for protection. In temperate climates, head-dress is purely ornamental answering to the Indian's tuft of feathers. Gloves are used by all but the working classes.

Stockings and shoes in parts of Scotland and Ireland are not essential among the working classes. A Scotchman a few days ago lamented that this luxury was creeping into his country. In the last century, the high heels of ladies' shoes were a great monstrosity. This custom has been somewhat revived within the last few years, and is injurious because it throws the weight of the body on to the toes. As the centre of gravity is altered, increased strain is placed upon those muscles which would, without fatigue, maintain the body erect as provided by nature. The gorilla, ourang-outang, and other like tailless apes, walk on their toes, so that it would seem a reversion to the ancestral type is aimed at. This attempt, however to imitate the "way willow" has been made among the Chinese since the eleventh century, but an hereditary result has so far not been produced, and there are signs that the custom is dying out. The injuriousness of this custom in the case of Europeans is accentuated by weighty petticoats, and must greatly enhance accidents.

In the dress of the ancients there was no interference with the form of the functions of the body till Roman ladies adopted the *strophium*, the object of which in connection with gauze dresses, which covered but did not conceal the figure, is obvious. The use of the *strophium* is shown in the case of a girl, aged 20, whose pendulous breasts caused pain while at work. Her loose stays were no support, a tighter pair ineffectual. She was perfectly comfortable by suspension, with a broad bandage tied round her neck, but which slipped on raising the arms. This case illustrates the one use of stays of the olden times with shoulder-straps, and the only use of the modern form as a petti-

coat peg; hence support by aid of shoulder-straps and pockets would, in some case be useful, and stay-makers develop a new industry. Nations who have not adopted European or American costume retain the freedom of the ancients. An Indian female wears her robe to expose the right arm and shoulder, whilst two-thirds of the left lower, limb are uncovered and feet bare. The symmetry of figure is appreciable; the dress, in harmony with a certain exposure, is graceful and modest. The Japanese woman leaves only a V-shaped portion of her breast; exposed the dress descends to the heels, has a sash round the waist, and high heeled shoes. The Chinese woman has wide trousers to the ankles, a tunic, with wide sleeves, to the middle of the calf, white stockings, and thick shoes. These three forms of dress leave the body unfettered and the limbs free. Of the three, the Chinese should be the most perfect. The Parisian fashion of accentuating, *more Romanorum*, that portion of the chest which should merge into the waist is not for the advantage of the sex, because it is "a custom fertile in disease and death." The back shoulders, and arms, with half the bosom exposed is nakedness without modesty. It is not beautiful, for the witchery of dress is absent. Duplicate hollows prominences, and angularities, detract from that assemblage of properties which attracts and pleases the eye, the impression of oneness is lost. The beauty of selected portions of the body is enhanced by contrast; the half-clothed Indian is picturesque; not the completely naked, except in the rare cases of perfect symmetry. The upper half of an old Indian man or woman is positively repulsive, yet the same half clothed is not objectionable. There is little to be said

on the dress of men; it is not easy to make any suggestion worth adopting, for the ancients have settled the fashion. Trousers, trossers, or trows have been a national costume for over a thousand years, and are of the same advantage to men in hiding spindle-shanks as long skirts are to women content with bare feet or slatternly shoes, yet knickerbockers, with variegated hose confer a freedom and comfort not to be

compared with the former. The broad-brimmed flat hat indicated on a former page—such as Mr. Punch invariably represents (John Bull as wearing—might displace the tall chimney-pot hat, and when not in use be allowed to hang over the shoulders as a convenient method of carriage. The evening dress-coat in its present form should be left for waiters and the like.

LIFE SAVING VALUE OF PAIN AND DISEASE.

DR. H. Cameron Gillies in the *Lancet*, contributes the following interesting article under this heading: Pain and disease are very closely related; pain is, indeed, the immediate cause of the *dis*-ease. We cannot have pain without *dis*-ease, but we can have disease without pain. *Dis*-ease, in the latter sense, is an expression for a pathological structural change; but it is not *dis*-ease in the etymological, original and I may say, more correct use of the word.

"Before King Henry crossed the seas,
And o'er to France he did transleet,
Lest that the Scots should him *dis*ease
He constituted captains meet."—
CHEVY CHASE.

Some one has said with great beauty and truth that "Pain is prayer of a nerve for food." The "textural death" from "privation" calls for sustaining and repairing food. That is pain and that is its purpose.

I have, for myself, a very commonplace rendering, or rather, paraphrase, of *pain* in the expression, *there is something wrong*.

If I take up a hot poker, pain comes at once to tell me in the most convincing manner *there is something wrong*. If it has not in any way injured the skin, there is no pain now; but if it

has, the pain remains till all is right again. Perhaps a "bad blister" is the result. But is not this blister the most beautiful possible provision for saving the deeper parts from injury by interposing a pad of water between the superficial skin and the tissues beneath? The pain and disease here are surely of the highest value in saving me from worse things. Pain may continue after the removal of the cause, but this also serves the great purpose of ensuring the repair of the injury done. It is the prayer of the nerves of that part for food—for the materials of repair; and it does not leave off till the measure of mischief done is put right—till the *status quo ante* is restored.

Suppose that I have eaten some indigestible or badly cooked food; my stomach cannot digest it. It rebels, or rather, justly, resents the injury. Spasms, cramps, and colic declare that *there is something wrong*. A healthy man drinks too freely of malt liquors and the heavier wines. Notwithstanding the many warnings from his head and stomach, he perseveres in his full living, till one early morning, very likely after a special indulgence on the previous day, a twinge in the great toe and a cruel pain tell him *there is something wrong; you must stop that port*.

He has gout. He calls on his doctor and "gets his sewers flushed," as I heard Dr. Alfred Carpenter put it. His clogged system again flows freely, and if he avoid his malt liquors and his wines and his too much eating, he will keep free from gout, and in good health. His pain and *dis-ease* are his best friends, if he only knew it.

The case of the spirit-drinker is still more emphatic. Morning by morning a splitting headache tells him *there is something wrong*, he heeds it not, but goes for "a hair of the dog that bit him." His energy gets dissipated, nervous sensibility diminishes, and the value of pain diminishes day by day. At last there comes a time—a terrible time—when he has a headache no longer. The headache goes and all his physical pain. But there come the "horrors" of delirium tremens, snakes, scorpions, devils come to lash him into conviction that *there is something tremendously wrong*.

Pain never comes where it can serve no good purpose. Say that a man is smashed in a railway accident. If his injuries be such that *he cannot recover*, he suffers no pain at all. He dies of shock, as the surgeons say. But that I submit in all humility is a wrong view of the case, a wrong interpretation of the natural facts. The man dies because vital parts of the organism have been destroyed in the collision; and this condition of shock, this insensibility to useless pain, is the most merciful provision that can be conceived.

But suppose a man is not mortally wounded, but has received say a compound fracture of the thigh. There is a period of shock there also, *but it passes away after a time*: and then if the limb has not been properly set and fixed and the wound cleaned and dressed, pain

comes with full force to impress that *there is something wrong* which requires to be put right. But if in the period of shock the injury has been properly attended to, there is no pain to speak of after the shock is over. The thing is as right as it can be in the circumstances, and there is therefore no unnecessary pain. So much is this a recognized truth that the surgeon's best proof of having done his work well is the freedom from pain. Could anything be more beautifully admirable than [this temporary insensibility to pain?—"shock," as it is called—Nature's time of grace in which the injury should be attended to. I cannot think of this shock, but with the profoundest admiration and reverence; yet our medical traditions, and even our present day literature, declare it an evil or a dangerous state, which should be got rid of, if at all possible. I venture to put it that shock is in direct proportion to the violence of the injury, and inversely as the vitality or capital energy of the individual. Surely this shock is one of the greatest blessings of our existence, when it does away with unnecessary and otherwise unavoidable pain. But if the injury be not attended to in due time—before shock has passed off—as surely is it a beneficent compulsion that makes us attend to it.

The measure of pain which attends an injury or a disease is a prophecy, in that same measure of recovery. The pain attending an injury or a disease varies as the vitality, as the promise of life. The scratch of a pin will put an infant into convulsions; an old man would perhaps not feel it at all. We see old people and weakly people suffering little or no pain from injuries that would cause acute and serious constitutional disturbance in the young

and vigorous. A physician to one of the Paris hospitals for aged women illustrates this well. "They get up in the morning," he says, "and make their beds. They have breakfast and perhaps go about a little. They say they feel tired. They lie down to rest—and die. When the lungs are examined afterwards, they are found so far diseased that life was quite impossible any longer." Yet they suffer no pain at all. Pain in their case would serve no good purpose. Their potential energy is run out; their promise of life is *nil*.

But the *power of repair also is* and must be directly *as is the vitality* and the promise of life. This needs no proof. Therefore, and as plain as anything can be, *pain is in direct proportion to the powers of repair*—that is, to the probability of recovery. It is in our knowledge now that almost all inevitably fatal diseases are not attended with pain. Pain in such cases would serve no good purpose, there is no pain.

Now there are serious exceptions—apparent exceptions—to this law of pain. Say that the injuries to the man in the railway accident are such that he does not die in the first period of shock but recovers sensibility and suffers much pain, but dies. That looks like useless pain and suffering, and fatal to my theory. Let us see. Fifteen or twenty years ago, this is almost certainly what would have been the course of a bad compound fracture of the thigh—shock, recovery to sensibility, great suffering, and death. But in our day we never look for the death, in a healthy man, from compound fracture of the thigh. Has this pain, then, this apparently useless suffering, ending in death, which had through long centuries rung in our pitying ears, that *there was something wrong* in our treat-

ment of compound fractures—has it been to no purpose?

To my mind, then as long as that limit is not attained by care and skill at which for any disease recovery is in the natural intention impossible, so long must such acute physical pain as seems to be outside this law of purpose mean that *there is something yet wrong* which must be put right. Pain is in these therefore our valuable stimulus or incentive to earnest effort. We may be quite sure that when we understand its meaning we can put it right, and pain shall cease.

I have had under my care a young business man—a man of great force and fine *go*, his physiological expenditure is consequently very high. He is subject to most violent headache and acute feverish attacks, lasting from one to three days; but in that short time he loses several pounds in weight. That man is as satisfied as I am that his headache is saving his life, for the attacks never come but when he has overdone himself; and as surely as he so does the attack comes and lays him up. Indeed, he understands the matter so well now that he takes the first motions and saves himself from even headache; and he would be the first person to admit that they always come at the right time, notwithstanding they are often inconvenient and always disagreeable.

DIPHTHERIA IN ST. LOUIS.—Reports of the Health Department, says the *Courier of Medicine*, show that diphtheria is prevailing to an alarming extent in this city. "It is a disgrace to the profession that so many of its members instead of co-operating with the authorities to suppress this disease, connive at the desire of parents to conceal its presence and neglect or refuse to report their cases and even deny and discourage fumigation of premises.

THE WATER CARRIAGE SYSTEM IN REGARD TO SEWAGE.

In the August number of the JOURNAL we referred to the admirable annual address at the meeting in July of the Sanitary Institute of Great Britain, by the President, Dr. Poore, F. R. C. P., &c., on the "Short Comings of some Modern Sanitary Methods." As promised, we give extracts below. It will be seen how strongly a portion of his remarks corroborate the views put forth by the editor of this JOURNAL in October last, at the meeting of the American Health Association, in Toronto, in relation to the pollution of our rivers and lakes and the danger from bacterial poisoning. Dr. Poore said: Most of the shortcomings of modern sanitary methods are due to the fact that in our dealing with organic refuse we commit a scientific error, *i. e.*, we pursue a course which is in opposition to natural law. This error consists in mixing organic refuse with water. When organic refuse is mixed with water, it undergoes changes which differ widely from the changes which it undergoes when mixed with earth.

According to Wollny, whose paper I have quoted previously, the process of oxidation of organic matter and the formation of nitrate takes place most readily when a moderate amount of moisture is present. The most favourable amount is about 33 per cent., and if the moisture rise above or sink below this amount, the process of nitrification and the formation of carbonic acid is hindered. When water is in excess the amount of free oxygen is insufficient to favour the growth of mould fungi, the schizomycetes (bacteria and micrococci) are formed, and in place of oxidation, putrefaction takes place with the formation of ammonia, free nitrogen, carbonic acid,

and carburetted hydrogen. Under these unfavorable circumstances it is possible that the nitrates which may have been formed may be again reduced.

This process of deoxidation takes place in mixtures of putrescible matter with water, and takes place also, it is said, in soil which is thoroughly soaked with sewage (*i. e.* putrescible matter mixed with water). In the face of these facts it is not to be wondered at that 'sewage farming,' which is farming under acknowledged difficulties, has not proved a commercial success. We must indeed be in doubt whether, when the circumstances are more than usually unfavourable, it exercises any very great purifying action upon the putrescible mixture. In the treatment of putrescible refuse, so that it shall not be a danger or annoyance, what we have to aim at is nitrification rather than putrefaction, and it is certain that by mixing with water putrefaction is encouraged and nitrification delayed.

It certainly seems to be almost uncontested that the proper course to pursue with regard to organic refuse—putrescible matter—is the very reverse of that which we do pursue. We clearly ought to encourage oxidation and make putrefaction impossible.

Putrefaction is certainly a great cause of ill-health. It was the putrefaction of wounds—now happily almost unknown—which converted our hospitals into something little better than charnel houses. It is the putrefaction of organic refuse mixed with water in cesspools and sewers that causes that long list of ailments which we ascribe to the inhalation of 'sewer air.'

The opinion is held by many that

the dejecta of typhoid patients and cholera patients do not become dangerous to others until putrefaction has set in; and such an acute observer was the late Dr. Murchison held the opinion that common putrefactive changes taking place in dejecta were a sufficient cause of typhoid independently of the admixture of any specific poison.

The putrefaction of organic refuse when mixed with water has, I think, been the chief cause of the development of modern sanitary 'progress.' Our forefathers were not given to this method of treating putrescible matter. House-slops trickled along open gutters, and excrementa matters were deposited in dry pits. At the beginning of this century the water-closet came into use.

Mr. W. Heywood, quoted by Dr. Farr, says:—'Water-closets were invented about 1813, and became general in the better class of houses about 1828-33. The custom at first obtained of building cesspools having overflow drains put below their doming, by which means the solid matters were retained, and the supernatant liquid only ran off.

'In the year 1849 what may be said to be an organic change in the system took place. In 1848 the City Commission of Sewers obtained its Act for sanitary purposes, which became operative on Jan. 1, 1849, and then for the first time was discharge into the sewers legalised. 'Previously a penalty might have been enforced for such a usage of them, but henceforth, within the City of London, those incurred a penalty who failed, upon notice, to construct the drainage of premises in such a manner as not to discharge all waste waters and *fecal matters directly into the public sewers* (i. e., directly into

the sources of water supply), of which the full utility was therefore for the first time recognised by statute. This Act was speedily followed by others for the remaining area of the metropolis and for the entire country.'

'It will be noticed,' says Dr. Farr, 'that the deaths from cholera and diarrhoea increased in London in 1842, increased still more in 1846, when the potato crop was blighted, and in 1849 culminated in the epidemic of cholera.

Dr. Farr says further, 'a system of sewerage is the necessary complement of a water supply.'

'Almost coincidentally with the first appearance of epidemic cholera, and with the striking increase of diarrhoea in England, was the introduction into general use of the water-closet system, which had the advantage of carrying night-soil out of the houses, but the incidental and not necessary disadvantage of discharging it into the rivers from which the water supply was drawn.'

In the decade 1871-80, 33,168 persons died of diarrhoea in London, the death-rate from this cause being 94 per 1,000. If the death-rate of 1838, had obtained in the decade 1871-80, the deaths from it would have numbered only 7,600, and there would have been a saving of 25,568 lives.

Since the introduction of the water-closet, and I believe as a direct consequence of it, we have had four severe epidemics of cholera, a disease not previously almost or quite unrecognised, has risen to the place of first importance among fevers in this country.

The evils which have arisen from cesspools and sewers has caused an enormous amount of attention to be devoted to what are known as 'sanitary appliances,' 'sewer constructions,' &c., and so great and so well recognised

are the evils of sewers that many of our friends are anxious that we should be compelled, by Act of Parliament, to protect ourselves from the mischief which previous Acts of Parliament have produced.

Not only does the putrefaction of organic refuse tend to fill the air of our houses and towns with foulness, but this mixture of organic matter with water is attended with other bad consequences.

This arises from the fact that much of the organic matter which we mix with water is distinctly poisonous. The zymotic theory of disease has of late years assumed more definite shape, so that we may now leave what was called the zymotic *theory* and consider the actual facts of zymosis.

There is no doubt that the actual infective elements of many zymotic maladies consist of microbes, fungoid bodies belonging to the class of fungi known as schizomycetes, that class which grows in organic mixtures where there is insufficient free oxygen.

These microbes are infinitely small; millions of them may live in a cubic inch of putrefying liquid. Under favourable circumstances they will live for long periods. They will not only live but multiply, and it is at least a question, and a grave one, to what extent these infective germs undergo an increase when mixed with organic liquids such as sewage or milk.

The fact that the zymotic poisons are *particulate and alive* is one which has most important bearings on the subject under discussion.—If the poison were a chemical poison, then dilution would practically do away with its power for harm. No amount of dilution is capable of destroying a zymotic poison; in fact, it is not impossible that the mere mixing of

organic refuse which contains a zymotic poison with water may be the means of keeping it alive and possibly causing it to multiply.

When a mass of organic matter charged with zymotic particles is mixed with water and washed out of a house, the water will carry the poison with it wherever it may chance to flow or trickle; to watercourse, well, or any other source of drinking water; in fact, the dissemination is as perfectly and thoroughly done as if dissemination of poison were the main object which we had in view.

When dealing with organic matter impregnated with zymotic poisons, mere dilution with water increases rather than diminishes the danger.

As long as the poisonous organic refuse is concentrated, its repellent qualities are such that there is little chance of its gaining access to the human body. The microbes contained in it are theoretically capable of infecting an almost indefinite quantity of water, and this large quantity of water masks the repellent qualities of the stuff, and thus the danger of infection is greatly increased.

I have endeavoured to show that the admixture of water with putrescible matter is inadmissible. 1. Because it encourages putrefactions and delays nitrification, and is antagonistic to a law of nature, and there can be no successful antagonism to nature. 2. Because the putrefaction set up in cesspools and sewers by mixing water with putrescible matter has been a direct cause of much disease. 3. Because the practice involves the most perfect dissemination of disease particles, and involves a neglect of the great principle, '*principiis obsta.*' 4. Because it is the great cause of the fouling of rivers and wells, and makes the obtain-

ing of pure water increasingly difficult. 5. Because it is financially and economically disastrous, crippling the rate-payers and exhausting the land. 6. Because it is one of the chief causes of over-crowding, the greatest of all sanitary evils.

It may be asked, 'What useful purpose can be served by talking thus to an audience of Londoners? London is hopelessly committed to the principle of water-carried sewage, and must make the best of it.' To this I reply that even London need not needlessly increase her already insurmountable difficulties, and that happily the whole of England is not yet quite absorbed into London and other cities. There is a very general belief throughout the country that, because London has adopted the system of water-carriage, it must therefore be the best. This idea is unthinkingly adopted, and to its adoption the distinction of borrowing and disbursing a large amount of other people's money acts as a spur. There has come within my own knowledge the case of a country town, in the midst of a poor agricultural district, which clamoured for a 'sewage scheme' for the purpose of polluting its sparkling water-course, where anglers pay large sums for the purpose of trout-fishing, its death-rate being at the time between 16 and 17.

In the Thames Valley, the region of villas and market gardens, a whole crop of 'sewage schemes' has lately sprung up, notwithstanding that the more rational methods of sanitation would be easier and cheaper.

Only the other day I visited a lone farmhouse which a friend wished to take for the summer, and I found that the proprietor, having taken the soil-pipe of a recently erected water-closet into a cesspool alongside a deep well

sunk in the chalk, had rendered his house unlettable to any thinking person, and lastly I heard last week of a friend who took a moor in Scotland, and wished to have rational methods of sanitation, but the noble owner, bitten by the modern craze for water, would allow nothing but water-carriage, and accordingly laid his filthy pipes to foul the babbling highland burn, and deprive the soil of that which it needed.

Again, in institutions such as work-houses, barracks, schools, and the like, water-carriage is often adopted, notwithstanding the favourable conditions for rational methods. The ignorance of soldiers in this matter is an acknowledged cause of the sickness and mortality during campaigns.

There seems, in short, a very great necessity for directing attention to the 'shortcomings' of water-carried sewage.

TEST YOUR HOUSE DRAINS.—Drain and soil pipes should be occasionally tested, as cracks and leakages may arise from various causes. First close all vents and openings in pipes: Then pour one or two ounces according to the length of the drain, of oil of peppermint into the soil-pipe at its mouth above the roof or into the basin or water-closet nearest the roof. Pour in, immediately after, a pailful of hot water; if the odor of peppermint is perceived at any lower fixture, it is an indication that there is an opening in some pipe through which foul air may escape. The peppermint should be kept outside of the house until needed, and the person who pours it in should remain on the roof or in the room with closed doors, until the examination of the fixtures below has been made by an assistant; otherwise the odor may come from the bottle or the clothing of the person and spoil the test.

REFUSE DESTRUCTORS AND THEIR RESULTS.

THE question of the destruction of the refuse of cities, although not yet solved, evidently approaches solution. Whatever may be done with the sewage, cremation is to be plainly the destiny of all garbage which cannot pass into the sewers. The complete combustion and destruction of the refuse is of the utmost importance, and the furnaces or destructors now commonly in use are not yet so perfect as they should be in regard to the completion of this process. In a paper in the Sanitary Record, Mr. C. Jones, Assoc. Inst., E, C., of Ealing, Eng., refers to this point in connection with destructors in the following lines. The continuous and rapid destruction of the town refuse, as fast as it was collected, with avoidance of all decomposing and offensive accumulations, could not but be of the greatest sanitary advantage to the town. It must be admitted, however, that the burning process as at present conducted was not wholly unattended with a discharge from the chimney shaft of a little unconsumed vapour which might be recognised at a distance as offensive. It was he considered, the escape of what were called empyreumatic vapours, which in the furnaces as then constructed passed at once into the flues, together with a mass of offensive products afforded by the active burning, that occasioned complaint of bad smells from the chimney. How to deal satisfactorily with these empyreumatic vapours, as also in the way of precaution with the vapours given off in the mere drying of the refuse, was not an easy matter. One way would be to take means for their efficient condensation; but except as a last resource, or in aid of other means, he did not recommend a resort to that method. Another mode would

be to take means for preventing the formation, or for insuring the rapid destruction, of these vapours within the furnace itself. Without altering the general disposition of the furnaces then in use—Fryer's and Healey's—he suggested the furnaces should be arranged in single blocks, so as to be easily accessible. The drying up the refuse in the furnaces before actually took fire should be better provided for, and the moist vapour given off in the drying, instead of being allowed to escape at once into the main flue, should be caused to pass over and through the mass of actively burning refuse. The opening into the flues leading from the furnace to the main flue should be so situated and arranged that the smoke and vapour given off by the incipient burning, together with a sufficient supply of air, should be caused on its way into the flues to pass over the most actively burning portion the refuse, and thereby get almost, if not quite, completely consumed. The flues into which the products—alike of the drying, the incipient burning, and the active burning—first passed from the furnace on their way to the main flue should be of some length but of no greater size than necessary, and be constructed with a view to their being maintained at as high a degree of heat as practicable. No amount of mere heating, however, would of itself cause their destruction. The flues must be sufficiently strongly heated, in admixture with a sufficiency of air, to effect their burning or destruction. . . . Dr. A. Newsholme, medical officer for Clapham, reported so late as April last, that the possibility of the escape of dust or soot or noxious gases seemed to be entirely ensured against at Ealing. The smoke escap-

ing from the chimney was white and thin, being much less dense than that escaping from the chimney of a private dwelling-house. This was owing to the fact that the smoke, and empyreumatic fumes, on leaving the destructor, passed through a fume cremator in which they were subjected

to temperature of 1,500° F. The escape of noxious fumes was thus rendered impossible. There are only it appears about thirty destructors, in England, two or three in Canada and only a few in the United States. It is probable the next few years will greatly increase their numbers.

THE DEATHS LAST YEAR IN CANADIAN CITIES AND TOWNS.

MORTUARY statistics point out where are the shoals and rocks, or where they are most numerous, upon which life is prematurely wrecked, and it is then for health boards to learn of the nature of the shoals and rocks and to provide means for removing them, or ways by which they may be avoided in the paths of life

The Abstract of the Returns of Mortuary Statistics for the year 1886, issued by the Department of Agriculture, furnish some valuable facts for reflection and also for action—facts which should not be put aside with indifference, but which should arouse every well-wisher of the country to a desire for some prompt and efficient means for suppressing the high mortality in the cities of the Dominion, which is unmistakably shown in the above-named returns. The twenty-two cities and towns dealt with in the report of the Department, and which made returns during last year, had an assumed population, as given in the report of 675,674. The number of deaths recorded in these 22 cities and towns was 16,009, or about 24.6 per 1,000 of population.

In the early part of the present year, in an article in this JOURNAL on the mortality in the cities and towns of Canada last year, dealing with 20 of the largest of these, we assumed the population to have been 640,000, and

with this population the recorded deaths gave a mortality of 25 per 1,000 of population. The difference is not great. Cities are liable to estimate their population rather over than under the correct number, and it is well known that all the deaths in a city are not recorded; one now and again will be neglected or overlooked.

In England, in the twenty-eight largest towns, with an estimated population of over 9,000,000, which there make weekly returns to the Registrar-General, there were, during the same year (1886), 189,610 deaths, as shown by the Registrar-General's weekly reports; equal to an annual death-rate of 20.9 per 1,000 of population. With these were included the over-crowded cities, such as Manchester, Liverpool and Newcastle. In London the mortality was 19.9.

In our Canadian cities, therefore, the average mortality was 18 per cent. higher than the average of the great cities of England, and 24 per cent. higher than in London, with its 4,000,000 of people. This is really a dreadful showing. There is no natural cause for this abnormal rate. The cause is wholly in the habits and practices of the people, wanting the counteracting influences and effects of a system of sanitation, such as prevails in England.

It is true, it is chiefly in the cities and towns of Quebec and in the Capital

of the Dominion, among the Roman Catholic population, that the abnormal mortality prevails. But it must be remembered that it is in these places that there is the largest birth-rate (and invariably where the birth-rate is high the mortality is high), and also that the system of registration of deaths through the clergy in connection with the church is the most perfect.

Of the large cities, Quebec records the highest mortality; Ottawa next; then Montreal; with Toronto fourth.

If the mortality as recorded in the "Queen" city, Toronto, were reduced to that of Great London, nearly 200 premature deaths would be prevented there—nearly 200 lives saved—every year. While if the mortality in this much smaller city were reduced to the same rate, nearly 300 lives would be saved in the Capital yearly.

When will the people, when will our Legislatures, adopt some practical preventive measure?

MILK STANDARDS.

CANADIAN AND FOREIGN.

ON the 27th of May last, at a meeting in Ottawa of the public analysts of the Dominion, a very important movement was made in the form of a resolution carried in favor of collecting and analysing a number of samples of whole milk from the various districts in the Dominion, with a view to establishing milk standards and limits. In accordance with this, on the 2nd of June following, the Commissioner of Inland Revenue issued a circular to the Collectors at Halifax, N. S., St. John, N. B., Quebec, Montreal, Ottawa and Toronto, instructing them to cause the collection of such samples. They were taken, not from retailers, but from one complete milking of herds with not less than four cows giving milk, kept in the city or its neighborhood. The public analyst accompanied the collector of the samples, and both were instructed to see the cows milked out and the whole milking well mixed before taking the sample. The analyses have been deemed by the Minister and Commissioner of Inland Revenue to be of sufficient interest to warrant their publication.

The percentage of butter fat and total solids found in these samples, were, in the different districts, as follows:—

| | BUTTER FAT. | | | Total Solids. |
|------------|-------------|---------|----------|---------------|
| | Highest. | Lowest. | Average. | |
| Halifax... | 5.40 | 3.00 | 4.24 | 12.72 |
| St. John.. | 4.62 | 3.43 | 3.91 | 12.45 |
| Quebec... | 4.18 | 3.02 | 3.54 | 12.39 |
| Montreal . | 5.17 | 2.80 | 3.82 | 12.29 |
| Ottawa... | 5.29 | 3.62 | 4.26 | 12.93 |
| Toronto .. | 4.50 | 2.52 | 3.38 | 12.08 |

The total average of butter fat was 3.86 and of solids 12.48.

It thus appears, says the Report, "that there are whole milks offered for sale in the cities of the Dominion, likely enough at the same price, whose percentage of butter fat varies from 2.52 to 5.40. This variation is, no doubt, caused by differences in the breed, condition or feeding of the animals. The number of the inferior samples is, however, small. Still, the fact remains that the richest samples might be diluted with an equal amount of water and still be as good, so far as regards butter, as some of the inferior sorts of genuine milk.

"It does not seem fair that the dairyman, who mixes say fifty per cent. skim milk with a whole milk of 4.5 per cent., thus reducing it to 3.2 of butter fat, should be punished, while the man who keeps poor animals, feeds them insufficiently and sells milk containing only 2.75 per cent. butter fat, which may be legally genuine, should be allowed to escape.

The chief analyst, Mr. McFarlane, says, "Judging from the foregoing analyses it would appear that thirteen per cent. total solids is too high a limit for Canada," and he suggests that in case of a standard being adopted for Canada, the lowest limit be placed at 12 per cent. of total solids and 3.5 per cent. of butter fat.

Milk is a very important article of diet, indeed it might be regarded as the most important of our foods, inasmuch as it is the chief food of the young, and one per cent., or even one-half per cent., of total solids in the public supply implies a large amount of nutrient elements of the first quality. We think the standard of Canadian milk should be about as high as that of any other country. Why should it not be? It would be of much interest to know why it has not proved so in these analyses. Are Canadian cows of an inferior grade? or are they not well fed? The unaccountable low average in the Toronto district very much reduced the total average.

The standard in Massachusetts we believe is 13 per cent. of total solids, of which 3.7 must be butter fat. Before adopting this standard the State made very extensive investigations, of the report of which the following is a synopsis:—

| | <i>Fat.</i> | <i>Solids.</i> |
|--|-------------|----------------|
| Paris Standard, 1887. | 4.00 | 13.00 |
| Average of a number of farms near Paris. } | 4.10 | 13.10 |

| | <i>Fat.</i> | <i>Solids.</i> |
|---|-------------|----------------|
| Report of Paris (1885) Municipal laboratory. Average of all authorities quoted. | 4.00 | 13.30 |
| Milk Inspector, Boston, 1885. Eighty samples as delivered by milkmen. | 3.50 | 13.30 |
| Wurtz (leading French authority) average of a number of analyses. | 4.00 | 13.50 |
| J. Carter Bell, average of 181 cows. | 3.70 | 13.60 |
| New York Dairy Commissioner's report, 1885. Average of 296 cows. | 4.21 | 13.73 |
| New Jersey State Board of Health, average of 85 Dairies | 4.22 | 13.80 |
| Average of 18 native cows. | 3.84 | 13.82 |
| Average of ten analyses | 4.30 | 14.00 |
| Average of a large number of analyses by Bouchardt. | 4.10 | 13.30 |
| Milk Inspector of Boston, 1884, average of 31 grade Ayrshire cows | 3.70 | 13.32 |
| Average of 100 cows of Russell Farm, England. | 4.40 | 13.40 |
| Average of 42 cows of the Agricultural Institute, Dublin. | 4.00 | 13.40 |
| Boston average of 3 dairies of 56 cows. | 3.79 | 13.45 |
| Report of American Academy of sciences. Average of 19 cows. | 4.83 | 14.49 |
| Total average of the above. | 3.91 | 13.53 |

THREE special points in preventing the spread of epidemic diseases: Compulsory and prompt notification of all infectious diseases; immediate and efficient isolation; thorough disinfection of all infected articles and other sources of infection.

A LADY who never failed to have her little jest with her doctor all through a painful illness, exclaimed one day when he was announced: "Tell him I'm very sorry, but I don't feel able to see him to-day!"

THE health department of New York has found arsenic and antimony in the bright red-colored stockings of commerce. Both very poisonous to the skin and body when absorbed.

It is estimated that one-half the drugs used in the United States are consumed in the manufacture of patent medicines.

MISCELLANEOUS NOTES AND SELECTIONS.

CHOLERA IN AMERICA.—On this the Chicago Medical Times says, notwithstanding the anxiety of the press and people for the past three years we have had until now no cholera. Every precaution possible is being taken by the health officers, and it may be that the disease will not spread. But the cholera is due here and it has arrived, and notwithstanding the lateness of the season, the rigid adherence to quarantine, and the improved methods of disinfection the probabilities are that America will see more cholera next year than it has for many years. The plague has not travelled as rapidly this time as in previous visitations, but there is but little room for doubt that it will be here during the summer of 1888.

THE LAST VISITATION of cholera, continue the Medical Times, was in 1866. In November, 1865, the arrival of a cholera ship from Havre caused consternation. Strict quarantine work kept the disease out, but the following April brought half a dozen steamships with cholera-stricken passengers. The Virginia was the first with thirty-one cholera dead, followed by the England with 250 deaths out of 1,200 passengers. The latter arrived April 20, 1866. Ten days later the first case occurred in New York. In that year the disease killed 1,212 persons in that city.

INTERESTING THEORY OF RESPIRATORY ATTACKS.—Dr. H. B. Baker, Secretary of the Michigan State Board of Health, has made a long series of observations relating to the effects of the weather upon the health. He recently exhibited a paper illustrated with diagrams showing curves for influenza, tonsillitis, croup, bronchitis, and pneumonia, that corresponded with the curve for atmospheric temperature with surprising closeness.

He thinks (Sanitary Era) that the bad effects of cold air on the air-passages are mainly through its drying effect, which can best be appreciated by reflecting that each cubic foot of air inhaled at the temperature of zero, Fahr., can contain only one-half grain of vapour, while when exhaled it is nearly saturated at a temperature of about 68° F., and therefore contains about eighteen and one-half grains of vapor, about eighteen grains of which have been abstracted from the air-passages. Thus cold air, falling upon susceptible surfaces, tends to produce an abnormal dryness which may be followed by irritation and suppuration. He claims croup is sometimes so caused. Under some conditions the nasal surfaces are not susceptible to drying, the fluids being supplied in increased quantity to meet the increased demand made by the inhalation of cold air. In that case an unusual evaporation of the fluid leaves behind an unusual quantity of non-volatile salts of the blood, such as sodium chloride, and an unusual irritation results; he thinks influenza is the name commonly given to this condition. The effects which the inhalation of cold air have on the bronchial surfaces depend greatly upon how the upper air-passages have responded to the increased demand for fluids; because, if they do not supply the moisture, it must be supplied by the bronchial; in which case bronchitis results. Finally, if the demands for moisture made by cold air are not met until the air cells are reached, pneumonia is produced.

It is said that the application of castor oil to a bee-sting will immediately counteract the pain.

In Turkey when a man is found guilty of adulterating food or drugs his ears are nailed to a wall.

THE PUBLIC HEALTH FOR OCTOBER.

MORTUARY RETURNS FROM TWENTY-FIVE CANADIAN CITIES AND TOWNS.

TWENTY-FIVE of the principal cities and towns in Canada which make monthly returns of deaths to the Department of Agriculture in Ottawa show a record for October of 1,330 deaths, or 120 less than in September. The returns from Kingston, however, for October have not been received. The rate of mortality for the month in the twenty-five cities and towns was about 24 per 1,000 of population per annum. In the previous month the rate was 25 per 1,000.

In Montreal, the rate of mortality in October was about the same as in September—30 per 1,000 of population per annum. In Toronto, it fell from 20 in September to 19.4 in October; in Quebec, from 30 to less than 25; and in Hamilton from 20 to 16. In Halifax and Ottawa the mortality increased from 20 per 1,000 in September to 22 in October.

From zymotic diseases the total mortality in the twenty-five places fell about 25 per cent.; or from a record of 390 in September to 293 in October.

In Ottawa, however, the mortality from this class showed a large increase in October as compared with September, and the total increase in the mor-

tality from all causes in this city was owing to this increase in the rate from zymotic diseases. In all the other large cities there was in October a decrease in the mortality from zymotics.

From diarrhæal diseases the total number of deaths recorded fell from 192 in September to 56 in October.

From diphtheria the record increased from 103 in September to 138 in October; or over 33 per cent. This was owing to a very large increase in Montreal in the mortality from this disease in October. And while there was one more death in Ottawa in October than in September from this cause, there was in all the other large cities a decrease from the same in that period.

From typhoid fever in the same period the record decreased from 70 fatalities to 65. In Toronto, however, the record increased from 9 in September to 20 in October; while in Montreal it decreased from 26 to 19.

The total mortality in October in the twenty-five cities and towns receded to a considerably lower point than that of June and to about the same as that of May.

THE Chief Quarantine Officer of the Dominion, Dr. Montzambert, was highly complimented at the recent meeting in Memphis of the American Health Association, by one of the speakers, in a discussion.

WANT OF THE HOUR.—So the British Whig, (Kingston) heads an editorial, and after referring to the prevalence of typhoid fever and a well known and common cause of it—sewer gas in dwellings—says, "The public health commands the first thought of our legislators, and to guard against that which injures we have inspectors of food and milk, tobacco and liquors

and gas, of factories and steamboats and railroads. . . The law is not yet comprehensive enough. It does not provide for the appointment of inspectors of buildings, and the clothing of them with power to insist upon the construction of houses substantially and with a regard for hygiene . . . Men have been startled occasionally by the outbreak of severe epidemics, but when the panic has subsided they continue in the old tracks and lay the foundation for a new eruption of disease." We want more articles of this sort in the popular press.

MORTUARY STATISTICS — RETURNS FOR OCTOBER.

DEATHS IN THE 26 CITIES AND TOWNS MAKING MONTHLY REPORTS TO THE DEPART. OF AGRICULTURE, OTTAWA—CAUSES, &c

| | Total number of deaths. | Males. | Females. | Deaths from Small-pox. | Measles. | Scarlatina. | Diphtheria. | Diarrhoeal Diseases. | Fever, Typh'd & Intermitt. | Rheumatism. | Zymotic Dis. | From Constitutional Dis. | Local Diseases. | Developmental Diseases. | Violent Deaths. | Estimated Population numbers. | Rate per 1,000 of pop. per an. | Rate in previous month. | Rate, corresponds last year. | Rate for year ending 31st Dec. '86. |
|-----------------|-------------------------|--------|----------|------------------------|----------|-------------|-------------|----------------------|----------------------------|-------------|--------------|--------------------------|-----------------|-------------------------|-----------------|-------------------------------|--------------------------------|-------------------------|------------------------------|-------------------------------------|
| Montreal | 479 | | | | | 2 | 81 | 14 | 19 | 1 | 116 | 68 | 151 | 110 | 14 | 186,000 | 30 | 30 | 28.5 | 31.6 |
| Toronto | 178 | | | | | | 13 | 4 | 20 | | 42 | 26 | 80 | 27 | 3 | 110,000 | 19.4 | 20 | 20 | 24 |
| Quebec | 143 | | | | | 1 | 5 | 4 | 3 | | 14 | 23 | 48 | 49 | 7 | 69,000 | 25 | 30 | 30 | 31 |
| Hamilton | 54 | | | | | | 1 | 2 | 3 | | 7 | 15 | 26 | 3 | 3 | 41,000 | 16 | 21 | 21 | 20.8 |
| Halifax | 64 | | | | | | | 2 | 2 | 1 | 7 | 18 | 24 | 11 | 3 | 39,000 | 22 | 17 | 21 | 21 |
| Ottawa | 64 | | | | | | 7 | 8 | 2 | 1 | 9 | 22 | 16 | 6 | | 36,000 | 22 | 20 | 35 | 30 |
| St. John, N.B. | 38 | | | | | | 2 | 1 | 2 | | 4 | 16 | 12 | 3 | | 30,000 | 16 | 22 | | 19.5 |
| London | 32 | | | | | | 1 | 1 | 1 | 1 | 6 | 11 | 11 | 3 | 1 | 22,000 | 18 | 24 | | 13 |
| Winnipeg | 50 | | | | | | 10 | 7 | 2 | 1 | 24 | 5 | 16 | 4 | 1 | 22,000 | 27 | 28 | | 18 |
| Kingston | 7 | | | | | | | | | | | | | | | 15,000 | | 18 | | 13 |
| Charlottetown | 14 | | | | | | 1 | | 2 | | | | 3 | 1 | | 12,500 | | | | 14.5 |
| Brantford | 89 | | | | | | 10 | | 4 | | 6 | 3 | 4 | | 2 | 12,000 | | | | 14 |
| Hull | 10 | | | | | | 1 | | | | 14 | 1 | 12 | 3 | 1 | 12,000 | | | | 14 |
| Guelph | 16 | | | | | | 1 | | 1 | | 2 | 4 | 5 | 3 | | 11,000 | | | | 15 |
| Belleville | 13 | | | | | | | | | | 3 | 6 | 5 | 3 | | 11,000 | | | | 12 |
| St. Thomas | 20 | | | | | | 1 | | 1 | | 2 | 7 | 7 | 4 | | 10,000 | | | | 16 |
| Three Rivers | 6 | | | | | | 1 | | | 1 | 2 | 3 | 9 | 6 | | 9,000 | | | | 30 |
| Chatham | 6 | | | | | | | | | 1 | 3 | 1 | 1 | 2 | | 9,000 | | | | 16 |
| Sherbrooke | 16 | | | | | 1 | 1 | 1 | 1 | | 6 | 5 | 4 | 1 | | 9,000 | | | | 25 |
| Peterborough | 11 | | | | | | | | | | 6 | 4 | 6 | 1 | | 3,000 | | | | 20 |
| Victoria, B. C. | 20 | | | | | | | 6 | 1 | | 7 | 4 | 7 | 2 | | 12,000 | | | | 20 |
| Tredenden | 5 | | | | | | | 1 | | | 2 | 2 | 1 | 2 | | 6,000 | | | | 23.8 |
| Savel | 16 | | | | 2 | | | | 1 | | 4 | 4 | 12 | 3 | 1 | 6,000 | | | | 50 |
| Woodstock | 11 | | | | 1 | | | 8 | | | 5 | 1 | 3 | 6 | | 6,000 | | | | |
| St. Hyacinthe | 16 | | | | | | | | | | 2 | 2 | 3 | 9 | 1 | 6,000 | | | | |
| Galt | 8 | | | | | | | | | | 2 | 1 | 2 | 4 | | 6,000 | | | | |
| Total | 1330 | | | 3 | 3 | 3 | 138 | 56 | 65 | 4 | 293 | 220 | 483 | 274 | 41 | 684,000 | | | | 19.9 |
| London, Eng. | 28 | | | | | | | | | | | | | | | 9,250,000 | | | | 20.9 |

Canada Health Journal.

A MONTHLY MAGAZINE OF PREVENTIVE MEDICINE.

THIRTEENTH YEAR of Publication.

NINTH VOLUME.

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\$1.50 now is worth more to us than \$2.00 many months hence, with cost of time, bills and postage.

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EDITORS' SPECIAL CORNER.

THE HIGH MORTALITY AND THE REMEDY.

Elsewhere in this number of the JOURNAL reference is made to the high mortality in the Canadian cities, as shown by the recent Report on mortuary statistics of the Department of Agriculture; eighteen per cent. higher than the mortality in the large and over-crowded cities in England. This fact is being discussed in different quarters, and it will not add to the popularity of Canada abroad. Is this high death-rate to be permitted to go on without special effort being made to prevent it? What, it may be asked, should be done? We contend that the Federal Government should take some early action. A Committee of the House might first be appointed to consider the question. Surely it is a question of sufficient importance for such a course. And although matters relating to health are largely under the control of the Local Legislatures, as the high mortality is very general we do not see how it is to be satisfactorily dealt with by the Provinces. We hope to see some early action taken when the Federal Parliament next meet by some one or more of the medical members of the House.

DUTY OF THE STATE IN PUBLIC HEALTH.

This is the subject of an editorial in the last issue (October 22) of the British Medical Journal. Unfortunately it is a duty sadly neglected in almost every country. The education of the public in matters pertaining to health is the great want.

What the British Medical Journal states regarding the Sanitary requirements in England are largely applicable to Canada. "In sanitary affairs wide and sweeping reforms are needed before public opinion can be efficiently educated, and, at the same time an enlightened public opinion is necessary to carry out these much-needed reforms; a vicious circle of neutralising necessities, which only outside educated interference can bring to good result. And what factor, in the calculations of statesmen, can be so powerful for good as the influence of the great British Medical Association? It represents public opinion, for each of its constituent units is in constant touch with every class of individuals." "The following seems to be the most needed and the most feasible reforms we can ask for: 1. The creation of an educated body of specialists . . . who shall devote themselves entirely to sanitary work. 2. The gradual fusion of all small sanitary districts . . . 3. The appointment, promotion, pay, and dismissal of all medical officers of health by the central authority." This would not do in Canada. "4. The compulsory education and examination of sanitary inspectors. 5. The reform of 'Crown's Quest Law' . . . 6. The formation of a Central Board of Sanitary Government and Statistics. And finally, the inculcation of a spirit of propaganda into the "doctors" of the sanitary service, so that the ideal of Professor Ruata may be attained. He says that the thorough informing of the peo-

ple in regard to the laws that control mental and moral being is needful to complete the work of customary education. The more freedom citizens have, so much the more profound must be their knowledge—knowledge of things concerning both body and mind—to prevent liberty becoming licence, and to attain the best result possible.

THE CANADA MEDICAL ASSOCIATION, though neither numerically, nor perhaps proportionately, so strong as the British Medical Association, is a very fairly representative body, consisting as it does chiefly of the leading spirits of the profession in the Dominion. It will meet next year here in the Capital, under the presidency of Dr. George Ross, of Montreal, editor of the Canada Medical and Surgical Journal and holding a high position in the Medical Department of McGill University. The Association has on many occasions passed resolutions and appointed Committees with the view of bringing about Federal legislation on behalf of the public health. It was not want of will and interest in the subject that prevented more decided action on the part of the Committees, but want of opportunity and ability to meet and carry out their desires. It is to be hoped that at the meeting next year the subject will again receive the consideration of the Association and that some means will be evolved by which the Government may be urged to take practical action.

WATER SUPPLY POLLUTION—IMPORTANT POINTS IN THE COMMITTEE'S REPORT.

The following are a few extracts from the Report of the Special Committee on the "Pollution of Water Supply," appointed last year, to the American Health Association at its meeting in Memphis during the second week of the present month. They are very suggestive and worthy of special consideration in view of the present practice of pouring sewage into rivers: "Your Committee considers itself warranted in believing that although the presence of sewage in wells and other underground water reservoirs may generally be indicated by chemical investigations, such investigations will usually fail when the character of a river or lake-

supply is under question. . . . Infected sewage, although present in exceedingly minute quantities, may give origin to dangerous epidemics. . . . Filtration through the soil is capable of destroying the organic constituents of the matter of healthy sewage which may be contained in a water, but this purifying process has, so far as your Committee has examined the evidence, no influence on the germs of certain diseases, which enter the well with all their powers for evil undiminished, so that, although the water may show on analysis only those inorganic remains which indicate antecedent sewage pollution, it may be as dangerous as though it were rankly tainted with recent sewage. Bringing these considerations to bear on the sewage-pollution of rivers and other large bodies of fresh water, your Committee is inclined to the belief that the failure of the chemical processes to detect minute traces of the contaminating matter is of no practical importance. For protective and preventive purposes the knowledge that sewage entered the water seems all that is required. The sewage, if not infected at one time, may become infected at another, and is therefore an ever present impending danger to the health and lives of the consumers. When the constant and extensive prevalence of typhoid fever is taken into consideration with the vast numbers of the contributors to the sewage outflow of a large city, the sewers of that city cannot be safely assumed to be uninfected. Hence, the sewage of a city entering a river above the point suggested as the intake for the water-supply of another community, should suffice to disapprove of all such suggestions, irrespective of chemical analysis or any other considerations. As the well water may become freed from the ordinary organic matter of sewage during its percolation through the soil, so the running water may have its ordinary sewage matter destroyed, by a retroversion of its elements to inorganic forms; but there is evidence to show—the Plymouth epidemic for example—that this purifying influence cannot be relied upon to protect from specific infection. Nor can reliance be placed on the dilution which takes place in a large stream. Recent experiments on the causative essential of typhoid fever point to matter in a particulate form as the element

of danger. Dilution does not dissolve and dissipate it into innocuity, as the typhus-miasm is dissipated by ventilation. It is there; and although one tumblerful may not contain it, another may. . . The measures to be recommended in consonance with the views submitted are hedged with difficulties on account of the relations which one community bears to another; nor will one cast-iron rule suffice for all cases. The influence of chemical treatment on the infectious principles of the excreta of disease comes up for consideration as well as that of the filtrations which are effected not only by irrigation and other modes of consignment to the soil, but by artificial means conducted on the small scale by the consumer and on the large scale by the municipality or the Water Company. Time is required for the investigation and consideration of these and allied subjects.

Your Committee has submitted the present paper merely as suggestive of the tendencies of the work of its members during the past year, and to avail itself of the opportunity which is here presented of requesting a continuance of its existence during the coming year. Signed:

Chas. Smart, (Major and
Sur. U. S. Army,
Washington, D. C.)
S. W. Abbott, (M. D.,
Wakefield, Mass.)
D. C. Ashmun, (M. D.,
Cleveland, O.)
W. W. Daniels, Prof.
(Madison, Wis.)
Edward Playter, (M. D.,
Ottawa, Can.)

OBSERVATIONS AND ANNOTATIONS.

FOOD ADULTERATION AND ANALYSIS.—

The report of the Department of the Interior on the adulteration of food for 1886 has been issued. The Department examined during the year 1,142 samples, 208 of which were adulterated and 41 were "doubtful." Coffee and spices seem to suffer most, and Dr. J. Baker Edwards, public analyst of Montreal, says, "It is obvious that the practice of adulteration is chiefly now as formerly in the hands of the spice grinders." Dr. Valade, of Ottawa, states, I regret being unable to report any

samples free from adulteration. Most of them contained meals of different kinds, pease, wheat, beans, &c., in considerable quantities. Some contained inert and mineral dusts, others gypsum and plaster of Paris, while the mustards, mixed with meal in quantities much beyond the standard indicated by the authorities, are colored with turmeric. It is desirable, he reports, that the Government should proceed with vigor against the shameless manufacturers of these products, the most generally adulterated ones on the market. The commissioner himself, Mr. Miall, states that, "The Department feels increasingly every year the difficulty of accomplishing any important work with the small vote hitherto placed under its control for the prevention of adulteration. When will the public cease to be "penny wise and pound foolish," especially in health proceedings?"

CANNED FRUITS AND VEGETABLES.—Of these Mr. Saunders, of London, reports: Of the four cans of preserved fruits examined all were more or less contaminated with metals; one, of blueberries, had traces of tin, another of pears, traces of tin and iron, but in neither of these cases was there sufficient metallic impurity to affect their fitness for food. The other two were both so strongly impregnated with dissolved metals as to make them unfit for food; the peaches having a large proportion of tin with slight traces of iron; the cherries, strong traces of iron, very strong traces of tin and slight traces of lead. Four cans of preserved vegetables were examined. The canned peas were free from metallic impurities; the corn contained traces of iron; the beans traces of tin and the tomatoes traces of iron and tin, but neither of these contained the metals in sufficiently large proportion to make them unfit for food." We believe that the habitual use of even traces of these metals, especially of tin, could not but be injurious to the health. Good glass, as we have often urged, should be substituted for tin and iron vessels.

"PATENT" FRAUDS.—Dr. Valade says, "In closing this report, I beg to be allowed to call attention to the remarks which I made in my report of last year on the subject of the patent medicines manufactured here and abroad. I have with pleasure

noticed that the opinions then expressed were taken into consideration by the then chief analyst, Mr. Sugden Evans, who totally concurred in my views on the subject, that Parliament should pass a law binding the manufacturers of the patent medicines which stock the market to the prejudice of the purse and health of people that can be influenced by high sounding advertisements, to register their receipts in the Department of Inland Revenue, which should then submit the articles to analysis in order to control their composition. I am prepared to assert that some of these nostrums are absolutely inert, while others are truly dangerous." Dr. Valade would probably agree with the editor of this JOURNAL that entire prohibition by the Government as in Germany would be the best of all.

THE OPENING ADDRESS AT MCGILL.—We have received, in the Canada Medical and Surgical Journal, a full report of the introductory address of Sir James Grant. We need hardly write that it contains very practical advice to those intending to practice the "healing art." "Wherever you settle in practice, observe carefully that particular locality, its physical peculiarities and the bearings of such with reference to the development of disease. Thus you will in time accumulate much valuable information. When called to visit a symptomatic case, enquire closely into the question of plumbing, drainage, water and food supply. Thus the causes of such diseases as scarlet fever, typhoid fever, diphtheria, etc., may be ascertained, and much practical good accomplished towards arresting their spread. Action in this direction marks the prudence of the medical man, gives confidence to the public as to his professional ability, and advances the interest of the State by a proper regulation of such defects as are found to exist in carrying out the principles now being formulated by boards of health in various parts of Canada.

THE WORK-ROOM IN THE SCHOOL.—After referring to education, mental and physical, Sir James Grant concluded his lecture as follows: "To our young medical men we look for careful observation in this direction, in which much useful and practical work, in the way of reforms, may

be brought about. Our Canadian children compare favourably with those in any other part of the world, as far as intellectual activity is concerned, and our aim and object should be to preserve the gifts of nature, glowing with more than ordinary lustre around the cerebral thrones of a rising generation. The more closely this whole subject is thought over, the more attention will it attract. The addition of a work-room to each public school, where children might employ even half a day in each week in making various articles in wood used in over-day life, would greatly encourage them in study, turn their practical genius to account, and, in a new country like Canada, render them better able to grapple with the varied vicissitudes of life. Mental and physical training thus combined would give force and vigor to the system generally, and draw out the special aptitude of many for particular lines of duty.

THE OTTAWA EPIDEMIC.—The epidemic of what appears to be a "malarial" fever, with, in some cases, typhoid symptoms, in Ottawa has given rise to a demand for more vigorous sanitary administration: the usual old story of active sanitary demands and measures after the outbreak of an epidemic. Repeated warnings had been given that the sewerage system of the city was bad and that there was a great deal of filth in some parts of the city. Nothing special was done to improve matters. A year ago, before the municipal elections, the present chief officer made promises that if elected his efforts would be to first of all make the capital a healthy city. We have not been able to learn of a single effort having been made by his Worship in this direction. Whatever has resulted or may result from the bad sewerage and filth in the city, which in this regard is not any worse than many other cities, it seems highly probable that the present epidemic has been caused by the city water supply, either from germs of the fever having developed in the fountain heads of the supply, by reason of the unusually dry season just past, or, from foul supply mains. The season has been such as would probably give rise to excess of malarial fever germs, probably the bacillus malarie, which may be communicated to

man by water as well as by air; while it has been noticed that the water after standing for a time has been as offensive to the sense of smell as water from an old or unclean cistern. As evidence of the water origin of the fever, the disease has manifested itself far from any collections of filth, in the most healthy parts of the city, unconnected with the sewers, but where the water was freely consumed direct from the taps. Although the imperfect sewerage of the city has probably caused an increase, likely enough a large increase, in the number of typhoid fever cases, the present epidemic is so general and was so sudden in its outbreak—so like an explosion—as to preclude the probability of being wholly of sewage origin. It has been too wide-spread to have been caused by contaminated milk from any one dairy, we should judge, and is certainly more like outbreaks which have occurred in other places and which afterwards were found to have been caused by some sudden and special contamination of the water supply.

THE OTTAWA WATER.—Samples of the Ottawa water supply have been, it is said, submitted to the chief Dominion analyst for examination. Chemical analysis alone will not by any means afford satisfactory evidence of the purity or impurity of the water. Such evidence can be furnished only by a most careful biological examination. We doubt if there is in Canada suitable apparatus reliable for this purpose. A Central Board of Health with a Hygienic Laboratory is yet a want in the Dominion. Chemical examination may show the water to be tolerably pure, or perhaps containing some excess of vegetable impurity, and yet it may contain also the germs of "malarial" fever—the bacillus malarie (a vegetable organism)—manifested only by the microscope with the most careful scientific investigation. It is on account of the development and spread of similar specific germs of disease that the waters of rivers are becoming dangerous; as pointed out in a paper we read at the meeting last year in Toronto of the American Health Association, touching experiments of Frankland, Meade Bolton, Wolfhugel and other biological investigators, and which resulted in a special committee, on "Pollution of Water Supply," being ap-

pointed at the meeting, brief extracts from a preliminary report of which committee, recently presented at the Memphis Meeting of the Association, may be seen on another page of this number. The disinfected secretions of a case of typhoid fever, trickling with a little stream into the river above the water supply, might, it appears possible, perhaps in a low strata of water, be conveyed to the intake of the supply, and, multiplying in the wonderful manner that organisms like the germs of disease are known to multiply, even in potable water, communicate the disease to hundreds in the city.

IMPURE CREAM OF TARTAR is a substance commonly sold in Canada. Out of about 35 samples recently examined by the public analysts, we understand, some 22 only were genuine; the others were adulterated with gypsum, alum, acid phosphates and starch to the extent of from 15 to 80 per cent. Cream of tartar is a substance in very common domestic use, and two at least of the adulterants found would be decidedly injurious if taken into the human stomach, and whoever would so add such ingredients would poison a fellow creature at any time for a small "consideration" if it could be "safely" done, or legal proceedings evaded.

UNYIELDING DRESS about the chest and its physiological effects and evil consequence wepe dwelt upon by Dr. Jessop at the last meeting of the British Medical Association, as referred to in an article on dress elsewhere (page 274). As we have before stated Balls Health Corsets manufactured by Messrs. Brush Bro. of Toronto, and sold by most dealers, are not unyielding, but yielding, by means of side coil springs, and are the least objectionable corsets we know of.

COMPARATIVE CITY MORTALITY.—Dr. Bertillon, Chief of the Bureau of Statistics of Paris, has collected some important facts relative to the mortality from certain diseases in European Cities. In Paris, in 1886, the mortality from typhoid fever was 45 in every 100,000 inhabitants; in London the mortality in the same number of inhabitants was 17; in Berlin, 16; in Vienna, 11; in St. Petersburg, 118; in Milan, 71; in Marseilles, 108; in Lyons, 40; in Edinburgh, 15; in Liverpool, 34; and

in New York 22. From diphtheria, another disease the prevalence and fatality of which is supposed to depend to a great extent upon local causes, we find there were 73 deaths in Paris to the 100,000, 163 in Marseilles, 33 in London, 128 in Berlin, 68 in St. Petersburg, 21 in Liverpool, 32 in Edinburgh, 52 in Rome and 119 in New York. From consumption, there were 470 deaths in Paris to every 100,000 inhabitants, 664 in Vienna, 448 in Marseilles, 449 in Lyons, 472 in Belfast, 203 in London, 112 in Rome and 376 in New York.

THE Orillia Packet states that a Mr. L. M. McDonald, of that town, after repeated warnings from the Health Inspector, was brought before Mayor Robinson for keeping his premises in an unsanitary condition. His Worship imposed a fine of \$4.20, inclusive of costs, which was paid; much more probably than it would have cost him to clean up.

M. M. SPILLMAN and Haushalter, according to the N. Y. Medical Abstract, caught under a bell-glass a number of flies which had seen enter spittoons containing phthisical sputa. The next day many of these were dead; an examination of the abdominal contents and excrement showed tubercle bacilli.

THE board of regents of the University of Michigan have appropriated \$30,000 for a building, which is to be used as a hygienic laboratory. Prof. Vaughan has been named professor of hygiene and director of the laboratory. An appropriation of \$2,000 has been made for the purchase of apparatus, and all the work performed is to be of a hygienic character.

FOR the proceedings of the Society for the study of Inebriety, with the report of the Colonial and International Congress on Inebriety held recently at London. We are indebted to Dr. Elliot of Orillia. There is much in it for serious consideration;—much that should induce all who are interested in the well-being of mankind to especially favour all efforts for healthy and more perfect physical development in order to promote self-control, and to encourage Inebriate Asylums, in which all who suffer from Inebriety can be properly treated and with a good prospect of cure;

as in this direction we believe most can be done for the promotion of a true and permanent temperance.

DR. G. H. COBURN, Health Officer of Fredericton, draws our attention to a stupid blunder in the JOURNAL'S table of mortuary statistics, in which, in the last issue, it is made to appear that the mortality of Fredericton last year was 50 per 1,000 of population, whereas the rate was less than 24 per 1,000; which, as Dr. Coburn writes, is "larger than we would like" without having it put up to 50. The 50 per 1,000 should have been opposite Sorel, which is the correct figure for this town. The mistake occurred through making a change in the order of the list of cities and towns.

WE are indebted to Dr. Coburn for a copy of the "By-laws and Regulations of the Provincial Board of Health" recently organised in New Brunswick, with also a copy of the Act for organizing the Board. The "Instructions for Health Officers" in the Regulations are most useful and we shall endeavour to give a synopsis of them in a future number.

NOTES ON CURRENT LITERATURE.

THE Illustrated London News (American edition) furnishes instruction as well as entertainment, and covers the customary broad range of this long established and widely known publication. We find during the past three weeks: Sketches of the Bulgarian Elections; Disputes Between Fishermen at Plymouth; State of Ireland; On the River Congo; At the Cat Show, Crystal Palace; Portrait of the Late Lady Brassey; and A Tame Lion, Algiers. The number for October 22 is an excellent one. Besides strangely interesting sketches on the Congo and in Morocco, there are two very pretty full page illustrations, a "Sleeping Beauty" and "Christening Sunday." The supplement of October 29th gives an excellent colored portrait of Prince Bismarck, more illustrations of the State of Ireland, a page of Our Troops in Burmah, Border Sketches in Kelso, Bristol Cathedral, the Death of Caesar, and an

attractive picture entitled *Speak!* Reading matter in abundance is also provided. Subscriptions can be sent direct to the New York office, Potter Building.

THE Century Magazine, with the current number, begins its eighteenth year and thirty-fifth volume, and with a circulation of nearly a quarter of a million copies monthly. As usual the November number is especially notable. At this time, wide popular interest attaches to Mr. Kennan's paper on the "The Last Appeal of the Russian Liberals," the text of which, for the first time in English, is included in his article,—in fact, the appeal has hitherto not really been published at all. Considering the wide and growing popular interest in Russian life, literature and politics, Mr. Kennan's series—the result of a special investigation of Russian politics, as seen both in Russia and in Siberia—is likely to awaken much interest. Mr. Kennan says: "It has been my fortune in the course of the last two years to make the intimate personal acquaintance of more than five hundred members of this Russian protesting party, including not fewer than three hundred of the so-called Nihilists living in exile at the convict mines and in the penal settlements of Siberia." The special art feature of the number is the sculpture of Augustus Saint Gaudens, of which several beautiful examples are reproduced. The fiction of this number is notable, including the beginning of two stories: "The Graysons," a tale of Illinois life in the first half of the century, by Edward Eggleston, and a novelette of Acadian life, by George W. Cable, entitled "Au Large," the scene of which is the neighborhood of "Grande Pointe." There are editorial articles on "A Phase of Political Independence," and "Sanitary Legislation in American Cities," with interesting "open letters."

In St. Nicholas for November, Louisa M. Alcott contributes one of her charming stories, entitled "Pansies." It is followed by a bewildering array of short stories, entertaining sketches, and bright jingles and verses. "Little Matti of Finland" is a delightful tale of a little known land, with many clever silhouette illustrations. "What Happened to the Bridegroom" is a melancholy tragedy in white frosting and wedding-cake, by William Theodore

Peters; Colonel R. M. Johnston contributes an account of an exciting encounter between "Buck and Old Billy"; and Almont Barnes's "A Spanish Tale" is an old-time fairy-story. J. G. Francis has opened a new jingle-mine in a very original and amusing series of "Aztec Hieroglyphs." This is the first number a new volume.

PUBLISHER'S SPECIAL NOTICES.

WE desire to again draw attention to the many advantages, to invalids seeking "winter quarters," of the Medical and Surgical Sanitarium of Battle Creek, Michigan. It is a vast institution and we believe it to be all under most able management.

PURE grape wines, of Canadian manufacture, may be obtained from the Ontario Grape Growing and Wine Manufacturing Company of St. Catharines. Any of our readers wanting such cannot do better than order direct from the Company.

THE most durable pen that we have ever used, we think, without exception, and a very easy writing pen, is Esterbrook's 808.

CATARRH, CATARRHAL DEAFNESS AND HAY FEVER.—The Scientific American says, "Sufferers are not generally aware that these diseases are due to the presence of living parasites in the lining membrane of the nose and eustachian tubes; but microscopic research has proved this beyond doubt, and the result is that a simple remedy has been formulated whereby catarrhal deafness and hay fever are permanently cured in from one to three applications made once in two weeks by the patient at home. A descriptive pamphlet of this new treatment is sent free on receipt of stamp by A. H. Dixon & Son, 305 King Street West, Toronto, Canada." It is said that some of our physicians use this remedy in their practice.

IN THIS REMEDY of the Messrs. Dixon we are persuaded there is much good. It holds quite a different position from the vast array of "patent" "cure all" frauds put upon the market with the sole object of making money, and this by misleading the public by puffing advertisements and misrepresentation. We believe in seizing upon good, as upon truth "where e're 'tis found."