

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured covers/  
Couverture de couleur
- Covers damaged/  
Couverture endommagée
- Covers restored and/or laminated/  
Couverture restaurée et/ou pelliculée
- Cover title missing/  
Le titre de couverture manque
- Coloured maps/  
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/  
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/  
Planches et/ou illustrations en couleur
- Bound with other material/  
Relié avec d'autres documents
- Tight binding may cause shadows or distortion along interior margin/  
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/  
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.
- Additional comments:/  
Commentaires supplémentaires:

- Coloured pages/  
Pages de couleur
  - Pages damaged/  
Pages endommagées
  - Pages restored and/or laminated/  
Pages restaurées et/ou pelliculées
  - Pages discoloured, stained or foxed/  
Pages décolorées, tachetées ou piquées
  - Pages detached/  
Pages détachées
  - Showthrough/  
Transparence
  - Quality of print varies/  
Qualité inégale de l'impression
  - Continuous pagination/  
Pagination continue
  - Includes index(es)/  
Comprend un (des) index
- Title on header taken from:/  
Le titre de l'en-tête provient:
- Title page of issue/  
Page de titre de la livraison
  - Caption of issue/  
Titre de départ de la livraison
  - Masthead/  
Générique (périodiques) de la livraison

This item is filmed at the reduction ratio checked below/  
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

**D**R. ROBERTSON, L. D. S., Dentist,  
Graduate of the Philadelphia Den-  
tal College, and of the Royal College of  
Dental Surgeons, Ontario. Office: Egan's  
Block, Sparks St., opposite the Russell,  
Ottawa.

**N.** PEARSON, DENTIST, formerly of  
New-market, corner of King and  
Young Streets, Toronto.

**R**OBINSON & KENT, BARRISTERS,  
ETC., Office: Victoria Chambers, 9  
Victoria Street, Toronto.  
N. G. ROBINSON, H. A. E. KENT.

**JAS. HOPE & CO.,**  
BOOKSELLERS,  
Stationers, Bookbinders & Printers,  
Cor. Sparks & Elgin Sts., Ottawa.

**G. W. McCULLOUGH,**  
All Rail Anthracite and Bituminous Coal.  
**WHOLESALE AND RETAIL**  
OFFICE, RUSSELL HOUSE BLOCK.  
OTTAWA, ONT.

**TOPLEY,**



104 SPARKS STREET.

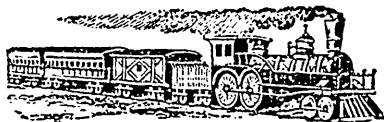
**Portraits of Public Men**  
AND VIEWS OF OTTAWA.

VISITORS WELCOME.

**HENRY WATTELY**  
**Chemist & Druggist**

188 SPARKS ST., OTTAWA.

Special attention given to the compo-  
sing of Physicians' Prescriptions.



**THE INTERCOLONIAL RAILWAY  
OF CANADA.**

**The Royal Mail Passenger  
and Freight Route,**

BETWEEN  
**CANADA AND GREAT BRITAIN**

AND

direct route between the West and all points  
on the Lower St. Lawrence and Baie des  
Chaleur, also New Brunswick, Nova Scotia,  
Prince Edward Island, Cape Breton, New-  
foundland, Bermuda and Jamaica.

New and elegant Pullman Buffet Sleeping  
and day cars run on through Express trains.

Passengers for Great Britain or the Con-  
tinent, by leaving Toronto at 8.30 A.M.  
Thursday, will join Mail Steamer at Hal-  
ifax A.M. Saturday.

Superior Elevator, Warehouse and Dock  
accommodation at Halifax for shipment of  
grain and general merchandise.

Years of experience have proved the Inter-  
colonial in connection with Steamship lines  
to and from London, Liverpool and Glasgow  
to Halifax, to be the quickest freight route  
between Canada and Great Britain.

Information as to Passenger and Freight  
rates can be had on application to

**E. KING,**

Ticket Agent,  
27 Sparks St.,  
Ottawa.

**ROBT. B. MOODLE,**

Western Freight and Passenger Agent,  
93 Rossin House Block,  
York St., Toronto.

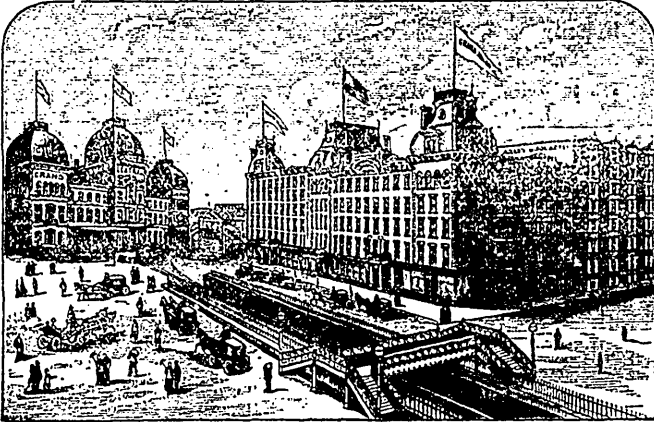
**D. POTTINGER,**

Chief Superintendent.

Railway Office,  
Moncton, N.B., Nov. 13th, 1885.

# CONTENTS.

Charms as a Means of Cure.....	151
"Monoideism"—Mind Cures, Faith Cures.....	155
Dangers in Food and Drink.....	160
The Public Health—Mortality of last year.....	163
Dominion Health Bureau.....	
School Machine Worry.....	166
Interesting Comparative Vital Statistics.....	167



## THE GRAND UNION HOTEL.

Opposite the Grand Central Depot, New York City.

Offers travellers and families arriving or leaving the city to visit Saratoga, Long Branch, White Mountains, or other Summer resorts, superior accommodations. All improvements, European plan, over 600 elegantly furnished rooms, fitted up at an expense of one Million Dollars. \$1.00 and upwards per day.

Richly furnished suites for families, and elegantly furnished rooms for dinner parties for ten and upwards. Cuisine and wines of superior merit. The Restaurant, Cafe and Wine Rooms supplied with the best, at moderate price. Toilet and Baggage Rooms, for ladies and gents, where coats, valises and parcels can be left free.

W. D. GARRISON, Manager.

Guests' baggage taken to and from this depot free, and \$3.00 cab hire saved by stopping at this Hotel. Be sure and try the Grand Union Hotel.

GENERAL KEER'S  
Himalayan Tea



Trade Mark Registered

## GENERAL KEER'S

# HIMALAYAN TEA

IMPORTED BY HIM DIRECT FROM INDIA

Selected for him with great care in Calcutta, the best market in the world for Indian Teas.

Forwarded to any part of Canada or the United States in Caddies of from 5lb upwards.

FOR SAMPLES AND PRICES APPLY TO

Major-General KEER, 58 CHURCH Street, Toronto.

# MAN,

## A PUBLIC HEALTH MAGAZINE.

VOL. I.

MARCH, 1886.

No. 5.

### CHARMS AS A MEANS OF CURE.

"The old order changeth, yielding place to new,  
Lest one good cut to-m should corrupt the world."

IT is a trite saying that man's highest study is mankind; and of this study few departments are more interesting, and surely none are more perplexing, than that which relates to his beliefs and superstitions. The Protean shape, which in generation after generation these superstitions assume, renders all study of them as complex and puzzling as the unravelling of a skein of silk after it has been subject to the antics of a kitten. The ever-active and playful imagination of man (irresponsible in his earlier ages as the gambols of a kitten) has, generation after generation, woven the original constituents of any given superstition into such a tangled skein that it is a difficult matter, indeed, to find which thread is the one that will lead us to a correct solution of the problem.

The persistency of the life of superstitions is another curious and not lightly to be ignored feature. This persistency reminds one forcibly in its nature of the obstinacy of life exhibited in the English bind-weed, or of the pusley, which is made the hero, if this term be permissible, of Warner's "My Summer in a Garden." Lop off as you may, the excrescences, destroy as you like the flowers, uproot as you will the fundamental principles, yet in some other form, at some other time, the same idea still lives and moves and has its being. It is true, indeed, that as education becomes more diffused the life of superstition is not so apparently active: The scepticism, necessarily a concomitant of education, is an ever-active pruning knife; but it is not by any means an eradicator: it keeps within bounds, but it does not destroy; it subdues, but it does not suppress. Is not the unlucky

thirteen still avoided even in educated circles; should we have to search very far before we found one and another, who deemed it unfortunate that the salt should be spilled at table, and who, perchance furtively, would throw a pinch of the condiment over the shoulder to ward off harm; has Friday yet lost its character of being a day on which no "enterprise of great pith or moment" should be initiated?

Not long since we met with a commercial traveller, a man as shrewd and hard-headed as these men are, who would never travel on a Friday. Yet when rallied upon being superstitious he indignantly denied the accusation: but could only explain his dislike to travelling on a Friday by saying he did not like it.

It is not our intention, however, to enter into a history or analysis of superstitions, but just to jot down some remarks anent the cures supposed to be effected by charms. Excepting in a few districts remote from the busy practical life of to-day, such as Devonshire and Cornwall in the Old Country, charming as a means of cure is at a discount, its place to some extent is, now and again, taken by faith "healing," the Lourdes miracles, and the archbishop laying on of hands. In these reported cures we have but the transmutation of that superstition which believed in charms; and any healing which may have taken place was effected in each case in the same way, viz., by the remedial effect of the imagination, or the subsequently altered circumstances in the patient's environment.

Let one's logic be never so clear, and one's facts never so potent, it is impossible to disabuse the mind of the believer in charms. The "bind-weed" of the superstition has firm hold on his mentality, and its glamour

is so bewitching that no argument will avail. We have amongst our friends a lady, one of the most accomplished it was ever our happy fortune to meet. Possessed of a clear practical mind she is the last one in the world we would imagine likely to come under the spell of the charm superstition; yet she implicitly believes that an unsightly crop of warts on her fair hands were charmed away, after repeated other treatment had failed, by an old Devonshire crone. It is useless to point out that warts frequently occur through disordered digestion, and as frequently disappear, voluntarily, on change of scene, occupation or habits; that immediately after the "charming" process she was married and removed to another locality. These explanations are far too prosaic; and although the plausibility of the arguments is admitted, the credit of the cure is given to the magical power possessed by the half-blind and wholly deaf old woman. And to show the inconsistencies the human mind will revel in, we know of no one more skilled in massage than the same lady; and we have often found severe muscular pains disappear, as though by magic, under the manipulation of her dexterous fingers. Yet to hint that such power on her part is magical would bring down a very shower-bath of ridicule upon one's head.

We know of no districts in England so likely to reward the inquiry into charms and their workings as are Devonshire and Cornwall. Removed to a certain extent from the rush of life, which, elsewhere, makes the practical and tangible the only things believed in, the kindly people of these counties pursue the even tenor of their way, and accept still as gospel much that their forefathers bequeathed them. Poetic in their natures as the glorious scenery about them, simple of heart and guileless of mind, generation after generation wove a folk-lore incomparably richer than any we have met with elsewhere, and formulated a system of charm-cure almost scientific in its precision of detail, and as full of mystic ritual as the weird religious rites of Phœnician and Druid, whence, indeed, much of the superstition was derived.

But even here, as elsewhere, education is having its necessary and legitimate result. The young men rise up and with glib tongue and scientific phrase explain away

the superstition; and the maidens pay attention to the newer charms of cosmetiques and laces. The old order is changing, and one has to search diligently in hidden nooks, and amongst the remnants of the passing generation, ere one is rewarded with practical proofs of the old beliefs.

As we have already instanced the belief in the efficacy of wart-charms it may be well to start with a few of these charms, not one of which was ever known to fail!!

I. Each wart must be touched with a new pin and the pin is then to be dropped into a new bottle, the mouth of which must be closed with a cork and bound with a hair from the head of a newly-born male child. The bottle is then to be buried in a freshly-made grave;—if that of a suicide, so much the speedier will the charm work. As the pins corrode the warts will drop off.

II. Each wart is to be touched with a small pebble gathered from a brook at the time when the moon is "like to a silver bow, new bent in heaven." This pebble is to be placed in a bag made of fair linen. The bag must be dropped on the way to church in the afternoon. Any person who picks up the bag, and examines the contents, will have transferred to his or her fingers the warts of the original possessor.

III. Another charm, and of great repute, was to steal a piece of meat from a butcher's stall in the public market. The warts were touched with this and the meat afterwards buried. As the meat decayed the warts disappeared, *pari passu*.

The charm which effected our friend's cure was a somewhat elaborate ritual. *Imprimis*: Three questions were asked. The date of her birth, her name, and the complexion of her lover. These satisfactorily answered, certain hieroglyphs were drawn on the newly-kaolined floor with a charred stick, and the lady was instructed to stand upon them, with her eyes closed, and the hands pendant and crossed. Muttering some cabalistic words, which our friend could not catch, the old woman moistened her left forefinger with saliva, and touched each wart; then having clapped her hands together seven times, she made the sign of the cross, and the charm was worked.

Performed by some old women we have met, we can easily believe this charm would be effectual, for their saliva would be

sufficiently caustic to erode anything less obdurate than granite.

Where severe cuts and kindred accidents are of frequent occurrence, as in the mining districts, a speedy method of stanching the flow of blood was "a consummation devoutly to be wished." Hence these charms:—

The wound being bound up the patient was turned with his face to the East. Then the charmer took his or her position behind the patient and with both hands held palm downwards, and the index fingers flexed upon the ball of the thumb, repeated these words:—

"Sanguis mane in te,  
Sicut Christus fuit in se;  
Sanguis mane in tuâ venâ,  
Sicut Christus in suâ penâ;  
Sanguis mane fixus.  
Sicut Christus quando crucifixus."

It is easily to be imagined what a jargon this would become in the mouths of ignorant country people, but it would be none the less impressive on that account.

A more common incantation was the ensuing:

Christ was born in Bethlehem,  
Baptized in the river Jordan;  
There He digg'd a well,  
And turne the water against the hill;  
So shall thy blood stand still.

A very curious charm was used for the cure of paralysis, rheumatism, sciatica and similar diseases. The afflicted person took his station in the church porch at the close of the Sunday morning service, penny after penny would be dropped into his open hand by the passers-by, for each of the congregation knew for what purpose the mendicant was there. Not a word would be uttered by the recipient of the doles until the parson came. Then, rising and making the sign of the cross, the sick person would beg the parson to give a piece of silver for the copper coins: this was readily done. This exchange made, the recipient proceeded up the church to the altar rails; the communion table having been removed from the wall, he would walk round it three times, repeating in a loud voice the Credo. Then exclaiming: "Now my silver piece must be made into a ring and in three weeks shall I be whole, blessed be God the Father, God the Son, and God the Holy Ghost," he would depart, firmly persuaded that a cure would be wrought.

Another charm of great repute for the cure of rheumatism was the crawling under a bramble, which had taken root a

second time in the ground; and being afterwards stepped upon by a woman, whose last child had been a breach presentation. We have ourselves seen one of these charm-brambles beneath which a deep furrow had been worn by frequent creepings.

The charms for tooth-ache were as many as are the modern advertized "certain cures." They almost invariably take the form of verse. Certain conditions have to be complied with, or the incantation is powerless. *Ab uno disce omnes*: "Fast a whole day: at sunrise repeat, with the face to the East, these lines:

"Christ pass'd by His brother's door,  
Saw His brother on the floor,  
What aileth thee, brother?  
Pain in the teeth?  
Thy teeth shall pain thee no more."  
In the name, etc.

Whooping-cough could be cured in ways galore. The following is one of the most singular charms:

The child was to be completely naked. It was to be passed three times three over the back of an ass, which had recently had young and three times three under the belly. Nine hairs from the back, nine from the tail and nine from the belly were to be taken. Three spoonfuls of milk were to be drawn from the teats, and the hairs to be steeped in this for seven hours. On three successive mornings the child was to have a little of this potion.

The only explanation we could ever get of this charm was, that, as Christ had ridden on an ass, no child who had sat where He had sat could cough any more.

For strumous children the ash tree charm was infallible. This charm is confined to no given district, but is widely believed in. M. Thoms has given a most interesting and valuable account in the *Athenæum*, Sept., 1846, of the antiquity and extent of this superstition.

The method of working the charm varies considerably, however, not only in different counties, but in different districts of the same county, one plan was to bore with a red-hot auger a hole in the bole of a young ash tree; into this hole a live shew-mouse, freshly caught, was put, and the hole closed with an ashen plug. As the miserable mouse slowly died the child would gain strength.

Another method was the following: A young ash being chosen, a vertical slit was made in the trunk by a knife, which had been exposed to the rays of the newly-

crested moon. This slit was held apart by main force, whilst the mother passed the naked infant through nine times. The slit was then bound up. If it closed perfectly the child would become healthy.

It was our good fortune to see this charm worked with even a more elaborate ritual—a ritual eminently suggestive. We were staying at a farm house in the wilds of Dartmoor. One evening the farmer told us that the “ashen-charm” was to be worked next morning on a neighbor’s child. Before sunrise we were up and away across the moor, knee-deep in heather, to a distant valley, slumberous beneath the shadow of a mighty tor. A clear brooklet, with music of its own, sang over ochreous pebbles, or stayed its waters in many a silent moss-edged pool to play dalliance with the luxuriance of ferns. Beside the brook a level sward reached to a little spinney. On arriving we found we were not the first. Beside the brook stood seven lads, each with a ram’s horn in his hand. Within the spinney a young ash tree had been chosen; two stalwart yeomen had taken the limbs, where they bifurcated, and had rent the trunk in twain. Facing the East, and opposite the cleft, an unmarried woman stood, and facing her on the other side of the tree, was another unwedded woman. Round the tree seven little heaps of the last year’s leaves had been piled, and by each heap was an attendant virgin. The longdrawn shadow of the hill lay over all: at the first glint of sunlight falling over the mighty tor upon the waters of the brook, the seven lads filled their horns with water, and advanced into the spinney; the virgins lit their heap of leaves; and the mother handed her unclad babe to the eastward maiden at the tree. She passed it through the cleft to her companion, who, taking it, handed it round the tree, from right to left, to her *vis-à-vis*. This was done seven times. The lads then poured the water from their horns upon

the ashes of the leaves, and made a paste of them. With a little of this the baby’s brow and eyes and mouth were anointed, and it was then taken home. The remainder of the paste was smeared upon the cleft trunk, which was then bound together with leathern thongs. If the tree recovered from this treatment the child would become hale and hearty.

It is almost impossible to trace the origin of these charms. Some are so ridiculous as to make one despair entirely of finding even a glint of reason for them; in others, such as the last, we can trace faint vestiges of the old sun and fire worship. Each superstition has been varied from generation to generation—receiving here an accretion and there another; and, handed down by word of mouth, has necessarily undergone perpetual variation as memory failed, or imagination enlarged.

Absurd as these charms seem to us now, there was a time, and that not very long ago, when they received as much credence as we give now-a-day to the most approved medical treatment. Nay, even yet, some of them are implicitly believed in. Over and over again we have been assured by the “Antients” of the hamlet, that they had practised the charm, whatever it might be, and it had rarely failed. What explanation is one to find? Did imagination have in olden days more potent influence upon disease than now? That would hardly apply to children of tender years, unless the imagination acted vicariously through their parents or friends. Or were the old-time folk more easily deluded? But could they be deluded on so vital a question as recovery from disease and accident? The whole matter is of absorbing interest, but our space is run out and, as we have before stated, our intention is not to discuss the origin or reasonableness of such superstitions.

J. R. POCKLINGTON.

**BOSTON WIT-HYDROPHOBIC.**—The Talk of the Day. Mrs. A.—“I hear that the Montmackingtons are going to spend the winter in Paris.” Mrs. B.—“Indeed? You surprise me! When were they bitten?”

**STREET NUISANCES.**—Dogs, and bipeds who “smoke” on the sidewalks.

**ADVANTAGES OF MATRIMONY.**—According to M. Lagneau, a well-known statistician, after 22 years of age married men live longer than bachelors. Among every 1,000 bachelors there are 38 criminals, among married men 18 per 1,000.

## "MONOIDEISM."—MIND CURES, FAITH CURES.

AS old as the most ancient records of which we have any knowledge is the practice of endeavoring to cure diseases of all sorts without the use of medicines or physical agencies of any kind: but by the laying on of hands, by prayer, and by charms of various sorts. At the present time the dominant form of this kind of cure, and a development of a certain kind of psychological study is the "mind cure." The stronghold of this "cure" is Boston. An exchange says: "A couple of years ago a Mrs. Eddy, who was for some time considering the idea of a possibility of the will or mind giving a cure to a disease, and who was for some time before giving a constant practice of attempting to dispel disease by a conviction that only a conception of a disease by the mind was the disease itself, and asking others to do the same, originated this gospel. A constant pursuit of this idea gave it a fastening upon many minds, and from a focus of such contemplations in or near Boston a spread of the gospel was made. A spread continued until the affair crossed the continent. A score of good minds gave it endorsement, and a thousand common minds accepted it. A couple of publications are advocating it. Others will follow. A cure of disease is claimed for the gospel, and a most astonishing devotion to the cause is found in the female portion of the people."

It is claimed by the disciples of this delusion that there is a "transference" of thought from the one practising the cure to the patient. "The one who is to act the part of healer simply turns his own mental power and attention in upon himself, concentrating his energy upon the idea that the patient is free from disease. This he does while sitting by the patient's side, though it is claimed by some that it can be done without even coming into the patient's presence or entering his house. In proportion as his vital force, that is, his nerve force, becomes absorbed in this one thing, it is transferred to the mind of the patient, who is thus brought into physical relation with him, and is under his control to such a degree that what he believes the patient necessarily believes. The patient thus believes that he is well, and, as the result, he is well, either immediately or speedily." This,

according to their own statements, is the theory and action of the mind cure.

The influence of the mind over the bodily functions in health and disease is well known, the power of hope over diseased conditions, of a belief in recovery of a determination to get well is universally acknowledged, and, properly used or directed, might be a valuable aid to the physician and patient. Unfortunately it has been heretofore almost wholly in the hands of fanatics and charlatans, and much harm has thereby been done. In a lecture at the Edinburgh College of Medicine. Dr. J. Hughes Bennett, a physician, of much eminence, an author of repute, and an advanced deep thinker, in referring to the "mind cure," which he calls "Monoideism," said: "In all the cases of relief there can be little doubt that any benefit that did occur may be attributed to a strong belief, on the part of the patient, in the efficacy of the means employed. In recent times, more systematic attempts have been made in this way to relieve pain. This subject, however, is yet in its infancy, and has to be separated from the charlatanism which has hitherto been mingled with it. The labors of Dr. Eisdale among the natives of India and Mr. Braid in Manchester exhibit a worthy commencement to the rational treatment of disorders by the means now alluded to, and there can be little doubt that, in no long time, its influence, when further studied, will be acknowledged. But how far this influence is dependent on the confidence of the patient, on the belief of some mysterious circumstance which is presumed to produce the effect, or on some unknown law regulating function, through the mind, further observation alone can determine." Dr. Bennett then referred to cases which have been authenticated in which various kinds of pain and other evidences of derangement, hysterical paralyzes of organs, etc., have been relieved or "cured" by this means.

In the words of a very good article in the *Scientific American*, "we know well that in every form of disease the patient can be largely benefitted by those attendant circumstances which give tone and hopefulness to the mind, and especially by the efforts of his own will. We have no reason to question that in many instances the



balance between life and death can be held and determined by the patient's actual will power. We know also that many cases are daily occurring, involving great exhaustion and distress, with not unfrequently acute pain, in which the disease is purely and solely functional, that is, there is no organic change of any tissue, so far as we can ascertain. These patients, as a rule, are in no danger, notwithstanding the frightful symptoms which they exhibit. Their case can terminate rapidly, and even almost instantly, in recovery, of which many instances can be given. Many who have been "bedridden" for years recovered in this manner. And one point, in addition ought to be mentioned—every possible symptom of organic disease is continually simulated by these functional forms, so completely as to deceive the friends of the patient and not unfrequently the physician himself. These cases can be largely controlled by the mind; they are within the reach of the "mind cure." In many of them, the machinery is in sufficiently good order for running; it lacks only *steam*. In them, a mind healer may make not only a complete cure, but one that is permanent. In others, the muscles have been so long without use that they have become sadly weakened; and, while the stimulus of hope under the influence of the mind healer springs them into energy, so that the one who is fearfully crippled can and does move at will, thus putting on record another "cure," yet the reaction is as sure, though not so rapid. Within one, or perhaps two days, the new-found strength begins to sink away, and presently the patient has become worse than before, and is perhaps permanently injured or hopelessly so, whereas different treatment might have made a slow but a steady and complete recovery. These cases are more common than those first mentioned.

But the advocates of the mind cure go much further than this, whether sincerely or not I cannot say. They say that real organic diseases are cured as promptly as those which are only functional. We know that the line of demarcation between what are regarded as functional diseases and those which are organic it is not easy always to define; but that manifestly diseased structure, with perhaps loss of structure could instantly, or in a short space of time, be restored to its normal condition no sane man will believe.

Faith cures are very much of the same nature as mind cures. In both reliance is placed really on mental effort or will power alone. In faith cures the "healer" is believed to be the Almighty, directly, in answer to prayer, and with faith. The centre of this "cure" is also in Boston. It is difficult to understand how those who practice it can be sincere. The following extracts from an article in the *Century*, by A. F. Schaffner, will well illustrate the manner of practice and the degree of success of this delusion.

FAITH CURES—THE THEORY.—1. All sickness is the result of sin. Sin is the cause, sickness the effect. This sin may or may not be that of the individual afflicted. But the race of man being sinful, sickness has invaded the mortal body as a consequence. Hence sin and sickness go together, and the soul and body are indissolubly connected.

2. Christ's Atonement avails for sin and all its consequences. Since sickness is one of these consequences, the Atonement makes complete provision for its cure. In proof of this, reference is made to Isaiah liii. 4, where we read: "Surely he hath borne our griefs, and carried our sorrows." Here the word griefs is rendered "sickness," and this passage, taken in connection with Matt. viii. 17, they claim, establishes the point. Psalm ciii. 3, "Who forgiveth all thine iniquities; who healeth all thy diseases," they claim, is also a proof of the completeness of the Atonement as affecting bodily ills as well as spiritual malady.

3. Spiritual redemption provided by Christ is of no avail unless accepted by the individual needing it. So the ample provision for bodily healing made in the Atonement is of no avail unless appropriated by the individual in an act of faith. Further, as soul-health is sustained only by a continually repeated exercise of faith, so bodily health is to be retained in the same way.

4. Death is one of the effects of sin. Since the Atonement avails for sin and all its consequences, it also can release mortals from the power of death. In this connection it is fair to say that, so far as we know, the English and American school of faith-healers do not claim this; but Pastor Stockmayer, of the German school, openly takes this position. When asked why all believers still die, he constructs an argument based on the "soli-

darity which exists between the members of the body of Christ,” which prevents the individual believer from rising very much above the average experience and faith of the church. He claims that the average faith of the church of to-day is so low, that while here and there believers rise to the privilege of “faith-healing,” they are not able to reach the climax of deliverance from death. When the church at large has risen to the height of “faith-healing,” then we may expect the vanguard to reach deathless life.

5. In consequence of the above theory of the completeness of Christ’s Atonement, as availing for bodily ailments, true faith will refuse to use any other than the divinely appointed way of healing. All remedies, external or internal are “works,” and are not germane to faith. An unwavering faith will discard them all. Here, again, it is fair to say that Doctor Cullis of Boston (himself an M. D.) considers the use of medicinal and surgical means allowable, where the patient has not the requisite faith. The Rev. Mr. Simpson of New York, however, and most of the leaders of the American school, hold that the use of any means other than that of anointing and prayer is sinful, because tinted with unbelief.

THE FALLACY.—1. We admit that sickness is the result of sin, and death its consummate flower; we also admit that the Atonement of Christ avails for sin and all its consequences.

2. But we do not admit that Christ’s Atonement avails for all the consequences of sin in this world. Here lies the fallacy of the school of “faith-healers.” Not until after the resurrection can the full redemption of man’s body be attained. This is positively taught in the Word. Nor do we find in the Scriptures any evidence that sickness, as one of the consequences of sin, is to be completely conquered this side of the grave.

3. If Christ’s Atonement, as claimed, avails for all the consequences of sin in this world, then all evils, such as extreme poverty, accidents, etc., should be overcome, since they, too, are consequences of sin. Yet no “faith-healer” will dare march down the line of his premises to this conclusion.

4. Vaccination prevents small-pox. If remedies are wrong, then they and the temptation to use them come from Satan.

Therefore, in this case, we have Satan prompting men to use his evil remedies to overcome the consequences of sin. But if Satan thus cast out Satan, how shall his kingdom stand? But on the other hand, if vaccination is not from Satan, then it is from God. But if from God, it is wrong not to avail ourselves of a God-given remedy. The same also is true of every tested remedy for any bodily ailment. The same also is true of any surgical appliances, and even of any change of climate undertaken for the sake of health. There is no way out of this “small-pox argument,” excepting to deny that vaccination prevents small-pox.

5. The analogy (chapter 1, section 3) between spiritual health and bodily soundness is vain and deceitful; for faith is absolutely essential for spiritual healing, but it is not absolutely essential for bodily restoration, as witness thousands of cures of unbelievers. The analogy does not hold.

6. The “solidarity of a corrupt church,” in the days of Ahab or of Paul, never prevented Elijah or Paul, from the exercise of miraculous power. The church of to-day, taken as a whole, is far purer than that of Ahab, or Paul’s day. Therefore, by Pastor Stockmayer’s argument, she should work greater works than Elijah and the apostle. But she does not and can not.

BIBLE CURES.—1. Whether in the Old or New Testament, they had two uniform characteristics: they were instantaneous and complete. Only one instance can be given where this seems not to have been the case. It is found in Mark viii. 22-26. The first touch of Jesus’s hand seems to have restored the sight of the patient only partially, so that he saw “men as trees walking.” The second touch completed the healing. But to all intents and purposes the cure was immediate, and all agree that it was complete. The claims of faith-healers that the cure of the Ruler’s son was gradual, is not good. The case is given in John iv. 46-54. Here the father’s question as to “when he began to amend” is claimed as proving that the convalescence was gradual. The answer is simply, “At the seventh hour the fever left him.” Now the only other instance when the phrase “the fever left” is used is in Matthew viii. 15. In this case, as soon as the fever left her

Peter's mother-in-law arose and began household duties, without any long period of convalescence. The presumption, therefore, in the case of the Ruler's son, is that the healing power of the Master worked in the same way, viz., instantly and completely.

Should any quote the case of the Shunamite's son (2 Kings iv. 33-35) as one of gradual cure, we answer, that even this was practically instantaneous, for the cure was wrought within *minutes*, and not within hours, or even days and weeks, as is so often the case in modern "faith-cures."

2. There are at least two cases of the use of means in the Word: in the Old Testament, that of Hezekiah (see 2 Kings xx. 1, and Isaiah xxxviii. 21-22); in the New Testament, that of Timothy, 1 Timothy v. 23.

3. Paul's estimate of the value of "gifts of healing" was not very exalted. He ranks them as far below "love," as is apparent from his whole discussion of the subject in 1 Corinthians xii. and xiii. The Church in Corinth was quarreling about these "gifts," and was forgetting the "graces" of character which are the best fruits of the Spirit. This conduct he rebukes. This wrong relative estimate of the spiritual and the temporal appeared in the seventy when "they returned again with joy, saying, Lord, even the devils are subject unto us." This excessive joy the Master rebuked, saying: In this rejoice not that the spirits are subject unto you; but rather rejoice because your names are written in heaven." See Luke x. 17-20. In all their epistles, neither Paul, nor Peter, nor James, nor John once refers to his gifts of healing, excepting in two instances, viz., in Romans xv. 19, and 2 Corinthians xii. 12, in both of which instances Paul merely alludes to his exercise of miraculous power as a proof of his apostleship. This is in marked contrast with the literature of modern faith-healers, who with pen and tongue have never done with this one theme. Christ and the apostles evidently thought *relatively* little of these temporal "gifts" as compared with spiritual "graces."

4. The gifts of healing in apostolic times were, by God's providence, confined to a few. See 1 Corinthians xii. 9, 28, 30. But modern faith-healers claim this gift as the prerogative of any believer with

sufficient faith, and they claim, furthermore, that every believer *should have this faith*.

THE PRACTICE—1. Great claims are put forth at conventions and meetings, and in published works, of numerous and marvelous "cures" wrought by anointing and prayer, without the use of any other means. But, first, let it be well noted, hundreds are not healed at all, who yet want to be healed and who believe they can be. At Mannedorf in Switzerland where Dorothea Trudel had her faith-cure home, Dr Cullis says he saw one hundred and fifty patients *waiting to be healed*. The doctor himself says that he receives "hundreds of letters" asking for his prayers. In all the homes, such as that at Mannedorf, in Bethshan in London, Berachah in New York, and Dr. Cullis's various homes in Boston, many are not healed at all. But of these cases the faith-healers give no detailed account, nor do they even indicate the proportion of healed and not healed. Is this honest?

2. Of those reported as "cured" many are not at all "cured." In two volumes entitled "Faith-cures, there are one hundred and fifty cures reported. Of these we find seventy-one, or nearly one-half, are not "cured," but at the best only "benefited," yet they are reported under the head of "Faith-cures." Any ordinary hospital acting thus would be rightly reprimanded as "fraudulent" in its reports. Again, of the one hundred and fifty cases, we find twenty-seven so unclear in their statements that we can make nothing of them. This leaves fifty-two cases which according to the testimony of the patients themselves, are really cured. The cases reported cover a period of ten years. To be honest in this matter, we claim that all faith-healers should report as do our hospitals, as follows: Patients treated ——. Died——. Discharged healed,——. Discharged benefited,——. Not benefited,——. Then, and then only, can men judge of the true results of faith-healing.

3. The enormous majority of the apparently "cured" are very slow in their convalescence, taking weeks, months, and even years to recover. This is far from the scriptural way, which, as we have seen, was practically sudden and complete.

4. But even in the fifty-two cases above mentioned, we are left in doubt as to the.

reality of the cure, by the singular use of language which faith-cure folk permit themselves to employ. They are taught by their leaders to claim that they are healed as soon as they have been anointed and prayed over, and that in spite of any subsequent symptoms that may remain. The following quotation from directions to patients, given by a clergyman, is but a sample of all their teaching: "When anointed BELIEVE THAT YOU DO NOW RECEIVE, *i. e.*, say, I am healed *now*; do not say, I *expect* to be healed. Believe against contrary physical evidence. After having CLAIMED THE PROMISE, be not surprised at the continuance of symptoms and physical pains. You may expect sudden and powerful returns of your sickness after anointings and prayers. But carefully note that they are ONLY TESTS OF YOUR FAITH. You ought not to recognize any disease, believing that God has rebuked it." Such unwonted use of language staggers ordinary mortals, and makes them wary in receiving testimony from those who allow themselves such liberties. The writer addressed a letter to Captain C., who claims to have been "cured" by prayer, asking him, "Are you now perfectly well?" Answer: "Praise the Lord; I am entirely well." Question: "Do your bodily senses bear witness with your faith that you are healed; or do you have to believe in spite of the evidence of your senses?" Answer: "Both; *i. e.*, my bodily senses assure me that for six years I have done everything reasonable for a well man, and have suffered no serious (or any) injury whatever; while I have always to rely on the promises and am tempted by the devil at every possible point. *E. g.*, if I attempt any unusual exertion, Satan says, You will hurt your heart, and sometimes succeeds in causing a few symptoms; but I look to Jesus only, and am perfectly delivered." (The italics are not his). To understand the "true inwardness" of this reply, we must remember that faith-healers make a distinction between disease and

"symptoms" so marked that they claim to be healed of disease even while the "symptoms" continue. This being the case, Captain C. can in one sentence affirm that he is "entirely well," while in the next he admits having "a few symptoms." How many, then, of the fifty-two cases out of the one hundred and fifty are of this nature, it is impossible to say without a detailed examination of each case and an inquisitorial form of questioning. Another of the cases widely advertised is that of a lady whose story may be found in Miss Carrie Judd's book, entitled "The Prayer of Faith." The second question asked Captain C. was also put to her, with the following answer: "I have walked by faith for eight years, *regardless of the senses.*" (The italics are hers.) Yet another person said to the writer, "I am healed by faith." When asked if the bodily senses bore witness to the healing, the reply was: "I am healed by faith, but not by my senses." When asked why language was so strangely used, the reply came: "I do not exactly like this way of speaking myself, but the leaders tell us we must say so." Now imagine any hospital physician giving such instructions to his patients, and then advertising them as "cured."...

1. QUESTIONS IN CONCLUSION.—Are not the leaders of this movement guilty either of gross ignorance or of dishonesty when they thus instruct their followers?
2. Do they not pervert the Word of God, and draw deceitful analogies between spiritual healing and bodily cure?
3. Are not the leaders of this movement also dishonest or grossly careless when they fail to publish lists of the unhealed, of the relapsed, and of the dead?
4. Are not the leaders of this movement inconsistent in not daring (with the exception of Pastor Stockmayer) to face the full logical consequence of their fundamental postulate that the Atonement of Christ avails in this world for sin and its consequences?

M. R.

THE Supreme Court of Iowa has decided that a hotel keeper who receives guests, knowing that there is a contagious disease in his house, is liable for damages to any guest who may contract the disease.

THE superstition that thirteen persons at table is unlucky has a real basis of truth. Quetelet in his work on probabilities says that on an average out of 13 persons of different ages one death will occur within the year

## DANGERS IN FOOD AND DRINK.

**F**ANCY, if you please, the state of mind of a citizen of New York as to the deceptions and dangers which may exist for himself and his family in the food and drink they consume. That the milk may be watered or skimmed, that the butter may be oleomargarine, or that the sweetening for his buckwheat cakes may be glucose syrup, he has long since learned. Notwithstanding this, he manages to make a tolerable breakfast, only reflecting, as he sips his morning coffee, that not long since he has heard that raw coffees are frequently "painted," as those in the trade term it, with various colors, some of which contain poisons. At his dinner he would like some vermicelli, but he has recently read in the papers of prosecutions in the courts for coloring vermicelli with the poisonous chromate of lead; he would like a salad, but remembers that a few months ago there was a stir about the sale of mustard colored with a poisonous coal-tar color; he would console himself with pickles by way of condiment, but hesitates to swallow what may contain a full medicinal dose of copper compounds; he might slake his thirst with lager beer, but again fears that he will only imbibe copper or lead in another form; an effervescent mineral water might serve as a substitute, but he has been informed that many manufacturers of mineral water in the city use for their wares water contaminated with drainage. In despair, he thinks to refresh himself with ice-cream, but again hesitates, since it is reported that one of the ingredients may be gelatine whitened with zinc white. The good citizen, knowing not which way to turn, experiences a reaction, concludes to take his chances, and eats and drinks heartily, philosophically reflecting on the added significance of the saying, "Let us eat and drink, for to-morrow we shall die."

It is my purpose here to give a brief account of some of the dangers which have been discovered, and, it is to be hoped, materially diminished, by the action of the New York City Health Department during the past few months.

As to coffee: Two forms of treatment have been applied to raw coffee in order to affect the color and general appearance of the bean—"sweating," as it is some-

times termed, and revolving in cylinders. The latter process is termed "polishing" when powdered soapstone or nothing whatever is mixed with the coffee, and "painting" when mineral pigments are added to change the color. The coffee is usually moistened to soften the exterior; sometimes a little gum arabic is dissolved in the water used.

When coffee was brought here in sailing vessels, requiring a long time for the voyage, the coffee underwent a change in the hold analogous to the sweating process in curing tobacco, or that used in the preparation of some kinds of tea. It is worthy of remark that a decided improvement in flavor is imparted by such a process to articles of the kind. The effect on the coffee was not only to improve the flavor, but to alter somewhat the form of the bean, while the color was changed from a brownish green to a more decided brown. When steamers began to carry coffee, the time of the voyage was too short to permit this sweating process to produce such an effect, and a method of treating the coffee by moist heat (140° to 150° Fahrenheit) was devised, which imitated in some respects the conditions produced in the hold of a sailing vessel. With some coffees this treatment produced a perceptible increase in the size of the bean, as well as the alteration in flavor and tint, and in this way, except in point of color, some South American coffees could be made to imitate the more popular "Java."

"Polishing" was originally practiced, without the addition of any mineral substances, to improve the general appearance of the raw coffee; but it was accidentally discovered that the addition of small amounts of pulverized soapstone effects a much more decided improvement. This led to the use of mineral substances and pigments to affect the color, until now coffee can be "painted" any desired shade by those skilled in this branch, just as one can get from a dyer any desired shade on woven fabrics. A list of the substances used in this "painting" may here find a place: gum arabic; Venetian red; French chalk, or soapstone; Silesia blue; chrome yellow; Prussian blue; turmeric; burnt umber; yellow ochre; drop-black.

The Silesia blue consists of a mixture of Prussian blue and barytes. In the sample examined a small amount of lead (probably there as white lead) was detected. The "drop-black" is ground bone-black. The other names require no explanation. Of these colors only chrome yellow (chromate of lead) is *per se* poisonous. The ochres, however, are sometimes the product of the weathering and decomposition of pyrites containing arsenic or copper, and those elements can frequently be detected in them. In the colors examined, only the burnt umber showed arsenic; still, in consequence of careless handling, poisonous materials sometimes get mixed with the substances used.

The use of colors containing poisons for "painting" coffee has been forbidden, and to a large extent stopped by the prompt action of the Health Department of New York and Brooklyn. Although the aggregate number of pounds of coffee thus treated is no doubt very large, the proportion to the entire amount of coffee sold has been small, and in cases of "painting," as has been seen, but few of the colors have poisonous constituents. Nevertheless, so long as buyers of raw coffee follow the older traditions, depending upon color as their guide, and

"Do not care for dirty greens  
By any means,"

or the reverse, some encouragement is given to these practices in defiance of the law, and only the enlightenment of buyers to suit the changed conditions of the coffee-trade can effectually stop "painting." At the present time the most expert buyers depend very little upon color, but judge of the samples by the appearance and aroma of the roasted beans, and the flavor of the infusion.

The coloring of vermicelli with chrome yellow seems to have come about in this wise: A large proportion of our population chiefly Germans, are very fond of what they term "Bier Nudeln," a yellow vermicelli, the color being supposed to be imparted by the admixture of eggs with the flour used in the manufacture. Some unscrupulous manufacturers, having found that for their trade a yellow color in the vermicelli was sufficient to work upon the imaginations of their customers, omitted the expensive egg, and added instead some

yellow coloring material. Turmeric, Martius' yellow (a coal-tar dye), and chrome yellow (chromate of lead) are colors which have been used. The last is by far the most dangerous addition, and at least one case of lead-poisoning in this city has been traced directly to this source. In some families the custom of making the nudeln at home prevails, which is certainly a safe plan. In some cases the manufacturers were most probably ignorant of the properties of the yellow coloring matter (chrome yellow) which they used. They simply used the material because other manufacturers did, and they found a sale for goods so colored. It is to be hoped that, in consequence of the publicity which has been given to this matter, this form of danger may soon become a matter of history only.

Some persons imagine, when they buy mustard from a grocer of good standing, that they are receiving only the flour of mustard seed, after grinding and bolting. They are almost invariably mistaken. If they were given what they suppose, the article would most probably lack the bright color to which they are accustomed, since the flour of farina from the four or five different kinds of mustard-seed now in the market has in but one, or possibly two, cases that brilliant tint; as a condiment, the genuine mustard flour would be thought to be too sharp and bitter, and as an ingredient in mustard plasters it would be unendurable. It is also asserted that pure mustard farina does not keep well. What is ordinarily sold under the name of mustard is a mixture of mustard farina—after partial extraction of the oil—with flour or starch and turmeric; and this method of preparing the condiment has become so general that it is not regarded as an adulteration by the manufacturers. By regulation of the New York State Board of Health, of March, 1883, manufacturers of mustard are allowed to add sixty per cent. of flour and turmeric to mustard farina, provided that fact is distinctly stated on the label of the package. These additions are not harmful. Turmeric is itself a condiment, being a constituent of the well-known curry-powder. Its physiological effects are described by the United States Dispensary as similar to those of ginger.

A few months since it was discovered that some manufacturers were not only

using in their lower grades of mustard excessive quantities of flour, but were replacing the flour in part with terra alba, and were substituting for the turmeric a coal-tar color—Martius' yellow scientifically termed "calcium dinitronaphthalate." This color, besides being as explosive as gunpowder when unmixed with anything else, was proved by experiments on dogs to be poisonous.

That copper compounds have frequently been used to give a bright green tint to pickles and preserved green vegetables generally has long been known. It may perhaps not be known that minute quantities of copper have been found in almost all vegetable products, apparently as an accidental constituent, since the amount varies according to the soil upon which the cereals, potatoes, etc., have been grown and the element is sometimes entirely absent. In an experiment connected with this investigation, copper to the extent of 2.57 parts of the metal per million was found in fresh cucumbers bought in market. In some mollusks, and in the coloring matter of the feathers of certain tropical birds, copper is an essential constituent; it has frequently been detected in the human body.

The question as to whether copper compounds are really poisonous has been vigorously disputed, and cannot be regarded as positively settled. It seems probable that to certain persons, possibly the larger proportion of mankind, they are poisonous, while to others they are not.

It must not be rashly inferred from the items which from time to time are published that *everything* which we purchase in the way of food and drink is bad or adulterated. Probably if the proportion of adulterated articles to the whole number of sales, say in a day, a month or a year could be calculated, it would be found to be small; and if those articles which were really dangerous or had received dangerous additions were only reckoned, the proportion would be still smaller. People may be horrified to read that of more than six thousand samples examined in the Paris municipal laboratory last year, over fifty per cent. were found to be bad; but an important point must not be overlooked. Chemists, or, as they prefer to call them in England, "analysts," do not frequently examine an article of food except to confirm or disprove a suspicion

that it is "no better than it should be"; as a consequence, the percentage of adulterations discovered is usually high. In other words, the "analyst" is apt to see the worst side of the question.

It is unfair in the extreme to assume that all dealers are dishonest, or that if they have a choice they will invariably prefer to adulterate with the most deleterious substance obtainable. What is at the bottom of all this is a desire for gain, and results from innumerable causes. Some manufacturers and dealers endanger the health or the lives of their customers through sheer ignorance, and take the same risks themselves without being aware of it. They imitate the practices of other manufacturers so as to be able to compete with them, and only know that their goods are marketable. Questions of casuistry do not trouble them. Adulteration is supposed to embrace the element of fraud, yet, more frequently than is supposed, fraudulent intentions are absent. The moral standards of men also are variable. One man considers anything moral which is not illegal; another goes a step farther, and regards any act of his as consistent with morality, provided he doesn't get caught. Adulteration is sometimes technical, rather than actual. For instance: some grocers buy strong vinegar, and dilute it to the point which they find their customers prefer. In Massachusetts, if vinegar contains less than five per cent. of acetic acid, it is regarded as adulterated. In England, three per cent. is the limit. If now a grocer should dilute his vinegar so that it contains but four per cent. of acid, it would be adulterated in Boston, and not adulterated in London.

The general laws of the State of New York are so constructed, or interpreted, that *injurious* adulterations or additions to food are illegal, while the plea of ignorance is seldom, if ever, accepted as a bar to conviction in the courts, though it may have weight when sentence is pronounced. Our citizens must be protected from the ignorance and carelessness as well as from the dishonesty of dealers in articles of food and drink. The law rightly assumes that dealers have sufficient acquaintance with articles in their line to be able to distinguish between what is good and what is bad.—ELWYN WALLER, in the *Century*.

## THE PUBLIC HEALTH—THE LIVING AND THE DEAD.

### MORTUARY STATISTICS OF LAST YEAR—HIGH RATE OF MORTALITY IN CANADIAN CITIES—WORK FOR A DOMINION HEALTH BUREAU.

IN January I briefly referred to the mortality during the latter half of last year (1885) in the 20 cities and towns of the Dominion which make monthly returns of the death-rate to the Department of Agriculture. In the following table are the names of the 20 cities and towns, with the total number of deaths in each during the six months and the number from zymotic diseases, the estimated population and the rate of mortality of each, with the totals in all of them. The monthly statements from the cities and towns to the Department were commenced in June only of last year, and as the report for the year has not yet been issued, it being impossible that it could be so soon as this, I cannot obtain the rate of mortality for the first half of the year. It would not vary much from that of the last half. The difference between the mortality in the first and in the last half in other counties, in the province of On-

tario and in the cities during the previous year, was not noteworthy. In estimating the population of the different cities I have simply added to the population as given in the census report of 1881, four and a half tenths of the increase in the population between that census and that of 1871: October of last year being four and a half years after the last census was taken. This though not quite so accurate as to add each and every year, to the population of that year, one-tenth of the increase during the decade just previous to that year, it is sufficiently so for our present purpose, and the total shows probably quite as large as the actual population in the 20 cities and towns, though it will vary in the different ones. Only round numbers are given. In relation to St. John, N. B., I have placed the population at 30,000, about 1,200 more than at the last census.

NAMES OF CITIES.	Estimated population.	Total number of deaths for second half of 1885.	Total number of deaths from zymotic diseases.	Total mortality per 1,000 of population per annum.	Mortality from zymotic diseases per 1,000 of population per annum.
Montreal.....	157,000	5,599	3,702	71.2	47
Toronto.....	101,000	1,180	322	23.2	6.2
Quebec.....	64,000	1,162	324	36.2	10
Hamilton.....	40,000	350	77	17.2	3.8
Halifax.....	39,000	415	79	21.2	4
Winnipeg.....	11,000	181	63	32.8	11.4
Ottawa.....	30,000	367	127	24.4	8.4
St. John, N.B.....	30,000	364	115	24	7.6
Kingston.....	15,000	182	62	24.2	8.2
St. Thomas.....	11,000	74	22	13.4	4
Galt.....	5,500	51	8	20.4	3
Charlottetown.....	12,000	128	72	21.2	12
Guelph.....	11,000	81	15	14.3	2.7
Bellefille.....	10,000	82	12	16.4	2.4
Chatham.....	8,000	49	11	12.2	2
Sherbrooke.....	8,000	103	28	25.6	7
Peterborough.....	7,000	79	15	22.4	4.2
Sorel.....	6,000	140	87	46.6	29
Fredericton.....	6,000	74	24	24.6	8
St. Hyacinthe.....	6,000	137	63	45.6	21
<b>Totals.....</b>	<b>577,500</b>	<b>10,798</b>	<b>5,228</b>	<b>37.4</b>	<b>18.</b>



From the figures it is found that the total mortality in the 20 cities and towns was at the rate of 37·6 per 1,000 of population per annum, and that the total mortality from zymotic diseases alone was at the rate of 18 per 1,000 of population per annum. This high rate, however, was mainly owing to the small-pox epidemic in Montreal, and it is but fair to fully consider this. But eliminating all deaths from small-pox in the Dominion, we find that the mortality from all other causes was 26 per 1,000, and the mortality from all the other zymotic disease was at the rate of 6·6 per 1,000, of population per annum. This is an unusually high rate of mortality both as to the totals and that from zymotics, and any one at all interested in the well-being and progress of Canada would naturally ask, why it is so? Then it must not be forgotten that the returns are not yet regarded as absolutely complete. The system is yet in its infancy. Any errors are those of omission. Were the returns complete they would show most likely a still greater mortality.

In England weekly reports (instead of monthly, as in Canada) are issued by the Government Health Department, which give both the births and deaths in each of the 28 largest cities or "towns." Let us contrast the showing of these reports with those in Canada.

During the year 1885, 182,339 deaths were registered in the twenty-eight towns there, which was equal to an annual rate of 20·5 per 1,000 of the estimated population. This, however, was considerably lower than in any year on record for which similar statistics are available. The marked improvement, therefore, in the health of the country generally, and especially of the urban population, which had been going on since the beginning of the present decade, was fully maintained during last year. In the ten years 1871-80 it may be further observed, the death-rate in the large towns dealt with by the Registrar-General in his weekly returns averaged 24·0 per 1,000. During the past five years of the current decade, 1881-85, the rate of mortality in these towns has not exceeded 21·5 per 1,000. This implies that upwards of 110,000 persons have survived, during the last five years, in these towns, who would have died had the death rate of 1871-80 since prevailed. It may also be stated that in England and Wales

during the same period of five years the saving of life, as the result of the reduction of the general death-rate of the country, is estimated at about 388,000. The rate of mortality in London during 1885 did not exceed 19·7 per 1,000, and was the lowest on record. In the twenty-seven provincial towns it averaged 21·3 per 1,000, and ranged from 17·1 in Brighton, and 17·2 in Hull, to 25·7 in Cardiff, 26·1 in Newcastle-upon-Tyne, 26·5 in Manchester, and 27·1 in Preston.

Of the 182,339 deaths registered in the twenty-eight towns, 24,079 were referred to zymotic diseases, equal to a rate of 2·7 per 1,000 of population. This zymotic death-rate was lower than that recorded in any of the ten preceding years, 1875-84, among which the rate ranged from 4·4 per 1,000 in 1878 to 2·9 in 1883. The lowest zymotic death-rates in the twenty-eight towns during last year were 1·2 in Halifax, and in Hull, and 1·4 in Brighton and in Huddersfield; while the highest were 4·2 in Preston, 4·4 in Newcastle-upon-Tyne, 5·0 in Cardiff, and 5·3 in Sunderland. During the year there were 6,148 deaths from measles, in the twenty-eight towns, more than one-fourth of the totals from zymotics.

In Canada there was in the different cities a wide variation in the total mortality, and a still more marked variation in the mortality from zymotic diseases. But Belleville, where there was apparently no epidemic, is the only place in Canada which shows a mortality from zymotics lower than the average of the cities in England—2·7 per 1,000. The highest mortality there, in Sunderland, chiefly from an epidemic of measles, was 5·3. Look at that of Montreal, of Sorel, of St Hyacinthe, of Charlottetown, of Winnipeg, of Quebec, of Ottawa, St. John, Kingston, and even of the Queen City Toronto.

Again, I say, one would naturally ask why is the mortality, and especially from zymotic diseases, so much greater in Canada than in England? The climate of this country is a healthy one, and comparatively free from malarious emanations. It is most probable that, for the most part, the people who came to Canada in years past were of healthy and vigorous ancestry, as usually those who emigrate are of the most vigorous and energetic. There is here but little poverty, and but little overcrowding. Where, then, are we to look for

the causes of the higher mortality in Canada ?

In England there has been for many years a well-organized Government Health Department, the Government Board, which exerts its salutary influence throughout the whole country. The local sanitary organizations in the cities under its influence are, and have long been, for the most part, active and efficient. The sewerage systems there and systems of scavenging are more perfect and better looked after, as likewise is the water supply. They have there that which is of great value, complete systems of notification and sequestration for preventing the spread of infectious diseases. In Canada all is different: here we have absolutely no public health organization at all, if we except our quarantine system and the system for the prevention of food adulteration. There are a good many local boards of health, especially in Ontario, and the two principal provinces now have each a Provincial Board, but there is no centre, no head, to promote uniformity and co-operation throughout the whole Dominion. The want of this is most felt in preventing the spread of epidemics, as manifested in the late epidemics of small-pox. The leaders of the medical profession in Canada have long maintained that we never can have an efficient health organization, or make satisfactory or profitable progress in sanitary work, without a Dominion or Central Board or Sub-department; one important function of which should be to receive reports of the prevalence, or otherwise, of diseases, and especially of epidemics, from all parts of the Dominion, and to act in accordance therewith. Such functions can only be exercised by one centre, not by many centres. Every other civilized country has a central or government health organization of some sort. Why is Canada behind, in this regard? She is spending large sums of money and, doubtless, properly so, in promoting immigration of foreigners—lives from other countries, to swell our numbers, while a few thousands of dollars more would pay the expenses of a Central or Departmental Bureau of health which would soon save as many lives amongst our own people from destruction by disease as many times as much spent in bringing them from abroad. This, if we could save, as doubtless we could, the same relative proportion that has evidently

been saved by sanitary proceedings in England; and with our present very high death-rate from zymotics, we should be able to save a yet greater proportion.

As many know, the late lamented Senator Dr. Brouse had long urged, from year to year, upon the Government of the day, the necessity for a Dominion Bureau of Health. Twelve years ago, during the parliamentary session of 1874, the then Premier, Hon. Mr. McKenzie, promised Dr. Brouse that he would endeavor the next session to have a Bill prepared for establishing such a Bureau. (SANITARY JOURNAL May, 1875) The next session came, and it was stated that difficulties in reconciling the powers of the General and Local Governments had prevented governmental action in this behalf. Later, a year before his death, Dr. Brouse again urged in the Senate, the formation of such a department upon the present Government. Sir Alexander Campbell promised that the question should receive the consideration of the Government. Two years ago, the most representative and influential medical meeting ever convened in Ottawa, or doubtless in Canada, considered and declared in favor of a plan for a "Dominion Health Bureau," and a committee urged it upon the consideration of the Premier, Sir John A. MacDonald. The proposed outlay per annum was put at only about ten thousand dollars. Surely no worthier, no more profitable, subject than this could engage the attention of the Government. Any difficulties in reconciling the Federal and Provincial authorities could easily be overcome, and best overcome, after the organization of a bureau on a plan similar to the one adopted two years ago, and by the advisory board thereof. It is to be hoped that this question will not be allowed to rest this Session, but will be taken up and pressed by some member of the House, or Senate, if not by the Government.

As I stated in the January number of this JOURNAL if we put the value of each life at that which political economists usually put it, namely, one thousand dollars, the late small-pox epidemic cost the Dominion over three and a quarter millions of dollars. This, without counting the cost of sickness, the loss of time, and other outlays. An active vigilant Federal Health Department might have prevented almost all of this loss.

Besides making investigations in Canada and foreign countries in relation to the prevalency of epidemics and using means for preventing the spread of the same into this country and from province to province or place to place, a Government Health Department could greatly assist the Commissioner of Inland Revenue in the prevention of food adulteration, which is slowly but surely sapping at the life of the people. Consumption among cattle is believed to be more common than is generally supposed. In the ninth annual report of the Agricultural College and Experimental Farm, Guelph, Ontario, it is stated that, "The extent to which this disease exists amongst the better breed of cattle in this country is alarming, for many reasons; not the least one of which is the danger to which the public are exposed from the consumption of meat from such animals." A health department could do much in preventing the spread of this disease, as well as other diseases of animals, as well amongst the animals them-

selves as from the diseased animals to man. It is well known that many diseases of animals may be, and doubtless often are, communicated to man. A system of meat and also of milk inspection would be very serviceable in saving life, often sacrificed in this way. Finally, the largest proportion of preventible sickness and deaths arises through the ignorance of the people in relation to public and other health laws. Vastly more good has been done in Great Britain since more direct means have been employed to educate the public in health matters. It would be especially within the province of a Federal Health Department to educate the public in this way. This JOURNAL has done a great deal in the way of educating the public in hygiene during the twelve years of its struggles, and hopes to do more, but is there a reader of this who will not readily concede that this should be the work of the Federal Government?

THE EDITOR.

## SCHOOL MACHINE WORRY, WHITHER DOES IT TEND?

DR. WRIGHT, in a paper in the last report of the Tennessee State Board of Health, sets forth with vigor some of the evils connected with the school system of this State. As his State is a fair representative of the average State, we have selected this report as expressing some of the obvious evils connected with our school system.

1. Emulation in a variety of ways takes largely the place of the rod of forty years ago. The physiologist who looks at the matter will find that the change is not for the better, in so far as the health of the child is concerned. The whip does its work quickly and is over, the child going about its tasks or play. But the goad of emulation never ends. Its influence upon the older girls is especially powerful. By it all sanitary precautions are swept away. Vehement excitement, with alternate elevation and depression of spirits in rapid succession are incessantly harassing the brain and nerves. This does not end with the school hours, but often extends through the play hours, and not infrequently through sleep.

2. The grading of the pupil is also a perpetual source of worry. Will I pass

or shall I be set back in grade? Such is the question children are led to ask, rather than some intelligent query respecting the subjects of study. It is this grading stimulus that is the motor power of both the average teacher and scholar. The hope to get into the next grade and the fear that the pupil may fail keeps the pupil in a state of worry.

A boy finds himself literally part of a great machine. If he can work as does the machine he is all right, but if he cannot he is crushed. Failure to keep up with the machine implies disgrace, loss of self-respect and confidence, grieved or angry parents, the jeers of school-fellows, etc. Often sickness compels him to desist so that days and weeks are finally lost, and so the grade is lost. Besides he often feels that his rights have been outraged, that he is a better scholar than one who has walked by him.

There are in general two grades of minds—one is quickly perceptive and the other is the reflective. The latter is the one who is most likely to suffer by the school machine. In it is no provision for the reflective mind. Of course if the physical frame be one of iron the boy may

survive and become a great mind. But the masses are not so. The results, as given by the author, and as they may be seen in any large town are: "In after life, helpless hysterical women; feeble irritable men, and, in extreme cases, epilepsy idiocy, and insanity."

The teachers also suffer from this machine. The writer says that a truly healthy woman teacher is rarely found in the public schools of Tennessee, and almost all teachers are women. An ex-superintendent of the State is a palsied man, also an existing superintendent of the largest city school.

Other great evils of this school machine are obvious to every thoughtful physician.

The query constantly presents itself, what can be done to avert these evils?

1. It may be settled that proportionately more money cannot be obtained for educational purposes.

2. This being admitted, it is clear that the present assessments must be made to go farther. This cannot be done by lower-

ing the wages of teachers, as they are already at starvation rates.

3. It will diminish the number of students for each teacher to forbid children entering the public schools before they are eight years old.

4. It will diminish the labor of teachers to reduce the school-hours of all children under twelve years of age one-half.

5. It will increase the funds for hiring teachers to abolish all high schools.

In these ways more funds are saved to hire more teachers for the students between the ages of eight and time of entering the high school. With this increased number of teachers and diminished number of scholars to each pupil, it will be possible to make the process of teaching less an inexorable machine, and more an artistic work by which each pupil will have more of such a specialized training as his nature calls for. In these ways the machine worry of the public schools might be measurably diminished to the point of greatest benefit to all interested parties.—*American Lancet.*

## INTERESTING COMPARATIVE VITAL STATISTICS.

DR. ALICE VICKERY has recently read a paper, entitled "Life in the East and West End," before the London Dialectical Society. She pointed out that during the past three or four centuries very great advance had been made in lowering the death-rate in various European States, but in England and Wales it had remained identically the same during the three decades beginning in 1841 and ending in 1870. London also had a similar tale to tell, for, with all the advantages of main drainage, the death-rate was 22.2 per 1,000 in 1850, 22.3 in 1860, and about 23 per 1,000 in 1870; but between 1871 and 1880 the death-rate had fallen to 21.3. Statistics which had recently been published for the first time, at the suggestion of Mr. Ernest Hart, clearly brought out the fact that the grand cause of the slow improvement in our mortality returns resided in the mass of indigence which existed in our so-called slums. M. Villermé, a distinguished Parisian physician, found that in France the death-rate of persons between the ages of 40 and 45, when in easy circumstances, was only 8.3 per 1,000 per annum, while

the poorer classes of similar ages died at the rate of 13.7. That was, two and a quarter times as many of the poor as of the rich died in France at these ages of a given number living. He also found that in the Twelfth Arrondissement, which was one of the poorest in Paris, 1 inhabitant in 15 died between the years 1817 and 1836, while only 1 death in 65 took place annually in the Second Arrondissement, or wealthiest quarter of Paris. The same gentleman found, forty years ago, that the probable life of an infant of a weaver in Mulhouse was as low as one and a half year, while that of an infant of the manufacturing classes was 26 years. Mr. Joseph Garnier also mentioned that in 1857 the mean life in certain quarters in Manchester was 17 years, whilst in other quarters of the same city it was 42 years. Mr. Edwin Chadwick, in a pamphlet published in 1877, mentioned that in part of a sub-district in London, comprising houses in good condition, the death-rate did not exceed 11.3 per 1,000 inhabitants living, whilst there were adjacent dwellings within the same sub-district where the death-rate rose to 38 in

1,000 from year to year, and in particular localities the rate was upwards of 50 per 1,000. The Sanitary Commission of 1843 established the fact that the mean age at death in Bethnal Green was, among the gentry, 44; among the tradesmen, 23; and among the wage-earners, 22; or, leaving aside deaths under 21, the mean age among the gentry was 61; tradesmen, 50; and among wage-earners, 49. Since that year these statistics had not been repeated; but Mr. Charles Ansell, jun., in 1874, had shown that only 80 per 1,000 deaths occurred among the children of the richer classes of England in the first year of life. Comparing the death-rate with the corresponding rate in Liverpool a few years ago, namely, 188 per 1,000, one could readily understand that the infantile death-rate in Bethnal Green in 1844 was 250 per 1,000, and that it was still in St. George's-in-the-East, this very year, 245 per 1,000, or three times as great as the mortality among the children of the rich. In some parts of London the death-rate of the infants of the indigent classes rose to 330 per 1,000, but in Berlin and some other cities of Germany it was 500 per 1,000. Mr. Ansell's figures showed further that between the ages of one and five years there were 46.84 deaths per 1,000 among the children of the richer classes in this country, as against 113.69 per 1,000 among the general population of the country. The mean age at death among the richer classes in England and Wales appeared to be at present extremely high, namely, 55 years. Among the general population it was 41 last year. Among the artisan classes of Lambeth two

or three years ago it was only 29½ years, which gave 25 years more of life to the richer classes than to the poorer. She did not believe that the unhealthiness of particular trades had so much to do with the death-rate as was supposed, and she cited the opinion of Dr. Thouvenin in the same direction. Comparing various districts of London in the second quarter of the present year, she showed that the wealthy parish of St. George's, Hanover Square, with 88,000 inhabitants, had a death-rate of only 17 per 1,000 per annum, and a birth-rate of only 18 per 1,000, while St. George's-in-the-East, with 40,000 inhabitants, had a death-rate of 35½ per 1,000 and a similar birth-rate. This was better understood when we learned that the death-rate of children in the former parish in the first year of life was 118 per 1,000, and the latter parish 245 per 1,000. Again, comparing comfortable Hampstead with its 50,000 well-fed inhabitants with poor Bethnal Green with its 127,000 inhabitants, the death-rate in the former was 12½ per 1,000, against 25 per 1,000 in the latter. The birth-rate of Hampstead was 22, while that of Bethnal Green was 39. Of 1,000 children born in Hampstead, only 95 died in infancy, as against 151 in Bethnal Green. Again, comparing St. James's, Westminster, with 28,000 inhabitants, with Whitechapel, with 69,000 inhabitants, the death-rate was 18½ as against 22½, and the birth-rate was 20 as against 34; but the infantile death-rate was 105 in St. James's, as against 206 in Whitechapel. — *Sanitary Record, London, E.*

## LEAKAGE OF THE GASES OF COMBUSTION FROM STOVES.

**I**NDEPENDENT of the injurious effects at all times of streams of superheated air from the surface of a stove—if those streams of hot air should come within the breathing compass of the inmates—which they will do on the upper floor, though not always on the floor on which the stove is placed—independently of this grave question in Sanitation which it is to be hoped is beginning to be a little better understood by householders, there is the question of *Leakage of the gases of combustion*. This is also a very serious ques-

tion, for a good many lives have been sacrificed to such gas escapes from anthracite stoves, and how many injured in health and constitution who shall say?

Gas escapes from stove pipes, are generally the result of:

(1). The complexity of the pipe system of the dwelling, for which our Architects are largely responsible, through omitting to provide a sufficient number of effective chimney flues.

(2). The defective way in which the fitting is often performed, leaving several

loose joints in a length of pipe. Then, when a window is opened for breathing air from without—the smoke and invisible vapours, as poisonous as they are invisible, will often make a short-cut from the pipe to the window, and so give the inmates an admixture of sulphuretted and carburetted hydrogen, and carbonic acid gas to breathe. Of the three, the first is perhaps the most deadly, but a sufficiency of either will destroy life. These poisonous gases may be detected by the smell, except the carbonic acid gas, which has neither taste nor smell, and so does its deadly work unfelt. But I have a strong notion that some of the other gases emitted from the anthracite coal, begin their mischief, upon the human system, some time before they are made known to the olfactory nerves. This point, as a practical one, is also interesting.

The best treatment for such ill-fitted pipes as have been described, is to fill

the openings with putty, very carefully, and after this is dry, to pass a brush over the surface of the joints with paint of white lead with a little black for coloring. The leakage once stopped at the pipes, we have only to see that the draft of the stove, without being too fierce, is always sufficient to hinder all leakage at the stove door.

We must not be too proud to entertain these humble questions of domestic economy, reflecting, as we should do, that life, health and comfort are greatly dependent upon their meeting with a satisfactory solution at the hands of individual house-keeper, some day perhaps he will have an expert in practical science to guide his efforts, at present he is largely left to the operation of his unaided mother-wit.

SANITAS.

QUEBEC.

#### DRAINAGE AND DRY SOIL IN RELATION TO HEALTH.

ALMOST every body knows that a dry soil is essential for the growth of good farm crops, and that the farmer considers that the increased yield to the field after drainage so much greater, as compared with what it was before drainage, that he often borrows large sums of money which he uses in under-draining his fields—*i. e.*, putting abundance of tile drains deep down in the soil for the purpose of drawing off and carrying away the superfluous water after a rain-storm, in order that the soil will dry quickly. There seems to be no doubt whatever that in all cases in which the drainage of land is found profitable in the increase and reliability of crops, it is, and probably in the same degree, advantageous to domestic animals and mankind, and indeed to all animal life, developing and growing upon it. It is stated that in Great Britain all the best breeds of horses, horned cattle, sheep and fowls come from the best drained districts, and that there the inhabitants live from 20 to 25 per cent. longer than, and suffer less than half the amount of sickness that, those do who live in badly-drained districts. Dr. Farr, the well known statistician and Registrar-General of Great Britain, says that from these districts “industry and the army receive their best recruits.”

A wet, foul soil from defective drainage is said to give rise to nine-tenths of all the “fevers” that afflict mankind. Numerous instances are upon record in which diseases of this kind, especially intermittent and remittent fevers, have been very prevalent in certain districts, but almost entirely disappeared after a complete system of drainage had been carried out in them.

Consumption is more prevalent on a damp or badly-drained soil. Dr. Bowditch, a distinguished physician of Boston, stated before the Massachusetts Medical Society, some years ago, that medical opinion in that State, as deduced from the written statements of resident physicians in 183 towns, tended strongly to prove “the existence of a law in the development of consumption in Massachusetts which had for its central idea that dampness of soil of any township or locality is intimately connected, and probably as cause and effect, with the prevalence of consumption in that township or locality.” Dr. Buchanan, a well-known physician in England, who had given much attention to this subject, stated some years ago, in a report to the Privy Council of Great Britain, on the distribution of phthisis (consumption) as affected by dampness of soil, “that wetness of soil is a cause of

phthisis to the population living upon it." He found that whenever the drying of the soil had been effected by proper drainage the mortality from consumption had decreased from 50 per cent. downwards.

Besides consumption and malarial fevers, many other diseases, and more especially bronchial affections and rheumatism, are much more prevalent in damp than in dry districts.

The cause of this, or the manner in which dampness of soil operates against the healthy development of animal and vegetable life, is not yet satisfactorily understood; but the fact that it does so operate is very plain.

Districts of country in a natural state present surfaces diversified by hills and valleys, the acclivities and declivities of which form water-sheds. At the lowest parts of these are water courses, along which the excess of water flows toward the sea. While a large proportion of the rain-fall of a country flows off in this way, often washing the surface of the ground of foul decomposing organic matter, and a small proportion is evaporated where it falls, and a certain amount is utilized in the process of vegetable growth, a considerable proportion percolates through the soil, especially in flat districts, until it meets with an impervious or almost impervious substratum; here it accumulates, and soon saturates the superincumbent soil, giving rise in some localities to swamps or marshes. The saturated soil is chilled by the evaporation of the mois-

ture which follows, and the air above is not only rendered too humid by the moisture but that near the surface, or the lowest stratum, is cooled rapidly, and so the functions of both animal and vegetable life are interfered with and disturbed. During warm weather the decomposition of dead organic matter is hastened by this condition of the soil and atmosphere, and the development of the micro-organisms which are believed to give rise to diseases of various kinds is greatly increased; in short, malaria is generated. It is well known that a damp chilly atmosphere is favorable to the development and progress of consumption.

When the soil is provided with abundance of subterranean passages by means of tiles,—provided, that is, with a system of drainage, the superabundant moisture in it soon drains out and flows away, and the soil retains only its natural or necessary quantity of moisture; not enough, it may be, for the development of the lowest forms of life, such as mildew, moulds and bacteria of various sorts, which impede the development of both vegetable and animal life.

Any head of a family about to build a home for himself and family should first of all see that the soil under and as far as practicable around it is thoroughly under-drained, so that it will not retain superfluous moisture; especially is this necessary if the soil is heavy and retentive of moisture.

THE EDITOR.

---

## DRAINAGE AND SEWERAGE.

**I**N the February number of *MAN* brief reference was made to cleanliness of soil. Of all the preventible causes of disease, a foul, damp soil is one of the most fruitful. Hence the importance of drainage and sewerage.

The terms drainage and sewerage, although differing very much in their signification, are not unfrequently used synonymously, and this, too, by well informed persons. And, moreover, not only is this the case, but many seem not to recognize the difference between the two processes. I have known at least one member of a city council and of a health committee seemingly quite ignorant of the fact that there is any difference.

Most people know, however, that the word drainage properly signifies the act or process of draining the soil, of drawing off or drying up the superfluous moisture in it; and that sewerage signifies the removal of the filth, along with the waste waters of dwellings, factories, etc., or that which had been used for domestic and manufacturing purposes, in a town or city, and it may be, too, the collected superfluous moisture of the adjacent soil, by means of a system of subterranean passages, with an outflow, or in which fluids flow away freely to an outlet.

Drains, then, for absorbing and carrying off the superfluous water of saturated soils, as after a rain-storm, should be pervious

or porous along their course, in order that the water from the soil may penetrate their walls and get into them. The ordinary porous tiles in common use are very suitable for this purpose.

Sewers must be of quite different material, and should be absolutely impervious to moisture—water tight. This should be the case also with what is commonly called the house-drain, leading from the soil pipe to the main, or street-sewer. Frequently this drain is made of porous material. If drains for conveying sewage or foul liquids of any sort are not impervious they allow the liquids to escape and saturate the adjacent soil, which, especially if not well under-drained, soon becomes foul, even like a mass of filth, in extent, in proportion to the amount of leakage of the drain or sewer. The soil-pipe in a house is usually made of iron and the drain leading from the soil-pipe to the street main should be equally impervious, although frequently it is not so.

The drains for drying the soil of its superfluous moisture may be connected with and poured into the house drain at any point. But as these drains should be at least two feet below the floor of the cellar, in most soils, and as the house drain need not dip so low until it nears the street, the connection of the soil drain

may be best made at some distance from the house. As the sewer gases should not be allowed to permeate the soil, there should be a water-trap between the soil drain and the house drain, at the junction of the two, unless the house drain is securely trapped between the junction and the sewer, which is not usual. The tiles for the drainage of the soil, it may be observed, should be in abundance. In heavy soils, retentive of moisture, they should be only two or three feet apart, in rows, converging either obliquely or at right angles, to the outlet or junction with the house drain.

The house drain should have a free outflow, and hence a good fall or dip throughout its whole length, from the soil-pipe to the sewer. At the soil-pipe or housewall, it need be only low enough for its protection from frost. Its declivity then should be such as to secure a free outflow, in order that it may be the more easily kept clean.

The main or street sewers should therefore be of good depth, instead of being, as they are in some cities, only seven or eight feet below the surface. It is impossible to have a good sewerage system if the drains are not much deeper than this in their course opposite dwellings.

THE EDITOR.

#### SANITARY CONVENTION NOTES—VENTILATION, HEALTH BOARDS, &c.

THE Sanitary Convention at Howell, Michigan, under the auspices of the State Board of Health, on March 3 and 4 was, it appears, a decided success. From a special report to this JOURNAL we learn that there was a large attendance of citizens throughout all the meetings. Rev. M. H. Pettit, President of the Convention, in his address made a strong plea for the progress of sanitary reform, because of its influence in improving the moral condition of the people and the general uplifting of the human race. The first paper, "Ventilation," was read by Wm. P. Appleyard, architect, Lansing, Michigan. He thought that one of the greatest difficulties with which sanitarians had to contend was the indifference of most people, and that this difficulty was greater in regard to ventilation than to any other subject. Impure air is an intangible

enemy with which we have lived so long that we do not realize his presence, and is, consequently, an enemy of the most dangerous kind.

The powers and duties of local Boards of Health was the subject of a somewhat lengthy discussion. Mr. R. H. Person who led in it said their powers were absolute, and frequently from their acts there was no appeal. The reason for such law was the common necessity for immediate action to guard the public life or health; but while this was the law, and theoretically their action, practically their duties were frequently ignored, for the reason that public sentiment did not sufficiently sustain them. He thought there was great and general need for a more enlightened public sentiment, which would demand of health officers prompt and vigorous action for the protection of the public health,



He thought such conventions as this would do much to awaken people from their apathy, and would make it possible to have the action of local boards of health conform more nearly to the theoretical requirements of the law.

Many clergymen in Michigan appear to take a deep interest in public health. The Rev. Dr. Jacokes, of Pontiac, spoke lengthily of the wide-spread and beneficent influence of the State Board of Health. He paid a high tribute, too, to the unselfish work by physicians generally in the cause of public health, and urged that the people should see to it that, while physicians are thus working for the public good and decreasing their practice, the people should properly compensate them, and suggested that physicians would be placed in better relations to the people if

they were employed by the year to advise people how to keep well.

Hon. John Avery, M.D., President of the Michigan State Board of Health, read a paper on the "Prevention of Communicable Diseases," which, in their order of importance as causes of death in Michigan are as follows:—diphtheria, typhoid fever, scarlet fever, whooping cough, measles, small-pox. He showed the great importance of efforts for their prevention on account of the lowest consideration, the money loss, which, he said, had been placed at a thousand dollars for each person who dies in early adult life, and each case of fatal sickness represents many more cases which involve great expense. The annual loss in Michigan amounts to millions of dollars.

#### MISCELLANEOUS ITEMS.

**MEDICAL HEALTH OFFICERS.**—In every local district the Medical Officer of Health should have the true place that belongs to him in all that relates to official action bearing upon health. He ought not merely to be the adviser of his Board, he ought, by virtue of his office, to be the chief and chairman of the Sanitary Department. He ought to be elected for a definite period; he ought to be upheld in every useful health reform he brings forward; he ought to be encouraged to inaugurate reforms; he ought to be placed in such an independent position that he can inaugurate any reform and correct any evil without being subjected to the risk and personal anxiety of dismissal for good service. He ought, in a word, to be able to put down disease, of which he is the medical judge, as freely, as unsparingly, as fearlessly, as the legal judge or magistrate puts down crime. Until this is the rule Medical Officers of Health will remain as mere clerks and chroniclers of disease; suggesters of placebos in sanitation; scapegoats of sanitary blunderers; gentlemen of education engaged by money for perfunctory service.—DR. B. W. RICHARDSON.

**TOBACCO, A COUNTER-BLAST.**—At a meeting of the Virginia State Medical Society (the State supposed to be the birth-place of tobacco) Dr. W. W. Par-

ker, chairman of a committee upon the use of tobacco, reported the following conclusions: That the use of tobacco is more revolting and obnoxious to the natural physical man than is the use of alcohol. That to the uninitiated it is a more deadly poison. That the *toleration* of it by the system is no evidence that the drug has ceased its bad effects upon the organism. That the moderate use of tobacco causes more dyspepsia than the moderate use of alcohol. That no young man should begin its use without first consulting the most intelligent physician in his neighborhood as to its probable effects upon his nervous and digestive system. That the testimony of smokers and chewers *themselves* is against the use of tobacco, that it is *uniformly damaging*; far more so than is the testimony of drinkers against the use of alcohol.

**THE CHILD'S CRY DEFINED.**—The child makes known its wants and pains by crying, as a rule, and we can assert that a child will not cry unless it is in some way uncomfortable, unless it has been spoiled by too much care, constant attention and rocking, in which case it may cry to assert its desire for a continuation of the same treatment. There is much in the cry of a child to inform the experienced nurse what the trouble is. The sharp continuous cry indicates colic. The sharp scream

which lasts but an instant indicates brain disease of an inflammatory character; the mournful cry indicates soreness of some part of the child; the loud, agonizing cry indicates pain, possibly from the sticking of a pin into its flesh; the ordinary cry shows hunger.

**DIGESTIBILITY OF CHEESE.**—Of eighteen varieties of cheese experimented with, Cheddar was digested in the shortest time (four hours), while unripe skim Swiss cheese required ten hours for solution. There is no difference in the digestibility of all sorts of hard cheese, or all soft cheese, but all fat cheeses are dissolved the most rapidly, because, being open by reason of the fat, they are the more readily attacked by the solvent.

**WATER AND DISEASE GERMS.**—A German writer says: The refuse from houses, dissolved or suspended in water, forms an excellent nutritive material for the lowest organisms which are so harmful to us. It is clearly shown that the purest water after being used to clean the floor of a room contains, in a very short space of time, abundant germs of disease, so much so that a drop of it injected under the skin of a rabbit or guinea pig is followed by a fatal result. With this dangerous slop-water it is the custom to charge the earth about our dwellings. It is in this way that typhoid fever and cholera germs fructify.

**THE MEDICINE OF THE FUTURE.**—Dr. Richardson says, the practical value of that great medicine of the future—preventive medicine,—will, I think, be much enhanced by a general recognition of an active eliminative law in nature which I have formulated as the Extinction of the Unit. This ordinance is the direct antithesis of Darwin's survival of the fittest, and one chief business of sanitary science is to counteract its influence by rendering individuals, families or nations, doomed in accordance with its conditions, to speedy death from inherited disease, more fitted to survive.

**THE PHYSICIAN OF THE FUTURE.**—In reference to this a Medical Exchange says: The world moves, and with the motion, change. Not the least among the changes is that in the science and art of medicine. Who would be willing to follow the same line of practice in every particular that he pursued ten years ago?

Were Dr. Rush to return and resume practise, after a century's vacation, who would consent to become his patients? The world has moved; and it is not to be supposed that it will now stand still after it has fallen into the habit of jogging on so steadily. Hence the question presents itself: What will the physician of the future be? If we read the signs of the times aright, the day is coming when the person of average intelligence will perceive that if he incurs a pecuniary obligation to the man who heals him or tries to when he is sick he incurs an equal if not a greater pecuniary obligation to that man who keeps him well or tries to, and with as much success as the one who heals him when sick. The preventer and the healer of the disease will probably be the same person; but, since the physician will have to render active professional service to the healthy, as well as to the ill, his clientele must be smaller, and so make room for more.

AN Anthropological Congress is shortly to be held at Rome, which will have a curious feature in a collection of seven hundred skulls of criminals, numbered and classified. To these will be added the photographs of 3,000, and the brains of more than 150 convicts; thousands of autographs, poems, sketches and special instruments, the work of criminals; an album containing a record of 700 observations, physical and moral, on 500 criminals and on 300 ordinary men. There will also be graphic maps of crime in Europe, with reference to meteorology, food, institutions, suicide, etc.; tables of the stature of the criminals in relation to the length of the arms, and of crime in towns compared to that in the country. M. Bertillon will exhibit the graphic curves of 23,000 recidivistes examined in twelve parts of the body, and the practical results obtained. Photographs of Russian political and other criminals, especially of those from Moscow, and wax masks of a large number of celebrated criminals will be also exhibited. All the notabilities in the science of criminal anthropology will take part in the Congress.

**PHILOSOPHY OF VACCINATION.**—The following is Professor Tyndall's explanation of the immunity afforded by one attack of an infectious or non-recurrent disease. Contagia are living things, which

demand certain elements of life, just as inexorably as trees or wheat or barley; and it is not difficult to see that a crop of a given parasite may so far use up a constituent existing in small quantities in the body, but essential in the growth of the parasite, as to render the body unfit for the production of a second crop. The soil is exhausted; and until the lost constituent is restored, the body is protected from any further attack from the same disorder. Such an explanation of non-recurrent diseases naturally presents itself to a thorough believer in the germ theory; and such was the solution which in reply to a question I ventured to offer nearly fifteen years ago to an eminent physician. To exhaust a soil, however, a parasite less vigorous and destructive than the really and virulent one may suffice; and if, after having by means of a feebler organism, exhausted the soil without fatal result, the most highly virulent parasite be introduced into the system, it will prove powerless. This, in the language of the germ theory, is the whole secret of vaccination.

**RESISTING** Health Officers when on duty is not a common event. New Jersey has had its first case of this kind which recently came to trial before a jury. It occurred at a small hotel in Asbury Park. The last annual report for 1885 of the State Board of Health of New Jersey gives the following account of it. The owner of the hotel caused a well to be placed a few feet from a closet vault. The Board of Health protested against this proximity of vault and well, and caused an examination of the well-water to be made by a State Analyst. The water was found to be polluted. The tenant was then requested to discontinue the use of the well-water, and to close the well by removing the pump. This demand of the Board not being complied with, a Health Inspector was sent to close the well. An ex-policeman was employed by the tenant to resist the health officer and prevent the closing of the well. The resistance was in this one standing between the officer and the pump, and thereby making it impossible for the Inspector to perform his duty. The man was arrested and a warrant procured for his detention from a Justice of the Peace. He was indicted

by the Grand Jury, and was convicted of assault in his trial before the Court of Quarter Sessions.

**THE MANAGEMENT OF MINERAL OIL LAMPS.**—In view of the numerous fatal and other accidents caused by petroleum lamps, the London Metropolitan Board of Works have made public the following suggestions as to the construction and management of such lamps, which are founded on recommendations made by Sir Frederick Abel, C.B., D.C.L., F.R.S., and Mr. Boverton Redwood, F.I.C., F.C.S., chemist of the Petroleum Association, after investigating the causes of lamp accidents. 1. That portion of the wick which is in the oil reservoir should be enclosed in a tube of thin sheet metal, open at the bottom; or in a cylinder of fine wire gauze, such as is used in miners' safety lamps (twenty-eight meshes to one inch). 2. The oil reservoir should be of metal, rather than of china or glass. 3. The oil reservoir should have no feeding-place nor opening other than the opening into which the upper part of the lamp is screwed. 4. Every lamp should have a proper extinguishing apparatus. 5. Every lamp should have a broad and heavy base. 6. Wicks should be soft, and not tightly plaited. 7. Wicks should be dried at the fire before being put into lamps. 8. Wicks should be only just long enough to reach the bottom of the oil reservoir. 9. Wicks should be so wide that they can be squeezed into it. 10. Wicks should be soaked with oil before being lighted. 11. The reservoir should be quite filled with oil every time before using the lamp. 12. The lamp should be kept thoroughly clean; all oil should be carefully wiped off, and all charred wick and dirt removed before lighting. 13. When the lamp is lighted, the wick should be first turned down, and then slowly raised. 14. Lamps which have no extinguishing apparatus should be put out as follows:—The wick should be turned down until there is only a small flickering flame, and a sharp puff of breath should be sent across the top of the chimney, but not down it. 15. Cans or bottles used for oil should be free from water and dirt and should be kept thoroughly closed. These suggestions apply to ordinary mineral-oil lamps such as are generally used, and not to benzoline or spirit lamps.

## EDITOR'S SPECIAL CORNER.

THE protection of young girls is a subject which, as our readers know, has recently engaged the mind of legislators and others in Great Britain. It may be that such legislation is more needed there than it is in this country. The fact that able men there have taken up the subject indicates that there is reason for demanding some sort of better protection than now exists; and we have reason to fear that here in cities in this country the most heinous crimes have been secretly perpetrated against very young girls. Seduction in the case of older girls is common enough to demand, now in this advanced age, in this enlightened period, this civilization of which men boast, some new attempt, some further effort, of a preventive character. Physical as well as moral and spiritual development seem to require and demand it. On this there is perhaps a general oneness of opinion. As relates to the form which such effort had better assume, whether of a persuasive or coercive character, there are apparently quite opposed opinions. Under the existing state of society, society punishes the erring (sometimes hardly erring, but fallen) girl or young woman, while the erring man escapes. It is surely high time that this manifestly unjust way of dealing with such offences were remedied.

In nine cases out of ten, if not in ninety-nine in a hundred, we believe that in cases of seduction the man is the principal offender—the designer and misleader. A physician who has been more than a quarter of a century engaged in the practice of medicine, who has been privately consulted by many erring girls when in trouble and with hope of relief, and has had under his care as patients hundreds of other young girls afflicted with various physical ills, after deep consideration of this question believes this to be the case. Of the many erring ones, judging from their ancestry and family and their habits, so far as could be ascertained (and he always enquired with deep interest into all these points), from their temperament and their conduct during consultation, he is persuaded that, almost without exception, every one of them had sinned far less than they had been sinned against, and but for the tempting advances of loose, designing men, for

the most part indifferent to womanly virtue, and deserving of criminal punishment, nearly every one of them, if not quite all, would then, and probably always, have been virtuous girls or women. Of the hundreds of young girls, of all classes and temperaments, who had consulted him in the ordinary way for almost all sorts of ills, not one in all his experience had manifested any immodest or loose conduct whatever, but, though often placed in trying circumstances, they invariably acted with modesty and discretion. This may not be very strong evidence in favor of legislation against the man in cases of seduction; but we should be glad to have the experience bearing upon it of other medical practitioners.

WITH the Bill which Mr. Charlton had introduced during several successive sessions of the Canadian Parliament for making seduction a criminal offence we are not familiar, but we regard it as “a move in the right direction.” While the enactment of such a Bill might, in exceptional cases, open a way for a designing woman to place an innocent man in a very trying position, we believe that a law with the object indicated might provide such safeguards as would make it practically impossible for an innocent man to be convicted of such a crime. Because murder is a criminal offence and the perpetrators of murder are subject to capital punishment, innocent men have been convicted of murder and that designedly, and hanged. Who ever has thought of having the law changed in this regard? Innocent men, and women too have been punished criminally for other serious crimes. Because it appears a man had narrowly escaped punishment of some sort, presumably in the way of damages, through what evidently were the machinations of a designing woman, a Montreal judge recently took occasion to speak strongly against such legislation as proposed by Mr. Charlton. Would his lordship remove from the list of criminal offences murder and larceny? We trust there will be soon some legislation for the better protection of young girls and young women.

BENJAMIN DISRAELI, when not yet Lord Beaconsfield, in his last appeal to the country, in 1874, if we are not mistaken in the

time, at a public speech at Manchester, said: "After all, the first consideration of a Minister of the Crown should be the health of the people"; "the health of the people of any country should have the first and highest claims on the Government" of that country; and "I think public attention should be concentrated on sanitary legislation." Is there one of the ministers in this country, in this city, or is there any other man of intelligence, who would not regard these sayings as wise sayings? They were words of one of the cleverest, ablest and most successful of men, words of the head of the British Government, stated publicly, in a large manufacturing city: that public attention should be *concentrated* on Sanitary Legislation; that the *first* consideration of a minister should be the *health* of the people. Not only were they wise sayings, but as laying down a part of the Government policy at that time, they proved to be sayings of "good policy." Mr. Disraeli "carried the election" at that time, we believe, by a large majority; and he did not neglect to promote, soon after it, the well-being of the people by great improvement in the public health laws of Great Britain.

In Canada how is it with the public health interests? We have not yet a beginning, no foundation, not even a corner-stone. Now that the greatest railway enterprise in the world is completed here, what better, what more profitable, subject could the Government turn at least a part of their attention to than to that of the health of the people. Attention thereto is needed, as shown by statistics elsewhere in this Jour-

NAL. No intelligent man will doubt that an efficient health organization, associated with, say, the Department of Agriculture, would be the means of saving many human lives from year to year, or of preventing many premature deaths and much sickness, especially from epidemic diseases. The difficulty of reconciling the power of the Federal and Provincial Governments has ever been given by the Governments of the day as a reason for not legislating for the promotion of the public health. Every body knows very well that the difficulty could be overcome if the Government were to set a bout it. Besides there is much which is outside of the jurisdiction of the provinces which a Federal Health Department could profitably attend to; and in preventing the spread of epidemics from one province to another the provinces can do but little, and but little is done, and epidemics are often fearfully destructive of life. If wise counsel were to prevail over political feeling in the provinces, we believe; that every province would be glad to hand over their public health interests to the Federal authorities—the Eastern Provinces essentially so. The more powerful and extensive the jurisdiction of a health authority the better, unquestionably, and it would best promote the public health everywhere if it were possible to have, in relation to it, but one central, universal authority for the whole world. We believe that at the next general election in the Dominion that party would be relatively best supported which would have the courage to make (as did Disraeli) the public health question a "plank in their platform."

A NOTED physician of New York, an exchange says, has caused his house to be re-furnished, and has, so far as possible, substituted polished surfaces, both in floors and furnished fabrics, instead of the dust and germ-secreting carpets and upholstery, which he has discarded. Any appliance, too which prevents the free ingress of sun and air into every part of the house during at least a portion of the day, he most rigorously condemns as a potent enemy to health.

THE Communion Cup is mentioned by a writer in the London *Lancet* as a means of communicating infection. He asks, Is not the slight turn of the cup, which communicants may be observed to make, not indicative of a suspicion of danger in the public mind? Might not a general wiping of the rim of the cup by means of a clean, white napkin be introduced? The editor replies that such a practice has been introduced in some communities.

## OBSERVATIONS AND ANNOTATIONS.

PNEUMONIA (inflammation of the lungs) is more prevalent in this country at this season of the year (March and April) than at any other. It is a disease which causes a great many deaths, often of those who are most vigorous and in the prime of life. Dr. Nagle, of the Board of Health of New York city, has given much attention to this disease, and has prepared valuable statistical tables concerning it. The prevalence of pneumonia, he says, "may be owing to a lack of ozone in the air, or it may be because there is too much ozone. Sudden changes of weather and high winds, particularly from the north and east, certainly have much to do with it. Smoking may be a predisposing cause, as tobacco is certainly an irritant. Anything which irritates the lungs should be avoided. If people would breathe through the nose instead of through the mouth, especially when in the open air or facing a cold wind, the lungs would be less irritated. One great cause of the fearful death-rate among children from this disease is undoubtedly the criminally foolish way in which they are dressed. Many mothers seem more anxious to make their children look pretty than to dress them comfortably. On a par with this is the folly of low-necked dresses among women as viewed from a health standpoint. Ladies so dressed will rush from a heated ballroom or theatre into the open air, and then wonder that they have colds or pneumonia. Wear reasonable underclothing, and don't remove your heavy flannels too early in the spring."

PROF. LOOMIS, in his valuable work on Practice of Medicine, says: "It is a well-known fact that pneumonia attacks the poor oftener than the rich, the private oftener than the officer, the sailor on shore oftener than on ship, the soldier oftener than the civilian at the same post. It is unknown in the polar regions and common on the Mediterranean, increasing in a direct ratio from the poles to the equator. Elevation above the sea predisposes to it; north and east winds favor its development; rainy seasons or damp and marshy districts do not seem to influence it. Periods of steady and extreme cold have little effect except upon the old, but sudden changes are very disastrous.

The first predisposing cause is age, the disease being most common in early childhood, from twenty to forty, and after sixty. The proportion of male to female victims is as three to one. Any general condition of the body which debilitates is a predisposing cause. The complications which render the disease so dangerous are those which diminish the nerve supply or weaken the muscular power of the heart. Bad sewerage and miasmatic influence are potent causes of the disease."

MANY physicians now believe pneumonia to be a specific, infectious disease, communicable from one person to another, and there are many cases on record which afford very strong evidence that this is the case. Dr. Leaming, special consulting physician in chest disease in St. Luke's Hospital (N.Y.), has published a pamphlet entitled "Endemic Pleuro-Pneumonia, as seen in New York, during the past ten or twelve years." In this Dr. Leaming holds to the belief that the pneumonia of the present day, or pleuro-pneumonia, as he terms it, is the same as the epidemic which caused so many deaths among the troops in Canada during the war of 1812-15.

In the *Wien. Med. Presse*, 7th Feb., 1886, are the conclusion of a series of articles by Prof. WINTERNITZ, against the numerous obesity cures which have of late attracted so much attention. These articles conclude as follows: Methodic excitation of sweat, influence of cold, appropriate and systematical work, increase the physiological fat-combustion so powerfully that these factors not only deserve more attention than has been hitherto bestowed upon them, but also render useless the strict and one-sided cures as employed at present.

AT the new state capitol building in Albany, N. Y., on March 11, the occupants were alarmed at a violent explosion of sewer gas in a large receiving basin in front of the building. Heavy stones were shattered and thrown into the air. The accident was the result of imperfect sewerage and ventilation of which the Board of Health had warned the Legislature. Says the *American Lancet*, "Pity the Legislature had not been sitting upon the basin."

The adulteration of foods is a practice so common that unless the public co-operate and aid the Government through the Commissioner in their efforts to suppress the evil it will be very difficult and a long process to suppress it. The law now in reference to the practice is very good, and if properly exercised and carried out cannot fail to mitigate the evil very materially in a little time; while persistent watchfulness will then keep it in check. In another part of this number is an interesting and suggestive article on "Dangers in Food and Drink." The dangers are probably greater in the United States than in Canada, but the only way to prevent them becoming as great here is by vigilance on the part of consumers. Self-interest should secure this.

Striptors vaccine, it is alleged, has been sold, croton-oil having been used instead of the genuine lymph to coat the quills. Many persons therefore who suppose themselves protected from small-pox have simply been "vaccinated" with an irritant. It seems hardly possible, says the *N. Y. Medical Journal*, that such a fraud could have been perpetrated, and the offenders not brought to justice.

No case of hydrophobia has ever been known to occur in New Zealand, and this is said to be due to the fact that no infected dog has ever been allowed to be imported into the colony. All dogs arriving at New Zealand ports are subject to a three weeks' quarantine.

It ought not to be so difficult a matter to banish hydrophobia, says the *N. Y. Medical Times*, if the dog who slobbers, hangs his jaws, barks unnaturally, or becomes snappish, is so quarantined that he can do no injury. Cauterization is useless, because it is too late, but sucking the wound *immediately and thoroughly* is the best means to be employed.

Progress in surgery is as marked as in any other science or art. A Dr. Duncan, of Edinburgh, Scotland, has made it a practice in several operations of amputation of the extremities to collect the blood from the portion of the limb removed, by expression, and inject the blood so collected into the chief vein of the stump before closing the wound. In cases where there had been very severe bleeding before the patient could be

attended to, this method proved very beneficial. The blood was mixed with a solution of phosphate of soda, to prevent coagulation, and kept at the temperature of the body until injected. Amputation of the thigh under the method of local anæsthesia with cocaine has, it is said, been successfully accomplished.

The foot-and-mouth disease has recently formed the subject of important investigations by Dr. Nosatti, an able Italian scientist and veterinarian. His researches have led him to the following conclusions: (1) That epizootic apthia is not a disease susceptible of developing itself spontaneously. (2) It is not an indigenous, but an exotic disease. (3) Its nature is eminently contagious. (4) Its virulent element is represented by microbes, discovered first by Rivolta. (5) The virus can be cultivated when placed in appropriate media, and by reducing its virulency by successive cultures it may become a safe and proper agent of inoculation.

In the Kalahari, where extremely poisonous snakes abound, the nude natives are often bitten by them, and although not knowing anything about *similia similibus* they cure themselves by inoculating with other virus. There is not a native nor a hunter that does not carry either the dried body of a deadly poisonous reptile, the sacs of the puff adder, yellow cobra, or capella. As soon as possible after being bitten they make slight incisions close to where the poison fangs entered, into which they sprinkle some of the dried and powdered virus. The first effect is to induce sleepiness, the swelling soon goes down, and in a day or two they are as well as ever.

The *Sanitarian* for February well sustains its high character for valuable papers on various sanitary subjects. There is one called "Random Notes for Promoting the Hygiene of the Dwelling;" another on "Yellow-Fever Prevention;" and a third on "Impure Air and Unhealthy Occupations as Predisposing to Consumption." In one on the causes of acquired immunity from infectious diseases by James Law, F.R.C.V.S., is the following: "This consideration serves to fortify the doctrine that the immunity from a contagious disease, acquired by a first attack, is due to a habit or acquired power of endurance or resistance, on the part of the living cells or nuclei of the animal body."

## CURRENT LITERATURE.

### TO THE TRUE POET.

Sweet as the sheen the dew-drops sip at dawn,  
Thy purity of song hath-laved my heart;  
The rhythm of its light hath inward shone  
To bid the shadows from my soul depart.  
As soars the lark above the fragrant mead,  
To bear the breath of wild-flowers to the skies,  
'Tis his to greet the sphere that purifies  
Earth's sweetness by its own; and scattering seed  
Of scented truth, upborne upon the wing  
Of song, 'tis thine to seek an upper light  
Beyond life's clouds; while we, up-gazing, sing  
A timid greeting to thy venturous flight,  
And long to bathe our being in the air,  
Where none but thee and such sweet singers dare.

J. M. HARPER.

Respectfully inscribed To Prof. Charles G. D. ROBERTS.

### BOOKS RECEIVED.

POISONS, THEIR EFFECTS AND DETECTION, A MANUAL FOR THE USE OF ANALYTICAL CHEMISTS AND EXPERTS, WITH AN INTRODUCTORY ESSAY ON THE GROWTH OF MODERN TOXICOLOGY, is the title of a new book by Alexander Winter Blyth, M.R.C.S., F.C.S., public analyst for the County of Devon, Eng., and Medical officer of health and public analyst for St. Marylebone, with tables and illustrations, in two volumes: New York, Wm. Wood & Co. These are two numbers of "Woods Library of standard medical authors," and, besides being very practical and useful works, they are highly interesting. They cover a great deal of ground, and are admirably arranged for ready reference. They complete an entirely re-written and greatly enlarged second edition of the author's "Practical Chemistry." Snake poisons and other toxic animal secretions have received notice, and much attention has been given to a subject which has been but little worked, namely, the cadaveric alkaloids. In two appendices are a *resume* of the latest methods for the identification of blood stains, and, for immediate reference in cases of emergency, an alphabetically arranged list of the more common poisons, with brief directions for treatment. As the author writes, "All medical men in practice are liable to be summoned hastily to cases of poisoning. In such emergencies not a moment is to be lost, for valua-

ble lives have ere this been sacrificed simply from the delay caused by searching for medicines and instruments, and visiting the patient unprovided with suitable remedies. Hence it is far the safest plan for every medical man to provide himself with an *antidote bag*." The bag should contain (1) Instruments; (2) Emetics; (3) Antidotes. The author informs us that it is significant that the root tox of the modern word toxicology can be traced back to a very ancient word meaning "bow" or "arrow," or, in its broadest sense, some "tool" used for slaying; hence it is no far-fetched supposition that the first poison knowledge was that of the septic poisons. Perchance the savage found that weapons soiled with the blood of former victims made wounds fatal; from this observation, the next step naturally would be that of experiment. Mr. Blyth's name is familiar as a practical, experienced and active sanitarian as well as a learned chemist. Messrs. Wood & Co. have issued but few more useful works than this one.

THE poisons known to the Asiatics were arsenic, aconite, opium, and various solanaceous plants, Mr. Blyth tells us, and then he gives us the following bearing upon the poisons of disease. There has been a myth floating through the ages that a poison exists which will slay a long time after its introduction. All modern authors have treated



the matter as an exaggerated legend, but for my own part, I see no reason why it should not in reality be founded on fact. There is little doubt that the Asiatic prisoners were well acquainted with the infectious qualities of certain fevers and malignant diseases. Now, these very malignant diseases answer precisely to the description of a poison which has no immediate effects. Plant small-pox in the body of a man, and for a whole fortnight he walks about, well and hearty. Clothe a person with a garment soaked in typhus, and the same thing occurs, for many days there will be no sign of failure. Again, the gipsies, speaking a tongue which is essentially a deformed *prakrit*, and therefore Indian in origin, have long possessed a knowledge of the properties of the curious "*mucor phycomyces*." This was considered an algae by Agron, but Mr. Berkeley refers it to the fungi. The gipsies are said to have administered the spores of this fungi in warm water. In this way they rapidly attach themselves to the mucous membrane of the throat; all the symptoms of a phthisis follow, and death takes place in from two to three weeks. Mr. Berkeley informs me that he has seen specimens growing on broth which had been rejected from the stomach, and that it develops in enormous quantities on oil casks and walls impregnated with grease. The filaments are long, from 12 to 18 inches, and it is capable of very rapid development.

ANNALS OF SURGERY, A MONTHLY REVIEW OF SURGICAL SCIENCE AND PRACTICE, edited by L. S. Pilcher, A.M., M.D., of Brooklyn, N.Y., and C. B. Keetly, F.R.C.S., of London, England, is a most reliable work, published, monthly, and simultaneously in Great Britain and the United States: London, Baillière, Tindall and Cox; St. Louis, J. H. Chambers & Co. Besides valuable original papers, a large portion of the work is taken up with an "Index of Surgical Progress." In the March number is a continuation of articles on "the present state of knowledge in bacterial science in its surgical relations," and another on the transfusion and reinfusion of blood, both very interesting; the latter referring to Dr. Duncan's practice of the reinfusion of the blood taken from an amputated limb, referred to elsewhere. An operation for covering the left hand with skin transplanted from the chest is described; the skin of the hand having

been nearly all stripped off by machinery. A band of skin ten inches long was dissected up from the chest and the hand thrust beneath the band. In an extract by F. H. Hamilton (N.Y.), on the primary adhesion of large incised (cut) wounds we are told that, "The conditions requisite to secure primary union are considered to be (1) fair health, especially the absence of any systemic infection or dyscrasy (2) The removal from the wound of foreign bodies, among which are included blood and serum; (3) The effusion of a moderate amount of coagulable lymph, and (4) no unnecessary violence to the parts in operating." To secure good results "the utmost care and attention to details is required of the operator, the lack of which was the most frequent cause of failure" After a tribute to the value of hot water as a means of imparting a healthy stimulus to paralyzed tissues, of arresting capillary hemorrhage, of removing the blood from the surface of the wound, exposing the ends of the vessels to the ligature, and of coagulating the albumen, while, unlike carbolic acid, corrosive sublimate and the like, it is absolutely innocuous, the writer closes by expressing his belief that the tide of professional opinion is setting strongly toward a rejection of the doctrines of Lister.

ST. NICHOLAS, for February, has a rich table of contents. "Fish-spearing through the ice," shows how some clever boys improved on an ingenious Indian mode of fishing. Mrs. Burnett continues her entertaining story of "Little Lord Fauntleroy," and tells how he returned to the home of his ancestors. Frank R. Stockton "Personally Conducts" the reader into many queer and interesting places "Around the Bay of Naples." There are two interesting letters on the subject of "Curved Pitching," and in the "Agassiz Association," Prof. W. O. Crosby of the Boston Society of Natural History, begins a free course of instruction in mineralogy, with practical experiments, open to all readers of the Magazine. In "The Firm of Big Brain, Little Brain & Co.," Frank Bellew tells, in a funny way, "a few simple things about the brain." W. W. E. gives the following valentine:

The sun and the moon are miles apart,  
Millions and millions, too;  
But if those old bodies had half a heart,  
They never could stand it so far apart,  
I know, I couldn't—could you?

But I have just heard—(and I think she's right)  
What the dear old Earth opines;  
That the sun shines down on some stars each  
night,  
And shoots them off, when they're polished  
bright,  
To the Moon for Valentines!