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Vol. 1.

NUMBER 8.

JUNE, 1886.

OLD SERIES.

Vol. 8.

MAN

A

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OF

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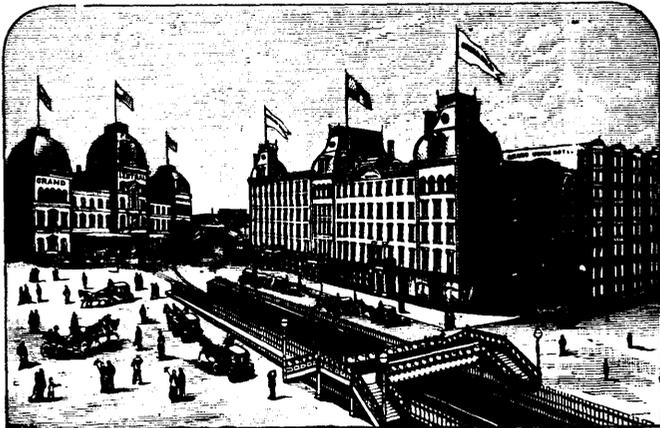
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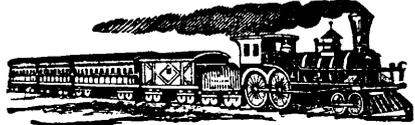
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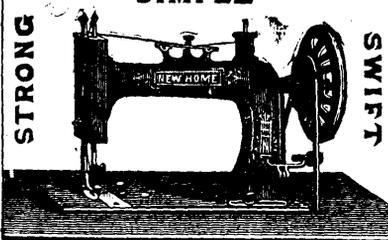
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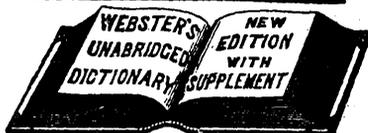
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Department of Public Works, 1
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SAVING FOR 1881.....	\$ 857,279 83
SAVING FOR 1882.....	1,102,867 15
SAVING FOR 1883.....	1,698,404 39
SAVING FOR 1884.....	2,175,010 72
SAVING FOR 1885.....	2,931,706 18

Total saving in cash in five years..... \$8,705,268 27

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A suggestive compendium of the Treasurer's Report:

RECEIPTS.

Balance, Dec. 31, 1884.....		\$275,652 44
Total net receipts from all assessments during year 1885.....	\$1,129,928 55	
Interest credited to the death fund account during 1885.....	6,954 82	
Total receipts.....		1,136,883 37
		\$1,412,535 81

DISBURSEMENTS.

Total amount death claims paid during year 1885.....		838,675 00
Balance.....		\$573,860 81
Accounted for as follows :		
United States Government Bonds, held by Central Trust Company.....	\$102,181 25	
United States Government Bonds, held by Insurance Department of the State of New York.....	100,559 37	
United States Government Bonds, held by Insurance Department, Canada.....	51,375 00	
Central Trust Company, New York, reserved fund account.....	205,666 55	
Fourth National Bank, New York, reserve fund account.....	39,551 74	
Fourth National Bank, New York, mortuary fund account.....	65,062 71	
Fifth National Bank, St. Louis, Mo., mortuary fund account.....	2,460 27	
People's Bank, Baltimore, Md., mortuary fund account.....	2,132 27	
Bank of Syracuse, N.Y., Mortuary fund account.....	603 39	
Cash in office, assessment account.....	4,268 26	
		\$573,860 81

The association has just deposited an additional \$100,000 of United States bonds with the New York Insurance Department making \$200,000 on deposit to the credit of the organization at Albany. Beside this, it has \$50,000 deposited with the Canadian Insurance Department. These facts and figures speak for themselves.

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J. D. WELLS,

General Manager.

MAN,

A PUBLIC HEALTH MAGAZINE.

VOL. I.

JUNE, 1886.

No. 8

HYDROPHOBIA—IS IT A DISTINCT DISEASE—PASTEUR'S EXPERIMENTS.

DR. W. H. LONG, IN THE AMERICAN LANCET.

WITHIN a year great interest has been taken in the disease known as hydrophobia by the profession and laity in both Europe and America, caused by the published discoveries of Pasteur and his claim to have a vaccine that would prevent the occurrence of the disease in persons after they had been bitten by rabid animals, provided the treatment by systematic inoculations could be given before the appearance of the first symptoms of hydrophobia. This interest was much increased in the United States a few months ago, by the sending of four children who had been bitten by a dog supposed to be rabid, to Pasteur for treatment. Since that time discussion of the subject has been kept alive by frequent allusions and comments on hydrophobia and Pasteur's investigations, by medical and secular journals.

The term hydrophobia is of ancient origin, and still retained to designate a disease supposed to depend on the introduction of a specific poison into the system through the saliva of animals suffering from rabies, and rabies seems to be confined to animals of the canine and feline species, all families of which are subject to it. There can be no question as to the existence of such a disease among these animals as rabies, or that it is capable of being propagated from one to another by inoculation, or by the same means communicated to other animals, wild and domestic.

There is positive evidence that dogs, wolves, jackals, cats and skunks are subject to rabies, and can communicate it to other animals. It is also certain that a number of the human race die from the effects of their bites.

Just what proportion of persons die from the bites of animals supposed to be rabid cannot be determined, but the

number is certainly very small as compared to the number bitten; so small, indeed, that a majority of physicians go through life without seeing a case of hydrophobia, or numbering among their medical acquaintances one who has. The question of percentage of mortality as compared with the number exposed or bitten, is of interest when taken into relation with Pasteur's vaccination theory, as well as the problem whether rabies or hydrophobia is a specific disease, dependent on a specific poison that must be propagated and communicated from animal to animal, just as small-pox or vaccine can be propagated in the human family by inoculation, or whether it may be produced by other causes.

There is a great diversity of opinion among writers on this question, the weight of evidence going to show that, among lower animals subject to it, rabies is propagated by inoculation from one to another by the medium of bites, though a few claim that it may occur spontaneously in dogs, and if in dogs, there is no reason why the rule would not apply to other animals. It is probable that many dogs thought to be rabid, without having come in contact with another rabid animal, were not suffering from that disease. I have seen a dog goaded to madness and a high state of cerebral excitement by being pelted with stones by a number of boys, after having been chased under a barn floor. After a time, in a state of frenzy, the dog ran out and through the streets of the town, snapping and biting at everything that was in his way. The cry of mad dog was raised, and a crowd of men and boys armed with guns and clubs followed him several miles through the country before he was overtaken and killed. All dogs known to have come in contact with the supposed rabid dog were

killed and other domestic animals bitten were kept in confinement. No person was bitten, and no case of rabies occurred among the animals confined. If this dog had rabies it was induced without inoculation, and, if not, which was probable, the difficulty of distinguishing between true rabies and a state of intense cerebral excitement will be appreciated.

The question of hydrophobia occurring in man by other means than the bite of a rabid animal is important in its bearings on the specific character of the disease and the preventive or curative inoculations of Pasteur. Here again the weight of evidence seems to be in favor of the specific theory, but there is sufficient on the other side to raise a grave doubt, to say the least.

Hartshorne says "there is good evidence to believe the disease may be communicated to man by the bite of animals not affected with rabies." Hammond reports two cases of hydrophobia caused by the bites of bitches in heat that were not affected by rabies and continued well afterwards.

They were never supposed to be rabid.

The bite of the small skunk, found so numerous on the western plains, seems peculiarly apt to be followed by hydrophobia.

The Rev. R. C. Honey, in the *Amer. Jour. Med. Sciences* for May, 1884, reports cases of the disease caused by the bite of skunks, and Assistant Surgeon John G. Janeway, U. S. A., in the *Med. Record*, of March 13th, 1885, reports a large number of such cases. Dr. W. Thornton Parker, in the same *Journal* of March 13th, 1886, makes a similar report, and says the bite of the skunk is more to be feared than that of the rattlesnake. It is not claimed that these animals are rabid. They prowl around and through the tents at night in search of food, and finding a toe, foot or hand uncovered, proceed to utilize it for that purpose. Dr. Parker says that so great was his fear of skunks that he always sodded around the bottom of his tent, and in addition to securely fastening the entrance at night, tied his dog to it, which was effectual in keeping the pests out. If the skunks had been affected with rabies they would probably have attacked the dog, which did not occur.

This view of the subject opens a field

for investigation, for it can be shown, as appears to be the case, that hydrophobia can be produced in man by the bite of animals not rabid, the theory heretofore accepted regarding its specific nature and method of propagation must be abandoned, and the conclusion forced upon us that there is a poison inherent in the saliva or secretions of the mouth of certain animals capable of producing the disease, or that it is developed in the same by conditions or circumstances not understood.

If not this, then it is a manifestation of tetanus, differing from the disease of that name only in the site of the lesion and its severity.

There have ever been men, some of them of eminence, who have denied the existence of such a disease as hydrophobia, declaring the one so-called to be a species of tetanus, and in support of that opinion point to the similarity of symptoms, and the fact that hydrophobia does not occur in persons bitten by dogs known to be rabid oftener than tetanus follows punctured or lacerated wounds of the extremities, the usual location of the bites of rabid animals.

It may be argued, also, that hydrophobia is either a specific disease or it is not; if it can be produced by the bite of animals not rabid, it is not; if not a specific disease, it is allied to tetanus, if not the same thing, differing in degree. The weight of authority is largely preponderant in favor of its specific nature, but a comparison of symptoms will show that those who claim the identity of the two diseases have at least some reason for their opinion.

In both diseases the symptoms point to the nerve centres as the seat of the lesion; in both we have early a sense of difficulty in deglutition which increases with the disease, terminating in laryngeal spasm. In both we have spasm of the voluntary muscles, which is increased or brought on by any cause that will excite reflex action, such as a touch of the body, sudden noises, a current of air coming in contact with the body, etc., and the fits may occur in either disease without these; in both we have a secretion of thick, tenacious mucus and saliva that adds much to the distress of the patient; in both the skin becomes hot and sensitive, and shows a decided rise in temperature. In tetanus the average duration is from three to five

days; in hydrophobia from two to three days, though a fatal termination may occur in either in a shorter time, but is oftener prolonged in tetanus. In both the muscles of respiration are involved, especially during the paroxysm—to a greater extent in hydrophobia. In both the temperature of the body rises after death and remains above normal for a considerable period of time.

The principal points of dissimilarity are that in tetanus the disease follows the injury in a few days, sometimes in a few hours, while in hydrophobia the average period is from 30 to 40 days. Niemeyer gives from eight to ten days as the shortest period, and months, even years, may elapse before the occurrence of the disease. Cases of hydrophobia have been reported as occurring three, five and ten years after the reception of the bite. Law reports one case of ten years, but believes in these delayed cases the disease is not true hydrophobia, but the hydrophobic non-rabique, of the French writers. He terms it "Lyssaphobia," literally a fear of being mad, but equally fatal with the true disease. In tetanus the symptoms point to the spinal cord as the seat of the lesion, the brain being secondarily and but slightly affected; in hydrophobia the brain is primarily affected, the seat of the lesion seeming to be at its base and in the medulla oblongata, the cord being secondarily affected.

There is frequent laryngeal spasm in hydrophobia accompanying the pharyngeal, which is rare in tetanus. The general convulsions that take place in tetanus are attended with exacerbations and remissions, while they are chronic with intermissions in hydrophobia, though Flint says they are sometimes tonic in the latter disease.

The main points relied upon to make a diagnosis are the occurrence of trismus in tetanus, which is absent in hydrophobia, and the mental excitement with hallucinations and occasional violent delirium that sometimes occurs in the latter disease, while in tetanus the mental diseases are clear. Cases of hydrophobia have been known in which there was no mental aberration. Some writers also call attention to the fact that tetanus follows a wound or injury, and hydrophobia the bite of some animal, evidently forgetting that the bite is a wound.

The pathological changes, as far as known, are general congestion of the brain and cord, more intense in the tissues of the cord and membranes, with structureless exudations, especially in the grey matter in tetanus" (Dr. Albert). "In hydrophobia we have congestion of the brain and cord with an accumulation of leucocytes around the blood-vessels and their infiltration into adjacent tissues, most intense in that portion of the medulla contiguous to the lower part of the fourth ventricle, and in the hypo-glossal, glosso-pharyngeal and vago-nuclei." (W. R. Gowers).

In very few cases of either disease, as far as has been discovered, have the pathological changes been sufficient to account for the phenomena presented, and from a review of symptoms and general feature of both diseases, it does not seem difficult to believe that they differ only in degree and part of the nervous system affected, which would account for all differences in symptoms.

Neither disease has ever been communicated from one human being to another, though wounds and bites have been often given by patients laboring under each, and it is extremely doubtful if rabies can be communicated to dogs by inoculation from human saliva. The correctness of the few cases reported is denied by most authors, though it is not impossible that the power of reproduction of any virus may be lost by its transmission through man from lower animals. Pasteur found that the introduction of his most rabid virus caused no serious disturbance in monkeys, and after inoculation through a short series of monkeys, the virus was powerless on dog. He had been experimenting for a long time with the virus of rabid dogs, and its effect on monkeys suggested the possibility of a sufficiently attenuated virus that would be harmless to man, and, at the same time, protect him from the bites of rabid animals. He worked faithfully for months to that end, and finally announced that he had succeeded.

In the course of his experiments he found that the brain and spinal cord of rabid animals would reproduce the disease when injected into or on the surface of the brain of other animals, and the medulla oblongata was used because it was as virulent as any other portion, more

convenient to handle, and uniform in size. By using the medulla of a rabid dog and injecting the brain of a rabbit, and then from rabbit to rabbit through quite a number, given by Billings at from 10 to 25, Pasteur found that he had a virus which was uniform in its results, and caused death in rabbits in seven days by producing a progressive paralysis without symptoms of rabies, and that the medulla from a rabbit so treated produced the same effect when injected into the brain of a dog. These experiments have been continued for a long time with the same results, and there can be no question but that Pasteur has succeeded in modifying the effects of rabific poison in animals, if not the result, or that he has produced a new disease from it. It was still necessary, however, to further change the character of, or attenuate the virus before venturing to use it on man. He found that the medullas from rabid rabbits, when exposed to a dry atmosphere at a temperature of 20° centigrade, lost in virulence with each day of the exposure, until the fourteenth day, when it became inert and produced no effect when injected into the brain of dogs or rabbits. Pasteur now had a virus of any strength from a super-virulent or fresh medulla, to the inert or that desiccated for fourteen days, and he believed in these he had a vaccine that could be used with safety upon the human race, and afford protection from the bites of rabid animals. The first inoculation was made on the 7th of July, 1885, less than one year ago, on a boy who had been bitten by a rabid dog.

His method of treatment is to take a portion of the driest and weakest virus mixed with bouillon and inject under the skin, and each successive inoculation to be made with virus stronger than the preceding. To make sure the virus used is all right a rabbit's brain is injected with the same virus at the same time and its effects noted.

The injections are made at first twice a day, then daily, and finally every other day until the strongest virus is used, when the patient is declared cured or protected. No constitutional effect is stated, and the only local effect is a "distinct hyperemia at the point of inoculation, not usually noticed until the last or most active virus is used." (Frank S. Billings, D. V. M.)

The absence of noticeable results is claimed to be due to the fact that the systematic inoculation "so prepares the elements of the body that they are enabled to resist the action of the more virulent rabid rabbit virus. The boy Meiser was discharged after twelve inoculations and Pasteur declared that "he has escaped a future outbreak of canine rabies." Of the four children sent from New Jersey to Pasteur for treatment, it will be noticed that Dr. Billings says they were bitten by a dog *supposed* to be rabid, and that two other children bitten by the same dog remained at home and have developed no symptoms of hydrophobia up to the present time.

If Pasteur's theory of hydrophobia and its prevention is correct, which is far from proven, it upsets all received theories and doctrines regarding preventive vaccination. All ideas relating to protective vaccination have grown out of the immunity against variola offered by the substitution of the modified form or vaccine in its stead, and the theory has almost come to be an axiom that vaccination for protection against a disease must produce a modified form of the disease under such conditions that its effects are visible, and that only diseases in which one attack secures immunity from future attacks are likely to be modified or prevented by vaccination. Pasteur's researches and experiments on the subjects of anthrax, chicken or fowl cholera, and swine cholera prove that protective vaccination may be given to animals subject to fatal diseases, but that in these a mild form of the disease is induced, and in diseases of which they are subject to but a single attack. In hydrophobia it is impossible to know whether a single attack would secure immunity for the future, because the disease is always fatal, both in man and the lower animals, and it is well nigh impossible to believe that such a fearful disease can be prevented or cured by inoculations that produce no other visible effect than a "local hyperemia" at the site of inoculation. Writers on hydrophobia say that several months or even years may elapse after the reception of the bite before the occurrence of the disease. How, then, can M. Pasteur assert that his treatment is effective in preventing or curing rabies or hydrophobia, when three-quarters of a year have not elapsed since he made his

first inoculations? His announcement of protection afforded to his patients was made months before it was possible to determine whether they were protected or not, if the accepted theory be true. The fact that such a large majority of persons bitten by rabid dogs escape the disease in question, and the length of time as above stated that may elapse before it is manifested, proves that it will require years of experimental inoculations on the human subject to demonstrate the truth of Pasteur's theory, or to disprove it.

For these, and other reasons, I doubt the correctness of Pasteur's deduction from his experiments with virus of rabies as applied to the human race. There can be no question as to his honesty and earnestness of purpose. In fact, his experiments and studies have given fresh impetus to the study of means to prevent fatal infectious diseases by vaccination with a modified form of the specific poison by which they are caused.

I believe it is a question of time only when the specific poison belonging to each specific disease will be discovered and so

modified and it will be used as a vaccine to secure immunity against the more fatal disease.

Friere claims to have discovered the poison of yellow fever, and to have successfully protected by inoculation over 6,000 persons against that disease, who live continually in the midst of it. If this be true, no more important discovery has been made during the present century, and this has been rendered possible by the researches of Pasteur, to whom all honor should be given for his persistent and intelligent labors in the interest of humanity and preventive inoculation. Failures in one direction may mean success in another.

In conclusion, I wish to present the following propositions:

1. Is our knowledge of the causes, course, duration, and pathology of tetanus and hydrophobia sufficient to declare them separate and distinct diseases?

2. If affirmed, is hydrophobia a specific disease, depending for its production on the inoculation of a specific poison found in the saliva of rabid animals?

FOOD AND ITS RELATION TO DISEASE.

BY J. H. HERRICK, M. D., SURG.-GEN. OF OHIO AND PROF. OF HYGIENE AND STATE MEDICINE, CLEVELAND, O., READ BEFORE THE OHIO STATE SANITARY CONVENTION.

ACCUSTOMED as we are, with all the aids for investigation, to reduce all the problems of life to scientific principles, we can but regard the questions concerning food as very imperfectly considered.

If this is true among teachers and scientists, it is much more so among the people who have no guide to the taking of food but a blind instinct or perverted appetite.

As physicians we overlook the most important factors of disease as found in either the kind or quality of food, or perhaps the common disregard of adjusting the food to the age and exercise of the individual.

Considering the relation of food to the operations of life as thus presented, the art of dietetics bears a most important relation to the maintenance of health; it is also one of the most important therapeutic considerations in the treatment of various forms of disease.

Recognizing the propositions of Paget as to the condition of normal nutrition as well founded, the very first of which is the "right state of the blood," we are prepared to accept the view that any disturbance of the blood-making process, either from the kind or quality of the food or its imperfect digestion and assimilation, is the most important factor of disease. In this relation of food to the body and mind, and the influence of the appetite, we are able to see how food may come to be a most fruitful source of disease. Practically, as physicians, we are able to trace a large class of disease directly, or more or less remotely, to food, from its non-adaptation for digestion or ill-adaptation to the wants of the body. The more direct diseases arising from food are first observed in the digestive organs themselves, being classed under the head of dyspepsia, which constitutes a very large class of ailments.

We are guided by instinct or appetite.

in the selection of our food and drink when kept to the simpler and more natural forms, but when highly-seasoned foods, to stimulate the appetite, and drinks that intoxicate are taken, the appetite becomes a passion; then the wants and needs of the body are not considered, excesses are indulged in, and diseases are produced. When foods are taken in excess of what is required they are not digested; chemical changes follow, which result in irritation of the mucous surface, or hyperæmia, and terminate either in the form of diarrhœa or inflammation, or may be followed by persistent constipation.

Again, in many disordered states there are such changes that even the natural promptings of nature fail, and it devolves upon the reason to dictate the supply to be furnished. Under such conditions the nature and amount of food taken will exert a most powerful influence for good or evil, and the art of dietetics becomes of the utmost importance. As conclusion, it must be remembered that food is to be regarded as so much fuel which is to be burned up in the body, and its force involved in the various activities of the body; also that, as a rule, all persons under the promptings of appetite eat too much for the amount of exercise performed, and that the important duty of the physician is to be that of a missionary or teacher to extend the sanitary principles of correct dietetics.

Indeed, it is not too much to say that a very large class of diseases which are most common at all ages and among all classes are due to the irregularities in these habits of eating and drinking. It is equally true that successful treatment of all constitutional diseases is largely dependent upon the judicious selection of food; so that dietetics is of greater moment than therapeutics.

With regard to food, the difficulties in the sick-room are the selection of such food as the condition of the system requires, and such as, under the existing condition of the digestive organs, can be prepared for assimilation—as, for illustration, milk. Not only is this true, but happiness as well as health may be insured by a good or imperilled by an improper diet. High consideration for the morals of society as well as individual health depend upon dietetics and digestion.

It is impossible in this paper to do

more than present a meagre outline of so extensive a topic.

First, it may be noted, that by far the larger classes of diseases may be due to excess of food. Under the impulse of appetite food is often taken in such excess that it cannot be digested; it then undergoes chemical changes in the alimentary canal, putrefies, quantities of gas are formed, and all of the conditions are present for the propagation of bacteria or disease germs which the most ardent champion of the theory of the germ origin of disease could desire. The inceptive material is formed with water and heat, and, in fact, with all the conditions for putrefactive changes, and that, too, at the very door of entrance into the great blood currents of the body. Large quantities—as much as thirty pounds—of half putrid masses of such material has been delivered by a single purge.

Of course, with such a condition it is not difficult to conceive the serious results that may follow defects in the digestive process, first, owing to impaired secretion in those glands which should furnish the appropriate juices in the digestive tract; second, conversion into diastase not taking place, fermentative changes follow, resulting in acid formations within the intestines.

The absorbents have not the power of guarding the entrance against acids, and with other absorbed material it passes into the blood current, when we have a condition known as a lithic or lactic acid “diathesis”—a condition favorable to the variety of forms of disease known as rheumatism and its “first cousin” neuralgia. I am thoroughly of the opinion that other dyscrasias also may be traced to mal-digestion as the *fons et origo* of the difficulty. Indeed, I am so fully convinced that rheumatism is caused from this source of derangement of the blood-making process, that I venture the assertion that I can produce rheumatism in myself in thirty days' time, although now perfectly free from any trace of it.

We know that the force-producing foods of the body are carbo-hydrates and hydro-carbon, the farinaceous and saccharine matters and fats, and that from the carbo-hydrates grape sugar is formed, by the diastase of the saliva and the pancreatic secretions, and that it is stored in the liver as glycogen. We also believe that it is

established that in the liver the glycogen is further elaborated into fat and becomes the fuel of the body, and is thus consumed or deposited in the cellular tissue for future use. A brief reflection concerning this complex process is sufficient to show the cause of dyspepsia, with all of its varied symptoms and far-reaching sequences; also constipation, irritation of bowels, followed by diarrhœa and dysentery, and all such forms of disease, not excepting the initiatory of cholera. Putrid substances may be absorbed, followed by hepatic derangement, accompanied with all the symptoms of the most typical form of malarial-fever—torpor, heaviness, fetor of breath, rigors followed by fever, and even jaundice. No doubt in this way we may account more readily for so-called malarial fevers, which Arctic explorers are said to have suffered in the extreme northern latitudes free from marsh miasms.

We as physicians are accustomed to look for some agency outside of ourselves for the causes of disease. We scan the atmosphere with our tests, examine with the microscope all sediment from the air we breathe and the water we drink, seeking after the specific germ which has produced the specific disease, which seldom, if ever, conforms to the ideal type we choose to give it in our pathology.

Again, the putrefying mass in the intestines acts as a constant irritant to the mucous glands, notably Peyer's patches, causing irritation, congestion, plastic infiltration and thickening; finally inflammation, absorptions, septicæmia, when we have both severally and collectively all the symptoms of typhoid-fever.

Further, if you insist that the specific germ is essential to the typical typhoid, we have all of the conditions for the formation growth, and multiplication of that germ—viz., putrefying organic matter—animal and vegetable.

I am more and more convinced from observation and experience that a number of factors are usually at work as the cause of typhoid-fever, as foul air from sewer emanations, from putrefying matter, impure water, etc., have attracted the entire attention as sole causes of enteric diseases and at the neglect of the cause under consideration.

Thus we may with reason trace a large group of diseases to excessive or indigestible food, having no reference to the relative proportions of the four alimentary principles—viz., albumenoids, fats, carbohydrates, salts, and water, the normal relation for a wholesome dietary being in the ratio of about four and a half ounces of albumenoids, three ounces of fats, fourteen of carbo-hydrates, and one of salt per day for the average man at average labor.

It has been fully shown by experience and experiment that when this ratio is much altered a corresponding impairment of health and vigor follows.

The length of this paper already prevents any consideration of the various diseases which arise from deficiency of food. The long catalogue of effects produced by famine, as well as the now historic record of diseases and death from starvation in rebel prisons during our late struggle, are too well known to need repetition.

In this presentation we are able to appreciate the great importance of the kind and quality of food to the individual and the whole community. As physicians we may grasp the fact that an appropriate food may be the most effective medicine, and an inappropriate or ill-adapted one may be the most pernicious poison.

Nature is to be regarded as the healer of disease. It is only our province to assist her by bringing about the necessary favorable conditions.

As "sanitarians" we are to interpret the laws of our being that are written all over, within, and about us.

M. Vallin in a report on the contagious properties of tuberculosis, read before the Société Médicale des Hôpitaux; stated that data are available which indicate that phthisis has been imported into isolated localities and islands by inhabitants from neighbouring countries where the disease existed. He also reported a case of tuberculosis said to have been transmitted from the owner to his dog.

TOBACCO blindness is becoming a common affliction. At present there are several persons under treatment for it at one London hospital. It first takes the form of color blindness, the sufferers who have smoked themselves into this condition being quite unable to distinguish the color of a piece of red cloth held up before them. Sometimes the victim lose his sight altogether.—*Scientific Amers*

ON THE CAUSES OF DEFECTIVE VISION OF CHILDREN.

BY D. R. SILVER, M.D., SIDNEY, OHIO. READ AT THE RECENT OHIO STATE
SANITARY ASSOCIATION.

THE importance of this subject is attested by the fact that not only medical men, but also the laity, are asking: What shall we do to make the cost of a liberal education for our children less than the loss or serious impairment of their eyesight? The question assumes that this is the price paid; as to its truth, let us inquire of those who have studied the subject.

Mr. Lawrence, who wrote a voluminous work on the eye many years ago, says: "While attending a book sale I was struck by the number of persons present wearing glasses; having counted them, I found there were twenty-three gentlemen in the room, and twelve of them had spectacles on."

There seemed, therefore, to these early observers, to be some connection, in the relation of cause and effect, between mental culture and defective vision. But it remained for Dr. Cohn, of Breslau, to set this matter in its true light before the profession and the public by the published results of his examinations of the eyes of ten thousand and sixty school children. His table is as follows: Elementary school 6.7 per cent myopic; intermediate, 10.3; high school, 19.7; colleges, 26.2. In the last the highest class contained the enormous percentage of 55.8.

It thus appeared that there was a large increase in the percentage from the lower to the higher classes. This observation has been confirmed by every one to whose statistics I have had access, and these comprise Erisman, of St. Petersburg; Drs. Derby, Cheatham, and Loring, of New York; Williams, of Cincinnati; Prout and Matheson, of Brooklyn; Conklin, of Dayton, and Ellis, of Hamilton; and these agree with my own examination of one thousand children in the public schools of Sidney and vicinity in which the average of myopia is thirteen per cent, ranging from three per cent. in the primary to thirty-three per cent. in some of the higher classes.

In the endeavor to account for myopia among school children, the following have been named as causes: Heredity, nationality, occupation, original or acquired

debility, faulty hygiene, and overwork or misuse of the eyes in childhood.

Unquestionably any or all of these may enter as factors in the production of this disease. But when we know, as a matter of fact, that myopia is found in the best specimens of physical development; in children whose homes are models in hygienic construction; in those also where neither heredity nor nationality can be taken into account, we are driven to conclude that occupation and misuse of the eyes in childhood are factors to which most importance must be attached.

It has been shown by statistics that the percentage of myopia increases with the years spent in schools. Therefore we will be justified in concluding that study of the printed page—that is, viewing small objects continuously—is injurious to the eye and may produce near sight. But in Germany, emphatically the "land of the myope," it is not found that artisans, such as watch-makers and wood-engravers, who also view small objects continuously, are particularly prone to myopia, and the exemption is found in the fact that such persons seldom reach the practice of the more intricate branches of trade before the eighteenth year; and all authorities agree that after that age, on account of the hardening of the globe myopia is not likely to be produced by muscular strain in convergence. Therefore occupation, with age as a modifying factor, explains most fully the frequency of this disease in our schools.

In seventeen divisions of this Union of States children are admitted to school at six years of age. In twenty-one divisions the age is five years. In eight sections it is four years. The Cherokee Nation and New Mexico have adopted seven years, and the Creek Nation of Indians ten years. England, Scotland, France, Sweden, Switzerland, and Germany, all six years, which age, in the latter, is compulsory. And this law, in my opinion, is responsible for the large and increasing amount of this disease in that country.

Myopia does not appear in infancy. Heredity, as a factor, exists only as a tendency. But when the tendency exists

The child put to school at the tender age of four or six years is almost sure to have weak or abnormal eyesight.

What, then, shall we do with these children? I answer, first, allow no child having any tendency to, or suspicion of, eye trouble to enter school before nine years of age; and, secondly, establish every large school at least one ungraded department, with a teacher competent to appreciate and enforce the hygienic requirements in all cases of defective vision from any cause. When we consider the great prevalence of this trouble, and that oculists agree that, while it is incurable, proper management will hinder its progress and in many instances prevent total blindness we think it imperative that sanitarians take the matter in hand and bring the subject to the attention of parents, teachers and the law-makers. The graded school system will not permit the proper mental training of myopic children when the hygiene of the eye is made an object.

As before stated, children but four or six years of age are too young to enter school; their physical development is not sufficiently mature. The eye, one of the most delicate organs of the body, is especially called upon for work. Upon its proper adjustment and form depends clear vision; and, when once injured, it may be repaired, but never can be restored. It may be true, as some one has said, that the proper time to educate a child is when it is a child; but it is also true that the proper time to educate a human being is when he is fit for receiving an education—fitted physically, mentally, and morally, the kind of education being wisely chosen with reference to his physical, mental and moral condition.

Especially is the high-pressure system of education to be condemned, which Professor Huxley has truly called "the educational abomination of desolation of the present day."

Nervous prostration has become one of the prevailing diseases of the time, even of comparatively young girls and boys. Forced to rise too early in their classes by the hope of reward or the fear of failure they become physical wrecks before the real work of life begins. Precocity in childhood is dangerous, and should be curbed rather than fostered. Both muscular and nervous force in childhood are

quickly expended, and the body must have rests for recuperation. Dr. Loring says: "If it be true that continued tension of muscular and nervous force unduly exhausts the energy of an organ, it is doubly true of the eye."

To acquire accurate knowledge the child must see clearly and distinctly. This proposition is self-evident. But we know that a large number of pupils in the schools cannot see objects in their proper relations nor of their real form. The optical construction of the eye will not permit it. A round dot cannot be seen as such. A straight line will appear curved. Of two lines forming an angle, only one will be seen. The letter h is mistaken for k, o for e, b for p or f, and so on. Such pupils, though bright in other respects, are laughed at by their classmates and punished by their teachers for their frequent blunders, which are attributed to carelessness or inattention.

The two most common imperfections of the eye requiring constant use of glasses for their correction are hypermetropia and astigmatism. Either of these, or both, as is sometimes the case, affecting the eyes, makes school life and the acquirement of knowledge requiring sharp, clear vision a burden.

Such pupils soon give up the hopeless task, drift out of school, and thus the world loses a bright intellect for want of culture and training.

Whenever a child bright in other respects makes frequent mistakes in reading, —miscalling common and easy words— or complains of headache while studying, or has any obscure nervous disorder, the eyes should be suspected of being imperfect optical instruments, and a competent oculist should be consulted.

Superintendents of large schools should be well instructed in the principles of hygiene for the eyes and in the common methods of discovering their optical defects.

If we would be successful sanitarians we must enlist the co-operation of the teachers of the schools; for, as has been aptly said, "the shortest way to the family circle is through the schoolhouse."

The tendency now is to subordinate everything to the early development of the intellect; but we must teach the teachers that that system which, in developing the powers of one organ endangers the integ-

city of another, is faulty and must be corrected.

In Germany it is said that seventy per cent of the highly educated have imperfect vision. Is this the necessary price of culture? Science answers, No. Avoid book gluttony. Avoid lesson bibbing. Begin study of the printed page later in life. Substitute for the present high-pressure system one more moderate, rational, and healthful. Do not encourage the

delusion that excessive muscular exercise in rowing, ballplaying, or wood-chopping can neutralize the effect of excessive brain work; that exhaustion in one direction can compensate for exhaustion in another. When this matter is thoroughly understood acquired myopia will be a rare disease, and the imperfect eyes, made so by nature, will be recognized early in life, and their imperfections remedied by the rich resources of science and art.

CHEMISTRY OF HAIR-DYES AND HAIR-DRESSINGS.

THE preparations for beautifying the hair, which form no small item in the commerce of drugs, may be conveniently classified as dyes, bleaching fluids, "restorers" and dressings. Of these, the last named on *y* comprises preparations which are harmless to the hair and to the general health.

Of the various preparations for coloring the hair there are but few, if any without objectional features. All of them are more or less hurtful to the hair; a few are rank poisons, and many are untidy and even filthy mixtures.

Bleaching fluids, washes which were intended for imparting a straw, or pale yellow to the hair, are now happily less used than formerly. The fluids used for this purpose consisted either of a strong solution of chlorine in water, or else one of hydrogen dioxide. One or two applications bleached the hair to the pale yellow which a depraved fashion demanded. Sulphurous acid was occasionally, but less successfully, used.

"Restorers" is a name applied to a class of compounds widely sold under the various names of "Hair Vigor," "Hair Renewer," etc. They came into notice first just after the Mexican war, under the name of General Twig's Hair Dye. *All of these mixtures are poisonous.* A sample analyzed by the author showed the following formula, which does not differ materially from other compounds of the same class:

Lead acetate (sugar of lead)	8 gram.
Milk of sulphur	11 gram.
Glycerine	100 cubic cent
Water	$\frac{1}{2}$ liter

Compounds of this class may be found by the score in any drug store. In all cases *the wrapper is of yellow or brown paper, and is gummed to the bottle, or*

brown glass bottles are used. This precaution is necessary to prevent combination of the sulphur and lead, before application to the hair. The yellow paper by excluding the chemical rays of light, prevents chemical action. These mixtures do not restore color to the hair—they simply dye it. The new growth of hair has none of the color which the so-called restorer imparts; fatal cases of lead poisoning have resulted from the use of such "restorers." It is hardly necessary to add that this compound is sold at a price exceeding ten times its cost.

There is a multitude of cheap pomades and oils (hair-dressing) to be found in every part of the world. A few of them are preparations having more or less merit. They are harmless except as they are heating to the scalp, or cause dust to adhere to the hair. The pomades are, in nearly every instance, made from lard colored and perfumed. The oils are commonly lard oil, sweet oil, or castor oil, to which coloring matter and perfume have been added. It is safe to assert that not one-tenth of one per cent of the pomades labeled "bear's grease" are genuine articles, and it is fortunate that such is the case, for bear's fat has none of the essentials of a good hair-dressing. On the contrary it is a rank, filthy, and heating substance, wholly unfit for application to the hair.

Of all of the various oils used as the basis of hair-dressings, pure castor oil is generally conceded to be the best. It does not become rancid, as is the case of olive and cocoa-nut oils, and it is not heating to the scalp. Unlike most of the vegetable oils, it has no gummy residuum. A justly popular hair-dressing is prepared from the following formula:

Spirit (alcoholic) of cologne $\frac{1}{2}$ liter.

Pure castor oil1-10 liter

A large proportion of the hair-tonics are based on this formula, bay-rum, quinine, ammonia, tincture of capsicum (red-peper), being added according to the needs of the case. Dilute bay rum is itself an excellent hair-dressing. Glycerine is added to many hair dressings

instead of oil. It makes a good substitute for the latter, but has the disadvantage of being sticky, and therefore liable to gather dust. As a general rule, hair-dressings should be applied only after the hair and scalp have been thoroughly washed.—Extracts from advance sheets of a Manual of Chemistry, by *Prof. Redway*, in *Southern California Practitioner*.

THE VENTILATION OF DWELLING-HOUSES.

SANITARIANS have from time to time devoted attention to the ventilation of dwelling-houses, and their efforts have resulted in much practical good; still, they have not devised, nor will they probably ever devise, a plan by which the internal air of a house can be kept more than moderately pure. On the other hand, if the known principles of ventilation are intelligently adopted, few houses need be occupied by air positively injurious to health. In considering the question of ventilation, a practical question suggests itself at the very outset—namely, How much air should be supplied to, or should a room contain so that the purity of its atmosphere may be preserved? or, in other words, to keep it free from excess of carbonic acid and organic matter? The quantity will of course vary according to the size of the room, the number its occupants and the method of its illumination; but, on the average, it will be necessary to supply not less than 3,000 cubic feet of pure air each hour to every adult, that is, about 10,000 gallons per hour for each person. To put these figures in another form, we may safely estimate that each adult requires a space of 1,000 cubic feet for healthy breathing—that is, a room 10 feet long, 10 feet broad, and 10 feet high. Now, what quantity of fresh air must be supplied to a room of the size each hour? So much as 3,000 cubic feet. Each adult requires an amount of air equal to three times the capacity of a room of this size each hour—that is, the air of the apartment should be totally changed three times every sixty minutes. It must, however, be observed that, theoretically, an apartment 10 feet high, 10 feet wide, and 10 feet long is large enough for one person; but, practically, it is not so much a question of the cubical contents of a room, but rather how we can continuously remove the im-

pure air constantly arising from respiration, gas or other methods of illumination. The larger the room there will be less need to change the air often; and there will be less difficulty in so ventilating as to avoid undue draught; but even the largest rooms require ventilation, for it must be remembered that the air of a moderately large apartment will be consumed in an hour; for instance, a room 20 feet by 15, and 10 feet high, will contain 3,000 cubic feet of air. The literal meaning of the word ventilation is 'blow with the wind,' but it is just the fresh breeze that most persons fear. A moderate draught is not injurious either to health or comfort, and if it cannot be tolerated, and, indeed, does not invigorate and refresh the system, that system is not in good health. Persons falling under this class will allege they are too delicate to allow fresh air to circulate around them. If not delicate they soon will be so, and as an eminent physician once said, 'they will continue so if they persist in denying themselves the invigorating and strengthening influence of Nature's cheapest and most simple restorative.' Granting that an occasional cold or attack of rheumatism does enter at an open window or ventilator, are such temporary and curable maladies not preferable to consumption and scrofula?—diseases surely and readily planted and cultivated by breathing foul air. Can ventilation be accomplished without the production of a dangerous or uncomfortable draught? It can; for air in motion is not felt if it does not travel at a rate exceeding $1\frac{1}{2}$ feet per second, unless the weather is exceedingly cold. Therefore, what is required is not only the admittance of fresh air, but its management after entry. Its forces must be broken by a screen, or some other contrivance, that will break it up into small streams moving at a speed

not greater than that mentioned. Air may be considered a fluid, which flows in a straight line until it comes in contact with some object. It can, therefore be directed in its course as well as divided, and may be conveyed to a part of the room not occupied by individuals. A troublesome draught, then, must be decreased in velocity, and it must be carefully noted that generally the velocity depends upon the size of the ventilating aperture—the smaller the aperture the stronger the draught; consequently when an uncomfortable draught is found streaming from any ventilating aperture, make the entrance larger rather than smaller. A close room may be readily ventilated by means of a window, open at the top to allow the bad air to escape and raised at the bottom for the entrance of pure air to push

upwards the vitiated. If the room is small the upper sash may be pulled down about two inches, and fill in the top space thus made by a carefully-fitting sheet of perforated zinc, whilst the pure air will enter by the space between the sashes, and as the lower sash will be two inches higher than the upper one, the cold air will be directed upwards against the ceiling. Another arrangement of the same kind requires that a loose strip of wood two inches high, and of a length equal to the width of the sash should occupy the space vacated by the lower sash being raised about two inches; or, better still, a similar strip of wood can be screwed to the lower bead of the window frame. An open fireplace is, of course, one of the best ventilators, and should not be closed in summer.—*Sanitary Record*, June, 1886.

THE PASSENGER'S RIGHT TO A SEAT.

IN the April *Pathfinder* the legal hints related to boarding the train. Now that you are safely on board, let us see what your rights and risks are. A knowledge of them may be promotive of health.

The first thing you set about is to find a seat. Now it is a well-recognized rule that it is a part of the contract of carriage to provide a proper seat for every passenger, and if the company fails to do this there is a breach of the contract on its part.—13 Hun. (N.Y.) 70. 36 Wis. 450.

But observe carefully what your procedure should be in order to comply with the law, in case no seat is furnished you. It has been held that you may decline to surrender your ticket until seated. "Everybody knows that," says a reader. Not too fast. It has been further held that you cannot remain on the train and still keep your ticket. You cannot ride standing; you must get off at the first suitable opportunity.—53 Mo. 317.

And if you do get off because a seat is not furnished you, you may retain your ticket, and you have an action for breach of contract.—Id. Until the suitable opportunity to get off is presented, you are, of course, entitled to remain aboard, and may stand in the aisle or ride on the platform.—34 N.Y. 670.

It is your sovereign right, also, to go into the drawing room cars in search of a

seat, if there are none vacant in the ordinary coaches.—76 N.Y. 402.

Nor are you bound to ask the conductor for a seat, or to exert your own manual force in removing some piggish passenger's luggage, before going into a drawing-room or palace-car in search of a seat.—Id.

If you should exercise your right to go into a drawing-room car, the conductor will likely demand the extra fare of you. You may justly refuse to pay it, and if ejected for non-payment, you may sue for an assault.—Id.

Circumstances might be such that a "horrid" man might be allowed to go into a ladies' car in search of a seat, and it has been held that a railway company may set apart a "ladies' car," and exclude all others therefrom.—70 N.Y. 587.

At least, if there are no seats in the ordinary coaches, and there are vacant seats in the ladies' car, the servants of the company may exercise their discretion in selecting persons to be put there.—13 Hun. (N.Y.) 70.

Any one who takes umbrage because they are left, when the employees exercise this discretion in selecting, have an action for breach of the contract of carriage.—Id.

Supposing you have got a seat at last, it would be well to bear in mind some further duties which are incumbent upon you. It has been said that the seat is for

the passenger to sit in and the window to admit air and light, and if you sit with your elbow or arm in or out of the window, you do so at your peril.—56 Pa. St. 294.

And yet the courts will not compel you to sit bolt upright as though your body was of cast iron, and to keep your elbow from protruding the smallest fraction of an inch outside the window, if there was no apparent danger.—17 Wis. 487.

But if, for instance, the train was passing through a switch yard, and you saw switch or signal posts flying by, it would be manifestly dangerous for you to put your arm or head out of the window, and

you would do so at your peril.—16 Barb. (N.Y.) 113.

However, you are not, as a matter of law, compelled to remain in your seat from the beginning of your journey until you arrive at your destination or the destination of the train. If that were so, you might die of thirst.—L.R. 82, Q. B. 161.

And it is a question to be left for a jury to say whether you are negligent, if while looking for a seat you pass from one car to another, following the direction of a trainman, who tells you there are vacant seats in a rear car.—37 N.Y. 287.

And whether it is negligence to stand up in the aisle and look for a seat, has been left to a jury also.

NOTIFICATION OF INFECTIOUS DISEASES—INTERESTING EXPERIENCE.

At a meeting last month of the North-western Association of Medical health officers, Dr. Tatham, health officer of the borough of Salford, Manchester, made the following remarks in relation to the above subject, which we take from the *Sanitary Record*:

Dr. Tatham said that, of the half million or so of people forming the urban community known as 'Manchester,' about two-fifths, or nearly 200,000, were inhabitants of the borough over which he exercised sanitary supervision. In the year 1867, when the first Salford Health Committee came into existence, the average death-rate of the borough was about 31 per 1,000 of the population, the mortality in the older districts being indeed 34 per 1,000. This was contrasted with the record during the five years ending 1885, when the average death-rate was less than 23 per 1,000. One of the earliest acts of the Health Committee, after appointing a medical officer of health, inspectors of nuisances, &c., was obtaining the demolition of a large portion of the insanitary old houses in one of the most densely populated and unhealthy districts. A well-equipped meteorological observatory was also established, and daily records for the last fifteen years were in the possession of the Health Department. The Corporation had also established three new public parks (in addition to the well-known Peel Park), and two recreation

grounds, the latter being in the most crowded part of the borough, with the object of accommodating school children and others who are unable during play-hours to repair to the public parks. Another beneficent provision of the Corporation, not less important, was public baths; an establishment had recently been opened in Greengate, and another in Pendleton. . . .

Since the opening of the Wilton Hospital in 1876 the sanitary authority had succeeded in isolating 3,000 patients suffering from dangerous infectious disease, an achievement of manifest importance. But the measures necessary for the control of infectious disease could not be said to have been completed till 1882, when the notification of cases of infectious disease occurring in the borough was made compulsory. Dr. Tatham found it difficult to say sufficient in praise of the operation of the compulsory notification clauses. The powers given the authority had been used most faithfully, yet discreetly, and, as a consequence, the friction between practitioners and the authority referred to in some districts as inevitable had been almost non-existent in Salford. During the three years the new powers had been in force (the three years ending with 1895) 3,921 cases of dangerous infectious disease had been reported at the health office, including 24 cases of smallpox, 2,591 of scarlatina, 234 of diph-

theria, 80 of typhus, and 941 of typhoid fever. Only since the acquisition of powers making notification compulsory had it been possible to estimate even approximately the effect of hospital isolation in checking the spread of infection. However, even a comparison of the local death-rates before isolation was attempted and since gave some indication of this effect. Taking scarlatina as a typical infectious disease, Dr. Tatham remarked that, whereas in the ten years 1871-80 the annual mortality from this cause averaged 11 in every 10,000 of the Salford population, in the five years ending with 1885 the annual mortality from the same had fallen to five in every 10,000. The proportion of notified cases which was removed to hospital had been increasing since compulsory notification was first enforced, thus proving that the public confidence in the hospital and the treatment received there was increasing. In 1883, 25·4 per cent. of the cases reported were admitted to hospital; in the following year 43·4 per cent., and in 1885, 52·4 per

cent. were admitted. As many of the cases notified could be satisfactorily provided for, and there was no pretext for moving them to the borough hospital, the proportion the authority actually removed was large. Compulsory notification, being now the law in thirty-nine of the large towns of England, had passed beyond the experimental stage. It had been adequately tried, and was universally pronounced a success; and it appeared to Dr. Tatham that the time had fully arrived when the Local Government Board should take steps to bring in a Bill making notification of infectious diseases compulsory throughout the kingdom. The disinfectant in use at Salford, which the medical officers present had just seen at work, was one of Washington Lyon's. The disinfection of clothes, &c., by means of superheated steam had this great advantage over other methods, that the whole operation could be completed in three-quarters of an hour. Another consideration of importance was that the disinfecting agent (steam) cost little.

TESTS FOR IMPURITIES IN WATER AVAILABLE FOR PHYSICIANS' USE.

THE most valuable tests for determining the impurities in drinking-water require, as a rule, an amount of apparatus and practice that places them beyond the reach of the practising physician. The estimation of organic carbon and nitrogen, of free and albuminoid ammonia of nitrogen, as nitrates and nitrites, are illustrations of this fact. [The presence of nitrites and chlorides is frequently significant of the impurity of water. The nitrogen of organic bodies is converted in the process of decay into ammonia, and exposed to oxidizing agencies is resolved into nitrous and nitric acids, which combine with bases to form nitrites and nitrates. The former are of especial interest, as a water pure enough for drinking purposes, and not containing more than 1 to 1000 part per 100,000 of nitrous acid, and the presence of three or four times this quantity is sufficient to condemn a water.]

A method that requires no apparatus and but one or two reagents, and the results of which, manifested either by the appearance of a color or a precipitate, are

at once recognized by the eye; such a method will be found of value when circumstances prevent a more complete analysis.

In an examination of a considerable number of samples of well water, my attention has been drawn to the significance attaching to the presence of the nitrites and chlorides.

The nitrogen of organic bodies is converted in the process of decay into ammonia, and exposed to oxidizing agencies is oxidized to nitrous and nitric acids, which combine with bases to form nitrites and nitrates. The former are of special interest to us, and I believe that a water organically pure should not contain more than one thousandth part per hundred thousand of nitrous acid, and that the presence of three or four times this quantity is sufficient to condemn a water.

A number of substances have been used as tests for these nitrites. The most delicate reagents, and those I have found to act most satisfactorily, are sulphuric acid and naphthylamine hydrochloride. If water containing not more than one

housandth part per hundred thousand of nitrous acid be treated with a drop of hydrochloric acid and a drop each of solutions of these reagents, after standing ten or fifteen minutes, only the faintest tint of pink will be perceived. If a marked pink be produced, the quantity of nitrites is sufficient to indicate serious contamination. In sewage and in the water from a few wells, the color was of a deep carmine, and the quantity present twenty to sixty six times the limit stated.

Another constituent of importance is chlorine combined with sodium, as sodium chloride or common salt. Since this is found in the fluids of the body, and urine contains five hundred parts per hundred thousand of chlorine, mixtures of animal excreta with water will increase the quantity of chlorine found therein. Two or

three wells have been found in Columbus containing less than two parts per hundred thousand of chlorine, but the majority contain from five to twenty parts per hundred thousand, while one well in an adjoining town contained more than fifty parts.

The reagents for chlorides are nitric acid and silver nitrate, which produce in water containing chlorides a white precipitate of silver chloride. In water containing one or two parts of chlorine per hundred thousand, the precipitate is so slight that it appears as an opalescence, while with ten or twenty parts a precipitate is produced. The appearance of a marked precipitate indicates the presence of a sufficient quantity of chlorides to justify the rejection of the water.—CURTIS C. HOWARD, M. C., Professor of Chemistry, Columbus, Ohio.

INFANT FEEDING.

AT the meeting of the Medical Society of the State of New York, held February 3, 1886, Dr. E. F. BRUSH, of Mount Vernon, read a paper with this title, and pointed out some simple methods of feeding an infant when it had been deprived of the breast (*N. Y. Med. Jour.*, Feb.) He urged the value of simple foods in preference to the so-called "patent foods," the composition of which was often unknown. He had examined the composition of the once famous "Liebig's food for infants," and of another popular food, and indicated the dangerous amount of alkali contained in them, citing Dr. Jacobi's warning that "we are not very careful in doses of alkalis in general," and Dr. Stillé's remark that alkaline treatment "lessens the amount of fibrin in the blood." He showed by the figures furnished by one of the advocates of peptonized food that the results of such feeding were not satisfactory. Proceeding, then, to the immediate subject of his paper, he stated that one of the greatest elements of failure in the artificial feeding of infants was the desire to give one sort of food alone under all circumstances, and hence the blind prescription of patent foods. He advised, on the contrary, the preparation of foods from simple articles to meet the requirements of each case as it arose.

He discussed the question of the best

staple food and had no hesitation in saying that it was cow's milk, which, however, was subject to many conditions that rendered it unfit, unless due care was exercised. In 1879 he had pointed out the difference between the milk of the ruminant and non-ruminant animals as regarded particularly the quantity and quality of the casein contained in them, and the difficulty experienced by infants in digesting a milk intended for calves. When an infant vomited a hard curd, the indications were that the milk must either be prevented from coagulating in the stomach or coagulated and broken up before entering the stomach. He showed that it was inadvisable to use an alkali, [such as soda] and therefore preferred the latter course, that of coagulating and breaking up the milk before giving it. In some cases he recommended the addition of lime-water as the safest agent, as it did not, like other alkalis, keep the stomach in an alkaline condition, nor cause an acid condition of the intestines. In case of diarrhœa in children fed on milk, the indications were to stop the milk immediately. The milk was usually the cause of the trouble, and it was rendered unfit by the physical condition of the cow, such as rutting, gestation, the ingestion of poisonous herbs, cruel treatment, and the like, to all of which states many cases of diarrhœa in infants could be traced. In these cases

of diarrhoea he recommended oatmeal-water, which his analysis had convinced him was somewhat similar to milk in composition. He insisted on the necessity of the medical attendant himself preparing or teaching the preparation of simple foods. In all cases the child should be put back on its ordinary milk diet as soon as possible. As to the kind of cow best adapted to supply milk, he preferred the common-grade cow to the Jersey or fancy breeds. The latter were of a tuberculous tendency, the fat in the milk was not sufficiently emulsified, and they were of an excessively nervous temperament,

while the common cow ordinarily was gentler and a good feeder. She should always be stall-fed. When milk was bought, that of one cow should always be avoided.

DR. JACOBI said that the tendency of cow's milk to coagulate in a very hard curd could be overcome by a method which he had some years ago learned from Dr. Loomis. It consisted in adding half a teaspoonful of dilute muriatic acid to a pint of water, mixing this with a quart of milk, and then boiling. The taste was pleasant, and coagulation would take place in the fine particles, as in woman's milk.—*Therapeutic Gazette*.

SCARLET FEVER FROM THE COW.

IN the last number of *MAN* we noticed that an outbreak of scarlet fever in St. Marylebone had been suspected to have been caused by a disease in the cows of a certain dairy which supplied milk to those who had manifested symptoms of the disease. The last number of the *Glasgow Sanitary Journal* gives the following in relation to the same subject:

In 1870 Dr. Taylor of Penrith, at the Annual Meeting of the British Medical Association at Newcastle, called the attention of the medical profession to the fact that scarlatina or scarlet fever may be propagated through the medium of milk; and in the Autumn of the same year Dr. Oswald Bell of St. Andrews published, in the *Lancet*, his observations regarding the propagation of scarlatina by milk. The investigations of these two gentlemen appear to have been conducted independently, and at about the same time since 1870, several local outbreaks of scarlet fever have been recorded due to contaminated milk supplies; but in every case the *origo mali* was traced to some one suffering from scarlatina having in some way or other contaminated the milk. In no case was the cow, or the milk as it came from the cow, ever suspected to be the origin of the disease.

From a report by Mr. W. H. Power of the Local Government Board on 31st March, and recently published, there is reason to suspect that scarlet fever can be produced by the milk of cows suffering from a disease so slight in its local manifestations as almost to escape attention, and producing so little disturbance of the general health of the cows that their

appetite is not impaired, nor the quantity of the milk which they yield diminished. The disease, at first sight, appears to be purely local, all that could be noticed being vesicles and small ulcers on the udders and teats; but from the evidence submitted in the report there is reason for regarding it as a general or constitutional disease, and one that might not improbably be communicated from cow to cow.

The reports published by the Local Government Board are not usually of a sensational or alarmist character, so that there is every reason to believe that Mr. Power has opened up a new field for etiological investigation. Dr. Klein, the well-known histologist, has been associated with Mr. Power in the scientific investigation of the disease, and two of the infected cows have been purchased and placed under Dr. Klein's observation in the Brown Institution of London.

We do not intend, in the meantime, to give an outline of the evidence which led to the conclusion that the milk was the medium, apart from contamination through a human medium; but we may observe that, on 18th December, 1885, Dr. Wynter Blyth, the medical officer of health for St. Marylebone, London, reported to the Local Government Board that an extensive outbreak of scarlet fever appeared to be associated with the distribution of milk by a certain milk dealer who obtained the greater part of his supply from a dairy farm at Hendon. Mr. Power, in association with Dr. Cameron, the medical officer of health for the district in which Hendon is situated, proceeded to

investigate the outbreak; but, after a thorough examination of the farm, and of the laborers there, they failed to discover any unsanitary conditions; and Dr. Cameron was able to affirm positively that there had been no cases of scarlet fever nor of any disease resembling it among the persons working or residing

on the farm, and that the few cases which had occurred in the Hendon district, during 1885, had been among families residing at a distance from the farm, and in no way connected with it. These negative conclusions led to an examination of the cows on the farm, with the results indicated.

THE INFANTS' FOODS IN THE MARKET.

MOST OF THEM NOT SUITABLE, BUT INJURIOUS TO YOUNG INFANTS.—CONTINUED.

LAST month I drew attention to the composition, as given by the public analysts of the Dominion, of some of the so-called "Infants' Foods" in the market and in common use, and stated that they were not foods at all fitted for young infants. I will now take up a few more of these substances.

Of "Royal Food," a sample by one analyst gave 78 per cent. of insoluble starch with some unannounced ingredients, and 20 per cent. of "extractive," with very little saccharine matter. Microscopical examination showed "baked wheat and oatmeal flour and cellulose."

As stated in the last number, starch is quite indigestible in the stomach of the young infant, and cellulose is entirely indigestible in any human stomach.

I need hardly write that therefore in these circumstances they can afford no nourishment whatever; on the other hand, they give rise to derangement of the stomach and the whole alimentary canal, often, if continued, in the case of infants, of a serious character. "Royal" food, indeed!

Another sample of "Royal Food" in the hands of another analyst, gave over 71 per cent. of starch, etc., with 6 per cent. of maltose and dextrine. Dextrine is a sort of converted starch, much more digestible than starch itself, while maltose is a sort of sugar of malt. Microscopic examination gave "granules of wheat starch"—starch in the most indigestible form. This sample of food contained over 8 per cent. of moisture, while another sample contained only one and one half per cent.; the first above referred to contained 2 per cent. of moisture. This sample, too, contained less than one half per cent. of fat while another sample contained 2 per cent. and another 2.5 per cent. A third sample of "Royal" food

contained 62 per cent. of starch and 8 per cent. of dextrine.

In "Mellin's food," from the analyses made, there appears to be much less starch; it has been apparently more largely converted into dextrine. One sample gave 62 per cent. of starch; others only 11 or 12 per cent., with 70 per cent. of dextrine and maltose. In microscopical examination, one sample showed granules of starch much broken up; another, fragments of silicious hairs and cuticle. The hairs were probably from barley used in the manufacture of the food; but the cuticle? Of five samples of this food all gave very little fat, not one of them so much as one per cent.; one gave, "a mere trace"; others less than one half per cent. This constitutes it an objectionable food, having altogether too small a proportion of fatty matter. While some samples contained 9 and 10 per cent. of moisture, others contained only 2 or 3 per cent.

Of "Papoma" six analyses were made. They contained from 70 to 87 per cent. of starch or starchy matter, with maltose, dextrine and sucrose, and a small proportion, quite too small, of fatty matter. Microscopical examination gave in the various samples such as "wheat farina," "a large proportion of wheat flour partially cooked," "wheat," and "granules of wheat starch."

Nestle's condensed or Swiss milk food showed much diversity in composition. The proportion of moisture in samples examined varied from 18 per cent. to 3½ per cent., and the fat from 10 per cent. to less than 3 per cent. One sample contained 54 per cent. of sucrose, a modified sugar, 11 per cent. of lactose, sugar of milk, and 8 per cent. of albumenoids. "Microscopical examination showed a large proportion of cane sugar crystals, with many fat

globules." Another sample gave only 3.2 per cent. of "sugared matter," 11 per cent. of soluble albumenoids, probably casein and dextrine, with 48 per cent. of cellulose, starch and insoluble albumenoids. A third sample gave 48 per cent. of sucrose, 14 of lactose, 4 of dextrine, and 7 of albumenoids.

Of Neaves food, one sample gives 76 per cent. of starch, etc., and 5 per cent. of maltose and dextrine, with granules of wheat starch under the microscope. Another sample gives 83 per cent. of "cellulose starch and insoluble albumenoids," 2.8 per cent. of dextrine and soluble albumenoids, and 4 per cent. of sugared matter, with less than one per cent. of fat. The analyst writes, "I am of opinion the sample is powdered biscuits well prepared." From these and other analyses, from the large proportion of starch as compared with the small proportion of fat and soluble albumenoids, this food appears to be the least nutritious of the foods examined for young infants, when the indigestible nature of the starch is considered.

Cardinal food gives the usual large proportion of starchy matter, with cellulose and very little fat. One sample is reported as showing "mixed cereals" and another "wheat flour," under the microscope. The different samples examined vary much, like all the other foods analyzed.

A sample of "Anglo-Swiss milk food" consisted of about 5 per cent. of moisture, 2.5 per cent. of fat, 8 per cent. of gluten

(probably from flour of some cereal, as wheat or oats), about 55 per cent. of soluble starch, (i. e., probably well cooked starch), with 27 per cent. of cells and insoluble starch. The analyst reports it as "good" and as "prepared biscuit." The strange thing about the food is why it is named milk food.

Of all the samples of all the nine varieties of infants' food thrown upon the market, to which I have now drawn attention, and which are extolled by the manufacturers, and not infrequently recommended by physicians, not one is fit to be taken, in any proportion, into the stomach of a young infant, and for older infants and young children, good bread with cow's milk is vastly better than any of the samples analyzed; while the cost of such foods is comparatively enormous. When will the public learn not to buy anything recommended and puffed by interested parties without knowing what they buy? They ought to know that recommendations can be purchased for almost any sort of thing.

As I before stated, the "Paravena Milk Food" of Messrs. Fish & Ireland, of Lachute, Province of Quebec, was not included in the above analyses. It is claimed by the makers that the starch of the farina from which this food is prepared is all converted into dextrine; which, as stated, is, quite unlike starch, a substance readily digested in the stomach of the young infant. The analyses of the public analyst of Montreal and of Toronto, it appears, confirm this.

THE EDITOR.

In the arid, treeless streets and avenues the temperature often runs from 130° to 150° Fah., when under the branches of a thrifty shade tree it would not exceed 70° or 80°. In the absence of sheltering trees, the stone and brick walls act on the principle of the regenerative furnace, and absorb the heat of the sun to yield it up again during the night. If trees were planted in the streets, the pavements and surrounding walls would be much cooler, and at the same time the trees would absorb the deleterious gases thrown off from the lungs and from decomposing matter, yielding in return a supply of pure oxygen.—*Scientific American*.

At a recent meeting of the Société Médical des Hôpitaux, M. Debove stated that he was called in to attend five children ill with typhoid fever. They had been kept separate, but one after the other was seized. The sixth brother escaped. Every hygienic precaution was observed; linen, stools, water-closets, cesspools, were all disinfected. M. Jouffroy observed that M. Debove's note indicated that typhoid fever can be contracted by direct contact. In Germany, as in England, it is believed that the germs of typhoid fever are expelled by the dejecta, and, after undergoing certain modifications, are capable of communicating the disease to healthy organisms.

THE PUBLIC HEALTH—CANADIAN MORTUARY RETURNS.

THE DEATHS IN MAY IN THE TWENTY-TWO CITIES, WITH THE CAUSES OF DEATH.

DURING the month of May, according to the returns, there was a considerable falling off in the death-rate as compared with the previous month. The total number of deaths recorded for the twenty-two cities and towns which make returns to the Department of Agriculture was 1313. In the previous month, April, there were 1422 deaths recorded. The mortality in May was rather less than 26 per 1,000 of population, per annum. In April it was over 27 per 1,000.

In Toronto, the mortality was about that of the average of the 22 cities, or nearly 26 per 1,000. In Quebec the rate was about 27 per 1,000. In Montreal it was 29; and in Ottawa 31 per 1,000. Excepting Sorel and St. Hyacinthe, where, too, the mortality was high, the other places all returned less than the average.

There were no deaths from small-pox recorded in any of the places excepting in Sorel and St. Hyacinthe. It is to be hoped that the scourge has been entirely stamped out in the capital as well as in Montreal.

From measles there were 26 deaths in all; while in April there were 34. Of these 26, 12 were in Toronto and 10 in Ottawa, 3 were in St. John, N.B., and one in Montreal. In the previous month there were 16 deaths from the disease in Toronto, 8 in Ottawa, and 7 in St. John. While the disease had apparently decreased in Toronto and St. John it had increased in Ottawa.

Parents are too liable to be indifferent about measles, to regard it as of not a very serious character, and usually to make but little effort to keep their children away from the infection of it. This is criminal. Many children die every year from this disease. It has been very prevalent in many parts of England for many months past, and has proved very fatal. Parents should be just as particular and careful about keeping children away from cases of measles as from small-pox or any other infectious disease. And it must be remembered that from mild cases the disease may be communicated to another in whom it may prove

very severe and fatal. Health authorities, too, are liable to be indifferent regarding the disease, which may be easily stamped out in any municipality or community.

Scarlet fever caused 6 deaths in May, and 8 in April, in the 22 cities and towns. Of the 6 deaths, 3 were in Hamilton, while there was one in Montreal, one in Quebec, and one in Kingston.

Diphtheria caused 83 deaths, in all, in May—a decrease from 88 in April. Of these 83, 21 were in Montreal—a slight increase over April, when there were but 20 deaths from the disease in that city. In Toronto there were 13 deaths from this disease in May, a decrease from 24 in April. In Quebec there was also a decrease, from 15 in April to 14 in May from diphtheria. There were in May the same number of deaths from this disease in Hamilton and St. John, N.B., as in April—5 and 8 respectively. In Halifax there were 4 deaths from the disease in May and 2 in April. In Fredericton there were 5 deaths in May, and 2 in April. The disease caused 3 deaths in Peterborough and 2 in Sherbrooke in May, although no deaths were reported from these places in April.

The returns show therefore a mortality of 1.5 per 1,000 of population per annum from diphtheria alone, in the 22 cities and towns. If this rate prevailed over the entire Dominion, and the disease is usually found to be more prevalent proportionately in rural than in urban districts, there must have been over 650 deaths from diphtheria in Canada in the month of May. As this has been about the average mortality from the disease during the past 6 months or more, it seems probable that there are in the Dominion not much less than 8,000 deaths from it during the year. Notwithstanding this, no special means are employed, except probably in a few municipalities, to suppress the disease.

From fevers, chiefly, doubtless, typhoid, there were in May 17 deaths, the same number as was recorded in April, though the disease seemed more wide-spread in May than in the previous month.

Diarrhoeal affections caused 34 deaths, in the 22 cities and towns in May, an in-

crease from 32 in April, though in March there were 48 deaths reported as of this nature. Of these 34 in May, 17 (one half) were in Ottawa, while 13 were in Montreal.

Doubtless the diet has much to do with the causation of diarrhoea, but it is very generally believed that dirt, too, is a very important factor in producing it.

Deaths from rheumatism decreased from 11 in April, to 2 in May; March giving a return of 10 deaths from this cause. Thus we have an illustration of the effects of season or weather as at

least an exciting cause of this affection.

The returns from some of the 22 places must yet be imperfect. It is not easy to believe that, for even the space of one month, in a town as large as St. Thomas or as Guelph, the mortality would be so low as at the rate of 8 per 1000 of population per annum, or less than one-third the average of the 22 cities and towns, or of Toronto. An explanation from the Health officers of these two places especially would be satisfactory to all interested in the vital statistics of the Dominion.

THE EDITOR.

MISCELLANEOUS ITEMS AND EXTRACTS.

CHOLERA AT AIX:—Dr. Bourguet of Aix, France, has published in the *Memoires de l'Academie* a report on the cholera epidemic of 1884 and 1885 at Aix, which presents some features of interest. The first case of cholera occurred at Aix, on June 26, 1884, when Toulon was the only cholera-stricken locality. Other cases followed in different parts of the district. Eight deaths occurred between June 26 and July 8. It has been positively never ascertained that six among them were in contact with cholera patients, nor with any article of clothing or food belonging to such patients, or coming from a contaminated locality. Three of the cases lived in the country, one in a convent belonging to an order where the inmates are forbidden to leave their cloisters. After July 8 the epidemic spread over a considerable number of communes, and it was difficult to follow its course. M. Bourguet considered that it was difficult to determine whether cholera at Aix travelled from Toulon, or whether it spontaneously appeared. The condition of the district was favorable to the incubation of the cholera germ. During May and the beginning of June there were a greater number of cases of diarrhoea and dysentery than usual. Towards the middle of June there were several cases of cholera, accompanied with cramp and algidity. From June 3 to June 30 fifty patients were sent to the infirmary with diarrhoea and vomiting. The principal part of the cholera patients at Aix drank spring water or good well water. Dr. Bourguet does not think that drinking impure water was a factor either in causing the epidemic or in spreading it.—*Sanitary Rec.*

MICROBIC STATISTICS.—According to the microbic statistics published by M. Miquel in *L'Annuaire du Bureau des Longitudes*, the bacteria dispersed in the atmosphere vary during the different seasons of the year. It is increased by north and east winds. At Montsouris, in a cubic metre of air, there are, in winter 260 bacteria; in spring, 495; in summer 650; in autumn, 480; giving an annual average of 471. In thickly-populated districts the proportion of microbes in the air is much larger. Seaside towns and those situated among mountains are the freest from bacteria; a closely packed population aids to engender and develop these organisms. Berne, although the mountain air constantly sweeps through its atmosphere, is by no means free from the presence of bacteria. According to Freudenreich's researches, the monthly average is 580, four times as pure as the air of Paris (2,020), but inferior to that of Montsouris (420). M. Miquel analyzed the air of a room in an old house in the Rue Monge. The analysis was made in the morning, before any door or windows had been open. In winter a cubic metre of air contained 45,000 bacteria; in spring, 26,600. The increased proportion in winter is in consequence of not opening the windows so much as in summer. In the wards of the *Hopital de la Pitié*, which are ventilated, there are 92,960 bacteria to a cubic metre in winter, and 54,110 in spring. In a new house in the Rue Monge a cubic metre of air contained, in winter 3,120 bacteria; in spring, 3,660; in summer, 4,560. The proportion varies according to the hours of day; from 12 to 1 o'clock, there are

62 bacteria per cubic metre ; from 2 to 3 o'clock, 102 ; from 3 to 4, 130 ; from 4 to 5, 128 ; and from 6 to 7, 148. The largest proportion occurs at sunset and sunrise. The following gives an idea of the relative purity of different atmospheres : Ocean air 0.6 bacteria per cubic metre ; mountain heights, 1 ; the saloons of vessels, 60 ; the top of the Pantheon, 200 ; Parc Montsouris (the average of five years), 480 ; at Berne, 590 ; Rue de Rivoli, Paris, 3,480 ; new houses at Paris, 4,500 ; Paris sewers, 6,000 ; the laboratory at Montsouris, 7,420 ; old houses, 36,000 ; the new Hotel Dieu, 40,000 ; the Hopital de la Pitié, 79,000.—*N. Y. Med Times.*

SCARLET FEVER.—Another case showing the communicability of contagious diseases by clothing is reported from Bath, Me., where a girl had scarlet fever at a boarding school. After recovery she returned home, and a trunk, containing the clothing she wore while sick, was put away in the garret. Six months later two little children were playing in the garret, and, opening the trunk, took out some of the clothing. In a week both were taken very ill with the disease, and one died. There were no other persons ill with scarlet fever in the community.—*Ex.*

COPPER in its metallic state is said to be poisonous, but as viands containing fatty or saline matters when cooked in copper vessels, dissolve some portion of the metal, I think such utensils should not be used for such a purpose. I am aware that large quantities of food are prepared in copper vessels, but I am sure that I need not remind you of the numerous instances of chronic poisoning which have been traced to their use. When kept perfectly clean, such utensils appear to be harmless, as the metal is readily eliminated by the excreta, but when neglected the case is very different. I feel that the dangers attendant on the use of dirty copper vessels are not sufficiently appreciated.—**DR. FOSBROKE**, Medical Health officer, Stratford-on-avon, in *Sanit. Rev.*

Up to April 14, Pasteur had inoculated 688 persons, presumably bitten by mad dogs, with only one death. He has also inoculated 19 Russians bitten by a mad wolf. Of these 19, 3 have died from hydrophobia—about 16 per cent. The usual per cent of deaths from the bites of mad wolves is said to be about 67. Since

April 14, Pasteur has treated other Russians bitten by mad wolves and mad dogs. One of the former recently died from the effects of his wounds ; one of the latter from hydrophobia, after having been submitted to treatment. This makes in all 720 cases treated, with a total of 5 deaths from rabies, despite treatment. Pasteur as found that the rabies resulting from wolf bites is the same as that of dogs, and only more dangerous because the bites of wolves are more numerous and severe.—*Scientific American.*

At a meeting of the Société de Médecine Publique et d'Hygiène Professionnelle de Paris, Dr. Grancher communicated the result of his experiments on the resistance offered by microbes to the heat of disinfecting stoves. They are as follows: The moist vapor stove of MM.—Geneste and Heschler is an excellent disinfecting apparatus. With this stove a temperature of 106° C., which is easily obtained, microbes are undoubtedly destroyed, though they be imbedded in mattresses. The dry-air stove of the same manufacturers is not so completely disinfecting as their moist vapour stove. With this apparatus the bacteria of charbon, its spores, the *tyrothrix scabei* and *bacillus subtili* are not destroyed. The hot-air stove at the Hôpital des Enfants Malade is a still more imperfect disinfecting stove.

THE GENETIC AFFINITY OF BACTERIA.—**DR. C. FISCH** believes that the assignment of bacteria, Schizomycetes, to the fungi rests on an unsound morphological basis, the physiological resemblance in the absence of chlorophyll not being sufficient of itself to determine the question. The developmental history certainly furnishes more conclusive evidence in the other direction. The nearest affinity of the bacteria lies unquestionably with certain green unicellular plants, oscillatoria, etc., included under the Schizophyta, or Cyanophycæ ; and these together form a natural group with no close affinity to any group of fungi. This observer is of opinion that at present the Schizophyta must be regarded as displaying the nearest genetic affinity with the Flagellata, most of which seem closer allied to the animal than the vegetable kingdom.—*Med. Times.*

At the last meeting of the 'Conseil d'Hygiène et de Salubrité' the

following decisions were adopted. Sputa of tuberculous patients contain the most active agent of transmission of tuberculosis. Sputa ought not to be deposited on floors nor on the ground, nor allowed to cling to linen; they are reduced to dust and are dangerous. Patients should use spittoons containing sawdust. These spittoons should be emptied at least once a day and washed with scalding water; their contents should be burned. These rules should be rigorously observed in schools, workshops, barracks, and hospitals. When a hired room has been inhabited a long time by a phthisical patient, it should be disinfected, and more especially if death has occurred in it. The room, bed and bedding, should be disinfected by sulphur, according to directions issued by the 'Conseil.' The clothes of phthisical patients should not be used until they have been washed and disinfected by superheated steam.—*Ibid.*

PURIFICATION OF SEWAGE.—M. Delfosse believes that he has arrived at a method of purifying sewage so that it can be turned into rivers without danger to the public health. Sewage is first treated with lime, sulphate of aluminium, and permanganate of potash, then filtered through bricks broken into pieces. After being filtered other reagents are used, which the author does not specify, and the sewage is again filtered, but through a bed of peat. Sewage thus treated is clear and inodorous.

STATISTICS OF HYDROPHOBIA.—There were, according to Dr. Dujardin-Beaumez 19 deaths from hydrophobia in Paris last year—a number higher than in previous years; and yet the number of stray dogs destroyed was also higher, viz., 5,060. Of these 19 persons, 15 were males and 4 females. The youngest was a little girl 5½ years; the oldest, a man of 63. The time of incubation varied from 19 months (in the case of a young man of 26) to 29 days (in a child of 11.) In only one case was the time of the bite unknown. Excluding that, and the exceptional case of 19 months, an average of about 2 months is arrived at for the time of incubation. As to duration of the disease, the extreme limits were 1 day and 8 days; average 3½ days. In no case were the lower limbs bitten. In 12 cases out of 18, the upper members were bitten, especially the hand (9 times out of 12), the wrist twice;

in 6 other cases it was the face (5 times) and the skull (once) that were attacked. Lastly, in 17 cases of the 18, the bite was that of a dog; in the remaining case, it was that of a cat. It will be noted that these statistics relate only to deaths from hydrophobia.—*N. Y. Med. Times.*

RANCID BUTTER.—At a recent meeting of the Academy of Sciences, M. Pasteur read a note from Duclaux on rancid butter. It is generally known that under certain conditions—exposure to the air, sunlight, or heat—butter undergoes certain modifications which are indicated by the term rancid. The butter thus degenerated loses its delicate flavor, and is strong in taste and smell; it is nevertheless not unwholesome, and can be used for cooking. The chemical cause of this change is due to butyric acid being changed into butyric acid, one of the fatty acids formerly discovered by M. Chevreul. M. Duclaux believes that this change is due to chemical phenomena, and is perfectly independent of microbes. The butyric acid absorbs oxygen that is contained in the air, and the formation of butyric acid is a direct result. Certain external causes facilitate this alteration—contact with the air, exposure to the sun. Fungi sometimes appear and hasten the process, but they are an accessory, not an essential factor.

In the *Journal de Med. et de Chirurgie*, March, 1886, M. Etienne Ferraud examines the relation between dung-heaps and diphtheria epidemics, which are more frequent in rural districts than in towns and cities. Statistics tabulated in Scotland and Prussia show that the rate of mortality from diphtheria is higher in rural districts than in towns or cities. At Lyons the outskirts of the town and the rural districts beyond the city suffer more from diphtheria than does the actual city of Lyons. Dung-heaps do not exist in the municipal districts, but are plentiful on the outskirts and in the open country. They consist of various noxious and infectious kinds of residue. Klebs, of Zurich, has observed the deadly influence of these dung-heaps. He states that diphtheria generally breaks out after a general cleansing of the streets, and rarely at other times. It may be safely concluded that the accumulation of dirt and refuse known as dung-heaps are formidable

factors in the etiology of disease in rural populations. M. Ferraud urges that the authorities in the agricultural districts should impress on the minds of country generally that the presence of dung-heaps folk is a source of danger.—*Paris Correspondent of Sanitary Record.*

THE DIGESTION OF MILK.—Boiled milk leaves the healthy stomach more rapidly than an equal quantity of unboiled milk. 2. The digestion of boiled milk is more rapidly accomplished than that of unboiled milk. 3. The coagulation of unboiled milk in the stomach is complete in five minutes. 4. This coagulation is not caused by the acid of the gastric juice, but by the influence of a special ferment (milk-curdling ferment). 5. The acidity of the gastric juice is at first due almost solely to lactic acid, and, later, in the process of digestion, to the presence of hydrochloric acid. 6. Hydrochloric acid first appears in perceptible amount forty-five minutes after the ingestion of half a pint of milk. 7. For the first hour and a quarter after the ingestion of milk the acidity gradually increases, and then decreases, until the milk has entirely left the stomach. 8. The curds of casein in digestion of boiled milk are much softer than in the digestion of uncooked milk.—**DR. REICH. MANN'S** Experiments, in *Deut. Med.*

The following special report from H. F. Peckham M.D., Health Officer of Cedar Creek, Mich., dated Feb. 16, 1886, has been sent to us. Two young ladies by the name of Hammond went to Kalamazoo on a visit. While there both were stricken with diphtheria, and one of them lived 9 days, the other 18 days. The mother of the above cases took care of them. After their death she returned to her home in Hope Township. The next day after her return I called upon her. She stated to me that the Health Officer had caused a thorough disinfection of all the rooms and her clothing. I thought best to order her to remain in doors. Within 10 days her youngest child, 3 years old, came down with the disease and died. Another one 12 years old recovered, while the father of the family was taken ill and died. Mrs. Hammond and her son did not have the disease. The premises were closely guarded, no one allowed to go there or come away. The period of incubation was about 8 days. The restriction was complete.

A NEW ANTAGONIST TO ALCOHOL.—The kola nut of Guinea, or gara nut of Soudan, the fruit of the *stereulia acuminata*, cola acuminata of Daniell, has recently assumed a new importance by its remarkable property of antagonizing the effects of alcohol. It has long been known that the kola nut contains caffeine, to which may be attributed the lessened desire for sleep and sense of physical well being caused by the consumption of it; for which reasons it has long been extensively and highly valued throughout a large portion of Africa. Unlike the coffee bean, however, it contains no tannin. It has recently been discovered that when chewed, it antagonizes the effects of alcohol, and constant use of it is said to dissipate the desire, even in old drinkers. Whether it is superior to the aromatic spirits of ammonia for the treatment of an "acute drunk" is not yet definitely known. The nuts are much more available for constant use, however, than any liquid, and if the claims put forward be true, the "diner-out" by taking a few of them along with him, need not be disturbed by thoughts of the next morning's headache.—*The Medical Record.*

CONSUMPTION.—At the Paris Academy of Medicine M. Lagneau said that the inhabitants of large cities would become extinct if they did not intermarry with the rural population or with foreigners; they suffer terribly from certain affections others escape, especially tuberculosis. This disease causes in Paris a fifth of the mortality (in 1882, among 58,702 deaths, 11,011 were from tuberculosis). Most medical men agree with MM. Barth, Godelier, Jaccoud, Lecadre, Mascaret and Champouillon, that sedentary occupations, remaining indoors, inhabiting rooms in which the air is not often renewed, are all conditions favorable to the development of phthisis. M. Lagneau especially draws attention to the fatal effect of remaining a long time in a bent position, the chest pressed against a desk; an insufficient quantity of air enters the pulmonary vesicles, thus unhealthy conditions surround pupils by day, who at night frequently sleep in overcrowded dormitories; consequently the lungs never normally expand, and thoracic development is imperfect. This condition has been observed over and over again by MM. Arnould and Dally in

pupils of the upper schools: they are pale, languid, thin, anæmic—often the first indexes of phthisis. These facts have been brought to light by many doctors, especially M. Peter and Dr. Williamson of Ventnor, who have observed that tuberculosis attacks especially the hard-working pupils, those who fit themselves to be teachers and professors.—Paris correspondent *Sanitary Record*.

HOW ARTIFICIAL TEETH MAY DO HARM.—Another agent in the combination to maintain for the man of advancing age his career of flesh-eater is the dentist. Nothing is more common at this period of life than to hear complaints of indigestion experienced, so it is affirmed, because mastication is imperfectly performed for want of teeth. The dentist deftly repairs the defective implements, and the important function of chewing the food can henceforth be performed with comfort. But, without any intention to justify a doctrine of final causes, I would point out the significant fact that the disappearance of the masticating powers is mostly coincident with the period of life when that species of food which most requires their action—viz., solid animal fibre—is little, if at all, required by the individual. It is during the latter third of his career that the softer and lighter foods, such as well-cooked cereals, some light mixed animal and vegetable soups, and also fish, for which teeth are barely necessary, are particularly valuable and appropriate. And the man with imperfect teeth who conforms to nature's demand for a mild non-stimulating dietary in advanced years, will mostly be blessed with a better digestion and sounder health than the man who, thanks to his artificial machinery, can eat and does eat as much flesh in quantity and variety as he did in the days of his youth. Far be it from me to undervalue the truly artistic achievements of a clever and experienced dental surgeon, or the comfort which he affords. By all means, let us have recourse to his aid when our natural teeth fail, for the purpose of vocal articulation, to say nothing of their relation to personal appearance: on such grounds the artificial substitutes rank among the necessities of life in a civilized community. Only let it be understood that the chief end of teeth, so far as mastication is concerned, has in advancing age been to a

great extent accomplished, and that they are now mainly useful for the purposes just named. But I cannot help adding that there are some grounds for the belief that those who have through life, from their earliest years, consumed little or no flesh, but have lived on a diet chiefly or wholly vegetarian, will be found to have preserved their teeth longer than those who have always made flesh a prominent part of their daily food.—SIR HENRY THOMPSON in "*Diet in Relation to Age and Activity*," in "*Popular Science Monthly*."

BISMARCK AND HIS DOCTOR.—Professor Schwenniger, the Prince's doctor, is the Roose of Berlin. Munich was to him what Brighton was to our English rising medico, and Bismarck's eldest son was his discoverer. This gentleman, having had some sixty or seventy pounds, weight taken off him, and having been brought out of the very back teeth of death by following Dr. Schwenniger's advice, suggested that his father should also become a patient. The chancellor was willing, but he could not go to Munich, and the doctor could not leave his practice there without a *quid pro quo*. The quid—several hundred quid—was found by his appointment to a professorship in Berlin, which he now holds, in addition to an enormous private practice. He sees Bismarck daily, and brought him into perfect health, and had so tamed the tiger that the former periodical explosions in the Reichsrath had entirely ceased, and there had been no change in the government since Schwenniger had charge of the chancellor's digestion. Diet, not medicine, is what Professor Schwenniger swears by. No drugs, no mineral waters, no "kur" of any kind. Eat of only one dish, no matter what that may be. Oysters, lobsters, beef, mutton—eat your moderate fill of that, but touch nothing else at a meal; no vegetables, save perhaps a little salad, no sweets, no savories, and do not touch one drop of liquid until half an hour, in some cases an hour, after your meal is ended! There is the *crucé* for those who like Chablis with their oysters, Madeira with their turtle, Marcobrunner with their fish, and D. and G.'s Gold-Lack with their first entree. One dish only, and no drink until long after the meal is over! What does Lucullus—what does Sir Henry Edwards, of the statute—think of that?—*Lou. Ex.*

EDITOR'S SPECIAL CORNER.

THE importance of diet in relation to health is year by year becoming more and more recognized. Our readers know that for many years we have endeavored to impress upon the public the desirability of the most careful attention to the food consumed, especially as relates to the purity and simplicity of the food; built up as the human organism is, muscle and brain, with the direct product of this food. Within the past year or two, much has been written in the leading medical journals of a like character and especially in relation to diet in the treatment of disease, a subject which has been sadly neglected or overlooked in the curricula of the medical schools. It is gratifying to observe the change in this regard, and much good will doubtless follow it. In promoting and preserving good health and a vigorous organism pure and unadulterated food is of great consequence.

In the last annual Report on Adulteration of Food for 1885, of the Commission of Inland Revenue, in the report of the late lamented chief Dominion Analyst, Mr. H. Sugden Evans, we read as follows:—"It must be conceded that few national outlays can be more productive to a country's welfare and stability than that which tends to ameliorate the health of its people, whether it be a development of manly vigor, intellectual and mental attainments, or the securing of sound, wholesome and invigorating food and pure medicines—in a word, the maintaining of the *mens sana in corpore sano* of the nation. To this end the due and regular inspection of the food supplies of the country very largely contributes, and although there must necessarily be a large expenditure at the outset, which does not immediately show any result, yet the operation of the Adulteration of Food and Drugs Act in this country has produced a conspicuous abatement of the frauds practiced on the public, whereby the very staff and support of life was meanly degraded."

MEANLY degraded, indeed. The adulteration of food and drugs is one of the meanest and most contemptible of crimes, and should be more severely punished than it is. At one time the punishment was burning at the stake. Mr. Evans continued, "The amended Act of last Session will become oper-

tive after the 1st of January, and it is believed that it will effect all that is to be desired; and, if rigidly administered and enforced, it is to be expected much larger improvement in the quality of food supplies will accrue than has done in the past. It has been the policy of the department charged with administering this Act to exercise leniency, and not to force its operation upon the innocent or unwary; therefore, the origins of frauds have been sought amongst the manufacturers and wholesale distributors. But, at the same time that it is laudably desired to punish only the guilty, it cannot be logically sustained that the retail vendor is not presumably cognizant of the adulteration, and therefore equally culpable." We trust the department will make a few good "examples" in this way, and believe it is the intention of the Commissioner, Mr. Miall, to do so.

THE Canadian quarantines, every now and then, are attacked by certain papers, too plainly, we fear, from political motives. It is a great pity that the public mind should be so disturbed in relation to so serious a matter without just cause. As we have pointed out, on a former occasion, the Canadian quarantine system with its regulations have been very highly spoken of abroad, as, for example, at an International Medical Congress held at Amsterdam, Holland, two or three years ago, at which the quarantinery organization of Canada was characterized by Dr. Van Leent, who had been, we believe, visiting the quarantines of this continent, as *très complets et très efficaces*. The Deputy of the Minister of Agriculture, Dr. Taché, is himself a most capable, painstaking and experienced physician, and the chief officer at Grosse Isle, Dr. Montizambert is a most competent and energetic officer of long experience. Besides the regular efficient regulations, in times of danger special proclamations are issued, and indeed have been issued every summer since 1883. We believe it is the intention of the Government to issue another now early this summer.

In actual practice, steamers before being allowed to land the mails at Rimouski, are first inspected by the quarantine officer at

that port. If he does not give a cleanbill of health, neither the passengers nor the mails can be landed, but the steamer must go back to Grosse Isle. Cases of small-pox have been this year brought by steamers to the St. Lawrence, but they were taken off at Grosse Isle, as provided by the quarantine regulations, and properly cared for there. No case of small-pox, so far as known, we believe, has been brought into the country this year. A case was reported, but it appears there is no doubt that it was only one of varicella, or chicken-pox. It was so diagnosed by both the ship's surgeon and the Government officers. The patient was well in a few days, and no cases of variola followed.

Dr. Montizambert, with the permission of the Government, we have just learned, has just had a steam yacht fitted up with all the most complete modern scientific appliances for disinfecting purposes, and with accommodation for the sick. With this, incoming ocean-vessels are met long before they reach Grosse Isle. If any cases of infectious disease is on board, it is looked after at once, and the process of disinfection is commenced. If necessary, too, the ocean vessel is detained at Grosse Isle, and as long as perfect safety demands.

We believe that everything is being done that is practicable and that can be done to prevent the importation into Canada of infectious disease.

The cholera, it appears, is still spreading in Italy. We fear little preparation is being made for it, or to prevent its spread, should it, by any possible chance, find its way into Canada. If it should reach here, it is most likely to come by way of New York, from Southern Europe. The cases which occurred at Courtown Harbour, in England, which were reported to be cholera, it is now said, were cases of dysentery. Two deaths had occurred up to June 5th, one being that of a soldier who had recently returned from Egypt. The *British Medical Journal*, the best medical authority published, in a recent number, says, "The early appearance of the cholera this year in so many scattered and distant parts of Italy is of bad omen, and a rapid and extensive diffusion of the epidemic with the increasing summer heat is almost inevitable. Still later advices confirm the correctness of these predictions. In the week ending June 6th there were in

Venice 215 cases and 121 deaths. Cases are again reported at Padua, imported from Venice; and it is reported that Florence has also been infected. The people of the cities and towns in Canada should be on the safer side, and, without exception, "put their houses in order." Often the long-threatening comes at last.

OBSERVATIONS AND ANNOTATIONS.

Excess of supply over demand is perhaps not more marked in anything than in the medical profession. Too many doctors, is the cry all over this continent by those who take deep interest in the welfare of the profession, and there is a very general desire to raise the standard of education in the schools. Schools hesitate, fearing a falling off in the number of students, which means in most cases smaller incomes to the teachers or professors. It is time, in view of the large numbers of students yearly graduating in medicine at the various schools in Canada, that some move were made to reduce the number by raising the standard of qualification and increasing the length of time demanded for a course of study from four to five years. We are pleased to observe that at the last meeting of the College of Physicians and Surgeons of Ontario, the president, Surgeon-General Bergin, in his address, referred to the subject and said, "The profession is being overcrowded, and the number of young men entering upon the study of medicine and graduating is far in excess of the needs of the country." He thought they should raise the standard of qualification. We should be glad to find the medical journals independent enough to take up this subject.

Col. BERTIN protested strongly, too, against the action, or rather inaction, of the Imperial Government in permitting gentlemen to come here with the very lowest qualifications, and, under the pretense of complying with the law, while not complying with it, to practice medicine upon the same terms as the men who comply with all the requirements of the law in Ontario. He suggested that the Council should take measures to compel the Government of Great Britain to carry out the pledges it had made to the Government of this country, that in Canada we shall have the regulation of the Dominion Medical affairs.

The attendance of visitors at the Colonial Exhibition is exceeding all precedent. During the month of May the total of 570,909 was reached. In the week ending June 12th, there were 159,715 visitors, making 873,569 since the opening. It is thought that the number by the middle of June will have reached up to 1,000,000.

THE term typho-malarial, we have on more than one occasion urged, is a misnomer and misleading. Dr. Geo. Tye, of Chatham, Ont., at a recent meeting of the Detroit Medical Association, quoted Bartholow and Wilson against the name, as a "complete misnomer," "misleading" and giving rise to "confusion." The doctor adds: "Abundance of evidence of this character can be produced to prove that this so-called disease does not exist. At the last meeting of the Ontario Medical Association, held in London in June last, in a discussion on fever I denied the existence of typho-malarial fever, and pointed out the evil consequences that might follow such a belief. This view was disputed by some eminent medical men present. The official nomenclature of our Ontario Health Report contains a place for typho-malarial fever."

DR. TYE continued in the following practical words:—"At the last meeting of the Ontario Medical Association Dr. Fraser read an instructive paper entitled 'Continued Fever,' which clearly shows that true typhoid on account of anomalous form, is often mistaken for some form of malarial fever. I make a condensed quotation: 'Waterworks were established in Sarnia in 1876. The supply pipe was near the outlet of a large sewer, but above it, and as the current was strong no contamination was feared, but the following two years typhoid was more prevalent than ever before. In the spring of 1879 the supply pipe was broken by the ice and during the following summer cases of *continued fever* became very numerous, and many of them fatal. Unfortunately, the disease got the name of malarial fever. The water was suspected and repeatedly examined by competent chemists and reported pure. The pipe was then carried into the bed of the river. Still the fever cases ranged from five to fifty annually, until the authorities closed the sewer, then no further cases occurred.' This exhibits in a strong light the danger of faulty nomenclature. Many of these cases proved to be true cases, most have been atypical, otherwise the pro-

fession of Sarnia would have been persuaded of its true character and the cause removed much earlier—and probably much misery and many lives spared."

OF the dust of cities, *Technics* says, dust "abounds in animal life, and the molecular activity of these organisms varies according to the height at which the dust is collected. Unfortunately, five feet is the height at which they are most active, about on a level with an ordinary foot-passenger's mouth. Thus these moving organisms are always in waiting to be devoured before our very faces. There is also plenty of vegetable matter disporting itself in the dust; and in those thoroughfares where there is much horse and other animal traffic, this vegetable matter consists largely of what has already passed through the digestive tract of animals, or has suffered decomposition, in some way or other. In this manner many diseases doubtless propagate themselves, and the history of plagues and pestilences in cities seems divested of some of its mysteries.

AFTER being drawn into the body—inhaled, the dust seems to be limited in its progress, as it has not been found in other organs than the bronchial glands and lungs. Sand and coal dust, inhaled by stone-masons and miners, are never found beyond the lungs. But recent experiments have determined the existence of veins in connection with the bronchial glands; and when such a gland becomes irritated by the presence of foreign particles, it seems feasible that these particles may be carried on through the thoracic duct, and thus distributed to other remote organs.

DIETETICS in disease is now a frequent heading to articles or items in medical journals. This shows the importance attached to diet. Little attention, however, is given to the subject in the schools. Dr. J. Milner Fothergill, a physician of high reputation, thinks it is the great therapeutic matter of the day, and he feels in duty bound to lend it what aid he can. Of the necessity of some systematic teaching of dietetics in a course of medical education, he says, no one can entertain a doubt. "It is surely as desirable that a medical man be taught how to feed a patient acutely ill, as how to prescribe for him. If it be a pyrexia, surely it is as desirable to maintain the strength, and call as little as possible upon the body-reserves, as it is to keep down the body-temperature by antipyretics. To pre-

vent exhaustion, both matters must receive attention. Every sick person is more or less a dyspeptic, and dyspepsia requires appropriate and suitable food. Many dyspeptics can alone perform their daily toil by a watchful attention to their food and food-requirements."

Why don't you doctors prosecute the quacks? is a question often asked us, says a writer in the *Southern California Practitioner*; and thus he adds, You might as well ask the grocer to prosecute the thief who steals sugar from a private residence, or the banker to prosecute the pick-pocket who purloins the purse from a lady in the crowded street. It is not the physician whose life is placed in jeopardy and who is swindled out of his money by the ignorant medical pretender.

SOME very sad occurrences have taken place from time to time in this wise: a person is taken suddenly ill in a public place, is removed by the police, charged with drunkenness and finally dies of paralysis or some other affection altogether independent of alcoholism. A medical man may have seen the case and blundered over the diagnosis or perhaps none had been called. An exchange says, Public officers of the peace should be compelled to call medical aid in every case of unconsciousness, or even incapacity, from whatever cause, and the diagnosis should be most guarded, and thus avoid such a mistake as was recently made by an eminent medical man in New York.

In some good articles in the *Fortnightly Review*, Dr. ROOSE develops the idea that the need of our age is not rest and stagnation, but healthful conditions for work, freedom from worry, suitable variety and a wise distribution of our time.

ZEISS, of Jena, Germany, *American Lancet* announces the discovery of a new compound for the manufacture of high power objectives. The first experiments with its use showed a large increase of amplification over the highest possibilities of the old material. It is hoped that glasses made from this material will enable us to distinguish by its structure alone bacteria of all forms.

THE death rate among the rich in London is from 12½ to 25 per 1,000. Among the poor it is from 23 to 35½ per 1,000. The average duration of life of the well-to-do in England is 55 years; among the artisan class at Lambeth it was 29½ years.

By a recent enactment of the Pennsylvania Legislature, boys under fourteen years of age, and all women and girls, are prohibited from being employed in the coal mines of that State, and most of the large coal mining companies have been discharging such help during the past three months. It is estimated that the law covers nearly one-half of the whole number of slate pickers in the mines, at which boys are sometimes employed when only six years of age, while it also includes a good proportion of the mule drivers and door tenders. It has required many years' agitation to get the law passed through the Legislature, and its enforcement now is causing no little excitement in the mining regions. Yet "society undoubtedly owes it to itself to see that these little ones are at school, instead of being thus early predestined to a life of ignorance."

OHIO is at last to be congratulated and welcomed to the category of States in which State Boards of Health have been organized—now thirty-two in all. In its main features the law for forming the board comprehends the same general conditions common to the laws of other States. It is the outcome of the State Sanitary Association.

THE *Medical Press* gives an instance of muscle poisoning. At Wilhelmshaven two vessels were taken into dry-dock in October, 1885. The sides of the vessels which were not copper-bottomed were covered with the common muscle. The dock work people collected large quantities, and ate them. Nineteen people were attacked with symptoms of poisoning. Nine of the cases were serious. One death occurred about two hours after the eating, and four others followed in about four and one-half hours. The post mortem examination showed conditions of irritant poisoning. There was redness, swelling, and in many places complete detachment of the mucous membrane from the small intestine.

M. PASTEUR announced, at a recent meeting of the Academy of Sciences, Paris, that he had treated the following number of people from different countries for bites from mad dogs: France, 505; Algeria, 40; Russia, 75; England, 25; Italy, 24; Austro-Hungary, 13; Belgium, 10; North America, 9; Finland, 6; Germany, 5; Portugal, 5; Spain, 4; Greece, 3; Switzerland, 1; Brazil, 1. These make a total of 726. The results of the treatment are not fully determined, but are satisfactory as far as known.

THE Women's Educational and Industrial Union of Boston, Mass., cautions all women to be wary of advertisements and circulars promising—on receipt of a certain sum—work at home, with large earnings. They are receiving letters from women far and near who have been defrauded by these promises. They ask the Press to give publicity to the following:—The Women's Educational and Industrial Union, 74 Boylston Street, will gladly give information regarding circulars and advertisements offering to women Work at Home.

It is said, says the *American Lancet*, that the New York Medical Missionary Society requires five thousand dollars to train medical missionaries. It strikes us that the society could by proper selection get many times the medical men it desires at far less expense by taking a few of the two thousand superfluous medical graduates of the present spring. We have at least two thousand more than the country knows what to do with. It is simply a waste of money to educate more.

THE great German historian, Leopold von Ranke, is now more than ninety years old. He has never taken much physical exercise, it is said, and yet is in such perfect health that he works fifteen hours daily, and has work laid out which will occupy all his time till his one-hundredth year.

DR. FOTHERGILL, in the *Medical Times*, says, what is doubtless very true, that towards its death the *Medical Times and Gazette* fell into the same spirit of Philistinism which characterized the closing years of the life of the *Medico-Chirurgical Review*. He says that neither can be said to have died lamented. The *Gazette* it was which a few months before its death abused this JOURNAL on account of our article, three years ago, on the value of vaccination, and urging the importance of isolation as well.

ON Freire's inoculations for the prevention of yellow fever, Dr. Irving A. Watson, of Concord, N. H., has received a letter from Dr. Freire himself. This Dr. Watson sends, with remarks on the success of the inoculations, to the *Sanitarian*. Following is an extract from Dr. Freire's letter. "I continue to practice vaccinations with the greatest success. The immunity is manifested in an absolute manner. Even now we are in the midst of quite an epidemic; nevertheless none of the vaccinated persons are attacked. . . . The people accept with pleasure the results of the inoculations, and their confidence is affirmed more and more by reason of the uninterrupted success of the method. . . . I wait with impatience for the arrival of the learned commission which you

mentioned. . . . As proven by the experiences of three successive epidemics, aggregating 7000 vaccinated persons, the result has been complete and incontrovertible. I am ready to go to infected countries in order to demonstrate, myself, the prophylactic powers of the inoculations." DOMINGOS FREIRE.

IN Cairo, the mortality for some weeks last summer, according to the *Egyptian Gazette*, was at the rate of 80 per 1,000 of population per annum. The *Gazette* adds, this was the death rate of London two centuries ago, and our present average mortality is about equal to that of London one century ago.—That is to say, as far as public health is concerned, we are quite a century behind London. But this should not be; for we enjoy many advantages over England.—We have a healthier climate, a sober people, and a splendid water-supply in Old-Father-Nilus. It has been our misfortune, however, to contaminate both the air we breathe and the water we drink, hence the population is being killed off by a system of slow poisoning, and we are compelled to drink the poisonous draught, and pay for it as well, because, forsooth, no other Company, that would supply good water, can be permitted to exist—the present Company having the monopoly for some eighty years to come. The death rate at Cairo alone for the last quarter of a century has exceeded the birth-rate by 37,000; and if this is equally true for the other towns of Egypt there is no difficulty in prognosticating where we are drifting.

AT the last meeting of the Sanitary Institute of Great Britain, Dr. de Chaumont, pointed out that general death rates, although valuable, were less sure marks of the condition of sanitation than particular death rates, and more especially those from particular classes. "The three most significant were (1) the deaths of children; (2) the deaths from consumption; (3) those from zymotic diseases. They were the most significant, because they were the most preventable by hygienic measures. As regards the death-rate of young children, the large preponderance of their deaths were still a blot upon our social system. As to consumption, the best security against the development or propagation of the disease was free ventilation." He might have added, and a dry, well-drained soil.

London has lately killed seventeen thousand dogs,—the best preventive of hydrophobia. About 34,000 well could be spared in Canadian cities.

The New York City Board of Health last year, it is said, destroyed more than a million pounds of spoiled articles of food.

Late analyses by Dr. Charles L. Mitchell indicate, says the *American Lancet*, that most

of the virtues of coco wine have been due to the alcohol it contains.

It is affirmed that the dogs who bit the Newark children who were sent to Paris to be treated by Pasteur have thus far shown no indications of rabies.

The next meeting of the American Public Health Association will be held at Toronto, Ont., Oct. 5-8, 1886. It was a happy idea that led to the selection of Toronto. May the meeting be a great success.

Dr. Geo. T. McKeough, from a study of an outbreak of diphtheria, near Chatham, Ont., concludes that from a clinical standpoint, diphtheria and membranous croup are identical.

English statistics show that in London the average duration of life of artisans is twenty-nine and one-half years, while among the well-to-do it is fifty-five years. The death-rate among the poor is about double that among the rich.

According to the census of the United States for 1880 there were in that country five hundred and sixty-three concerns for the manufacture of proprietary medicines. These employ more than four thousand persons, had invested ten millions of dollars, and had an annual out-put of fourteen millions of dollars.

The vital statistics in Illinois appear from the last report of the State Board of Health, recently received, to be very imperfect, the returns showing only from 8 to 10 deaths per 1,000 of population per annum. The actual death-rate for 1884, in Cook County, outside of Chicago, is placed at 15.84 per 1000—"a figure which it is believed is very nearly correct. The rate in Chicago for the same year was 17.6." Will any one familiar with mortuary statistics believe that the mortality of those places was not much nearer double that rate? Doubtless it was, and probably not two-thirds of the deaths were reported.

CURRENT LITERATURE.

SUMMER SONG.

The woods in deepest green are dressed,
The sky is glowing blue;
Our fair land smiles, from East to West,
With flowers of every hue,
Our rivers clear reflect the sky
And bring its tender beauties nigh.

The trees, from elm to lilac, ring
At morn and eve with song;
On slender boughs the songsters swing,
Or through cool coverts throng,
And sweep, with fragile wings and fair,
The ocean of the summer air.

And in the wood's deep heart the hum
Of insects, and the low
Croon of the pines proclaim that some
Ear-haunting lyrics flow
Even here. The furthest glades have felt
The sun their winter bondage melt

And so, with birds and flowers, we hail
The song-rich summer days,
When guardian hill and nestling dale
Bask in the ripening rays
The brook, the breeze, together chime,
And the earth breathes in rounded rhyme.

JANE E. G. ROBERTS.

FREDERICTON, N.B.

MAGAZINES AND BOOKS RECEIVED.

HARPER'S WEEKLY AND HARPER'S BAZAR are two most admirable publications and, especially the former, among the few most welcome literary periodicals we receive. They are always fresh and full of interest, both in text and illustration. In the last "*Weekly*," just received, we find a fine full-page illustration, "Squared Away for Home"—The "*Priscilla*" winning the Atlantic Club Regatta, June 15th; with a double-page, well-executed representation of "The Drive to the Soldiers' Home at Washington," which is very suggestive. In the number, too, are portraits of the late King Ludwig and of the late

Edwin P. Whipple, with a biographical sketch of each, and with many other illustrations. Besides a serial story, "Cynic Fortune: a Tale of a Man with a Conscience," there are in this number, as usual, good home and foreign political articles. In one, "The Banishment of the French Princes," the French Republic is contrasted with the American. One on the "English Election" is, of course, laudatory of Mr. Gladstone. In a third, "The President and Democratic Party," we find it stated that, "The Democratic situation is interesting and amusing. The President whom the party did not wish to nominate is yet in

the early part of the second year of his term. The general feeling of his party is unquestionably opposed to his course, and yet it is plain that nothing but his renomination can save his party at the next election."

The *Bazar* is, in the family, no less valuable. Besides fashion plates, there are many interesting and instructive illustrations, and in each number a page of illustrated wit and humor. The *Bazar's* greatest value lies in its well-written and reliable articles relating to moral, social and hygienic progress. These are always moderate in tone and admirable in sentiment; and those bearing upon hygiene, especially, are greatly superior to much of the literature on this subject commonly published in popular periodicals.

THE CENTURY for June, it were enough to write, is "up to the average." The principal contents are, a "Portrait of Benjamin Franklin;" "A Literary Ramble," prettily illustrated;" "The Two Bells;" "Meh Lady: a Story of the War;" "American Country Dwellings," handsomely illustrated;" "The Queen's Bead;" "Faith-Healing and Kindred Phenomena," a very good article;" "A Sonnet;" "Harvard's Botanic Gardens and its Botanists;" "To John G. Saxe;" "The Minister's Charge," continued;" "Circling Fancies;" "Unpublished Letters of Benjamin Franklin;" "Bird's Eggs;" "Hotel Experience of Mr. Pink Fluker;" "Stonewall Jackson in Maryland;" "Harper's Ferry and Sharpsburg;" "The Invasion of Maryland"—the last five fully illustrated; and "Antietam Scenes." In "Topics of the Times" is a good article—"A Word of Sympathy and Caution," relating to capital and labor; and in the "Open Letters" are discussions on "Christian Union," "Women going to College, and the "Labor question."

THE JUNE *St. Nicholas*, for young folks, often interesting and amusing to old and even middle-aged folks, is an attractive number. This charming monthly for the young especi-

ally is, perhaps without exception, the best of its kind published in the world. Parents who wish to place in the hands of their children a select Magazine, highly interesting and instructive, with hardly a feature that could be objectionable to any parent, should subscribe for *St. Nicholas*.

THE DECORATOR AND FURNISHER for June is especially rich in illustrations, and contains among others articles on the following subjects: "Artistic Philadelphia Residences" illustrated;" "Decoration of city houses;" "Dining-room furniture;" "A house furnished for \$400;" "Persian designs;" "screens;" "Sappho," A statue (sketch) "seasonable draperies," "smoking-room" (design) "wall brackets," wall paper hanging" and "window draperies," with a handsome coloured plate, "design for ceilings," in two styles, and other admirable designs and items of interest.

A TREATISE ON ASIATIC CHOLERA, edited and prepared by Edmund Charles Wendt, M.D., Curator and Pathologist of the St. Francis Hospital; and also of the New York Infant Asylum; member of the New York Pathological Society, of the New York Neurological Society, of the Medical Society of the County of New York, etc., etc. In association with Drs. John C. Peters, of New York; Ely McClellan, U.S.A., John B. Hamilton, Surgeon-General, U. S. Marine Hospital Service; and Geo. M. Sternberg, U.S.A. Illustrated with maps and engravings. New York: William Wood & Co.

THE above is one of the series of Woods' Library of Standard Medical Authors, in the usual handsome style. We shall notice it more at length on another occasion.

SIX LECTURES UPON SCHOOL HYGIENE, delivered under the auspices of the Massachusetts Emergency and Hygiene Association—To the teachers in the Public Schools, Boston. Ginn & Co. This is a nice little volume of over 200 pages which we have just received. We shall endeavor to examine it and give a full notice in our next issue.

PUBLISHER'S NOTICES.

FOR GOOD pure milk and clean we recommend that in bottles from the Nepean Dairy farm. We have never known milk to be so free from sediment after standing a few hours, as this milk. It is drawn from the cow through the Barnhart "protector," which prevents contamination from the cows' teats, the stable, etc., during and after milking.

THE Grand Union Hotel is always in perfect order. In its bill of fare and comfortable rooms and beds it is hardly second to any hotel in New York, but very much less expensive. It is convenient to all the depots.

Guests arriving by the Grand Central Depot have their baggage transferred to and from the Grand Union Hotel in five minutes, free of charge. Those arriving by steamer or railroad South, North, East or West, may reach the Grand Union Hotel by the Elevated Railroad for from five to fifteen cents, and save carriage hire.

At General Keer's Himalayan tea office, 58 Church st., Toronto, besides the most delicious tea probably on this continent, you can get most delicious rice, imported direct from India, and dal, an Indian lentil, said to be the cheapest and most nutritious food known for its weight.



DEPARTMENT OF INLAND REVENUE.

Adulteration of Food Act, 1884.

Notice is hereby given to the Public that the Districts for the purposes of this Act, which is now in operation, are coterminous with the Inspection Districts of Inland Revenue.

That the following Analysts are appointed, namely:—H. Sugden Evans, F.C.S., F.R.M.S., Chief Analyst for the Dominion Department of Inland Revenue, Ottawa; William Saunders District of Windsor; W. H. Ellis, District of Toronto; F. X. Valade, District of Kingston; J. B. Edwards, District of Montreal; M. Fiset, District of Quebec; W. F. Best, District of New Brunswick; M. Bowman, District of Nova Scotia and Prince Edward Island; J. B. Wright District of Manitoba.

That the following tariff of fees has been established:

For analysis of Milk.....	\$5 00
“ “ “ when 6 samples are submitted at one time.....	20 00
“ “ Bread, Sweets, and other articles unenumerated.....	5 00
“ “ Butter, Malt Liqueurs, Cider, Wines, Alcoholic Liqueurs, Tinctures, Liqueurs, } Condiments, Spices, Drugs, Oils.....	8 00
“ “ Tea, Coffee, Tobacco, Cocoa or Chocolate, and Drugs for their Alkaloids, as Opium, Barks, etc., Pharmaceutical Liqueurs, Fluid Extracts, etc., Dispensed Medicines } and Waters.....	10 00

That any Officer of Inland Revenue or other person authorized by the Act, on obtaining a sample from a vendor and on the completion of his purchase of such sample, shall declare to the vendor the object for which he has made the purchase, and shall forthwith, in presence of the vendor, proceed to divide the sample into three equal parts, making the same up into three parcels of such description as the nature of the article may require, carefully wrapping each separately, attaching to it a label of such form as may be approved from time to time by the Minister of Inland Revenue, and sealing each parcel therewith in such a manner that the parcel cannot be opened without destroying the same. One parcel shall be delivered to the vendor, the second shall be forwarded to the Public Analyst for the District within which the sample was taken, and the third shall be transmitted to the Minister of Inland Revenue.

That if a vendor of an article (either wholesale or retail) refuses to give to an officer any sample of such article which the officer desires to procure under the provisions of the 7th section of the Act, after the officer has paid or tendered the value of such sample, the officer shall explain the object of his visit and the requirements of section 7 and 8 of the Act, and shall thereupon demand to be shown the stock of such article and to be furnished with or permitted to take samples of the same. If the vendor still refuses, the officer is to repeat the demand in the presence of a reliable witness.

That when samples have been purchased at places distant from the residence of the Public Analyst of the District, the Officer or Inspector shall transmit the respective portions of the sample to the Public Analyst and to the Minister of Inland Revenue respectively, by mail or express prepaid, and the cost of such transmission shall be deemed to be a portion of the cost of purchase.

That when the Analyst's certificate declares an article to be adulterated within the meaning of the Act, the Officer or Inspector shall be advised of such fact, and shall forthwith notify the vendor of intention to prosecute, if such course be determined upon by the Minister of Inland Revenue.

That the Analyst shall impartially perform the duties of his office, and shall not communicate the result of his analysis to anyone, unless specially authorized or testifying before a court of law in conformity with his duties under the Act.

That the Analyst, on receipt of sample, shall proceed with all reasonable speed to make the analysis, and forthwith forward his certificate of analysis to the Minister of Inland Revenue.

That to any municipality appointing Inspectors under the Act, a remission of one-half the fees shall be made by the Public Analyst, and the half so remitted shall be paid under the authority of the Minister of Inland Revenue. But that such Inspectors shall comply with all the requirements of the law and such instructions from the Minister of Inland Revenue, who shall in each case determine the maximum amount of fees that shall be remitted to a municipality in each fiscal year.

E. MIALL,
Commissioner of Inland Revenue.

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Physicians who have recommended it and mothers who have used it for the past four years say, the results are as good and even better than from high-priced foreign foods of similar nature.

It is an absolutely pure compound preparation of specially prepared farina of Wheat and Barley in which the starch has been converted in Dextrine, combined with pure milk and sugar, so that when mixed with water, as directed, for feeding the child, it contains all the casein, sugar, butter and other mammalian constituents nearest in QUALITY and QUANTITY to MOTHER'S MILK of any food made.

The analysis of Dr. Edwards and Dr. Ellis, ordered by the Government, is highly satisfactory. For fuller particulars, testimonials, analysis, etc., address

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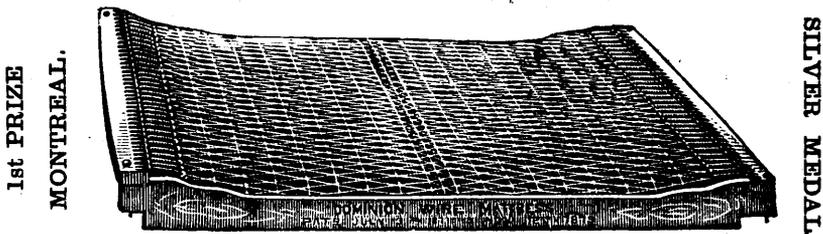
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<i>Best Dry summer Wood, Beech and Maple, long, per cord</i>			
<i>Do.</i>	<i>do. cut and split,</i>	<i>do.</i>	\$4.50
<i>2nd Quality Do.</i>	<i>long,</i>	<i>do.</i>	\$5.00
<i>Do.</i>	<i>do. cut and split,</i>	<i>do.</i>	\$4.00
<i>Dry Pine slaps</i>	<i>long</i>	<i>do.</i>	\$3.00

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