

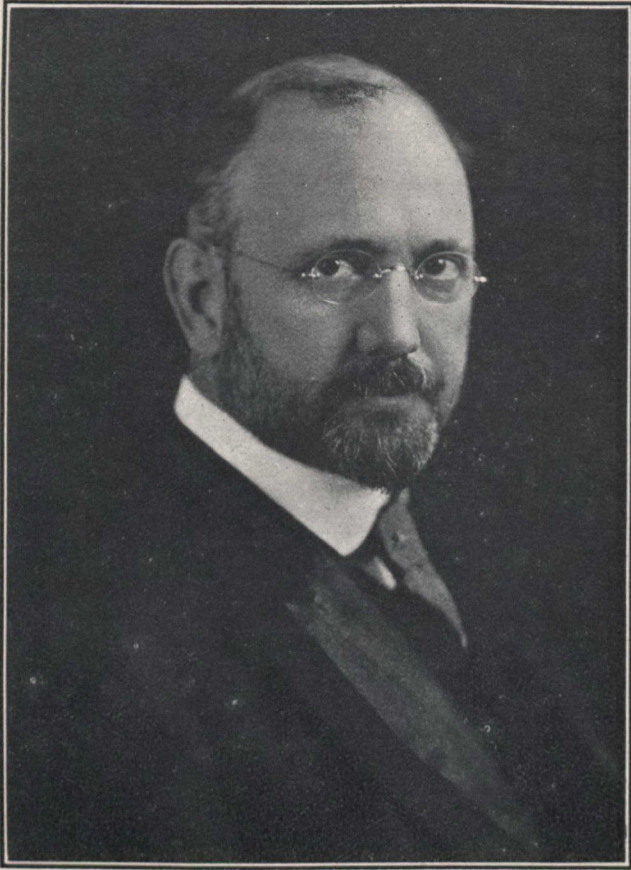
**PAGES**

**MISSING**

We are not content, now-a-days, to limit the action of the State to the protection of its citizens against harmful experiences. The State endeavors more than this. It strives to secure that the citizens shall not merely negatively suffer harm but shall positively be benefited.—

*CHARLES MERCER, M.D., F.R.S.P., F.R.C.S.*





WILLIAM A. EVANS, M.S., M.D., LL.D., D.P.H.



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Special Articles

**PURE WATER AT A MINIMUM OF COST  
FOR INSTALLATION AND MAINTENANCE**

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Water is the most wonderful substance furnished by nature—to merely index its properties would take a volume. We will consider its use for potable purposes.

No living thing can exist without it, and yet were we to use a chemically pure water its effect on the animal economy would be deleterious. Nevertheless, Providence furnishes it in abundance in the combination required, but it is becoming a costly necessity due either to carelessness, ignorance, cupidity or crowded communities; and to the consideration of the latter condition we propose to give most attention.

Pure water to the hygienist is the chemist's element ( $H^2O$ ), containing its ordinary amount of dissolved air, and small percentages of salines that may vary very greatly in composition as in quantity, but it must not contain organic impurity. If this be present, and from vegetable sources, it is less harmful; if the source be animal it is specially deleterious, for, being due to animal waste, it may be accompanied by active biological entities (germs) likely to cause sickness and many diseases, espe-

cially the endemic and contagious, for these are greatly dependant on this form of distribution.

Time being given, natural processes would convert these albuminoid or nitrogenous wastes of tainted water into harmless nitrates by the (germs) microscopic living elements that depend for their existence on these nitrogenous wastes, and the whole would disappear when the food supply is exhausted.

We may note in passing that bacteria (germs) or microbes are indispensable to the disintegration and reduction to their simpler inorganic elements of all kinds of organic matter, the result of life waste, and their number and variety are governed by the amount and kind of material awaiting their services. Here and now we are most concerned with the soil and water supply.

The upper layers of the soil have most organic material, so there we may find a great abundance of germs or microbes of all varieties, and as we go downward organic substances diminish, and *pro rata*,



germs diminish. A few feet under the surface, below the roots of the vegetation, there is practically no organic substance and there are no bacteria. Since vegetables depend for their sustenance on inorganic material, the roots may and do penetrate beyond the layers of soil rich in germs and organic waste.

Hence spring waters (coming from deep sources), artesian or driven wells are sterile. Surface waters passing over contaminated surfaces and through the upper layers of the soil convey a percentage of their impurities to the streams and lakes, where the germs continue to flourish until their food supply fails. Sunlight also is inimical to their growth.

In ordinary parlance we say if there be animal organic waste there is sewage contamination, and in time the water will purify itself, all of which is true with proper limitations.

The animal constitution has such recuperative powers that we can dispose of a vast amount of injected dirt, but there are some varieties that even the strongest constitutions cannot handle with impunity. These are some of the pathologic microbes that can live a long time in water that is sewage tainted and are specially malevolent. For example, let the ejections of a case of typhoid fever, cholera, etc., get into a well, lake or stream, even in small quantity, and the result: an outbreak of disease in those who have ingested the water, if it had not been sterilized by boiling, as in tea, coffee or other cooked preparations.

The remedies are patent to all: Avoid tainted water or remove tainted material.

The two methods are made use of, but they are beginning to border on the difficult, if not impracticable. Let us consider the salient points.

The untutored savage could camp beside the spring, lake or river with impunity. His successors followed the same role, and all went well until the tainting of the water overcame the natural powers for purification. Careless and ignorant people built their byres, stables, outhouses, etc., so that they drained into the water courses, underground as well as above ground. Cupidity throws all varieties of waste from the many types of factories into adjacent water courses, as it costs less

to do so than otherwise to dispose of objectionable matter. These conditions are not difficult to remedy, but crowded communities mean concentration of objectionable material and less place to put it. This gives rise to the garbage cart and common sewer that, when well carried out, fairly well fills the bill, and the water supply may, with care, be unobjectionable, but to assume that large rivers can receive tainted effluents and so dispose of them as to continue to be good potable water is not in accord with the experience of to-day.

The mighty St. Lawrence and its confluents and the Great Lakes were assumed to be perfection, but now they are tainted and disease-producing. This need not be wondered at when we consider the number of large cities and towns that discharge sewage and offal into these basins, and a population increasing and to increase; of the thousands of steamers and boats that are continually dumping offal of every type into those potable (?) waters. The time has come when concerted action must be adopted, very different from what now obtains. The remedy by filtration is being adopted, but at what cost and with what result the future will determine.

Every stream and lake over the whole of the country where population is dense is in like condition because these basins, being the lowest places, must be the reservoirs of drainage of all kinds.

The conditions above detailed to a variable extent prevail in detached buildings and rural communities.

Let us summarize present processes for treating waters more or less tainted.

1. *Dilution*—But this has failed with our largest lakes and rivers.

2. *Exposure to Air and Sunlight*—But the length of time needed to obtain the desired results too often vetoes this process.

3. *Chemical Treatment and Filtration*—But this, in addition to cost of maintenance, as well as installation, becomes a serious question where millions of gallons are daily required.

4. *Filtration and Bacteriological Filter Bed*—In addition to cost is very often inefficient, myhap due to a part of the bed allowing an impure stream to mingle with the purer.



*The Chloride of Lime Process—*

Here I may outline a most satisfactory method where only small supplies are needed, or in camp, or travelling, that is not costly nor difficult in technique. About .3 to .5 parts in a million (3 to 5 parts in 10,000,000) is the amount of chloride of lime required. It can be obtained by this method: Put an evenly filled teaspoonful of high grade chloride of lime into a teacup of water; dissolve. Then to this add 3 cups of water and bottle up for a stock solution. When needed, put a teaspoonful of the stock solution into two gallons of water (an ordinary pailfull), mix carefully, and it is ready for use, and all germ life destroyed. There is no need here to go into the rationale of the question; it suffices to know of its efficiency. This method can be adopted when or where there is a question of tainted water for domestic purposes.

But the aim of this paper is to indicate how good water can be obtained directly from its source.

There have been volumes, and observations by most skilled scientists, on the treatment of tainted waters, but we do not propose to further discuss it for two reasons.

1st. No generally practicable and reliable system has been devised. 2nd. The urban residents, who are chiefly considered in the discussion of this subject, will not average more than from 20 per cent. to 40 per cent. of the population, and the large balance of 80 per cent. to 60 per cent. of the village and rural population are nearly as much threatened by the dangers of defective potable water as are the urbanites, and demand our attention. We will consider each.

*Detached Dwellings.*

For want of a better distinction, let us class these as being those that have no common public supply or sewerage and generally depend on the well for supply.

The march of progress that has left little of this earth unexplored—on its surface or interior or overhead—has for some unexplained reason passed by the well.

*The Well.*

Let us consider the ordinary well. The two common varieties are:

1st. The surface well—a lined up hole in the ground that collects the seepage

from adjoining territory; and the water in its reservoir must be tainted or not, owing to its source—as a rule tainted.

2nd. The Deep Well, which, it is assumed, taps the deep water courses (underground) and should furnish a good supply unless from faulty construction or care.

The neolithic man may have considered the invention of the well as a great advance. When, mayhap, the spring or water course dried up and the well would likely supply his wants, but since then invention in this line has been very limited.

Let us consider the defects of the well in order that they may be avoided.

Its purpose is to furnish easy access to the water supply that the underground water courses places at our command. To achieve this, a pit is sunk till water is reached, and then it is lined up with stone or brick or wood (cement but rarely). Then all you need do is to drop a bucket with a rope to it or put in a pump, and there you are—no science nor theory is needed and what more would you have?

We want the water as it comes from its underground source, uncontaminated, and this the well rarely gives, and if it be an old well we can rightly assume it has ceased to do so.

The ordinary surface well is so objectionable that we need not discuss it.

The defects of the well are, assuming purity of water:

1. Seepage—The pervious walls of the well allows any water in its vicinity to percolate into it with possibility and too often probability of taint.

2. Storm water—Melting snow and rain floods washing into the well. Though this could be readily avoided it is too rarely done.

3. Filth accumulation in the well—bleached earth worms, frogs, toads, mice, rats, with other less excusable decaying matter I need not mention.

4. Silt Accumulation, that encroaches on and in time may fill up the water storage capacity.

5. Stagnant-water—Unless frequently renewed the water in the well is apt to become stagnant and impalatable, if not tainted.

6. Well cleaning—Hence it is evident



that the well should be regularly cleaned out (how many are?). This is always more or less costly and is a job that is difficult of accomplishment if the well be deep.

7. Danger—The press informs us of various well accidents of varied kinds from various causes. We need not dilate on them.

8. Cost of Construction—Those who have not had the experience will fail to appreciate the outlay needed to secure (as the phrase goes) a good well. If a deep shaft be required that has to pass through unstable strata it soon reaches into the hundreds.

9. And when all is done it may be a dry well or the water unfit for potable purposes.

10. Frost in winter is a frequent source of annoyance.

11. Location — To avoid contamination it would require to be at a distance from residence and outbuildings, which means inconvenience at all times and especially in winter, unless where pipe connection is practicable, which is the exception.

12. Cellar Wells dispose of the latter two difficulties, but they are not to be thought of unless as will appear *infra*.

#### *The Remedy.*

In considering these conditions I trust the reader will excuse some details of a personal experience, as it may assist the solution of a difficult subject.

When assuming possession of my present residence, I found two wells—one for the house and one for the stable—and a third was put down for a cottage. I may say that they had an unexceptional and never-failing supply of good spring water from an underground source.

Experiencing the difficulties detailed *supra*, the question to solve was: Plenty of water a few feet deep; how may it be obtained? The well is one plant, can there not be a better one?

If we go back a few decades of the last century, engineering was largely devoted to the subject of wells of all kinds. Iron pipe costs but a few cents a foot, where well sinking costs dollars, so that it is preferable to put down a pipe from the surface to the water supply, and the drive well came into its own.

The history of the driven well is most

interesting, but here and now we may accept it as a fact, as it is an ordinary business proposition and that it can be used in every locality with every probability of success.

It eliminates *in toto* the twelve objections detailed, and we need only dwell on three. Cost nominal, as there is less labor and iron piping costs from 6 cents a foot up. A properly prepared pipe is easily and quickly driven into the ground. When deep enough, attach the pump and *factum est*.

If it be a dry well or water undesirable hoist the pipe and try it in another place; the only expense the small amount of labor needed in sinking the pipe and hoisting it up again.

It would be, of course, needful to do some experimenting as to location before going into much expense, but this question is generally solved by the well digger.

#### *A Pure Supply.*

Since air and water-tight pipe reaches from the pump to the water, there can be no seepage, and though it went through a bed of bacteria they could not enter. As they cannot live deep below the surface, and even did they gain admission accidentally, they could not live in the sterile waters in underground water basins.

In some limestone districts there is the possibility of tainted water sinking deeply, but it is exceptional and can be provided for.

#### *The Cellar Well.*

Hence the well can be driven in the cellar or inside the house walls with no fear of frost or contamination, and the kitchen pump and water supply placed where desired at comparatively little expense and in need of no supervision.

In my own case, after experience in the use of a pipe leading from the outside well to a pump in the kitchen, I decided on trying the driven well. The first one I put down in the conservatory over 25 years ago, and it has never received attention nor care except new leather valves and suction lining for the pump, and it is just as good in every way as when put down. Putting it down was but a forenoon's work for a couple of men, as we had not to go down more than 14 to 16 feet.

About 12 years ago I put down one in



the cottage, and it has been in constant use and never required any care, and about the same time put one down in the cellar of the residence, and though not much used lately it is as good as ever.

Having the spring of water and the facilities for a hydraulic ram, this has to some extent displaced the wells, yet the three driven wells are as fit for duty as ever.

The details and construction of driven wells are purely an engineering question, and being one of the industries of the day it need not here claim farther attention.

In many of our villages and small towns where there is no public water supply the driven wells can eliminate the other kinds unless in some exceptional locality.

The town pump and the house pump in thickly settled communities should not only be available and admissible, but desirable, while running no risk of a breach of sanitary requirements except where geological conditions such as too pervious strata or rock fissures would prevent.

We may safely say that pure water can be at the command of every one in every locality as far as known. Should exceptional conditions develop they can be disposed of on their merits.

#### *Urban Water Supply.*

Where a good gravity or other supply is easily available, that settles it; but these conditions are too often wanting. The preceding argument applies to towns outside public water supply.

Where a water supply for public service is demanded, we must either get good water or try to purify the tainted, and the experience of the day is that purification, though theoretically possible in practice, it is questionable, and each succeeding year increases the difficulty.

We must fall back on the other horn of the dilemma—avoid tainted and only use pure water, but how can it be obtained? We have decided on its practicability for detached houses, but for a city it is another matter. Let us discuss it.

This mother earth of ours is not only a most wonderful study, but is more wonderful in what she furnishes for her inhabitants.

Within her bosom are not only everything we can think of, and doubtless much of what we cannot even conjecture. Ask

for anything we want and complying with fixed laws, she gives us waters, potable and medicinal, oil and gas, coals and minerals of all kinds, and from the deeper springs gives us radium emanations of untold value. If surface waters fail, why not explore and resort to underground reservoirs. They are very freely distributed and in most unexpected places — from the plains of Dakota to the desert of Sahara.

Without discussing imaginary schemes let us take a town in any valley or on a lake or river shore. The water in the stream is below the ground water level in the district, and if it be not desirable to use the water of the stream, let us go to its untainted source, a sufficient distance from the stream to avoid its contaminations.

To further explain my idea. Let us assume the water of Lake Ontario, near Toronto, is of questionable purity and needs filtration (with all the expense and labor that this implies). Can we not get all the good water we want, and never touch Lake Ontario, though using its waters.

Let us go back from its shores some distance and put down driven wells — far enough below the level of the lake — need there be doubt that water would be obtainable in quantity and purity from the lake and adjoining territory? Or would it not be quite practicable to lay off a sufficient lake area and put down pipes to a depth sufficiently below the lake bottom to give a filter bed that need never wear out? And this the more as the water would come from the deeper and purer layers while passing through a filter bed of any desired depth. In any case, we can insure the purity of the water, as it comes practically from a germ-free source and is filtered as well. This filter bed may be any size wished for, and obtained at no expense for purchase, maintenance or repair — it will not wear out.

The engineering details — size of pipe, depth to be driven, supply furnished by each unit — are easily capable of solution. Extension would merely be so many more units.

The cost of pumping, distribution, etc., need be no more than now obtains, and the question of good water supply is not only solved for the present but the future as well.



In the middle States (United States) communities up to 18,000 people have been and are thus supplied.

The artesian well (a rock-pierced driven well), where the saline contents of the water are not objectionable, is specially desirable, as the water comes from deep and distant sources.

Different methods have been adopted in different localities to obtain potable surface waters, such as infiltrating galleries, cribs, shallow wells along the banks or within the bed of surface streams. Lately "well strainers," perforated pipes laid horizontally and beneath the surface of the bed of the stream, so as to obtain filtered waters. This subject is an engineering question in which many factors must be considered. The population to be served, the geological formation, etc., and no two places may be alike.

That the ideas above outlined are not creatures of the imagination, I would refer to the city of Brooklyn, N.Y. Now they are to get an extra supply by tunnel from the Adirondacks, but for the years past they depended on an underground supply, there being no sufficient lakes nor rivers on Long Island. A series of driven wells were put down and connected up with the pump, that sent the water where required. If one well needed repair it could be cut off the general supply, attended to, and switched back again. Brooklyn had no tainted water supply, no filters to build or clean; a minimum of expense and but little machinery.

Two years ago when in Mobile, Alabama, I noticed a special installation. Mobile has an exceptionally fine supply of pure spring water obtained from adjacent hills, but this was not depended on by a large ice manufacturing establishment—they wanted a large supply of pure water, and for condensing purposes at as low a temperature as possible.

Although the Alabama River (a large untainted stream as rivers go) was only a few hundred feet distant, they very judiciously decided to put down driven wells alongside the factory, as not only least costly, but giving a good water at relatively low temperature.

I followed their construction with more than ordinary interest. They drove down rows of four-inch iron pipe about ten feet apart to many feet (about 40) below the river level, each pipe well being connected to a common main, and this to the pump. The whole plant and unlimited water supply were all within the precincts of the factory.

The deep bed of sand driven through was some of it very fine, requiring special contrivances to prevent it clogging the entrances and filling the pipes, etc., but these are engineering points we need not discuss here.

The object of this paper is to outline methods by which pure water for any town, village, or detached house can be obtained at a minimum of expense for installation and maintenance, that need not become inefficient by lapse of time, surroundings, increase of population or the establishment of factories. And where a pure gravity supply is not available the driven well is the only reliable means that can secure the desired results.

There are many details worthy of elaboration, but it would unduly extend this paper. It is not assumed that there is any novelty disclosed other than an index of up-to-date conditions which should be generally known and acted upon by health boards and sanitary authorities; but judging by the conditions that prevail, and unsatisfactory results of the efforts made for amelioration of the evils, a general ignorance appears to be very prevalent.

Pure water at a minimum of expense for installation, maintenance and extension when needed, should be at the command of any community or individual; and we would like to enlist the combined efforts of hygienists and engineers to extend to some extent their field of vision and exploitation so they may find what they are in search of.

In the meantime let every one know that a suspicious water can be fearlessly used if treated with chloride of lime (bleaching powder) as detailed—*supra*—or if it be boiled for 15 minutes.

In the Report of 1899-10 of the University of Illinois, U.S.A., on the Biological and Chemical survey of the waters of Illinois, details are given of the examination of thirty-six wells—of which eighteen were driven or bored—fifteen were dug wells and three were both dug and bored. All the driven or bored wells were satisfactory, unless where now and then they were too highly mineralized. The dug wells were good, bad and indifferent, and all liable to contamination, which included the three that were both dug and bored. The conclusion was "that driven or bored wells, unless waters were too highly mineralized, are much to be preferred to the dug wells."



## VENTILATION OF WORKING ROOMS

In which a good deal of Heat is Radiated—such as Engine Rooms, Press and Printing Rooms, Bakeries, and Kitchens.

BY W. A. EVANS, M.S., M.D., LL.D., D.P.H., CHICAGO.

Engine and boiler rooms are warm because of the fires within them. They do not need to be kept warm, but it is difficult to keep them otherwise. The relative humidity in them is high. They are dusty to about an average degree. There is usually a good volume of air entering the room and a fair amount of air movement within them. As the fires must have a good air supply in order that they may be efficient the stokers and engineers usually get a good deal of fresh, cool air.

Press rooms are warm because of the fires in and near them. They must be kept warm in order that the ink will run well. They are usually dusty—generally there is only a small intake of air and there is not much air movement within the room. The men working in the room are not infrequently quite crowded. They sweat freely. They catch cold easily. Their consumption and pneumonia rates are high.

Bakeries have ovens which make it difficult to keep the rooms cool. Most bakeries do not have a separate sponge room. During the hours when the sponge is setting the sponge room must be kept warm. Bakeries are usually badly crowded. There is much dust. The dust contains gluten and therefore is more harmful than starch dust. The humidity is high. The kitchens are warm by reason of the fires within them. Kitchens for hotels and restaurants are usually dirty. They are practically always overcrowded. The humidity is high.

In the case of the last two illustrations there are æsthetic reasons why the conditions should be rectified. It is not pleasant for the consumer to think of sweat pouring into the soup or of hot, sweaty, dirty hands handling bread. The factors combined make directly and indirectly against the greatest wholesomeness of the product. Nevertheless the most important consideration is the health of the workers. It is quite generally agreed now that the harm of improper air results in great measure from the heat thereof. Humidity which

is too high or too low is harmful. Carbonic acid, carbon monoxide and other gases are of consequence. Dust and bacteria are also harmful agents.

In the air borne infections dust and bacteria are of great importance and heat and moisture are less important. In the air-caused conditions, including susceptibility to infection, heat and humidity become the factors of greatest consequence.

A hot room which is humid is very oppressive and debilitating and precipitates colds and other forms of infection. A hot room which is too dry is a factor in sub-infections and latent infections. If the temperature of an inhabited room is cool the expired air will rise out of the breathing zone in time to escape the next inspiration. If the air of the room is over 70 degrees F. the expired air will remain in the breathing zone and be inhaled in a state of concentration. The air in the aerial envelope is befouled and warmed by the body. If the air of the room is below 70 degrees F. this aerial envelope air is changed. If it is above 70 degrees F. the aerial envelope remains befouled. Considerable difference, say 30 degrees F., between the temperature of the human body and that of the room air is a great force in purifying the breathing zone and the aerial envelope. Hot rooms are therefore unhealthy. However, the heat itself is not the most important factor. It is that the heat annuls a purifying factor. A warm room can be made healthy if the air is otherwise moved with sufficient force and thoroughness. Every man needs the stimulus which comes from having something cold strike his skin—always provided the volume of cold striking and the amount of heat abstracted is not beyond the compensating powers of the body. This stimulus of cold is the function of a cold water bath or a cold air bath in the morning. A man in a cold atmosphere will do a little more work or a little more study than a man in a warm atmosphere. But



these are questions of efficiency rather than health.

Men working in warm air will not be unhealthy if the air is kept fresh enough and if it is circulating freely enough. If the force of difference in temperature is not operating to cause currents of air within the room then it must be supplied by fans.

In introducing fresh air into a work room where the temperature is high it is necessary that the air should be warmed before it gets to the parts where men are at work. During certain hours bakers work very hard and make a great deal of heat. Their skin must be warm in order that evaporation and radiation may rid their bodies of that surplus heat. If cold air strikes their skins, the blood is driven away, perspiration is checked, and great harm and discomfort follows.

The fresh air must be warmed in cold weather. The difference between the temperature of the incoming air and the temperature of the room can vary a good deal, dependent very much upon the method of introduction. It may be as great as sixty degrees, but this is seldom allowable. If the air is introduced near the ceiling and there are no nearby workers such a difference would be tolerated. Fresh air introduced 50 degrees F. below the temperature of the room would probably fall to the floor and heat slowly. If men are at work anywhere near the inlets the cold air would probably fall on them. The men would plug the inlets and do without fresh air, except that which leaked in. Therefore unless there is much waste room and men can always be kept well away from the inlets the incoming air should not be more than 30 degrees lower than the room temperature. The ideal arrangement is to use the surplus heat of the room to heat the incoming air to a temperature within 20 degrees of the temperature of the room, and to introduce the fresh air near the floor. Whenever it is found that the air movement in a room is not brisk enough to bring comfort fans should be added to the equipment. The reference here is to fans which bring about internal currents and not to fans located on the inlet or outlet ducts. In small installations the surplus heat of the room should furnish force enough to move the air in

the ducts. In large installations blower fans will certainly be needed. If the work room is in a cellar the question will be purely one of heat abstraction. If the work room is above ground there may be enough wall and window chill and leakage to make some radiation a necessity. If such radiation is required it should be placed near the windows and the fresh air should be passed through it. Such a room should have windows on more than one side. The suction force of heated air is not as great as the force of wind of say ten miles an hour. The windows which would be on the lee side of such a room would act as outlets rather than inlets. The inlets should then be opened on the wind side or neutral side of the room.

This, however, is of secondary importance. The main questions are—How can the heated air be removed from the room? How can the fresh air be heated before it is discharged into the room? How can the warm air of the room be circulated?

As a basic proposition the warm air should be removed by outlets which open from the room at the ceiling. In these outlet ducts there can be carried the inlet ducts, thus warming up the incoming fresh air. The fresh air ducts should discharge into the room, preferably near the floor and usually behind or around the source of heat in the room. Electrically driven fans should be abundant enough to keep the air currents active. Sometimes this arrangement can be advantageously varied—for example, in a bakery the hot air should be taken out right over the ovens and the fresh air put in around them, so that having been warmed it will be driven out directly into the room. As the cost of heating the fresh air is usually the reason for insufficient ventilation, the proper ventilation of superheated working rooms should be universal. There is no reason why such places should not have a great surplus of fresh air since there is an excess of otherwise waste heat with which to warm it. The requisite is that the inlet and outlet ducts be so arranged as to utilize the waste heat. The standards of volume of air per inhabitant, cubic feet of air space per inhabitant, air currents, freedom from dust, humidity, and sunshine are relative. If one changes for the worse no harm follows if the others im-



prove to a compensating degree. Places in which the temperature must be kept too warm must be superior to the standards in other hygienic qualities to compensate. Such places require more than the average amount of air movement through fans, as has already been indicated. As the temperature and humidity standards are lowered the sunshine standard must come up. Bakeries and kitchens should never be in basements or cellars. Engine rooms and boiler rooms can be placed there without great harm, because the volume of air must be large in order to get boiler efficiency. There is no wall leak or wall chill in cellars and basements. Therefore heat abstraction and control of currents could be made effective. It is possible that a way could be worked out for satisfactory cellar occupation for printing presses.

I do not think that the crowding, dirt, dust, humidity and heat of bakeries

and kitchens can be overcome enough in cellars and basements to warrant us in losing sunshine. Places which are unduly warm must compensate by having a high standard of cleanliness. High temperature increases the susceptibility to infection, and therefore spitting on the floor and dusty air must be prevented. The hands of the workers get very dirty in printing and stereotyping establishments. This is of great importance in these trades. On the hands of the printer doing ordinary work there is a good deal of antimony—a poison. Decalcomania printers get brass on their hands. If the hands are not washed before eating or smoking slow poisoning is liable to occur. Therefore such establishments should have an excess of lavatory equipment—a compensating raise in a standard. As any standard falls other standards in the same group must rise or harm follows.

## CHILD WELFARE AND THE CITY

BY WM. H. ATHERTON, PH.D.,

SECRETARY, CITY IMPROVEMENT LEAGUE OF MONTREAL.

“This boy is Ignorance. This girl is Want: Beware them both and all of their degree, but, most of all, beware this boy, for on his brow I see that written which is Doom, unless the writing be erased.”  
—“A Christmas Carol,” Charles Dickens.

Mr. Ebenezer Scrooge was a squeezing, wrenching, clutching, covetous old sinner. A type of the rich and selfish merchant of London in the middle of the 19th century, he cared as little about his fellowmen, civic pride, civic loyalty, or civic responsibility as any man. He was an oyster by choice—a citizen by accident. It is true he paid his taxes, because he had to, but he never opened his heart or his purse strings to anything over and above the forced requirements of the law. Social problems or the calls of humanity left him untouched.

When others would call on Scrooge to

help the poor with a donation at Christmas time, he would caustically ask whether the prisons and the workhouses, the tread mill and the poor law were still in full working order, because “I help to support those establishments—they cost enough and those who are badly off must go there.”

“But many can’t go there, Mr. Scrooge, many would rather die.” “If they would rather die,” said Scrooge, “they had better do so and decrease our surplus population.”

This Scrooge philosophy is hardly the popular doctrine of to-day, thank goodness, in the twentieth century city life so admirably visioned for us by the Hon. H. B. Macfarland.\*

### *Scrooge's Conversion.*

But, after an enforced and strenuous course of ghostly visitations at midnight on

A lay sermon given before the Annual Convention of the Union of Canadian Municipalities held in August, 1911, at Quebec.  
\* Late President of the Commission for the District of Columbia, U. S.—Speaking at Quebec.



Christmas Eve, Scrooge found social salvation and a new life in the social problems around him through his new-found interest in Little Tiny Tim, a deformed, crippled child, the son of his own ill-used clerk. A little child opened his heart to his social duties, and he became a good, practical citizen, for his biographer, Dickens, tells us, "Scrooge became as good a friend, as good a master, and as good a man as the good old city knew, or as any other good old city, town or borough in the good old world."

*The Children, Ignorance and Want.*

One of the object lessons which Scrooge had to study before becoming a good citizen was the following:

The spirit of reform brought forth for Scrooge two children from the slums, "wretched, abject, frightful, hideous, miserable." They knelt down at the spirit's feet and clung upon the outside of its garment.

"Oh, man!" cried the spirit to Scrooge, "Look here! Look! Look down here. They were a boy and a girl, yellow, meagre, ragged, scowling, wolfish, but prostrate, too, in their humility. Where graceful youth should have filled their features out and touched them with its freshest tints, a stale and shrivelled hand like that of age had pinched and twisted them and pulled them into shreds. Where angels might have sat enthroned, devils lurked and glared out menacing.

"Spirit!" cried Scrooge. "Are they yours?" "No!" answered the spirit of Scrooge's reformation, looking down upon them, "they are Man's! And they cling to me, appealing from their fathers. "This boy is Ignorance. This girl is Want. Beware them both and all of their degree, but, most of all, beware this boy, for on his brow I see that written which is Doom, unless the writing be erased."

"Deny it!" cried the spirit, stretching out its hand towards the city. "Slander those who tell it ye! Admit it for your factious purposes and make it worse, and abide the end!"

"Have they no refuge nor resource?" cried the now repentant Scrooge. The spirit turned upon him, with his own words, "Are there no prisons? Are there no workhouses?"

\* \* \* \* \*

*City Officials and the Child.*

Gentlemen of the Canadian municipalities; mayors, aldermen and civic officials, you know to whom the accusing hand of the spirit of reform was pointing when directing Scrooge's gaze to the city—it was to those, who in the 19th century city, held responsible positions in regard to the children of the city such as you hold to-day.

But if the spirit of reform came unto us to-night he would not be so stern. The modern city official does not slander the humanitarian who tells him of the city's ills. The spirit of philanthropy and charity is listened to these days.

In the twentieth century city all are vying with one another to do something for their neighbour, especially the poor. There are not so many Scrooges nowadays—although he is not unknown. A great wave of civic altruism is traversing the world. It is being experienced in a keener and cleaner interest in civic government by the ruled and rulers, and to-day more than ever are practical means being taken to ensure that preventive remedies should be applied to our social evils, so that in the future our prisons, our reformatories, our hospitals, our insane asylums and our cemeteries shall not be the main solution of our child-life problems.

But let us not be pharasaical and draw no lesson for ourselves from the picture sketched by Charles Dickens of the degradation of child life in London in 1843.

In this fair land of Canada have we no children called Ignorance and Want? Have we no slums which are fostering centres of disease, inefficiency, sin, poverty, ignorance and want for the young of our race?

This last year we have been visited by several distinguished city planners and students of social problems from England—Mr. Henry Vivian, M.P., the expert on model dwellings for the working classes; Mr. Raymond Unwin, an author of undoubted merit on city planning and the architect of the First Garden Suburbs of Hampsted; Mr. Thomas Adams, chief inspector under the "Town Planning Act" of the local Government Board of London, England; and others.

What pained and surprised these men from the old country was that already in this new world, this Canada of ours, this



land of promise, we are reproducing the evils of the old world, and that the slums of London are being rivaled and even surpassed in our midst.

Similar testimony of the alarming conditions existing in our Canadian cities has been lately published by the Conservation Commission of the Dominion Government in the pamphlet on "Unsanitary Housing," by Dr. Hodgetts, medical advisor to the commission. We can no longer doubt that already bad environment is being created in our city life, and it needs no prophet to foretell that out of the Ignorance of the rulers and of the people we shall rear up our quota of anemic, stunted, inefficient, unproductive children, whose end will be Want unless the writing of Doom be erased.

The remedy is efficient house-and-town planning.

For the centres of consumption and infantile mortality, which are the fertile cause of our death roll, always occur in the poor and congested city districts or badly planned suburbs of the artisan classes. At least, it is so in Montreal, and there in consequence we have the highest infantile mortality on this continent.

Do you know, that out of every hundred children born in Montreal in the year 1909 (the last official blue book I have seen) 29 perished in the first year; that out of the total mortality of the people 54.92 per cent. was caused by the deaths of children under five? Do you know that in Montreal during the month of July of this year (1911) out of 1,419 deaths 1,033 were those of children under five (i.e., 72.92 per cent. of last month's mortality); that out of 6,297 deaths occurring in Montreal between Jan. 1 and July 31, of this year, 3,482 were those of children under five? Ignorance of the laws of feeding, no doubt, is greatly to blame for this, but the chief cause is the unhealthy conditions inseparable from overcrowded districts, which again is the result of a badly planned city.

Is it a matter of congratulation that we are welcoming to our cities hordes of inefficient people from southern Europe, brought here by Government subsidy, while a white-robed army of potential citizens of our own flesh and blood are dying at an alarming rate from preventible evils which a subsidized campaign of hygienic education or city planning could remedy?

What consolation to us should it be that, while we are becoming rich and while we desire our cities to rival in greatness the capitals of the old world, the children, the real wealth of the people, are falling thick as leaves that fall in Vallombrosa!

And of the rest of the slum children that survive the pruning of the first five years are we to say that these are always sound in body and mind, undeteriorated?—that they are being brought up in surroundings that will turn out efficient men and women for the struggle of life, capable of rearing in their own time a strong, intelligent and upright Canadian race? We would like to say so, but King Consumption and the Governors of our jails, reformatories and insane asylums bid us pause before we make reply.

Gentlemen, it is your blessed privilege to erase the doom that is written on the foreheads of so many of our city youth by the wise and faithful exercise of those powers put into your hands, as administrators for the common weal.

Not only can you insist that every city department under you, such as that of health, sanitation, water, milk, food and factory inspection; the lighting, the ventilation, the cleaning, and the scavenging of your cities, shall be thoroughly up-to-date and efficiently administered—but you will boldly remove the predisposing causes that have in the past caused bad city environment and slums and produced a debilitated population, whose children will also suffer from lowered physical vitality and lessened mental combativeness in the battle of life.

This you can do by instituting, with bold and intelligent foresight, house and town planning movements in your cities, based not so much on the æsthetic embellishment of your neighbourhood, not so much on the provision of civic centres or expensive boulevard schemes, as on the welfare of the children of the working population.

You will do this the more surely if you will remember that life is to be lived more and more in cities, and that in consequence you must import the country into your midst by providing that there shall be ample light, space, air and green spots even in the industrial centres, where the poor must necessarily congregate to be near their bread-winning occupations.



This is the first law and ABC of modern city planning.

You will thus spread the people out, you will give them parks, playgrounds and breathing spaces at frequent intervals, and doing this you will avoid slums. *Slums you must not tolerate*, you must abolish them directly or indirectly by reconstruction or prevention. As Mr. John Burns has said, "Motherhood, childhood, youth, society, and the race demand the abolition of the soul-destroying slums."

To help more effectually in this you will early take steps to grasp greedily and secure for your children and their children's children *all the available land within and without your cities* while it is reasonably cheap, for the want of this elementary precaution, it is, that has made city life in the past so productive of death and disease to the toiling population.

Thus by controlling beforehand the growth of your city and its suburbs and arranging for its expansion according to the true needs of the people—which are the health, strength, morality of the working classes—you are moulding your cities and your cities are not moulding or crippling you.

In such a twentieth century city the boy Ignorance and the girl Want will not be blots on your civilization.

#### *City Associations and the Child.*

"Spirit! are these children yours?"  
 "No! they are Man's and they cling to me appealing from their fathers."

It is the spirit of humanity again speaking.

It is undoubtedly the first duty and inalienable right of parents to tend their children themselves and to give them every chance of a full development of body and mind, but when parents neglect this strict duty, either through wilful and vicious ignorance or more frequently because of lack of sufficient knowledge, the children then have a right to appeal from their fathers to the spirit of humanity and civilization, as interpreted by the state, the municipality, and the more blessed of their fellow-citizens.

Civilization means that we are our brothers' keepers and we must bear one another's burdens. Nowadays it is coming home very forcibly that those

who have been more endowed with the talent of health, wealth, and knowledge are but stewards, who must make use of their opportunities for the common good. Living as we do in social life for mutual help and protection and a fuller enjoyment of life, where some are weaker in intellect, strength or riches, the better endowed are bound to give of their superfluity to the needy. Hence there have arisen many organizations of private citizens in every walk or profession of life who wish to give some of their time, service and money for the good of the whole. These have different names, such as city clubs, associations for embellishment, for social service, social welfare, etc. Some are formed in educational, humanitarian, aesthetic, or philanthropic, others in civic bodies; but all with the intention of grappling with the social problems, of our city; of promoting better, cleaner, healthier municipal life; of finding out the causes of the ills of society, of remedying and reforming them by legislative means.

In the past all failure in city life was apt to be placed at the door of the city hall, but nowadays citizens realize that they get the government they deserve, and that they themselves must contribute more of their own direct assistance in the government by taking a share in the many burdens and problems of municipal life, which are too arduous and complex for the city representatives unaided. Hence there have arisen many volunteer organizations of educated men and women for this purpose. It is to the mutual interest of city authorities and such bodies to complement and supplement one another harmoniously—both should shoulder the burdens of responsibility in the household of the city; the Organizations, by awakening the civic conscience and educating the people, and starting movements for enlightened reform, and the City Halls, by concretizing the enlightened public opinion thus formed in wise legislation and carrying it into execution by the effective administration of the law.

May I in my capacity as the representative of a civic organization of private citizens of the type alluded to, appeal to you to encourage the growth of more on these lines throughout Canada. I hope the time is not far distant when we shall be able



to have federations of national Canadian organizations of expert, but unofficial, bodies—corresponding to the great American associations, viz., the National Municipal League, which views municipal life from the financial and administrative side, and the American Civic Association, whose aspect is mostly aesthetic and humanitarian—meeting occasionally in joint convention with official municipal organizations such as yours here to-night. The collaboration of such like Canadian societies with the Union of Canadian Municipalities, representing the city halls of the Dominion, would be of incalculable worth for our Canadian municipal life.

With such a powerful combination of many divergent minds, interchanging ideas and working for unity through variety, at work upon the solution of our social problems—the best official and volunteer service available—we could hope for much progress.

How quickly could municipal movements of national import be seized upon and embraced over the Dominion by the representatives—official and unofficial—of the various cities meeting one another and comparing experiences by public and private conferences!

Your kind invitation to me as a lay municipal worker emboldens me to illustrate concretely what I mean, by placing before you a movement which, while originating in Montreal, is deserving of adoption throughout Canada.

#### *A Child Welfare Movement for Canada.*

We private citizens of the City Improvement League of Montreal and its associated societies, stirred by the sight of the annual slaughter of our infants, and moved by their appeal to come to the aid of their parents, have been diagnosing the causes of our city's ills. Among the chief predisposing causes of our infantile mortality we find that of defective house and town planning. Therefore we have tried to secure a city planning commission established by the Legislature of Quebec for the Island of Montreal, but at present we have experienced delay. Nevertheless, we have not abandoned our purpose of agitating for it. Meanwhile, we have been inspired by our recent city survey investigations, which impressed upon us the relation of infantile mortality with house and town congestion,

to take up the case of the child as the immediate basis of our city planning propaganda—for we are convinced that child welfare and city welfare are synonymous, for as has been said, "The indefinite improvement of humanity and the cause of the little child are inseparably bound together."

Again, we believe with Dr. C. W. Elliot, who visited us last November, that "if we are hoping to reform mankind we must begin, not with adults, whose habits and ideals are set, but with children, who are plastic. We must begin with the children in the homes, the streets, and the playgrounds," under the auspices of "the child."

In this way, we find that we can present the city planning, housing, and parks' and playground movements to the public by a new but solidly humanitarian and powerfully attractive argument.

We found that our view was shared by many organizations in the city and a movement started under the auspices of the City Improvement League, the Association St. Jean Baptiste, the local Council of Women, and the ladies of La Federation Nationale St. Jean Baptiste, and backed by all the leading organizations of the city and engaged in by all the prominent medical men, lawyers, architects, educationalists, business men, clergymen, and others, of all creeds and racial origins, giving freely of their expert experience, who have combined to study for a year the conditions and problems of child life and early youth and to crystalize their results in a *Child Welfare Exhibition* to be held in October, 1912, on the lines of those held lately in New York and Chicago, and shortly to be repeated in St. Louis and other American cities.

It is found that such exhibitions, together with the propaganda of an educative campaign connected therewith, are invaluable in the promotion of a right public opinion and in the suggestion of well-directed reforms which cannot but be of avail for parents, experts, and rulers alike.

To briefly indicate the scope of the projected Montreal exhibition.

Starting with infant life and prenatal influences, the section of Child Hygiene will illustrate the causes and remedies of infantile mortality and will then pass on to cover the rest



of the child's health till early youth. The exhibition section, entitled "City Environment and the Child," affords the opportunity we have been seeking of extending a propaganda for the housing and town planning movements along child welfare lines. The "Home of the Child" is now entered, and there is demonstrated the advantages of the economical and sound furnishing of the artisan home. The "School life of the Child," in all its forms, with its scholastic and industrial curriculum, its furnishing, its ventilation, and other hygienic accessories, comes next, to be followed by a section provided by the Churches on the work that is being done in the "Religious and Moral formation of the Child," who is to be planned to dwell in the city, which is to be not only healthful and beautiful, but also holy. The "Social life of the Child," its club associations, its recreations indoor and outdoor, Child Labour and Juvenile Crime; each have their special sections to illustrate the intellectual and spiritual training of the child. What is being done and can be done for the Abnormal child—the blind, the crippled, the deaf and dumb, the mentally defective will all be illustrated. And finally there will be a section on general Private and Public Philanthropy in its relation to the child."

My *first* point in giving you this slight sketch of the scope is to show you, in line with my subject, "Child Welfare and the City," the wide field of usefulness in which the city official or the private citizen is called upon these days to labour, if he would satisfy adequately the call of the city children, and my *second* point is to suggest that such educative movements and exhibitions on behalf of the child need the

support and co-operation of the Municipal, Provincial, and Dominion Governments.

We assist, financially, exhibitions and movements that promote the growth of our commerce and industries, the rearing of a good stock of cattle, the conservation of our natural resources and our crops;—have our governing bodies thought as yet sufficiently of assisting movements that will assist the culture of a better crop of citizens? It would be easy to load you with statistics proving conclusively the economic value of every healthy child to the state and the economic loss through the upkeep of our jails, reformatories, insane asylums and other hospitals, which are maintained to repair the errors contracted by the ignorance of the past of the laws of health of body and mind governing the rearing of a nation's children.

In placing before you the project by which we citizens of Montreal are endeavouring in our citizen associations to fulfil our part of the city's duty to the child, I trust that your cities will contribute to make our venture on a Child Welfare Exhibition a success by sending us exhibits indicative of your work in the same field, or by promulgating in your own centres similar educative campaigns for the better, physical, moral and intellectual Welfare of our Canadian Youth, so that planned and trained in all things that render them fit for the exercise of a full, abundant life, they may maintain Canada's aspirations in the competition for place and power among the nations of the earth. The nation that cares most for its children will be the greatest nation, and the nation that rears up in its slums the children of ignorance and want will eventually find its place among the lowest—a consummation we can never contemplate for Canada.

## THE BREEDING SEASON IN MAN

BY R. J. EWART, M.D., M.Sc.Vict., F.R.C.S.Eng., D.P.H.

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That there are certain periods amongst all animals during which the function of reproduction is performed is a matter of common knowledge. But that man himself still shows some indication of such a season has only of late years been no-



ticed. It is a well-known fact that animals in the wild state and those in captivity differ very widely in their sexual habits. Whilst confined and regularly fed, there is a marked increase in the number of œstra in any period, though conception even under such conditions seems to occur more readily at that time which corresponds with the true breeding season in the wild state. This epoch in the life of the female is decided by certain conditions favorable either to herself or her offspring.

It is well known, and much deprecated by the medical profession, that most births occur at night. The object of this is obvious. It is essential for the well-being of the female that she should not be disturbed in such a process, and further, that she should be protected at that time, when she is incapable of defending herself. We can imagine, other things being equal, that, as the winter nights are longest and darkest, those types which happen to choose this period of the year would be the most likely to bring forth their offspring in peace and hence survive.

With respect to the infant, this time is not the ideal season for its first days of life, even though we know that whilst in such an immature state it possesses great resistance to cold. From general considerations the late spring would be considered as a more suitable period than the winter. The conditions of its life should be sufficiently unfavorable to act as a mild stimulus to growth. We can easily conceive of a surfeit of food or a want of sufficient variation of temperature leading to a soporific effect on the one hand, or actual starvation and exposure, producing an untimely death, on the other. In the spring, the conditions appear to be neither too easy nor too severe. Taking these two factors into consideration, we should deduce that period of the year corresponding, in these climates, with January, February, and March, as the most suitable for birth with savage man. Supposing man were a monœstrous animal, this would bring the female in use in the previous April, May, and June. If we agree that civilization has had the same effect on the human female as captivity and

domestication on other animals, then the menstrual periods must have occurred much less frequently in prehistoric times, a special season being allocated for the production of young.

The question we have before us may be put thus:—Is there any indication at present of such a season, and if so, are there any differences in the children born during this period from those born at other times?

The first query we can answer in the affirmative, as the data collected by various observers, and from an analysis of our personal instincts, present a series of facts that amount to proof. Ploss\* has shown that births were not equally distributed throughout the whole year, the greatest number being found in that month which typified the advent of spring in the countries concerned. Thus in Russia, Italy and France the highest birth-rates occurred in the first month of spring.

In Scotland, Haycraft found that colder months contained the greatest number of births, thus bringing the female into use the previous May or June. The May Day festival, as pointed out by "Frazer," in ancient times, was a period of great licentiousness, and we see, even now, in the crowning of the May Queen an essential tribute by the male to the sexual side of his nature.

In a town, the essential conditions underlying this periodic character must be, owing to the nature of the life led, as weak as modern customs can make them, and it is interesting to see if there remains in such a community any semblance to the more primitive state. The points of inquiry resolved themselves as follows:—Firstly, the distribution of the births over the whole year; secondly, the relative fertility of the female according to season; thirdly, the numerical sex relation; and, lastly, the power of survival. The facts on which I base my conclusions can be obtained in any health or education office—owing to the inspection of school children, the month in which the birth occurred being given with every inspection, so that anyone desiring to work out the facts of this interesting little problem may easily do so. My own fig-

\* Das Weib. Leipzig, 1895.



ures are not very numerous, a few groups only being taken at random from a mass of material, and in consequence I have not divided it very extensively. In the majority of instances I have either taken quarters, to correspond with the seasons, spring, summer, autumn, and winter, or halves, firstly from January to June, and secondly, from July to December.

I scarcely think a more detailed classification is of much value, as the trait which we wish to delineate will not be

confined too closely to any period. The town under consideration (Middlesbrough) has a population of 105,000, with a birth-rate of 32, and the rather unique position of 1,089 males per 1,000 females born, which, I think, is one of the highest for the country generally. The average number of births per month was 272. January, however, had the greatest number, 317, in the year 1909. The distribution in each quarter was as follows:—

	Males.	Fe- males.	Male excess
1st quarter—Jan., Feb., March (90 days).....	974	847	191
2nd quarter—April, May, June (91 days).....	922	858	
3rd quarter—July, Aug., Sept. (92 days).....	875	784	116
4th quarter—Oct., Nov., Dec. (92 days).....	856	831	

The greatest numbers occurred in the first quarter of the year, but on analysis this excess consisted mainly of males, and the females reached their maximum in the second quarter, though the differences are small. The variation amongst the

males, according to season, appears to be greater than amongst the females, and this is an interesting point in connection with sex determination. Dividing the year into three periods, the figures read as follows:—

	Males.	Females.	per 1,000 Males Females
January, February, March, April .....	1,289	1,134	1,136
May, June, July, August .....	1,181	1,101	1,072
September, October, November, December.....	1,157	1,085	1,066
Total .....	3,627	3,320	1,098

In the months December and November, the females were in excess of the males. In all others males were more numerous. Most marriages occur in the early part of the year, especially about Christmas and Easter, Lent, a period of scarcity, coming in between. These periods of excess would tend to decide the time the birth should occur, still, the same impulse that leads to mating at any particular time may be dependent on those physiological conditions which render conception more likely. Thus, 550 first births occurred from January to June, and 400 from July to December, which might be attributed to the period of marriage, though the desire for mating and the likelihood of conception are probably synonymous.

The fertility of the females appears to vary considerably. Thus out of over 500 inquiries I found that 46 conceptions occurred in the first half of the year, at an

interval of under two years from the previous birth, whilst in the second half there were only 34, showing that many of the menstrual cycles in the summer and autumn are not followed by true œstra, and hence conception does not occur. Further, the average interval from birth to birth in the first and second quarters was found to be 30 months, and in the third and fourth quarters 31.5 months, a difference not great, yet significant. It would be quite relevant to suppose that children born at the true breeding season would be in some way different from those born at others, and that the creation of a new life at the time, for which through various causes special adaptations have been made for that purpose, would be more fitted to meet the needs of life. To follow up a long series of lives through a period of time is the best method to elucidate such a point. That is a tedious and difficult task, and was not



the one adopted in the present instance.

In any health or education office we possess, as I have said, vast series of data, giving the age and sex distribution of birth in the various periods of the year, and it is

this source that I have used. I have divided them into two sections only — January to June, July to December — and in tabular form they may be given as follows:—

Born in	At Birth		At 6th year		At 11th year	
	No.	Per M.	No.	Per M.	No.	Per M.
January to June .....	3,600	519	2,320	559	3,040	597
July to December .....	3,340	481	1,860	441	2,060	403

It will be seen from this table that children born during the first half of the year seem to have inherited more vitality than those born later. It might be contended that it is due to the more suitable seasons coinciding with the more immature periods of life, and is responsible for the difference in the number surviving. This may be so, still it does not militate from the fact that any cause leading to the production of the young at a certain period, and hence producing a greater fitness on the part of the mother at that time, must influence the probable survival of the offspring. So, whatever is the factor underlying these differences, it comes eventually to the same thing.

I think we may therefore conclude that there is good evidence of a special season

for breeding in man, and that the offspring produced at that time are likely to be better and healthier than those produced at any other, and further, that the male excess reaches its maximum at the corresponding season, a fact which might be made use of for the benefit of society, for at the present time males are required. It is curious that in that class where families are the smallest, and in which inhibition of self and control of sex instinct is greatest, there is a marked female excess. It is scarcely unreasonable to expect that that power which has been utilized so successfully to limit number, might also be used to regulate the kind and fitness of the next generation, as there is a great demand for males in the more prosperous walks of life.

## NEW METHODS IN DIAGNOSIS AND TREATMENT OF INFECTIOUS DISEASES

BY WILLIAM S. MAGILL, M.D., ALBANY, N.Y.

It is not the purpose of this paper to present any general study of so large a scope as the title might indicate, but only to submit for consideration a limited number of diagnostic methods of relatively recent development; to lay stress upon their ease of application; and to point out their valuable contribution to a positive knowledge of pathological processes and their consequent field of utilization in practice. It will also be my effort to indicate the wider use of such methods than for diagnostic purposes only; in some cases I shall point out with insistence upon the value of such methods in prognosis and in the control of therapeutic effort and effect.

The imperative importance of early diagnosis of tuberculosis is established. We are not here interested in the mere determination of the bacilli of tuberculosis in sputa or excreta, but in methods that shall unmask a beginning invasion of the organism of these bacilli: the precocious diagnosis of a tubercular infection. There are various methods which reveal such infection in its initial stages with great reliability.

The use of tuberculin as a diagnostic agent dates from Koch's failure to establish its value as a general means of cure. It was found that a hypodermic injection of a minute dose of tuberculin pro-



voked a marked and prompt rise of temperature in a tubercularly reacting organism. The exhaustive studies and perfections of this use of tuberculin have completely demonstrated its value as a diagnostic method, but have also revealed dangers and disadvantages of sufficient gravity to confine its application to specially trained observers.

It may be said in general terms that nine out of ten individuals infected with tubercle bacilli will evidence this fact by their reaction to the injection of tuberculin, almost immediately upon the establishment of such infection in the organism, and throughout the entire duration of the organic resistance to invasion. A characteristic rise in temperature subsequent to injection of tuberculin is quite positive evidence of tubercular infection of the organism tested. The failure of this reaction is not evidence of the non-existence of such infection; but in general terms it can be said that the cases in which such failures are possible are limited to at least one in ten. Such a failure is generally due to the fact that the infected organism is so exhausted as to be no longer reactive. In such cases, of course, the clinical symptoms of tuberculosis are not deficient. The studies of the rise in temperature of the infected subject tested by tuberculin have shown that this tubercular affection provokes a marked hypersensibility of its victim to manifest high temperature on slight provocation. Based on this susceptibility to heighten temperature two methods of diagnosis are now used. Often, at the first onset of tubercular invasion, it will be found that the muscular and mental activities of the day's work are sufficient to provoke in the infected individual a slight rise of body temperature above the normal during the late afternoon or evening. This fact is of ancient clinical observation and use in the early diagnosis of tuberculosis. It is developed into a method of diagnosis when a suspected individual is directed to take moderate exercise for half an hour or more, with hourly observation of his subsequent temperature. A rise above the normal is strongly indicative of the existence of infection, if found to be a constant phenomenon under such conditions.

The second diagnosis method, based upon this characteristic rise in temperature, is

widely used in France and seems to be of well proven reliability. It is based on the particular susceptibility of tubercular subjects, even in the earliest stages, to any dose of iodine. The method consists in administering to a suspected subject a relatively small dose of iodide of potassium and carefully observing the temperature of the ensuing 24 hours. If the subject be infected with tuberculosis, a marked rise of temperature is a quite constant phenomenon and a distinctly valuable point of diagnosis. Objection to this method is made, as also to the use of the injection of tuberculin, on the ground that the drug administered may facilitate the development of the pathological process. It can be answered, however, that such drug administration for purposes of diagnosis is not long continued nor often repeated, and, therefore, not liable to cause permanent injury when skilfully used and observed. One of the advantages claimed for the administration of iodine as an aid in the diagnosis lies in the temporarily quickened and augmented pathological actions; frequently permitting the clinical detection of the true temporarily exaggerated symptoms. One need not too hastily deery a diagnostic method on the ground that its use for the time being exaggerates a pathological condition. No one would rationally regret palpation for determining the localized pain on the ground that it temporarily exaggerated the pathological compression of swollen tissues. Because of the accusation—perhaps quite seriously made—of possible harm in the injection of tuberculin and the ingestion of iodine the use of these methods has remained quite limited in spite of their great utility and proven reliability for the precocious diagnosis of tuberculosis. Experts in very different lines of investigation have developed such results that the value of the preceding methods has been overlooked.

With the same fundamental property of tuberculin to develop a specifically marked reaction in the tissues of a tubercular individual, efforts to avoid the production of a general reaction of such organism by eliminating from the test the introduction of any tuberculin into the general system have been most successfully made. As the result of this line of experimentation, have been established three diagnostic methods,



all built upon this irritant property of tuberculin; but restricting to a minimum the area of the provoked reaction of the organism. First, in order of time of the introduction is the conjunctival; second, the inoculated cutaneous; and, third, applied-cutaneous reaction to tuberculosis. These methods are alike in fundamental principles and approach each other in the value of their results for the remarkably early diagnosis of any organism reacting to tubercular infection. They differ merely in minor details and in the technique of the several diagnostic methods, as indicated by the name applied to each.

The conjunctival reaction is obtained when one drop of a one per cent. solution of well-chosen tuberculin is cautiously instilled upon the temporarily inverted conjunctiva of an individual organically reacting to tubercular infection. Under proper conditions this reaction is shown by the intense reddening of the seat of instillation within a few hours, persisting from one to several days thereafter in practically all such infected individuals. The reddening of the thus instilled conjunctiva of a normal non-tubercular individual is practically never observed. Objection to the use of the conjunctival method is made by a claim that cases of serious complication of ocular tissues have resulted. One such case, about which a great deal was said and published in New York was found quite unfounded by the personal investigation of this writer. The men who have most thoroughly investigated this method—Wolff-Eisner and Calmette—and used it in very many thousands of cases, are strong in their showing that there is practically no harmful result to be feared in any case suitably subjected to the conjunctival test. The enormous number of individuals examined by this conjunctival method in the hands of the most expert observers has already permitted the collection of clinical data for establishing the use of this method, not only for diagnostic, but also prognostic, purposes. In speaking of this reaction it becomes my duty to point out a grave fault in many writings on this subject. The reaction is often referred to as the "Calmette reaction" on account of the propaganda and use made of the reaction by that authority. Apparently no writer who criticizes the reaction as dangerous has

taken the trouble to know what the so-named reaction really was, for I have found one appeared to know what sort of tuberculin Calmette used—a very vital point of this test if it is to be criticized as dangerous.

When Calmette took up his propaganda for the employment of the conjunctival reaction for the diagnosis of tuberculosis, he used a chemically precipitated and thus purified tuberculin in a standard solution and when he or his co-workers state the results of such tests as harmless you must remember that such results are from the use of a pure reagent. Subsequent writers seem to have utterly failed to consider the nature of the tuberculin as at all important. I have never been able to find one of these who knew anything about the kind of tuberculin used in the tests he so elaborately classed and criticized.

To avoid the criticism of possible harm to a valuable organ, the use of cutaneous reaction is often advocated. By the simple process of scratching the epithelium and the application of a drop of the same solution of tuberculin to this insignificant wound of the skin, in fact, the simplest sort of a vaccination operation at any chosen point of the tegument, the inoculo-cutaneous method of using tuberculin for the diagnosis of tuberculosis is carried out. A zone of more or less intensity and diffused redness of the surrounding tissues is developed in the course of a few hours and persists for one to several days in all persons reacting to a tubercular infection. In this method, as well as in the conjunctival, the clinical data accumulated would point to the great value of this test for both diagnosis and prognosis. It may also be found quite effective in its operation, according to the employment of tuberculin of human or bovine origin, to indicate the corresponding source of the infection of the subject submitted to this diagnostic method. To avoid abrasion of the epithelium, which is requisite in the inoculo-cutaneous method, a salve containing the tuberculin is thoroughly rubbed into a selected portion of the skin and this application is quite sufficient to provoke a manifest zone of intense redness of the skin of individuals reacting to the tubercular infection.

All of the preceding three methods of



diagnosing tuberculosis infection by the reaction of a selected and localized zone of tissue subjected to the activity of tuberculin, yield very prompt and valuable results and are subject to little objection or hostile criticism of any standing. This may account for the great rapidity of their spread into most extensive and very general use.

A French authority recently pointed out the ease with which this same line of investigation could be carried out by the simple application of a drop of the 1 per cent. solution of chosen tuberculin to any suitably prominent nasal turbinate or pharyngo-nasal mucosa. In this case a marked hypercæmia of the point touched with the reagent rapidly develops and persists at least 36 hours in the individuals reacting to tuberculosis infection.

In the use of provoked high temperature the conjunctival or the cutaneous reactions to tuberculin it is scarcely probable that the individual submitted for such method of diagnosis will remain in ignorance of its import and nature. The positive reaction to such tests is most patent to such individual and must reveal to him this ill omen.

To avoid the liability of the patient's inevitable observation of a positive diagnostic conjunctival, cutaneous, or temperature reaction, it has seemed of great advantage to use the pharyngo-nasal mucosa for the chosen site for this sort of tuberculin application and observance of reaction. I have followed this as a method of procedure at my clinic at the New York Nose, Throat, and Lung Hospital for more than a year, with most satisfactory results. There is no difficulty of application of the reagent nor observation of any consequent reaction. The patient has no knowledge of the operation nor of its consequences. A long continued control of these cases by either a conjunctival or cutaneous test demonstrated the uniformity of results.

All of the preceding methods of diagnosis of tuberculosis involve the provoking of a phenomenon to be noted only by more or less constant and personal observation of the suspecting individual. Such methods are inapplicable for long distance control.

Two methods of determining the existence of a tubercular infection without continued or personal observation of the pa-

tient have been employed and are proving their claims.

The first method in point of time is based upon the well-known Pfeiffer serum reaction, which was the precursor of the Widal test, now so universally used. You will recall the fundamental principle of that reaction, as established by the clinical observation: that the serum of an individual resisting or recovering from an invasion of infectious germs, when added in a very dilute form to an active culture of the specific motile germs of that particular infection, would soon arrest all motility and provoke the sedimentation of such germs in their liquid cultures.

By careful search and cultivation, strains of tubercle bacilli have been found in which the individual germs are so motile that their fluid culture constitutes a really homogeneous suspension of the specific germs, with no sedimentation thereof at the bottom. To make with such culture a method of diagnosis of tuberculosis, it is sufficient to receive a minute amount of blood or serum of the individual suspected. This matter is added in diluted form to the liquid homogeneous culture above described, and if the organism of the source of such serum was reacting to tubercular infection, the phenomena of sedimentation of the bacteria takes place in their culture within a few hours, whereas no sedimentation results from the blood or serum of normal or practically non-tubercularized individuals. The accuracy of this method of serum diagnosis of tuberculosis is well established, and it corresponds very closely to the percentage reliability value of the conjunctival and cutaneous reactions.

The second method of this kind, also requiring a small amount of blood from the individual proposed for diagnosis of a tubercular infection, is still in the hands and control of its originator and must be mentioned here subject to all the reservations of a progressive step of great promise, but not yet released from the laboratory proofing of its foster-parent. The foundation of this method lies in Calmette's observation that an infection of tuberculosis which provokes an active resistance of the organism, determines the appearance of an appreciable quantity of lecithin substance in the blood of such individual. By reason of the special quality of cobra



venom to fix such lecithin matter, by the use of a standardized solution of this venom the amount of lecithin appearing in the blood of the individual can be determined and fixes a diagnosis of tuberculosis.

This method holds out to us a most entrancing promise, for subject to verification and control of his series of experiments, Dr. Calmette tells me that the amount of lecithin in the blood is an index of the organic resistance. In this case the accurate determination of the amount by this method permits the exact measure of the state of infection at any given time. The degree of resistance being then known, an exact method of prognosis, as well as diagnosis, is here available and what is of far-reaching import in medicine: a new power is placed in our hands when this method fulfills its promise; for by such accurate determination of a correct index of the progress of a disease we have for the first time a source of accurate knowledge and control of therapeutic efficiency.

The similitude of underlying factors involved in this work of Calmette and that which is bearing such ample fruit in the subject of hæmolysis is striking, and leads at once to the next line of diagnostic work, the serum diagnosis of syphilis.

Time only permits the mention of the easy and positive demonstration of the specific microbe of syphilis, which we possess for a diagnostic method of any suspected tissue, and the very simple and

practical method used by Noguchi, whereby a minute portion of blood or serum of any suspected case can be sent to great distances for a diagnosis of very great reliability, which can be made in the laboratory in two hours' time. The value of this serum test is by no means limited to its use in diagnosis; for here, too, appears this new power in medicine which I have mentioned. By this method of serum test a positive knowledge of the state of the disease and an accurate measure of therapeutic efficiency is in our hands.

I must reserve for a future opportunity the demonstration of the resources of blood examination to show the onset of a diabetes long before any clinical symptoms of glycosuria, or to absolutely determine by a single examination any doubtful diagnosis of small-pox. But I must mention the power which the developed methods or cryoscopy have given us to foresee, forestall or control the critical periods of insufficient renal functions with consequently developing toxemia and our ability to accurately determine the degree of such impairment and select the impaired kidney.

Few realize the ease with which an examination of the blood will permit a diagnosis of pus formation in cases of pleurisy, appendicitis or cholecystitis and similar affections. The value of such easily obtained positive knowledge makes it an imperative duty for the medical practitioner to obtain every available aid from these diagnostic methods.





## Editorial

### Science and Politics.

It would scarcely seem proper that *The Public Health Journal* should not show its interest in the wider questions affecting its particular work by neglecting to refer editorially to the dominant issue which entered into the recent general elections for the Canadian Federal House. Dr. Crozier, of London, the well-known Canadian-born philosopher, said over fifteen years ago: "The scientific interest is always a potent one and is daily exercising more and more influence over the most intelligent and cultured minds." It may perhaps have been difficult to see any evidence of this fact in reading or listening to the heated discussions on reciprocity *versus* anti-reciprocity during the weeks preceding the elections; but, nevertheless, it is fortunately true that it is the daily influences from a man's environment which affect him and form his permanent character and which in an election contest make themselves felt in the expression of his opinion on any particular policy.

We have therefore an interesting field of enquiry as to how far the all-important questions of the hygiene of childhood, the inspection of school children, their housing and methods of instruction, the age at which they go to work, the influences of factory and store, and of the hurry of modern social and industrial life of every kind impressed the Canadian body politic in its outlook upon the reciprocity issue.

There seems no doubt that the essence of the question lay in the problem of whether Canada's economic, social and national life was to be promoted or injured by close commercial relations with the United States; whether prices on the whole were to be reduced to the consumer or advanced to the producer; whether the present busy Canada was to be injuriously affected or benefited by freer commerce with a country in some matters more advanced, and whether those quite definite characteristics which mark Canadians and which, with national pride, are deemed superior, were in social and moral affairs to be influenced adversely or not by making intercourse across the Boundary yet more easy.

In the matter of the simplest consideration—that of the demand and supply of food—we recognize at once a public health question. Should wheat be permanently increased by reciprocity by 5 per cent. Canadians would have an increase of three million dollars added to the price of their wage-earners' bread, and hence an increased cost of living; but, on the other hand, Canada might expect, owing to free fruits, an extension of the use during the winter of fruits from the south, which are a necessary anti-scorbutic in northern climates and so perhaps more than make up for the increased cost of bread. Again, in the matter of meat, there is already abundant evidence to show that the economy in the preparation and preservation of carcasses due to cold storage would increase the Canadian supply of cold storage meat under freer trade beyond the point of similar supply from home-grown animals; and every scientific observer will agree that if the knowledge of refrigeration could be made universal for Canadian farmers, butchers, and supply men—with the steady industry of the northern farmers, coupled with the permanence of local markets and the less cost of transportation, the application of this process would not only enable Canadians to compete favorably with any and every outside supply, but the consuming public would also be more healthfully and economically served if the waste through unscientific handling of these perishable products were thus prevented. This would be equally true of milk, eggs and butter, and still more true in the matter of Canadian-grown fruits, which, including the small fruits, are to-day only available for a day to day supply, and cannot be generally sent to any distant place either in large quantities or in a properly ripened or assured condition of preservation; if competition thus served to teach the science of refrigeration as applied to meats in Chicago or fruits in California, then reciprocity should have its compensations for Canada.

Both Canada and the United States have further, within the last year or two, had



enough loss of life through forest fires to teach them, one would think, that the application of adequate and scientific methods of protection against this danger is not only a public health duty, but a practical possibility. And yet it would seem apparent, after thirty years' observation, that the saving of human life or the application of science in a systematic way to the forest fire problem will not take place until the people and their representatives arrive at a proper realization of the real value of the domain thus requiring protection. Perhaps an increase in the price of pulpwood may hasten this day.

There are other phases of the reciprocity problem serious to Canadians viewed from the health standpoint. Within the last few years, for instance, owing to the operation of a tariff clause admitting milk products free into the United States a trade has sprung up by which not only is cream being sent across the border from neighboring parts of Canada to New York and other states, but the dried casein is also finding a market in relation to sugar refining and like industries to an extent which may very seriously affect the public health. It is quite evident that anything lessening the local supply of such articles as milk, or increasing abnormally their prices, would directly affect the health of the children and ultimately of the race. But such a trade, if increased, goes further. It lessens the available milk for pig feeding and would certainly lower the standard of Canadian bacon, which has hitherto stood higher than American corn-fed by virtue of its better bone and muscle admixed with the fat. Should it lessen the local production of butter it would further limit the supply of that kind of fat looked upon as essential by every town-resident in Canada.

In the social sphere many Canadians have seen nothing which would incline them to closer relations with the United States, and it might perhaps be well for those utilitarians who recognize in the reciprocity problem a question of trade and prices only to study Thomas Carlyle's "Latter Day Pamphlets" and his cynical references to the *pig-philosophy* of the *laissez-faire* school of philosophers.

On the other hand, the trade restrictionists—if anti-reciprocity be thus inter-

preted—would do well to remember that to be a jingo is not to be a good Canadian; that Canadians have pressing national, municipal, and social duties to perform towards their own poorer classes and towards those new-comers, whether in city or town, who have come because they were needed, and whose life and labour have done so much to make the Canada of to-day self-centred, contented and prosperous.

Perhaps what Canadians and their neighbours are to-day needing to understand more even than trade problems is what the late Sir John Simon, the first Chief Medical Officer of England, said in an address on "Experiment as a Basis of Preventive Medicine": "To the science of nature is indeed allotted that one incomparable human day which knows no sunset. In the fierce light of its everlasting daybreak individual workers will pass away, generations will change; but the studies of nature, and, above all, the gathering of such knowledge as can lessen man's physical difficulties and sufferings will surely grow from age to age; and, as in Proserpina's sacred tree, one golden fruit will follow another—*Simili frondescat virga metallo!*"

#### Inter Alia.

Dr. Geo. G. Nasmith, City Bacteriologist of Toronto, stirred up some nervousness by recently publishing the results of his official investigation into the products of the numerous and recently-launched water companies of that city

It appears, from Dr. Nasmith's report, that the majority of these several waters, being hawked so strenuously around Toronto, are far from being as pure as the water supplied by the municipality itself. In fact, dangerous bacteria were found in a number of the samples purchased on the open market and tested. And we understand, as a result of this investigation, that some of the water companies so criticized, will cease doing business. In this connection, Dr. Reid's suggestion on page 457, in reference to Toronto water, should be read.

Without going into the merits of the public health service as a career, we may safe-



ly say that the possession of the degree or diploma in state medicine, sanitary science or public health is an advantage which, at the present time, is widely appreciated. It should be held by candidates for any public health appointment and it has become popular among many other classes of practitioners. There is now no difficulty in obtaining the necessary courses of instruction, the degree being given by institutions like McGill University, Laval and the University of Toronto in this country, the universities of England, Ireland and Scotland and leading universities in the United States. It is only recently, however, that the large universities of the United States have decided to place the course in their curricula.

The subjects for study include sanitary chemistry; sanitary physics, sanitary legislation, bacteriology and parasitology; vital statistics; meteorology and climatology; preventive medicine and practical sanitation. And the regulations of all examining bodies for this degree are drawn on similar lines; as a rule a period of not less than twelve months shall have elapsed between the attainment of a registrable qualification in medicine, surgery and midwifery and the diploma in state medicine, sanitary science or public health.

A year and five months ago, in the June 1910 number of this Journal, it was editorially pointed out, our readers will remember, under the caption, "The Medical Council," that the sight, was far from edifying, of practicing physicians of reputed high ideals, graduates mostly of equally efficient national universities, meeting in the different provincial subdivisions of this country, annually or more frequently, at the expense of an easy going electorate, apparently for the purpose of levying questionable taxes, collecting personal expenses and strengthening against one another the by-law fences of local lobby-purchased medical preserves.

It was also stated that the methods might well be questioned of such provincially encounceled members of the noble

and naturally unconfined profession of medicine, who not only impede the arrival of interprovincial reciprocity in medical registration but who unprotestingly inherit a departure from the economical, broad-minded, and dignified position of pure inspection and academic standard regulation and yield their yeas to its continuance and to the continuance by test duplication of petty distrust in the examining probity of our great state-endowed and costandardized universities.

As a result of these sentiments, expressed even more strongly by several of our contemporaries, we are now glad to be able to comment favorably upon the action of the Medical Council of Ontario. The Ontario profession has at last, under the leadership of Dr. Edward Ryan, had itself officially recorded as placing trust, at least to a greater extent than heretofore, for examination purposes, in the universities which they recognize as competent to carry on the work of medical education. The Ontario university matriculation standard is now the standard of this Council and all Ontario Council examinations have been abolished—except the fifth year final test in medicine, surgery, and midwifery.

One of the most momentous undertakings in relation to public health has recently been initiated by Dr. William A. Evans in The Chicago Tribune. Dr. Evans has undertaken the editorial management of a department in the Tribune, his purpose therein being to help public health government, municipal, state and federal, in gaining that publicity which is absolutely essential to its success.

The Chicago Tribune has always been a leader among publications giving help to movements for the safeguarding of society; it has been careful always to protect its readers against the improper and exaggerated statements so frequently seen in newspapers of a less conscientious class, and has at all times fought hard for that highest grade of medical service so well typified in the career of the latest member of its editorial staff, Dr. William A. Evans.



## Library and Laboratory

### "Personal Hygiene and Physical Training for Women."

Under the above title Dr. Anna M. Galbraith has written a valuable book. She has succeeded in reciting clearly and concisely the fundamental laws upon which all personal hygiene is based and has given accurate and useful directions for the proper development of the body and the training of the physical powers to their highest degree of efficiency. Dr. Galbraith alludes to the fiat which has gone forth from the American Medical Association for the scientific education of the public in the laws of hygiene and sanitation and she has made this fiat the foundation of a work which may be considered authoritative in its special field.

The book considers in nine chapters: Hydrotherapy; the Care of the Skin and its Appendages; The Digestive System and the Maintenance of a Good Digestion; the Respiratory and Circulatory Systems under which heading are included, the Kidneys and the Female Pelvic Organs; the Nervous System as the Balance of Power in the Body; Hygiene of the Mind and its Relation to the Physical Health; Dress; Physical Training; and Symetric Development, including therein good carriage and grace of motion.

Under the heading Hydrotherapy, Dr. Galbraith speaks of the Alcohol Rub, the Salt Glow, the Electric Light Bath and the Internal Use of Water, describing all other forms of water application, together with the skin and its functions. In regard to the internal application of water, she cautions her readers to avoid the mistake of undoing the good that would be done in boiling or filtering drinking water by adding ice when it is placed on the table, and considers fully the action of water on the digestion and its therapeutic indications.

One of the most interesting parts of the work is the consideration of the Complexion. Dr. Galbraith points out that the face is a complete index of the life of the individual, written large, so that he that runs may read. By looking at the

condition of the skin and the whites of the eyes we can judge very fairly of the digestion. From the dulness or brilliancy of the eyes we can make a very fair diagnosis of the general condition. From the general expression of the face we can read the kind of life that has been led by the individual, whether of pleasure, dissipation or sorrow.

From greatest antiquity men and women have striven to beautify their bodies. To be indifferent to presenting a pleasing appearance is, in Dr. Galbraith's opinion, an indication of some abnormal condition in the individual or her environment. She points out that the ideal complexion combines the qualities of clearness, translucency and fineness of the outer skin and the proper disposition of the blood, and asserts that the beauty of the skin is evidence of good respiration, good digestion, proper excretion of the bowels, skin and kidneys, good condition of the blood and plenty of outdoor exercise. Under some conditions, certain applications to the skin are pointed out as being admissible and beneficial; and suggestive formulas are given. The Hair is fully considered as well as the cosmetic treatment of the hands.

The author says in relation to the Hygiene of Work, that the proper selection of work for the particular brain to do and the physiologic regulation of the work done is its basis—"For health, for happiness and efficiency, right work, rightly done, is the most important matter in any man's or woman's life. The physiologic, as well as the moral necessity, has always been conceded for every man to have a life work — a vocation; a work for which he should be fitted and for which he was capable, sufficiently congenial not to sink into mere drudgery, and which would, at the same time afford ample financial compensation to be remunerative and a stimulus to his power of endurance.

"Important from the physiologic point of view, as a vocation is for men, it is equally or more important for women."

The book is fully indexed and illustrat-



ed, the illustrations being especially good. Interesting tables are also given, such as the relative proportions of a perfect female form and a table of standard weights for women. — *“Personal Hygiene and Physical Training for Women,”* by Anna M. Galbraith, M.D., Fellow of the New York Academy of Medicine, 12 Mo. of 375 pages, with original illustrations. Philadelphia and London. W. B. Saunders Company, 1911. Cloth. \$2.00 net. The J. F. Hartz Company, Limited, Toronto, Canadian Agents.

### “Proper Living Upon a Physiologic Basis.”

Another manual dealing with Personal Hygiene comes to us edited by Dr. Walter L. Pyle, being the fourth edition of the work, enlarged and revised. It is an illustrated compilation of special contributions, each contributor being a recognized expert in his special field.

The subjects dealt with, in order, are: Hygiene and the Digestive Apparatus, by Charles G. Stockton, M.D., Professor of Medicine in the Medical Department of the University of Buffalo; Hygiene of the Skin and its appendages, by Geo. Howard Fox, M.D., Clinical Assistant, Dermatological Department, College of Physicians and Surgeons, New York; Hygiene of the Vocal and Respiratory Apparatus, by E. Fletcher Ingals, M.D., Professor of Laryngology and Diseases of the Chest in Rush Medical College, Chicago; Hygiene of the Ear, by B. Alex. Randall, M.D., Professor of Diseases of the Ear in the University of Pennsylvania, Philadelphia; Hygiene of the Eye, by Walter L. Pyle, M.D., Assistant Surgeon in Wills Eye Hospital, Philadelphia; Hygiene of the Brain and Nervous System, by J. W. Courtney, M.D., Physician for Diseases of the Nervous System, Boston City Hospital; Physical Exercise, by G. N. Stewart, M.D. (Edin.), Professor of Physiology in the University of Chicago; the Body Posture, by Joel E. Goldthwait, M.D., of Boston; and Domestic Hygiene, by D. H. Bergey, M.D., First Assistant in the Laboratory of Hygiene and Assistant Professor of Bacteriology in the University of Pennsylvania, Philadelphia. An appendix is added dealing with House Temperature and Respiration, Baths, Massage, Ac-

cidents and Emergencies, Poisons and Antidotes; a glossary being attached and the work fully indexed.

Dr. Pyle, among his introductory remarks, points out that most cases of illness are preventable, following as they do disobedience of physiologic laws. There is such a thing as physical morality, he says, and the preservation of health should be considered a sacred duty. Personal Hygiene being applied physiology, a proper understanding of certain elemental truths must be acquired before they can be applied.

Concerning a certain failure in human nature, Dr. Pyle remarks that persons of intelligence often furnish thoughtless recommendations of purely “quack” remedies and unscientific instruments and apparatus—“The advertisements of these articles may be seen in the best general and religious periodicals. The literature of the laymen pertaining to personal hygiene is in great measure unsatisfactory and irresponsible. Many of the so-called health books being of a very questionable authorship.” And—“There is a multitude of the best parents who think that their way is not made easier by the so-called moral reformer, but rather the reverse.”

As Dr. Pyle further points out, it is not desirable to produce athletes, physical culture fanatics, nor practitioners of new-fangled and erratic “systems” and “pathies.” What is needed is simple instruction by capable teachers in the proper care and use of the body, authoritatively based upon the best available modern anatomic, physiologic and hygienic data. We should not have “every man his own physician,” as seems often the object in lectures, periodicals and books relating to health; rather give every man fundamental knowledge that will enable him to understand and, if necessary, formulate the requisite rules of health and to distinguish scientific medicine from quackery.—*A Manual of Personal Hygiene, Proper Living Upon a Physiologic Basis.* By eminent specialists. Edited by Walter L. Pyle, M.D., Assistant Surgeon to the Wills Eye Hospital. Philadelphia. 4th revised edition. 12 mo. of 472 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Cloth. \$1.50 net. The J. F. Hartz Co., Limited, Toronto, Canadian agents.



**"Inspection of Fruit, Game, Fish, etc."**

As a practical guide for those who undertake the inspection of fish, poultry, game, fruit, nuts, and vegetables, this little work is invaluable. Our readers will find its 169 pages and numerous illustrations interesting and instructive. The book contains acts and regulations concerning inspection; the appendix consisting of a list of questions set by the Royal Sanitary Institute, the answers to which, by means of the index, may be found in the body of the book. — *The Inspection of Fish, Poultry, Game, Fruit, Nuts and Vegetables*, by H. Horace Walker, Sanitary Inspector to the Metropolitan Borough of St. Pancras, Late Instructor and Lecturer to the Essex and Middlesex and Hertfordshire County Councils. London: Bailliere, Tyndall and Company, 8 Henrietta St., Covent Garden. 1911. 5s. net.

**"Principles of Hygiene."**

School children are often victims of irrational methods of health teaching. This should no longer be the case when both teachers and scholars have the opportunity of perusing and beneficially enjoying the latest work on the subject, by Dr. J. Halpenny and Lilian B. Ireland. The authors are Winnipeg people and the work is authorized for use in the schools of Manitoba. Manitoba is to be congratulated.

It is well pointed out in the foreword of this book that the central thought in the discussions of such topics should be the life of the body and a study of the means at the disposal of the people by which it can be preserved in the state of highest efficiency; the authors believe and base their teaching upon this belief, that an eliminative study of the bony frame or the intricate physiology of the body cannot so well tend to develop right methods of living. Public health, in other words, has made much progress in the last few years and there are many interesting incidents regarding the conquest of science in this direction, and the authors believe that such incidents should be taught school children before the dry details of anatomy and physiology.

A better illustration, however, might have been chosen than that on page 60, which has a tendency to leave the reader

falsely under the impression that the natural foot is not beautiful.

Among the good things cleverly expressed in "How to be Healthy" are that: "Some day a clause will be put in the law regarding government grants, providing that trustees who do not have the school premises scrubbed at least once a fortnight will not receive help from the governments. This is far more necessary, in loyalty to our Dominion, than making a great show of the flag. We need the flag over our schools, but under that flag marches the race which is first in all things which betters humanity, morally, mentally and physically"; . . . that "two or three holes in a storm sash are not sufficient for one person, let alone two, in a room;" . . . and to "never let yourself play unfairly. It's only a game but what is a game? How were games invented? Again our savage ancestors are our teachers. They told of their fights, of their triumphs and failures around the camp fire at night. They acted it over again so that those who had not been there with them could see how brave they had been. Then all joined in. Next day the boys and girls played it over again. It is a game of life played for fun. Don't you see that if the game is not played fairly, the game of life may be a failure, too?"

In dealing with mental hygiene, the idea so well expressed by Ella Wheeler Wilcox: "Thoughts are things and their airy wings are swift as the carrier dove. They follow the law of the universe, each thing must create its kind, and they speed o'er the track and bring you back whatever went out of your mind"—is the basis of the talk on self-control.

And what a truth is this that we find in the chapter dealing with The Home: "We fear that some boys and girls in the country are anxious to leave the farm and go to the city because the home is possibly too much a place of drudgery and too little a place for enjoyment."

"How to be Healthy" is a small book, but its 38 chapters contain life facts, beautifully, simply and most interestingly told. The extent of the subjects dealt with may be gleaned from the titles of the chapters: Sunlight; Fresh Air; Ventilation; Sleep; Respiration; Physical Drill; Mental Hygiene; Clothing; The Home; The



Country School House; Summer Holidays; Foods; Selecting and Preparing Food; The Care of Food in the Home; Good Water; Clean Milk; Bad Milk; Alcohol; Alcohol and Animals; Alcohol and Men; Tobacco; Dust; Sweeping and Dusting; Microbes; Microbes in Action; Microbes and Disease; The Blood in Health; The Blood in Disease; Infectious Diseases; Tuberculosis; Disinfection; Home Nursing; Skin; The Nails; Care of the Mouth; The Eyes; Ears, Nose and Throat; Emergencies.

Each chapter is summarized at its end in a few sentences under two heads: "What to do" and "How to be Healthy." — *How to be Healthy*, by J. Halpenny, M. A., M.D., Surgeon to the Winnipeg General Hospital, Lecturer in Surgery in Manitoba Medical School, and Lilian B. Ireland, Manitoba Normal School. Authorized for use in the Schools of Manitoba. 242 pages. Illustrated. Toronto: The Educational Book Co., Limited, 84 Spadina Ave. 40c. net.

#### "How to be Healthy." "

The new third edition of Dr. Bergey's work on the "Principles of Hygiene" comes to us revised and enlarged. The recent important discoveries in the domain of etiology, as, for instance, that relating to the Spirochæta Pallida, have been incorporated. Following the changes in our knowledge of immunity the section touching upon this subject has been largely re-written. The book has been prepared to meet the needs of students of medicine in the acquirement of the knowledge of those truths upon which modern hygienic practices are based; to aid students in architecture in comprehending the sanitary requirements in ventilation, heating, water supply and sewage disposal; and to aid physicians and health officers in familiarizing themselves with the advances made in hygienic practices.

Dr. Bergey's introduction discusses the Cause of Disease, Sanitary Science and Hygiene; and the twenty-two chapters following deal with Air; Ventilation; Heating; Water and Water Supply; Removal and Disposal of Sewage; Garbage Disposal; Exercise; Clothing; Personal Hygiene; Industrial Hygiene; School Hygiene; Military Hygiene; Naval Hygiene; Soil;

Habitations; Fatal Cases of Disease; Disinfection; Quarantine and Vital Statistics. The Appendix contains a number of useful tables. — *Principles of Hygiene*, the new third edition. For students, physicians and health officers. By D. H. Bergey, M.D., Assistant Professor of Bacteriology University of Pennsylvania. Third revised edition. Octave of 555 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1901. Cloth. \$3.00 net. The J. F. Hartz Company, Limited, Toronto, Canadian agents.

#### "Public Health and National Insurance."

This is a compilation, in pamphlet form, of articles by the author, recently published in certain periodicals, dealing with medical service in relation to state insurance. Dr. Richards urges the advisability of a more unified medical service than is suggested by Lloyd George in the British National Insurance Scheme; and argues that the local health committee of this bill should become a statutory committee of the county or borough council, pointing out at the same time that the medical service should be mainly preventive. The argument is somewhat in opposition to ideas of the British Medical Association, but makes interesting reading and is well presented in divisions dealing with: Hopes and Fears; The National Insurance Bill and Preventive Medicine; The Provision of Sanatorium Benefit; The National Insurance Bill and Public Health, followed by an Appendix giving particulars of typical friendly societies and medical clubs. — *Public Health and National Insurance*. By H. Meredith Richards, M.D., Medical Officer of Health and School Medical Officer, Croydon. London: P. S. King and Son, Orchard House, Westminster. 1911. 6d. net.

#### "Inquests and Investigations."

Dr. Arthur Jukes Johnson, of Toronto, has supplied a want in furnishing, under the above heading, a practical guide for the use of coroners holding inquests in Ontario. It contains all the necessary forms for coroners' use and the text, in full, of "An Act Respecting Coroners and Coroners' Inquests." The work is fully indexed and small enough to be carried



in the pocket. — *Inquests and Investigations — A Practical Guide for the Use of Coroners Holding Inquests in Ontario.* By Arthur Jukes Johnson, M.D., M.R.C.S., England, M.M.C., Chief Coroner for the City of Toronto. Canada Law Book Co., Limited, Toronto. 1911. \$2.50 net.

#### “Bulletin Sanitaire.”

The Sanitary Bulletin of the Province of Quebec, circulated par autorité Du Secrétaire de la Province de Québec, published by the Provincial Council of Public Health, of which Dr. E. P. Lachapelle is President and Dr. Elzéar Pelletier, Secretary, comes to us for the six months of March, April, May, June, July and August, replete with interesting matter. The printing of the articles indiscriminately as written in either French or English is a good plan.

A matter of interest taken up in the Bulletin is the Division du territoire de la province de Quebec en 10 districts sanitaires.

Le Gouvernement de Québec a bien voulu donner son assentiment au projet, que lui avait soumis le Conseil d'hygiène, de diviser la Province en 10 districts sanitaires et d'installer dans chaque district un hygiéniste de carrière qui y représentera le Conseil d'hygiène, a titre d'assistant inspecteur, et donnera tout sou temps à la province.

Le nominations des 10 assistants inspecteurs ne se feront pas, cependant, avant le mois de juillet 1912, afin de donner le temps aux médecins qui désireront poser leur candidature, de se qualifier pour la position, en suivant les cours spéciaux d'hygiène appliquée qui se donneront dans les trois universités de la province, du premier octobre 1911 au milieu de juin 1912, cours qui se termineront par les examens pour l'obtention du diplôme d'hygiène publique (*i.e.* diplôme d'hygiéniste de carrière.)

Le traitement annuel de ces inspecteurs régionaux sera de \$1,200.00, avec perspective d'atteindre un traitement de \$1,500.00 pour ceux dont les services donneront satisfaction au Conseil d'hygiène. Les frais de déplacement des inspecteurs, dans l'exercice de leurs fonctions, seront à la charge du Conseil d'hygiène.

According to the advance draft the Pro-

vince is divided into districts as follows: Metapedia, 65 municipalities; Fraserville, 83 municipalities; Quebec, 152 municipalities; St. Hyacinthe, 118 municipalities; Sherbrooke, 165 municipalities; Valleyfield, 84 municipalities; Montreal, 121 municipalities; Hull, 117 municipalities; Three Rivers, 109 municipalities; Chicoutimi, 74 municipalities.

The fourth Convention Annuelle Des Services Sanitaires de la Province de Quebec, is reported with the excellent addresses of the several speakers, that of Dr. Elzéar Pelletier, “Avant-projet pour l'inspection semi-medicale des ecoles rurales de la province de Quebec,” here following:

Dans son rapport annuel de 1900, le Conseil d'hygiène de la Province a appelé l'attention sur l'importance de l'inspection médicale des écoles; mais, jusqu'à présent, seules deux municipalités, l'ont organisée: Montréal en 1906, et Lachine l'automne dernier (1910).

A sa réunion de Sherbrooke et beaucoup mieux encore à sa réunion de St. Hyacinthe, votre Convention a émis des vœux pour faire étendre l'inspection médicale des écoles à tout le territoire de la Province. Pour aider à la réalisation de ces vœux, j'ai pensé qu'il y aurait avantage à provoquer, aujourd'hui, une discussion sur les moyens d'organiser l'inspection pour les écoles rurales. Si je m'en tiens à un plan plus particulièrement applicable aux écoles rurales, c'est que, pour les écoles urbaines, on peut déjà s'inspirer aux deux plans élaborés par Montréal et par Lachine; celui de Montréal pour une inspection quotidienne, qui est précieuse pour le dépistage des contagieux et celui de Lachine pour une inspection hebdomadaire avec attention particulière donnée à la confection de la “fiche de santé” de chaque écolier et à son maintien à jour.

Le dernier rapport du Surintendant de l'Instruction Publique porte à 42,863 le nombre des écoliers dans la ville de Montréal et M. le Dr. Baudouin, médecin municipal de Lachine, évalue à 2,000 le nombre des écoliers dans cette ville; soit, pour les deux villes ensemble, 44,863 écoliers qui bénéficient de l'inspection médicale. Comme le Surintendant de l'Instruction Publique porte à 381,146 le nombre des écoliers de la province, nous restons avec 336,282 écoliers encore à découvrir. Ces



336,282 écoliers sont distribués dans les 6531 écoles ou institutions scolaires, soit une moyenne de 98 écoles par comté. Voyons ce qui pourrait être probablement fait pour ces 6531 écoles.

L'inspection d'une école a pour objet :

1° De faire établir quelles sont les conditions de salubrité du bâtiment scolaire,

2° De constater si les programmes suivis sont trop chargés et si les heures de classes sont en proportion de la capacité physique moyenne des élèves.

3° D'évincer les élèves infectieux.

4° De constater l'état physique de chaque élève.

Dans les municipalités urbaines, les inspecteurs-médicaux des écoles sont chargés et avec raison de toutes ces opérations. Pour les écoles *rurales*, je soumets qu'il a lieu de distribuer l'ouvrage de manière à pouvoir utiliser ce que nous avons d'immédiatement disponible; c'est d'ailleurs le seul moyen, de rester pratique et d'obtenir des pouvoirs publics qu'ils donnent suite à nos vœux et suggestions.

I—Pour établir les conditions de salubrité des 6531 bâtiments scolaires présentement envisagés, je propose d'utiliser les 49 inspecteurs d'écoles que le Département de l'Instruction publique a déjà à son service. Ces inspecteurs sont tenus de visiter les écoles de leurs circonscriptions respectives deux fois l'an et auraient ainsi toutes les facilités pour dresser le *casier sanitaire* de chaque école, sans qu'il en coûte un sou additionnel à la Province. Il

n'y aurait qu'à mettre entre les mains de ces inspecteurs un questionnaire précis, qui ne permette de réponses échappatoires, pour avoir d'eux un rapport tout aussi bien fait que le sont ceux des médecins inspecteurs dans les villes. Ce questionnaire pourrait être libellé, conjointement, par le Département de l'Instruction publique et le Conseil d'hygiène de la Province.

II—Passons à la constatation de l'adaptation des programmes d'étude et de la longueur des heures de classe à l'âge des élèves, afin de prévenir le surmenage et la sédentarité. Le Département de l'Instruction Publique est je crois, toujours parfaitement renseigné par ses 49 inspecteurs ordinaires sur ce qui se fait dans ses écoles et, par conséquent, il peut, chaque fois qu'il y a un doute sur la pos-

sibilité de surmenage par un programme trop chargé ou de sédentarité exagérée pour certaines écoles, consulter un physiologiste, en attendant que le département ait le directeur-médical attiré, dont il sera question ci-après.

Ce deuxième objet de l'inspection peut donc, comme le premier, être dévolu au Département de l'Instruction Publique tel que présentement constitué.

III — Dépistage et éviction des écoliers infectieux. Je considère que, dans les campagnes, ce dépistage doit être dévolu aux bureaux municipaux d'hygiène. D'ailleurs, dans les municipalités bien organisées, il est déjà fait par le médecin municipal, car rien ne peut mieux renseigner l'autorité sanitaire municipale sur les maladies contagieuses régnantes dans sa juridiction que des visites répétées à l'école. En temps d'épidémie surtout, une municipalité ne peut prétendre avoir pris des mesures complètes, adéquates, sans ordonner ces visites pour tout le temps que dure l'épidémie.

IV — Reste l'examen individuel de l'écolier pour découvrir les tares et autres défauts qui l'empêchent de suivre avantageusement ses classes et qu'il importe de signaler à sa famille, pour que l'avenir de l'écolier ne soit pas compromis.

Ici nous n'avons rien d'immédiatement utilisable, tout est à créer. Il s'agirait de nommer des médecins-inspecteurs qui, à l'automne (à l'ouverture des classes), feraient l'examen de tous les élèves *commençant leurs études cette année là* et dresseraient pour chacun d'eux une "fiche de santé."

En fixant à 5 le nombre moyen d'années qu'un enfant passe à l'école, notre chiffre total de 336,282 écoliers nous donne 67,256 élèves *entrants* à faire examiner par année. Comme l'expérience a démontré que cet examen médical prend en moyenne 15 minutes par élève, il y aurait pour 16,814 heures d'onvrage soit, calculant 8 heures de séance par jour, 2,100 jours. Avec 67 médecins-inspecteurs, soit un inspecteur-médical par comté, nous aurions, pour chacun d'eux, 31½ jours de séances, auxquels il faudrait ajouter le temps passé sur la route.

Mais, en plus des élèves *entrants*, les inspecteurs devront réexaminer ceux des *anciens* dont les fiches n'ont pas été satis-



faisantes durant les années précédentes et, dans certains cas, vérifier l'exactitude des "casiers sanitaires des bâtiments scolaires" dressés par les inspecteurs ordinaires des écoles; de sorte que nous devons plutôt prévoir, pour chaque inspecteur-médical, une durée moyenne annuelle de service de deux mois (séances et déplacements compris).

En Angleterre, le "Board of Education" pourvoit à un deuxième examen régulier des élèves, l'année de leur sortie de l'école. Mais pour nous qui n'avons encore aucune organisation, cet examen des finissants me paraît une question pour l'avenir.

Le choix des 67 inspecteurs-médicaux devra être soigneusement fait. Le moyen d'élaguer les fruits secs est de faire concourir les aspirants. Nos trois universités pourraient, préalablement au concours, organiser un cours spécial facultatif. Comme modèle de syllabus pour ces concours, nous avons celui formulé par la ville de Paris.

Pour diriger les opérations des 67 inspecteurs-médicaux, le Département de l'Instruction Publique aura besoin d'un "directeur-médical de l'inspection des écoles." Les duplicata des 67,256 fiches dressées par les médecins-inspecteurs lui seraient envoyées; il aurait, de même, accès aux casiers sanitaires des bâtiments scolaires dressés par les 49 inspecteurs actuels du Département. En outre, le Département le consulterait nécessairement sur les questions médicales et sanitaires qui surgissent à tout moment dans un département de l'Instruction Publique.

La question qui se pose probablement dans vos esprits est de savoir quel serait le coût d'un service d'inspecteurs-médicaux qui serait organisé dans les lignes ci-dessus.

Les dépenses de déplacement de chaque inspecteur seraient de \$3.00 par jour en moyenne, soit \$1.50 pour pension et \$1.50 pour cochers, ce qui fait pour les 67 inspecteurs (\$3.00 x 60 jours x 67 inspecteurs) equals \$12,505.00.

Quant au chiffre total des honoraires pour les 67 inspecteurs travaillant pendant 60 jours, il suffirait de connaître le montant qu'on serait disposé à accorder par jour, pour l'établir séance tenante.

Le salaire du "directeur-médical en

chef du service" ne doit pas être porté entièrement sur le bilan des dépenses de l'inspection présentement envisagée, car, comme nous venons de le voir, sa présence au département de l'Instruction Publique est déjà nécessaire pour les consultations médicales et sanitaires dont doit avoir souvent besoin le département.

En allouant une somme assez ronde pour papeterie spéciale, je ne crois pas que le coût d'un service de 67 inspecteurs-médicaux dépasserait \$35,000.00 par année.

Doit-on dépenser cette somme? Je vais vous en laisser juger vous-même après avoir mis sous vos yeux les chiffres probables de malades ou de défectueux parmi les 336,282 écoliers de cette province qui ne bénéficient pas encore de l'inspection médicale; malades et défectueux qui, suivant très mal leurs classes, ne seront pas suffisamment préparés pour soutenir les luttes de la vie et iront se détériorant davantage, faisant perdre au pays des vies qui auraient pu être utiles, augmentant le nombre d'infirmes que la société aura eu à secourir plus tard et dont un certain nombre s'acheminent déjà vers nos prisons.

En prenant pour base les taux d'invalidité que l'inspection médicale faite en Angleterre a permis d'y établir pour les écoliers anglais, les défectueux parmi les 336,282 écoliers de notre province qui ne sont pas encore secourus, se chiffrent comme suit:

33,628	souffrant de défauts sérieux de la vue .....	10%
13,451	suffrant de défauts de l'ouïe .....	4%
6,725	auraient des oreilles suppurantes .....	2%
26,902	auraient des tumeurs adénoïdes ou des amygdales hypertrophiées qui obstruent ou le nez ou la gorge .....	8%
100,884	suffrant de carie dentaire avancée .....	30%
3,362	lartreux .....	1%
3,362	tuberculeux, d'une forme très facile à reconnaître.	1%
4,202	cardiaques .....	1¼%
33,628	de nutrition défectueuse (ce dernier chiffre est basé sur la moyenne établie par Hogart) .....	10%



Ces chiffres donnent un total de 226,144 *probablement* défectueux sur les 336,282 écoliers de cette province qui ne bénéficient pas encore d'une inspection médicale!

### The Value of Heredity.

Dr. G. Archibald Reid, author of "The Principles and Laws of Heredity," says in a recent paper on "What is the Value of Heredity?" that evolution implies adaptation to the environment. Degeneration implies the contrary. All plants and animals are adaptational forms. Man and the beetle can live in their own environments, but not in one another's. The right theory of evolution and the right theory of heredity must fit in with this fact of adaptation. Only one theory of heredity fits the facts — Darwin's theory of natural selection. Selection implies a selective mortality, that the fittest survive and the unfittest perish, as a general rule. Many people die young. Who were they? Those who were weak against various microbial diseases. Each disease in its own habitat weeds out the unfittest. One other source of elimination is alcohol, to which people vary in susceptibility. If the ill-conditions which affected the parent do not, as a general rule, tend to alter offspring, then since the offspring do vary spontaneously the fit would be preserved and the unfit would be weeded out and the race would undergo protective evolution. Do the ill-conditions of the parent as a rule tend so to affect offspring that they weakened, or is the alternative theory true, that the ill-conditions of the parent do not tend to affect offspring? A very unhealthy condition is to be found in the slums of great cities. There are parents who are unhealthy and children who are puny. What is the connection between the puniness of the children and the unhealthiness of the parents? Are the children puny because their parents are unhealthy, or because they are reared under unhealthy surroundings? Since the fit will survive the race will go on getting more and more resistant to slums. Are children living in slums getting resistant to slums, or are they degenerate? The races most exposed to slum life are Jews and Chinese. Those races have not grown degenerate. There has been selection and the races have undergone

protective evolution. The races longest exposed to consumption are most resistant to consumption. In every case it is not degeneracy but evolution. Taking alcoholic disease as an instance, the English of the present day are more temperate than their ancestors, and the most temperate of all are the upper classes, who take as much as they want, but do not want much. In every case one gets protective evolution. Children tend to resemble their parents on the whole — a man produces a man and a beetle produces a beetle — but they vary in details. The differences are not produced by the direct action of the environment of the parent, but they are called spontaneous. Offspring are not rendered degenerate by the misfortunes of their parents, but races undergo evolution owing to the fire to which they have been exposed. Sufferings do not affect a race; it is the deaths of the race that affect it; it is not the illnesses, but the illnesses which ended in death, that change the race. Nearly all microbial diseases originated in the Old World. It is disease which has dug the foundations of Empire. Disease created an enormous void which the English have filled. More than anything else, disease has founded a permanent Empire. We can hardly hope to continue indefinitely in Africa and in India, because the natives will gradually get rid of us. We have practically a permanent hold in Australia and New Zealand because we are used to all the diseases and nothing can displace us. So soon as the race undergoes protective evolution it is not conceivable that the misfortunes of the individual could injure his successors.

### Sanitary and Outdoors.

It may be, says the *Traveller*, as Max Nordau insists, that the progress of civilized society goes hand in hand with mental degeneration. It may be, as Oliver Wendell Holmes suggested, that everybody is insane in some particular or other, or that, as Dr. Harvey W. Wiley says, "nearly every man and woman at some time in their lives verge upon insanity." Drink and drugs, with the rush and worry of life, the roar of machinery, the pressure of social duties, the overwhelming of the senses and straining of attention by the innumerable events and irritations of ex-



istence in great cities — these are held to be responsible for the wrecking of human minds to an extent undreamed of in the old simple days.

But whether this pessimistic analysis is true or not, it may be largely disregarded if the people will but follow a plain and easy recipe. Read this bit of pastoral prose poetry from Governor Johnson's message to the school children of California in urging them to observe "Bird and Arbor Day";

"The love of birds and trees is one of the healthiest emotions of the human heart. It may well be cultivated. There is no more innocent and no more gratifying source of enjoyment than intelligent interest in the beauties of nature. Learn to know the calls and plumage of our birds, the varying foliage of our trees; grow to love the quiet places where they may best be studied, and you will be happier and better citizens."

The sunshine, the open places, the voices of nature! There's medicine for the sick mind. Get into the country all you can, bask in the sun, breathe the fresh air, get acquainted with the birds and flowers and trees, play in the water and come into intimate contact with the wholesome soil. Then you may laugh at nerves and brain fog, in the full and satisfying consciousness of a sound mind in a sound body.

### The Real Test of Vaccination.

Nowhere more than in communities that offer a virgin soil for smallpox do the beneficent effects of vaccination stand out with remarkable distinctness. The *London Lancet* remarks that the reason for this is not far to seek. The issue in such cases is not confused by any such side issues as partial protection, worn-out vaccination, the respective shares of long-continued sanitation and vaccination, and so on. It is a clearly defined issue between the results of the epidemic among those people who have never been vaccinated and those who are efficiently vaccinated sufficiently in advance of infection for vaccination to become operative as a preventive. Such an instance is afforded in a recent report (with a copy of which we have been favored) by Dr. Victor G. Heiser, Passed Assistant Surgeon, United States Public Health and Marine Hospital Service, and Chief Quar-

antine Officer of the Philippine Islands. Dr. Heiser says: "During December, a person afflicted with smallpox was transferred from San Jose, Antique, to the Island of Caluya, which is a small isolated island south of Mindoro, the inhabitants of which have heretofore not been systematically vaccinated. An old woman took some of the contents of a pustule from the smallpox case shortly before death and commenced to vaccinate (inoculate) a number of the inhabitants; smallpox in epidemic form soon resulted. The population of Caluya and nearby islands is about 2,000. Approximately, 1,000 cases of smallpox occurred before the facts became known to the outer world. Vaccinators properly equipped were immediately sent to Caluya. They vaccinated 800 of the remaining 1,000 persons. Of these, not one contracted smallpox who had a successful vaccination, that was two weeks old. The undersigned (i.e., Dr. Heiser) visited 10 families, ranging from five to eight in number. In six of these every member was stricken with smallpox. A physical examination showed that they had no vaccination marks. In two other families six persons were stricken and two escaped. A physical examination showed that of the six stricken members not one had been vaccinated. The two remaining members had successful vaccination marks. Upon inquiry it was learned that they had visited Calapan a year previously and were vaccinated while there. In two other families that lived in the midst of a smallpox stricken village there were no cases of smallpox. A physical examination showed that they had good vaccination scars. Further inquiry elicited the statement that they had but recently come from another island where they had been vaccinated. In one house one person was found with varioloid. Upon inquiry it was learned that he had been vaccinated during childhood. Net result: Community of 2,000 population; 1,000 unvaccinated persons contract smallpox; 400 die; 800 are protected by vaccination; no cases occur after the incubation period was passed; no deaths occur. The remaining 200 are semi-civilized and fled from the vaccinators, and their condition is unknown." This is only one of the object-lessons that the Philippine Islands, under the administration of the



United States Government, have afforded us as to the protective value of efficient recent vaccination against smallpox. We cannot hope that it will influence those opposed to vaccination, but it should nevertheless be put on record and published as widely as possible.

### The Insanity Plea.

Supporting the theory once insane, always insane, and arguing against setting free those who have been imprisoned for crime, in reality or allegedly committed as the result of insanity, Dr. J. F. Baldwin has written a letter to *The Lancet-Clinic*, a Cincinnati medical journal.

The letter touches upon a vital topic and one which for years has been given extensive study and attention by prominent alienists and physicians. It reads:

"Some 15 years ago a young man in my city, Karl Doh, employed as a tailor, entered the workshop as usual, drew a revolver and shot dead a fellow employe. No words were spoken, no opportunity for defence was allowed, and the killing seemed to be a cold-blooded, predetermined murder. A few weeks later I was asked by his attorneys, one of them an ex-Supreme Court judge, to visit the man in jail, as they expected to offer insanity as their defence. I promptly objected, and told the judge I was tired of that sort of defence, but after listening to his statements I consented to examine the prisoner.

"I found that he had always been more or less peculiar and that there was a good deal of mental disturbance in the family history. He had tried to commit suicide on his mother's grave, shooting himself several times in the left breast. I was able to develop the scars to determine the truth of the statements of himself and friends as to the number of bullets (five) which he had fired, the number that had gone completely through, and those that had been cut out by the surgeon.

"I do not now recall all the points in the case, but it was very evident that we were dealing with an insane man, and that he had murdered his fellow-workman while under the delusion of persecution. I brought out all these facts at the trial, and the result was that he was sentenced to the penitentiary for life, as the only safe place

for him. I assured his friends that he would be all right so long as he remained in the penitentiary, but that if they ever attempted to secure his pardon I should oppose it on principle.

"They seemed to acquiesce in my view, but after a few years attempts were made to secure his release. He had been an absolutely model prisoner and the penitentiary officials joined with his friends in recommending a pardon. I heard of it, and appeared before the Pardon Board to explain the situation, and the petition for pardon was promptly rejected. Later, renewed efforts were made before Governor Harris. I again heard of it, and promptly took the matter up with Mr. Flickinger, the Governor's private secretary, and again the petition was rejected.

"Less than two years ago, however, and greatly to my surprise, the daily papers announced that he had been pardoned by Governor Harmon. In the interval, I had been approached by some of his friends and had agreed to withdraw my opposition to the pardon if the governor would appoint a special commission of expert alienists to investigate his case. If they decided that he was a safe man to be at large I would have no objections to the pardon. I recommended such action personally to Governor Harris, but the suggestion was not carried out.

"I have no doubt that the pardon was secured from Governor Harmon without any knowledge on his part of the patient's condition, or that there was any opposition to the pardon. I had felt that so long as he remained in the penitentiary, with absolute uniformity of environment and habits, and with entire absence of excitement, his mental equilibrium would not be unbalanced; and that equilibrium was too unstable for him to be safely at large.

"I heard nothing about him until recently the daily papers announced that he had committed suicide. That his mental unbalance was thus directed against himself rather than against others was fortunate, but can be regarded, I think, purely as a matter of good luck.

"I report the case as an illustration of the necessity of very great care in the setting at large of our criminal insane.



To the Editor, *The Public Health Journal, State Medicine, and Sanitary Review*:

**Disease Carriers.**

Sir:—In *The Public Health Journal* for September, one of the many items furnishing food for thought is that on page 433, concerning Cholera Carriers and Diseases of Childhood.

The discovery that human beings, after apparent recovery from typhoid fever or cholera may continue to harbor these micro-organisms in their bowels, give them off in their stools, and through these transmit the disease to others, opens up possibilities hitherto unsuspected. It is certain that other affections may be similarly carried and transmitted. I have detected dysenteric amœbæ in the stools of a man who had suffered ten years of ill-health, following a mild attack of dysentery. The list may be considerably enlarged if, as is now held, pulmonary tuberculosis effects its first lodgment through the agency of infected food taken into the stomach.

Dr. De Wolfe suggests that the exanthemata and other infectious maladies of childhood, especially diphtheria, might be preserved and imparted in the same manner. The suggestion is too important to be dismissed with contempt. We constantly mistake by judging new propositions from the standpoint of the completeness of our own knowledge. Those who realize the fragmentary condition of the totality of human knowledge are little disposed to pronounce anything impossible.

This matter brings into renewed prominence the subject of intestinal antiseptics. We are not disposed to stop with the detection of this mode of transmitting infection, but must seek for the means of prevention. If the maladies thus transmissible can be influenced by intestinal antiseptics, such as are now employed by many thousands of practitioners, it should be universally known and the practice considered obligatory. In America more than 50,000 physicians employ as intestinal antiseptics the sulphocarbolates of zinc, lime and soda. The clinical evidence

in their favor is overwhelming. Their use has steadily grown each year since 1880, when they were first introduced in human practice.

At first they were given on the crude theory that they "killed the bugs" in the stomach and bowels. To this it was objected that it was impossible to chemically disinfect the tortuous bowel, insofar as to free it from all micro-organisms. But by this time the results of the treatment had proved so markedly superior to all that had preceded it, that its advocates refused to abandon it for want of a plausible explanation of its action.

In time it was ascertained that better results were obtained if the bowels were swept clean of fecal material before the sulphocarbolates were administered, and these were then given in doses to correct and prevent all abnormal odor of the stools. The effect was so decided that it was estimated that more than one-third of the symptom-totality disappeared under this treatment, reducing the gravity of the attack to that extent. No ill effects have ever been charged against the sulphocarbolates when employed in chemical purity.

Even yet it is uncertain how they act. The stools under their use become odorless and normal in all respects, fever is moderated, neurotic symptoms subside, the digestion is restored. I have searched in vain for a case of fecal transmission of typhoid fever, or dysentery, where this method has been applied.

Turning to Major Drum's analysis of the Ottawa outbreak, I ask if it could have been possible, had the early cases along the watershed been thus treated antiseptically.

Those who advocate the intestinal antiseptics are right or wrong. If wrong, this has never been proved, nor has any plausible explanation been given for their practical success. If the sulphocarbolates are not the best agents for the purpose, we should be shown what others are more effective against each of the three maladies, now known to be harbored by "carriers"—typhoid fever, cholera and amœbic dys-



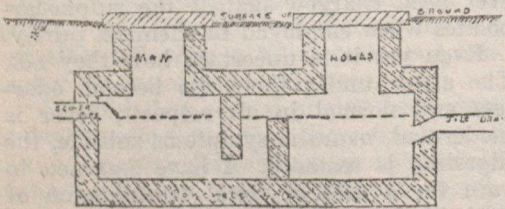
entery. The stools of diphtheria patients should be studied for the Loeffler bacilli, during the attack and after it. The way seems open for a most important advance in the prevention of infectious disease.

WILLIAM F. WAUGH, M.D.,  
Chicago, Ill.

### Some Suggestions on Individual Sewage Disposal.

Sir:—Before the discovery of microbes very little attention was given to the disposal of sewage in order to make places more sanitary. Not only were populous cities then swept by cases of typhoid, cholera and kindred bowel troubles, but even sparsely settled country districts were visited by the same dreaded diseases. Since then more careful attention has been given to sewage disposal, so that now diseases caused by insanitary methods in disposing of sewage are much less common.

The common country closet, which generally consists of a hole dug in the ground over which is constructed a somewhat rude shed, has a larger sick and death list to its credit than most any other insanitary agency. It is hardly ever screened to keep out flies or placed in a position where its con-



Septic Tank for Sanitary Disposal of Sewage.

taminated waters are certain not to enter wells and other sources of water supply. Surprising as it may seem, people who are otherwise scrupulously clean, permit the most insanitary conditions imaginable to exist here.

Even if no sewers are available insanitary closets should not and need not exist. All vaults should be well screened and the "dry earth" system installed. This can be done by getting dry dust from the public highway and placing it in a box in a corner of the closet. By means of a small shovel a sufficient quantity of the dust should be used every day to keep the ex-

crement well covered. This will prevent the escape of all odors and even when the vault is not screened flies will not be attracted or be able to gain access readily. If possible, the vault should be lined with cement.

However well the dry closets may be taken care of, they can never be as sanitary and satisfactory as the water carriage system which has been used for a long time by our cities, and even now is operated quite successfully in farm and rural homes that are entirely dependent upon their own source of water supply. Such a system, aside from the cost of the well or other source of water supply, can usually be installed at a cost which need not exceed \$250 or \$300, and should consist of an elevated tank, sink in kitchen, bathtub, closet and wash bowl in bathroom, and a method of sewage disposal something like the one illustrated in the accompanying drawing.

For the disposal of sewage the septic tank is a much better and more sanitary way than to have the sewer from the closet empty directly into some stream or cesspool. By having the sewage carried into a tank where it may be allowed to remain for some time, bacteria which live only in dark reservoirs will attack the solids, decompose them, and finally purify the sewage. The insoluble particles will settle to the bottom of the tank. These need to be removed once in about every two years. The purified sewage can be emptied into a field or tile drain without fear of contamination. If no such outlet can be given, it can be distributed by underground irrigation. This can be done by giving the drain very little fall, say one inch every 15 or 20 feet, and making it at least 50 feet long. This will distribute the seepage so that no particular spot will become wet and soggy.

This septic tank should be at least 3 by 4 by 8 feet and constructed of concrete. The incoming tile should be of good sewer pipe cemented at the joints and have very little drop to the surface of the water so as to disturb the sewage as little as possible, for these bacteria work best in a quiet place.

C. D. STEINER,  
College of Agriculture Ohio State University.



## Meetings and Reports

### DOMESTIC

#### Child Welfare Exhibition.

The promoters of the Montreal Child Welfare Exhibition to be held in October 1912 are sending out circulars asking co-operation. The movement is certainly worthy of help from all quarters. The exhibition will be replete with everything appertaining to child welfare. The secretaries are W. H. Atherton, Ph.D., 62 Beaver Hall Hill, and L'Abbe J. O. Maurice, D.Th., LL.L., 835 Ontario St. East.

#### Muskoka Free Hospital for Consumptives.

A member of the staff of *The Public Health Journal* had the pleasure of visiting the Muskoka Free Hospital for Consumptives recently and noting the advances that have been made in this method of treatment.

An excellent feature in this hospital is that each patient is supplied with a card for his daily report. He is requested thereon to state whether or not he is being cared for satisfactorily, in regard to meals by placing his comment after each meal which is named thereon, and in regard to room, nursing and general matters by making his comment in the same way.

Everyone upon entering the institution subscribes to regulations which include the following:

Patients must spend at least eight hours out of doors daily unless excused by the physician; they must be out of the wards before 9 a.m.; they are expected to follow the advice of the physicians regarding dress, exercise and diet; and as food forms an important part of the treatment, patients are urged to take as much nourishment as possible.

Patients are required to use for expectoration at all times the cuspidors provided for that purpose. Spitting on the ground, floors or into basins, closets and sinks is absolutely prohibited. For the health of all concerned this rule will be strictly enforced; all patients are required

to do some regular daily work unless excused by the physician-in-charge; conversation between patients regarding their symptoms or any subject relating to illness should be strictly avoided at all times.

#### Earl Grey's Interest in Public Health Matters.

Earl Grey's interest in matters appertaining to public health has been pronounced on all occasions. Upon his recent visit to the Canadian National Exposition he was very much interested in two of the models which were loaned by the Chicago health department for use in the Ontario Board of Health exhibit arranged by Dr. McCullough. The Governor-General personally requested permission from the Chicago Board of Health to duplicate these models for Canadian schools, and permission was granted by Health Commissioner Young. One of the models portrays by means of sleeping dolls and smoke the unhealthy effect of sleeping in a poorly ventilated room. The other model shows the great death rate due to improper care of children.

#### Cinquieme Convention Annuelle des Services Sanitaires de la Province de Quebec.

La "Cinquieme Convention annuelle des Services Sanitaires de la Province de Quebec," aura lieu à Montréal durant l'été de 1912.

Nous comptons que les municipalites de Quebec, se feront un devoir d'y déléguer leurs officiers sanitaires.

Les officiers pour cette Sème convention sont:

Président, Dr. E. P. Lachapelle, Commissaire de la ville de Montreal.

Secrétaire, Dr. J. A. Baudouin, Directeur du Bureau d'hygiene de Lachine.

#### A Civic Guild Bulletin.

The Toronto Civic Guild is issuing an excellent little monthly bulletin; the month of May last saw its first issue. Each number is illustrated and gotten up in the best



style and is a credit to the secretary, Mr. W. S. B. Armstrong, and the Toronto Civic Guild. The August number took up Toronto's civic debt; a consideration of better housing; the proposal to improve the approach to the Don bridge; the question of street width; building lines on residential streets; height of buildings, and the conservation of the Rosedale ravine.

#### Toronto Board of Health Bulletin.

The Health Bulletin issued by the Department of Health for Toronto is a compilation of good extracts and added comments; the first issue was that of May. It is intended to issue the Bulletin monthly to the citizens of Toronto and others who may be interested in health matters, its purpose being to keep the people informed of the work of the health department and give advice about different diseases and epidemics, the times at which they are likely to occur and the best means of combatting them in the home.

#### Infant Mortality.

Dr. Helen MacMurchy's second report on "Infant Mortality" should be read and re-read with care by those who have the real interests of our country at heart. These interests we are all supposed to have. Dr. MacMurchy addresses her report to the Honorable W. J. Hanna, Provincial Secretary for Ontario, and covers her topic in a very thorough and convincing manner. She points out that infant mortality is such an extensive subject that it may be approached from many points of view, and there is no part of sanitary administration which does not bear a relation to it.

Dr. MacMurchy takes up the difference between the poor man's baby and the rich man's baby, saying that it should not be made too expensive to bring up a baby; that such expense is bad for the race. "What we want," Dr. MacMurchy remarks, "is the ordinary Canadian baby. We have the fathers and mothers, and we must see that they get good milk, good air, and good water. It is the mother that we should specially do something for. She is the one, and the only one, who can save the baby. If the 'own mother' is dead, then adopt a mother for the baby. Australia does it. Why not Ontario? It is the

mother that the Government should get behind."

Dr. MacMurchy's report is fully illustrated and contains statistics of the utmost value.

#### The Bulletin of the City of Winnipeg.

Dr. A. J. Douglas, Medical Health Officer of Winnipeg, is to be congratulated on the appearance of Winnipeg's Health Bulletin. The motto of the Bulletin is that "No sanitary improvement worth the name will be effective whatever acts you pass or whatever powers you confer on public officers unless you create an intelligent interest in the public mind." Judging from the first two copies before us the Bulletin will certainly create this interest. In his foreword Dr. Douglas says that the issue of the Bulletin marks a new departure in the work of the Winnipeg Health Department; its object is educational; it is proposed to set forth in its columns from month to month such statistics as may be of interest together with information and advice at each particular season of the year that may be helpful; to afford particulars with regard to prevalent diseases and to suggest what measures should be taken to restrict and prevent these. The ambition of Dr. Douglas and his Health Department is to make Winnipeg the healthiest city on the Continent.

#### Health Circular No. 28, Nova Scotia.

Circular No. 28 of the Public Health Department of the Province of Nova Scotia reaches the high standard set by Dr. A. P. Reid.

It takes up the Extirpation of Tuberculosis, Infectious Diseases, Poliomyelitis, Pneumonia, Cholera Infantum, Disinfection, Smallpox, and contains a number of valuable statistics and extracts from other publications.

"Let us think," says Dr. Reid. "Tuberculosis is curable. Why is it not cured?" And speaking of publicity — "Unless there be knowledge of the disease (tuberculosis) centres the authorities are unable to act efficiently. They are unable to prevent the lapse of curability into incurability or to arrest its spread from a centre. Hence the authorities should have notification of every case of the disease, no matter what its stage may be, and noti-



fication should be compulsory.”

*The Public Health Journal* is pleased to note two extracts from its pages in Circular 28: a letter from A. F. on “Insanitary Schools,” and “Some Household Insects and Their Neighbors,” by F. W. Waugh, of Toronto.

#### Twenty-ninth Annual Report of the Ontario Board of Health.

The officers of the Ontario Board of Health for the year of 1910, which year this report covers, were Dr. Charles Sheard of Toronto; Dr. Milton Ira Beeman of Newburg; Dr. William R. Hall of Chatham; Dr. John W. S. McCullough, taking the place of Dr. Chas. A. Hodgetts as Secretary and Chief Health Officer; Dr. John A. Amyot, Provincial Bacteriologist; Dr. W. T. Connell of the Kingston Laboratory; F. N. Lancaster, B.A.Sc., Provincial Chemist; Medical Inspector Dr. R. W. Bell, and Mr. George E. Young, the Sanitary Inspector.

In his resume of the transactions of the board for 1910, Dr. McCullough offers a tribute to Dr. Charles A. Hodgetts for the excellent work done during that officer's administration, and recites the unanimous resolution of his Board in that regard. Dr. McCullough also mentions the loss occasioned upon the departure of former Provincial Chemist, Dr. G. G. Nasmith, who became Chemist of the Laboratory of the city of Toronto. He then takes up the report of Dr. Nasmith and Dr. T. D. Archibald regarding the Lindsay ozone purification plant, and points out that the results of this examination authorized by his Board tended to show the system installed by Lindsay as utterly inadequate for the purification of its water supply — “This question, it would seem, is now settled without any doubt, and the results vindicate completely the position taken in the matter by the Provincial Board of Health. It is also an object lesson for municipalities undertaking such experiments without the advice and sanction of the Board, as required by law. The town of Lindsay has spent upon this plant a large sum of money, for which, unfortunately, it has received no value except experience.”

In dealing with tuberculosis, Dr. McCullough's words are: “It is a communicable disease preventable by proper care,

a disease with a tendency to natural cure when associated with good food, good living conditions, avoidance of drink and all forms of intemperance, pure air, sunshine and a cheerful and optimistic conception of the disease.” He gives the results of inspection of certain abattoirs, pointing out that when the regular buyers for such abattoirs find the condition of tuberculosis among animals to prevail in certain localities, they naturally avoid buying there so that they may not suffer financial loss — “What is the result? The animals are thereupon sold to local butchers and are consumed in the country and smaller towns where there is no inspector. If we are to have any results in the prevention of tuberculosis and other diseases we must have some system of rigid inspection of all meat used.”

The appendix of Dr. McCullough's Report is taken up by reports of city health officers. We note, however, that there are a number of such reports missing, and presume that the organization in Ontario is not tyrannical enough, or at least, has not the means of enforcing the rule that every municipality in the jurisdiction shall have reports sent to the chief health officer.

This twenty-ninth annual report is well illustrated, the illustrations relating to the Lady Grey Hospital for Tuberculosis at Ottawa being particularly noteworthy.

#### Maritime Medical Association.

At the last annual meeting of the Maritime Medical Association in Halifax it was decided by unanimous resolution to discontinue the existence of the Association. This was done in carrying out the policy of forwarding the interests of the Canadian Medical Association. The Maritime Medical Association was the only inter-provincial association in Canada, and the way seems now open for a better union between provincial societies and the all-Canadian association, following the reorganization of the profession as proposed by the C. M. A., throughout the Dominion.

#### Inspection of Schools and the Ontario Medical Council.

The Ontario Medical Council passed the following resolution regarding the inspection of schools at its recent annual meeting:



Whereas, The question of medical inspection of schools and scholars is now prominently before the peoples of various nations; and

Whereas, The Legislature of 1907 of Ontario authorized trustees to provide and pay for the dental and medical inspection of pupils as the regulations may prescribe, or, in the absence of regulations, as the board may deem proper:

Resolved, That this Council, in the interests of school children, respectfully recommend to the Minister of Education the advisability of taking a physical census of the school children, with the view of comparing the health and physical condition of children in urban and rural districts and in the meantime further recommend the training, as in England, of the students in our model schools, normal schools and faculties of education in such a knowledge of school hygiene as will enable them to recognize common defects and diseases of children.

This Council further recognizes that while the employment of school doctors and nurses, giving all their time to medical inspection, would be the ideal plan for every municipality in the Province, yet it is of the opinion that the public are not sufficiently familiar with the benefits of medical inspection to be ready to meet the very considerable expense involved in inaugurating such a comprehensive system at the present time.

#### Guarding Against Cholera.

In view of the European cholera situation, Dr. F. Montizambert, Director General of Public Health for Canada, in circularizing his quarantine officers, the commissioner of customs, ship owners, agents, and others concerned, says: "I am directed by the honorable the Minister of Agriculture, to inform you that, in order to diminish the danger of the introduction of Asiatic cholera into this country, he has issued the following orders:

"All steerage passengers arriving at ports in Canada from ports or places infected with cholera, shall be subject to bacteriological examination at the quarantine station of the port, and shall not be permitted to pass such station nor to make customs entry, until it has been determined by such examination that they are not

cholera-bacillus carriers. This regulation shall apply until further notice to steerage passengers from Italy coming directly or via intermediate ports.

"For all cholera contacts arriving on vessels upon which cholera has occurred, the period of detention under quarantine observation shall be 10 days, unless after 5 days' detention they are found not to be cholera-bacillus carriers."

#### Royal Recognition of St. Johns' Ambulance Association.

His Majesty King George V., sovereign head and patron of the Grand Priory of the Order of the Hospital of St. John of Jerusalem in England, has approved of the following honors to be conferred upon the officers of the Canadian branch of the St. John Ambulance Association:

Knights of Grace, Dr. F. Montizambert, I.S.O., president of the Canadian branch, Ottawa; Col. G. Carleton Jones, D.G.M.S., Ottawa; Col. the Hon. J. M. Gibson, Lieutenant-Governor of Ontario; Sir Edward H. Clouston, Montreal.

#### The Public Health Exhibit of the Ontario Board of Health at the Canadian National Exposition.

The very great interest manifested by the thousands who saw this exhibit at the Canadian National Exhibition held in Toronto this year is not only an evidence of the excellent and practical character of the exhibit itself, but also of the desire of the Canadian people to be in the forefront in the matters pertaining to this important branch of education. Sanitary or public health matters have within the last few years made giant strides. People are rapidly becoming concerned about the means of prevention, rather than the cure of disease, and what with the information accumulated in respect to the necessity for pure water, disposal of garbage and sewage, of the dangers from flies, from the careless spitting consumptive, of the necessity of ventilating our houses, churches, places of amusement and business, there seems no better way of distributing this information than by such an exhibit as that given by the Provincial Board of Health for this Province.

This exhibit is a further development of the travelling Tuberculosis Exhibit in-



stituted by the Board during the last few years. Last year it was shown in a railway car about the Province. This year for the first time it embraces a large variety of subjects relating to public health and it is the intention of the Board to continue this educational feature upon a larger scale. Although the space allotted to the exhibit was so limited that a large portion overflowed to a tent annex and a considerable portion remained unopened for want of space, there was even under such difficulties a remarkable display, material being furnished as follows:

*Paper Water Cups and Brackets—*

American Water Supply Co., Boston,  
*Sputum Cups—*

Meinicke & Co., New York.

*Paper Cups, Spittoons, Paper Towels, etc.*  
Stone & Forsyth, Boston.

*Sputum Cups, Water Cups, etc.—*  
Seabury & Johnson, New York.

*Paper Towels, etc.—*

Scott Paper Co., Philadelphia.

*Paper Blankets—*

Cabinet Mfg. Co., Quincy, Ill.

*Biological Products—*

Burroughs, Wellcome Co., London.

Parke, Davis & Co., Walkerville.

H. K. Mulford & Co., Philadelphia.

*Milk Laboratory—*

City Dairy Co., Toronto.

*Sanitary Drinking Fountains—*

Springfield Sanitary Drinking Fountain  
Co., Chicopee.

Flint Sanitary Mouthpiece Co., New  
York.

S. W. Tobey, Wausau.

March Tenny Co., Muskegon.

*Water Filters—*

Hygeia Filter Co., Detroit.

Jarvis Sanitary Filter Co., Toronto.

*Water Stills—*

Consumers' Gas Co., Toronto.

Lymans, Ltd., Montreal.

*Charts Illustrating Domestic Water Supply—*

Ontario Wind Engine & Pump Co., To-  
ronto.

*Model of Garbage Destructor—*

Heenan and Froude, Manchester, Eng-  
land, per Laurie & Lamb.

*Knopf Window Tent, Microscopes, Elec-  
trical Centrifuges—*

J. F. Hartz Co., Toronto.

The Provincial Board of Health, Ontar-

io, further displayed a very fine collection of handsomely mounted photographs of sanatoria in Great Britain, Germany, Scandinavia, United States and Canada, with plans of various ones; models of tents, sanatoria and shacks for the care of consumptives and models of sanitary conveniences and of the various types of sewage disposal plants.

*Disinfectants—*

West Disinfecting Co., New York.

Parke, Davis & Co., Walkerville.

*Portable Sanitary Closets—*

Red Cross Sanitary Co., Grimsby.

Parker-White, Limited, Winnipeg.

*Fly Pest Exhibit—*

C. Gordon Hewitt, D.Sc., Ottawa.

*Charts, Banners and Literature—*

Toronto Health Department, Toronto.

In addition to these, three exhibits stood out prominently and formed a centre of attraction. These were:

1st. The splendid charts of the American Association for the Conservation of Vision.

2nd. The exhibit of the American Association for the Prevention of Infant Mortality, and

3rd. The various practical charts, healthgrams, and banners and the mechanical models loaned by the Department of Health, Chicago. This exhibit was in charge of Dr. C. St. Clair Drake, the designer of the models. The first one illustrated infant mortality. Three thousand five hundred dolls affixed to the wall represent the babies who died of preventable disease in Chicago last year. In front of this is a revolving cylinder operated by clockwork with a number of larger dolls, every fourth one of which is chopped off by the Angel of Death. "One out of every four drops into the grave, and 70 per cent. of this might be prevented," is the startling object lesson which day after day attracted the attention of thousands.

None the less interesting was the model illustrating ventilation. Two rooms of equal size are shown in which there are dolls in tiny beds. At the ordinary breathing rate by means of an ingenious contrivance smoke is seen to issue from the noses of the dolls. In the one room which has its doors and windows open the atmosphere remains clear. In the other without ventilation the air is soon quite murky.



These models excited much interest. All day the space about them was crowded and the comments upon the value of the lesson taught were numerous. Indeed, His Excellency Earl Grey, who visited the Exhibition, said they were the best educational features of the Fair, and he asked how he could secure them to exhibit in Ottawa and Montreal.

Each day in the demonstration room of the Women's Building one of a series of health talks was given by various ladies and gentlemen who are interested in pre-

ventive medicine. The lectures were interspersed with moving pictures illustrating good and bad milk conditions, the danger from flies and from tuberculosis. Among the lecturers were Dr. Hastings, City Health Officer of Toronto; Dr. Helen MacMurchy; Dr. Connell, of Kingston; Dr. C. Gordon Hewitt, of Ottawa; Dr. G. D. Porter, Dr. W. H. Doherty, Professor Dean and Dr. Amyot.

The whole exhibit was assembled and managed by Dr. J. W. S. McCullough, Chief Health Officer of the Province.

## INTERNATIONAL

### Great Lakes International Pure Water Association.

Canada and the United States, in Chicago on the 29th of September, joined in a reciprocity movement to keep the great lakes clean.

An organization, to which the Governor of each State and the Premier of each Province bordering on the great lakes or the St. Lawrence River will send an official delegate was formed at a gathering of city health officers and sanitary engineers from both sides of the international boundary line.

The new society adopted as its name the Great Lakes International Pure Water Association and elected Dr. C. E. Ford, health commissioner of Cleveland, as temporary president. Dr. Charles J. C. O. Hastings of Toronto was elected temporary vice-president, and Dr. W. A. Evans, of Chicago, was chosen as editor.

As soon as the various governors and premiers have had time to act, permanent officers will be chosen. The officially appointed delegates will be the only ones having voting power, but others interested in the subject of pure water supply and kindred matters will be permitted to join and take part in the sessions.

A movement for laws preventing the discharge of sewage into the great lakes, already under way in Canada, probably will be one of the first matters taken up by the new society.

The society put itself on record as in favor of grouping cities and towns similarly situated on any body of water into sanitary districts for co-operating in securing a pure water supply.

### More of the Great Dresden Exhibition.

Dresden's great international hygiene exhibition has made that city the centre of interest for all Europe; and this will last for the next year or two.

All nations responded to the invitation to co-operate in discovering and displaying whatever endangers, protects and restores the health of mankind — physical, moral and social. For many years over 3,000 specialists in all parts of the world have been gathering the exhibits. For several years hundreds of experts have been at work arranging their displays. The results are marvellous. At present fully 300 congresses of experts are gathering to study and discuss them.

In one great building, called "Der Mensch," (the man) every conceivable device, model and description is shown to exhibit the origin, growth, disease, suffering and death of a human being. The heart action, for instance, is seen actually at work circulating the blood, which is measured as it is lifted and propelled through the arteries. Disease due to neglect, to indulgence in the vices of lust and drink, to occupational and housing conditions, to heredity, infection and contagion, are boldly and baldly displayed, but always with scientific accuracy and with an important purpose.

In the historical collection there is a series of realistic reproductions illustrating the evolution of the house for human habitation. The sports which contribute to health are not only depicted on paper, in picture and by model, but are produced in action by sporting associations and



champion players assembled for the purpose from many lands.

Industrial conditions are classified in no less than fifteen sections. All this wonderful array is intelligible to the plain observer, but the expert also finds his data classified in strictly scientific form. It is safe to say that no other such contribution has ever been made to the health of mankind or to prevent and alleviate suffering as in this exhibition at Dresden. It should never be scattered, except to be shown elsewhere. It ought to go around the world.

### International Municipal Congress and Exhibition.

The days from September 17th to 30th inclusive witnessed in the Coliseum at Chicago one of the finest exhibits that has ever been held regarding municipal matters. Most of the wonderful improvements adopted during recent years by the various large cities of the world were shown and described by means of small models, pictures, charts and lectures; the exhibit being, in fact, a great municipal museum in which miniatures of the good things in existence, under civic control, were gathered together; New York with its subway, its recreation piers, its docks and great buildings — Montreal showing its beautiful river front — Cleveland, its great group plan, its schools and public works—Port Sunlight, the co-operative town of Eng-

land — Nuremberg, the antique city of Germany — Rotterdam, from cleanly Holland — the "Commission Rule" display of Des Moines—and other exhibits of endless interest.

Among the general discussions taking place at the Congress was that on ventilation and its investigation from a practical standpoint as it exists in large cities. And not the least things of interest were the comparison of the old and new methods of fire fighting and the Chicago Woman's Civic Clubs' display illustrating the co-operation between the city and the home.

### Interstate Association of Medical Examiners.

A matter of considerable interest at the recent meeting of the American Association of Medical Examiners in Los Angeles was the affiliation made between the Interstate Association of Medical Examiners and the American Association, and a name was adopted under which the divisions of Washington, Oregon, British Columbia, Idaho, Montana and California will be included, namely, the North West Section of the American Association of Medical Examiners.

To be eligible for membership in this Association a physician must be a regular examiner for some life, accident or liability insurance company.

The next regular meeting of the Association will be held in Spokane.

## UNITED STATES

### Sense and the Sex Question.

The school authorities of Oakland, Cal., a city of 140,000 inhabitants, inaugurated with the opening of the schools in that place in September a course of lectures and class instruction in sex hygiene. The suggestion advanced in this journal some time ago that every city should employ for the public schools and at the public expense two instructors in sex hygiene and that they should be a man and a woman, is exactly what is being carried out in Oakland. It is the first city in the United States to undertake anything of the kind, though there is on foot a movement to do the same thing in Sacramento.

Of course there are reactionary and ignorant prudes in Oakland, who are blushing violently and noisily at this "destruction of modesty and sense of propriety." They would rather the children would learn sexuality by innuendo, by double entendre, by association as they get older with procurers and macques. It is ignorance in youth and instruction from questionable sources later on that leads girls to betrayal and the brothel and boys to the brothel and the hospitals. In the name of the Almighty, why cannot horse sense have some influence with the average parent, when souls and bodies of children of both sexes are at stake!



The folly and barbarity of prudish parents is responsible for from 50 to 60 per cent. of the inmates of the insane asylums, for half the "specialists" in medicine; for boys, girls, men and women who die, some of them insane, or blind, or deaf, or speechless, or in idiocy. Straight up and down ignorance upon the part of parents, who would do better by their children if they realized what should be done in the way of instruction and warning, results in the same effects many times. Ignorance excuses no one in physical and moral law any more than in statutory law.

Social workers and the medical fraternity are agreed that sexual ignorance has desolated more homes and ruined more lives than any inherent laxity of morals, and they all decry the persistent prudery that has already wrought such havoc in the rising generation.

The prudes are the right bower of the madames, the macques, the "specialists," the hospitals, and the asylums for insane and idiots.

#### United States Campaign Against Dust.

A warning against the dangers of dust has been issued by the National Association for the Study and Prevention of Tuberculosis, in which it is shown that the percentage of deaths caused by tuberculosis in dusty trades is more than double that for all employed men in the registration area of the United States.

As a result of the dangers from consumption to those exposed to various forms of dust, and at the request of the National Association, the United States Government has recently appointed a commission to work in co-operation with state authorities in making an investigation into the conditions of the metal mining industries in the United States, with special reference to diseases of the lungs. The work of the commission engaged in this special task will follow lines somewhat similar to those worked out by the Royal Commission of Australia, whose report was recently received in this country.

"Dusts are of three kinds," says the National Association; "factory, street, and house dusts." The statement refers to the results obtained through investigations made for the Bureau of Labor by Frederick L. Hoffman. While among males

generally in the registration area of the United States 14.5 per cent. of all deaths are from consumption, the mortality among grinders from this disease is 49.2 per cent., and in hardly any of the dusty trades is it below 25 per cent. The percentage of deaths from tuberculosis among all those exposed to metallic dust is 36.9 per cent.; to mineral dust, 28.6 per cent.; to vegetable fibre dust, 28.8 per cent.; to mixed animal and other forms of dust, 32.1 per cent.; to street dust, 25.5 per cent.; and to organic, or dust coming from the articles being manufactured, 23 per cent.

The statement speaks also of the dangers from house dust, especially in rooms that are not well ventilated. The association warns against dry sweeping, and against the use of the feather duster, or other devices that scatter, but do not take up the dust.

Since the ordinary dust blown about in the streets is impregnated with disease germs, the National Association urges the adoption of methods that will prevent the further dissemination of such bacilli. It also urges for the coming months of fall and winter more open windows and more fresh air in house, shop, and school-room.

#### The Cincinnati Plan.

Appreciating that there has arisen a feeling that medical teaching is far from perfect and that the attention of students has been too completely directed to diagnosis and treatment and not enough to prevention, the University of Cincinnati has adopted the co-operative system of instruction in its college of medicine. This is the system that has been responsible for the remarkable success of its engineering school and that has become widely and favorably known as the "Cincinnati Plan." As applied to medicine, it marks, we believe, a distinct departure. The first two years of the curriculum is to remain unchanged, but during the last two years the student will divide his time equally between active service in the city Board of Health and the regular studies of the college. In the former capacity he will do chemical and bacteriological work, sanitary inspection and fumigation, will trace the sources of infections, make food, dairy, bakery and school inspections, practise



preventive inoculation and vaccination and serve in the municipal dispensaries. In every phase of laboratory activity the student will be given experience. His record in this practical work will count toward his general scholastic standing.

It requires no professional mind to understand the manifold virtues of this proposition. The common complaint against young college graduates, particularly those who seek to break into social service, is that they lack first-hand experience. It is customary to teach hygiene by lectures and recitations, rarely by observation and almost never by the laboratory method. The newly-made physician has some practical knowledge of the *methods of sanitation*. In other words, a part of his education must be gotten after he has left college. And though it is still admitted that contact with the world in the pursuit of the daily bread is the greatest teacher, there is no gainsaying the fact that a doctor, of all men, should have the highest possible professional training. The University of Cincinnati plan, then, represents a clear gain. It gives the student all the lectures he had before and in addition confers upon him a practical acquaintance with the problems which he will find confronting him in the future. The benefit to the community is beyond all accounting in terms of dollars and cents.

#### Underground Waters of Southern Minnesota.

The United States Geological Survey has just issued Water Supply Paper 256, *Geology and Underground Waters of Southern Minnesota*, by C. W. Hall, O. F. Meinzer, and M. L. Fuller. The region described in the report includes approximately the southern two-fifths of the State of Minnesota and has an area of 28,265 square miles. Aside from the Cities of Minneapolis and St. Paul this is essentially an agricultural region.

The purpose of investigation, which was conducted in co-operation with the Minnesota State Board of Health, was to determine to the fullest practicable extent the principal facts in regard to the underground waters, their quantity, head mineral quality, sanitary conditions and

depths beneath the surface, as well as the best methods of drilling to them and finishing wells for their utilization and to consider all other questions relating to their recovery for human use.

A question in which nearly all communities are interested, says the report, is whether flowing wells can be obtained by drilling to considerable depths. Much blind optimism prevails in regard to this subject. Many towns have at one time or another borne the expense of drilling at places where there was no real prospect of obtaining flows and others are likely to suffer in the same way unless they are properly informed.

It is by no means necessary that every village or city should drill a deep well in order to learn whether flows can be obtained. Even where there are no prospects for flowing wells, the question of head is important. If the water rises higher from the deeper than from the shallower beds it is important that the community should know it. The information obtained as the result of the investigation gives ample data for determining definitely for most communities whether or not there is any prospect of obtaining flowing wells. These data are given in the report for each county separately so that the well driller may determine with some degree of accuracy to what depth he must go to obtain water. The investigation developed the fact that the domestic water supply for most of the village inhabitants of southern Minnesota is derived from shallow, open wells, which in settlements without sewer systems are necessarily near one or more privies or cesspools. An examination of eleven of these wells situated in as many different villages showed the presence of bacillus coli in ten of them—an indication of contamination by human or other animal excreta. This situation is an argument for higher ideals of cleanliness and sanitation in villages embraced in the investigation. Every community, it is stated, should aim to procure an adequate source of water supply, to install an efficient system of waterworks with mains reaching every home, and to construct an approved and extensive system of sewers. The report states that the people should be educated in the elementary principles of sanitation. When once they compre-



hend that in drinking the clear, cold water from their shallow private wells they are imbibing the bacteria laden seepage from their privies or barnyards, and when fur-

thermore they understand that better conditions are within their reach, they will be ready to do their part in the work of improvement.

## THE EMPIRE AND THE WORLD ABROAD

### Housing Problem in England.

When John Burns, the workingman Cabinet Minister of England, fathered the town planning bill as his first official parliamentary infant, and engineered it successfully through the House of Commons in the face of stormy opposition, he was hailed as a hero by his colleagues, and naturally felt proud.

But while he was receiving the congratulations of all who were crying out for better housing accommodation, more beautiful towns and healthier surroundings on the one hand, he exposed himself to an avalanche of personal abuse prompted by slum landlordism, which felt bitterly the invasion of its vast territorial interests.

And now it has dawned upon the president of the Local Government Board that the enthusiasm of his friends was premature, for their plaudits are not yet justified by the results.

He is now face to face with a problem more acute, perhaps, than that which prompted the town planning idea itself. For the operation of the act, which came into force recently, meant the wholesale wiping out of huge areas covered with unsanitary working class dwellings, especially in rural districts, and the result is that thousands of poor families are being driven from their homes without any alternative accommodation except the workhouse or the barns of their neighbors.

In Kent and some other counties bordering on London there are already hundreds of families who are obliged to seek the hospitality of the hopfields.

No man is more disturbed over these unexpected results of his town planning scheme than John Burns himself. His elevation to the position of a Cabinet Minister did not add to his popularity among the rank and file of the working classes, and it is now feared among his friends that his town planning zeal may lead to his political undoing.

But meanwhile he passes the blame on to the local authorities, who should be able, he thinks, to rise at once to an emergency of this kind and provide the necessary habitations for the dispossessed families. He is reminded, however, that houses to accommodate thousands of persons can not grow like mushrooms, and that he should have foreseen the difficulty he was creating before he put his act into force.

It must be explained that the slum landlords of the country are conspiring to bring discredit upon the town planning scheme and that many local authorities are aiding them in their campaign of resistance to the working of the act.

The landlords declare it would not pay them to put the old houses into the sanitary condition required by the act, while they can not run the risk of having them inhabited in their present state, in view of the penalties which the act imposes. The result is that evictions, recalling some of the old scenes in Ireland, are now a matter of frequent occurrence in the rural districts of England. The situation has become so acute in the counties adjacent to London that the canvas tents used by coronation soldiers have been asked for to shelter some of the ousted victims.

No act of parliament placed on the statute book of England has ever provoked more determined opposition from the landlord class, and it looks as if the battle was only opening.

### Australia and Tuberculosis.

The results obtained in the crusade against tuberculosis in Australia are likely to give an educational impetus to the other countries in the world, according to one of our correspondents who has recently visited the island continent. Less is known by the outside world about Australia than any other civilized country, and the writer was surprised to find health conditions there better than in any known



country on the globe. The death-rate is only 10.95 per thousand per annum.

"The death-rate from tuberculosis," he writes, "has been steadily declining during the past twenty-five years, and now is less than 9 per cent. of the total deaths, which is a lower percentage than any published by any other country which complies its statistics in an equally reliable manner."

The writer goes on to say that the measures which the Australian health authorities believe to be responsible for this satisfactory state of affairs are of interest.

"These are all the more noteworthy," he says, "when it is remembered that in 1885 over 16 per cent. of the total deaths were due to tuberculosis in New South Wales.

"In 1881 a Board of Health was organized in New South Wales, to which considerable powers were given to combat disease. From the time the board brought the provisions of this law into force there has been a rapid decline in the tuberculosis death-rate.

"In 1886 a Dairies Supervision Act was passed. It required that all dairymen and milk vendors must be registered, the dairies kept in a sanitary condition, and that any person working in a dairy must be reported to the Board of Health immediately if he is suffering from an infectious disease.

"The enforcement of this Act was followed by a marked reduction in the infant mortality. The rate for the latter for the years 1883 to 1886 was 81.6 per cent. This steadily declined, and for the years 1905 to 1908 it reached 25.9 per cent.

"In 1892 the Diseased Animals Act was passed, which prohibited the sale of diseased animals and authorized the condemning and destruction of meat which was unsound.

In New South Wales the notification of cases of pulmonary and throat tuberculosis has been compulsory for over ten years. The walls and ceilings of houses in which cases occur are sprayed with a solution of formalin and the floors are washed with a solution of corrosive sublimate.

"The effectiveness of the educational

campaign is well shown by the fact that open-air sleeping is more general than in any other country. There is scarcely a dwelling-house constructed nowadays in Australia, even a laborer's cottage, which is not provided with a suitable verandah for outdoor sleeping.

"There is very little expectorating on the sidewalks or other public places. Ordinances to prevent the contamination of milk and other foodstuffs are well observed. In shops where fresh meat is offered for sale it is customary to find sheets of water running over the front windows and walls for the purpose of catching dust.

"All large cities like Sydney (population 700,000), Melbourne (population 600,000), Adelaide, and others, have tuberculosis sanatoria, with a large number of beds for chronic cases.

"The Greenvale Sanatorium near Melbourne will compare favorably with similar institutions in Europe or America. The health officials believe that only a few years will elapse before every case of pulmonary and throat tuberculosis will be under such control as to reduce the danger of transmitting the infection to a minimum."

The following recommendations made at a conference of the principal medical officers of the Commonwealth last Spring, indicate the advanced state of the tuberculosis campaign in Australia:

"Legal power to regulate the home management of consumptives; legal power to remove dangerous or infective consumptives into segregation; legal power to detain such consumptives in segregation; legal power to examine medically contacts and housemates of consumptives; financial assistance to the wives and families of necessitous consumptives admitted to hospitals or sanatoria."

The conference stated that forcible segregation was necessary for "the small number of persons who persistently decline to take the precautions enjoined upon them for the safety of others," and "to the somewhat larger number of persons whose circumstances, either of poverty or of advanced illness combined with small means, render observance of the necessary precautions by them physically impossible. This form of control should



be applicable not merely to persons in dwellings, institutions, and the like places, but also to those frequenting workshops and places of public resort."

#### Rich Out-Patients in Paris.

Members of the medical profession in Paris are up in arms against the hospital authorities for an alleged public abuse, which consists in allowing rich patients to be attended, to the detriment of the poor and the serious loss of practitioners. The *Syndicat des Médecins* has presented a formal protest to the authorities. The principal grievance is that patients who can very well afford to be attended in their houses now prefer to go to the hospital as paying patients, and for a ridiculously small fee they obtain surgical or medical aid to which only the poor are entitled. The physicians state that in former times the rich considered it humiliating to be attended in the hospitals. The members of their families would have had conscientious scruples about confiding them to strange nurses. Heavy sacrifices were made to keep the sick or invalids at their own homes, and have them attended by their own physician. Nowadays they allege it is quite common to hear of persons in easy circumstances, who live in magnificent flats and occupy prominent positions, going to the hospitals when the slightest thing is the matter with them. They go there, a fortiori, when it is a question of having an operation. For five or ten francs a day they get all the attendance they require, and the services of the best physicians or surgeons. With a few tips here and there to the nurses, infirmarians, and general servants, they are made as comfortable as could be at an outlay which is ridiculous compared with their means. They thus obtain for a few hundred francs, or even less, a treatment

for which they could readily afford to pay.

Doctors in the Paris hospitals report typical cases. One of them says that for some time past they noticed that hospitals had become a sort of rendezvous of the "monde élégant" and the "haute bourgeoisie." Number So-and-So, for instance—all patients have a number—is the proprietor of a large and prosperous hotel in the north. Some of his traveller guests had told him of the excellent attention they had received at the hospital. He took the opportunity to come to town and have himself treated at the same institution. In the morning he was at the consultation with the poor, and in the evening regularly went to the theatres with his wife. Number So-and-So is a shopkeeper, who has an extensive trade. He had himself treated for a fracture of the nasal bone. He could not come to the consultation the following day because he had arranged to go with his family to the seaside. The same doctor gives other instances of persons who, after they had come to the consultations at the hospital, and by paying discreet tips had their turn ahead of the numerous poor, went to the summer resorts for a cure. One man, so as to deceive the staff, had come in a workman's blouse. But under it the physician detected fine clothing, and on inquiry it was learned that the man was a rich manufacturer employing hundreds of hands. A retired dealer who had made a fortune assumed the name of one of his delivery men, and also came to the hospital in workman's clothes. A lady living in the provinces on a large income came to Paris and stayed with her cousin, but to obtain free treatment at the hospital for her daughter she dressed her up in the maid's clothes. No wonder some members of the medical profession are becoming indignant.