

**PAGES**

**MISSING**

In every walk of life, whether it be professional or mechanical,  
one generation out-does its progenitor. The world is  
continually becoming richer and better because  
each in turn places upon the altar of the  
world's progress some accomplishment,  
some invention, some discovery, some  
method, which makes that par-  
ticular generation, or the par-  
ticular time stand out  
prominent over  
every preced-  
ing period.

—Anon.



JOHN W. S. McCULLOUGH, M.D.  
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**Special Articles**

**SHALL WE HAVE PURE MILK IN CANADA**

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Of the various foods in general use there is none perhaps so universally used in every family and by every individual as milk. There is none which from its composition can be of such universal service to the sick and well of all ages. Containing all the essentials of a perfect food, requiring little or no preparation before serving, comparatively easy of digestion, it has its place as one of the very important articles of diet for the sick and convalescent.

Milk fresh from the udder of a healthy cow is almost sterile, and as such is a most excellent article of diet for either the sick or well. But this cannot be said of market milk, 12 to 48 hours old, which has received no special care. It is such an excellent medium for the growth of micro-organisms that from containing a few bacteria per c.c. when milked from the udder, it is not unusual for the count to increase enormously when handled carelessly. Examination of samples of

milk delivered to houses and hospitals in St. Petersburg, London, New York, Washington, Toronto and other cities, have shown the presence of millions of bacteria per cubic centimetre, in some an average of over 22,000,000, and a maximum of over 307,000,000 per cubic centimetre. Fortunately most of these organisms are saprophytic and not concerned in the production of disease unless through their toxins. Yet many diseases are conveyed by milk, and epidemics running into many hundreds have been directly traced to a contaminated milk supply. The principal diseases carried by milk are typhoid, scarlet fever, diphtheria, tuberculosis and infantile diarrhoea. That the first three are not infrequently milk borne is amply demonstrated by the study of numerous epidemics traced definitely to the existence of a case of one of these fevers in the person or household of one handling milk after

leaving the cow and before reaching the home of the consumer.

Park's recent bacteriological studies of tuberculosis in man show us that bovine tuberculosis plays an important part in the tuberculous affections of children. Pulmonary tuberculosis appears always to be of human origin, but the tuberculous cervical adenitis, the mesenteric tuberculous glands, and even generalized tuberculosis in children, when of alimentary origin, seem in most cases to be due to bovine infection.

That infantile summer diarrhoeas are in the vast proportion of cases due to milk-borne infection, can be doubted by no one who has looked into the question. The number of deaths occurring in children under one year of age in Canada and many other civilized countries is a standing disgrace. In the last census year (1901) there were born in Canada 149,448 children, and there were 21,328 deaths of infants under one year. One of every seven infants die in the first year of life. There is no cause of death so prolific among children in the first year of life as disease of the digestive organs. Milk forms the principal food during this year, about 400 quarts being consumed per head, and many observers have shown that the death rate from diarrhoeal diseases is greatest amongst artificially fed children. Newsholme, of Brighton, as the result of an investigation in an infant population of 1,259 in 10,308 houses in Brighton, England, concludes that, taking the whole of the first year of life, the number of deaths from epidemic diarrhoea among breast-fed babes is not much more than one-tenth the number among artificially fed infants. Not one death from diarrhoea occurred at the age period 6 to 9 months in breast-fed children. Other investigations made in England, France, Australia, and elsewhere have shown that during the summer months the number of deaths of artificially fed infants is three to eight times that of the breast-fed. On the other hand, we know that where milk is properly handled the infant mortality is comparatively low, and where radical improvement has been made in the milk supply and in the methods of handling it, there has been a sudden, even startling lowering of the death rate., This is well illustrated by the statistics given by the

New York Hospital for Children on Randall's Island. These children were fed on milk from a carefully selected herd pastured on the island. The deaths from 1895 to 1897 were 41.81 per cent. of the admissions. A pasteurizing plant was then installed, and with no other change in diet or hygiene, the rate promptly fell to 19.80 and for seven years the average was 21.75, or little more than half the rate at the time the organisms in the milk were not destroyed by pasteurization. In this one institution the changed death rate meant a yearly saving of 177 lives.

It is quite safe to say that milk plays just as important a part in the death rate throughout Canada, and that thousands of lives are yearly sacrificed because of impurities in milk. Our adult population should be aware of these facts that they may be on their guard against impure milk. But the infants are helpless, and it is the bounden duty of all to see that in every dairy, every milk shop, and wherever milk is handled, that such precautions are observed as will ensure safety to the consumer.

To secure good milk should not be a difficult matter—it need entail but slight additional expense. To continue to allow milk vendors to sell for human consumption the foul, infected mixture so often sold as milk, should be considered in the present state of our knowledge a breach of the Criminal Act, and differing but little from manslaughter.

By instructing farmers and dairymen in the proper selection, care and feeding of their herds they will be more than compensated for the slightly increased cost of production of a clean milk.

A large proportion of dairy cattle not only yield no profit, but are kept at an actual loss. An Illinois State Bulletin states that the most profitable dairy cows in Illinois give a net profit of \$57.22, the poorest have shown an actual loss of \$17.83. The average production of the Canadian dairy cow can readily be doubled, and the profit increased fourfold if every milk producer in the Dominion were to adopt careful business principles, keeping an accurate daily record of the amount of milk and butter fat, also the cost of food consumed, by each individual cow in his herd. When he discovers that a cow is not giving a good

return, he should remove her from the herd and replace her by one of greater productive capacity.

A milk to be reasonably safe for human consumption should conform to the standards either of a certified milk, or an inspected pasteurized milk.

Certified milk is sold only in bottles, which are sterilized, filled and sealed at the dairy immediately after the milking, and in these packages are delivered to the consumer. In the city of Toronto three dairies supply milk certified by the Milk Commission of the Academy of Medicine. Their standard is as follows:

The herd milk shall contain 12 to 13 per cent. of total solids, of which  $3\frac{1}{2}$  to  $4\frac{1}{2}$  shall be butter fat.

It must be free from coloring matter, preservatives or other foreign substances; from blood, pus or disease-producing organisms; from all disagreeable odors and tastes.

It shall not have been heated in any way, nor frozen.

All cows shall have been tuberculin-tested by the veterinarian of the Commission before entering the herd and found healthy, and shall be retested every six months.

It shall have been cooled to 45 deg. F. within one-half hour after milking, and kept at not higher than 45 deg. F. until delivered.

It shall not be more than 24 hours old when delivered to the customer.

It shall not contain during July, August and September more than 10,000 bacteria per c.c. nor in the remaining months of the year more than 5,000.

The veterinary inspector and the physician of the Commission shall each month inspect the herd, the health of the employees, and the hygienic conditions of the dairy.

Their requirements relating to barnyard, stables, water supply, cattle, milkers and other helpers, the dairy, etc., are too long to be quoted in this paper, but those interested may secure a copy on application to the Secretary at the Academy of Medicine, Toronto, or the Milk Commission of the Canadian Medical Association.

Certified milk, because of increased cost, can only be produced in limited quantity. For general use we must rely on the exer-

cise by the producer, transportation agent, vendor and consumer, of reasonable care, and where there is any doubt as to the possibility of contamination, ensure safety through efficient pasteurization.

Pasteurization consists in heating milk in a closed vessel to a temperature of 140 deg. F. for 30 minutes, or 150 deg. F. for ten minutes, immediate refrigeration to 40 or 45 deg. F., and keeping at that temperature until delivered to the consumer.

In large municipalities this is preferably done under inspection or direction of the health officer, but may be efficiently done at home. It is not to be confounded with boiling or sterilizing by heat, which processes destroy the ferments present, seriously interfere with the subsequent rising of the cream, and modify the taste of the milk.

Pasteurization produces none of these effects, but does effectively destroy all pathogenic organisms and thus gives us an absolutely safe milk. These are the rules formulated by the Canadian Medical Association Milk Commission for the production of "Inspected Milk," which, when pasteurized, is a perfectly safe milk. The rules involve no other expense than those requisite in maintaining a clean dairy, clean stable, clean cows, clean utensils, and careful handling of the product.

The following regulations ask for nothing more than the cleanliness required in the preparation of any other article of diet placed on our tables:

#### *Barnyard.*

1. Manure should not be allowed to accumulate in the barnyard in the summer time, and should never be allowed to come in contact with the stable or milkhouse. It gives rise to bad odors and encourages flies.

2. The barnyard should be well drained.

#### *Stables.*

1. Cows should be housed in well-lighted and well-ventilated stables in order to keep them in good health.

2. There should be at least 500 cu. ft. of air space for each cow.

3. No other animals but cattle should be kept in a cow stable. It should not be used for storage of any kind because of the danger of accumulating dust.

4. The stable floor should be made tight and preferably of some non-absorbent material with a proper slope for drainage.

5. If the space above the stable is used for the storage of hay, etc., the ceiling should be made dust proof. Cobwebs should not be allowed to collect.

6. Stables should be whitewashed with lime every six months.

7. There should be an efficient manure gutter which should be cleaned morning and evening.

#### *Cows.*

1. Sick cows should be removed from the herd and their milk should not be used.

2. Cows should be kept clean. The udder and teats should be washed and well dried just before milking. The clipping of the long hairs around the udder and tail will materially help.

3. Cows must be treated kindly and spoken to gently.

4. The bedding should be clean.

#### *Milking and Milkers.*

1. The milkers should be healthy and should wear a clean linen or cotton duster and cap while milking.

2. They should wash their hands thoroughly with soap and water and dry them on clean towels before milking.

3. The hands and teats must be kept dry during the entire process of milking.

#### *Utensils.*

1. The pails into which the milk is drawn should have an opening not exceeding five inches in diameter on one side of the top. This prevents the entrance of a good deal of dust.

2. The milk pail when full should be immediately removed to the milk house, and the milk strained through gauze that has been sterilized by boiling at least 5 minutes. The milk should then be immediately cooled to a temperature of 50 deg. F. and kept at that temperature, or lower, until delivered to the pasteurizing plant.

The more rapidly milk is cooled, the safer it is and the longer it will keep, because cold checks germ growth. It should be delivered to the pasteurizing plant within eighteen hours after being drawn.

3. Ice should be kept for cooling.

4. All water used must be pure. It must be easily accessible and abundant.

#### *Milk House.*

1. A milk house should be provided separate from the stable and dwelling house,

and used for storing the milk only. It should be kept absolutely clean.

2. Farms which furnish "inspected milk" must always be open to inspection by the Commission.

3. The Commission also reserves the right to make a bacteriological and chemical examination of the milk as they deem fit, both before and after pasteurization.

4. Milk must comply in all points with the requirements of the Pure Food Law of the Adulteration Act of the Dominion of Canada.

If the above rules and regulations are fulfilled, the milk when delivered to the pasteurizing plant should not exceed 100,000 bacteria per c.c. between May 1st and September 30th, and should not exceed 60,000 per c.c. from October 1st to April 30th.

While milk thus produced is clean, yet it is not bacteriologically clean, but this can be accomplished by pasteurization or heating.

This insures an absolutely safe milk at little or no increase of cost.

Those interested in a pure milk supply should be acquainted with the following literature:

"Report of Canadian Medical Association Milk Commission, 1910."

"Milk and its Relation to Public Health," U. S. Public Health and Marine Hospital Service, Hygienic Laboratory, Bulletin No. 56.

The Legislature of the Province of Ontario at its last session passed a milk act which gives each municipality power to establish such regulations as will ensure a safe supply for its citizens. A minimum provincial standard of three per cent. butter fat and twelve per cent. total solids is fixed, but each municipality may fix for its own standard beyond this minimum of requirement.

Each municipality may enact by-laws regulating milk offered for sale, and may inspect such milk and dairies producing it *wherever situated*. These by-laws may relate to:

(a) Care of cows producing milk.

(b) Sanitary conditions of stables, dairies and store rooms.

(c) Water supply of herd.

(d) Can cleansing and type of all utensils used.

(e) Proper care, storage, transportation and distribution.

(f) Bacteriological tests of milk.

(g) Granting, refusing and cancelling licenses to producers and vendors.

(h) Appointment of inspectors.

(i) Publication of tests and inspections at discretion of Health Officer.

The sale of milk is prohibited from any cow with tuberculosis of udder or milk glands, or with tubercle bacilli present in the milk, or suffering from anthrax or splenic fever or any other local or general disease which is liable to render milk from such cow a menace to the public health.

No one shall assist in the production, transportation or vending of milk who has been exposed to any of the infectious diseases.

No cans, bottles nor other utensils used in distribution of milk shall be used for any other purpose whatever.

Certified milk is defined and the term certified may not be used unless authorized by the Medical Health Officer or an incorporated society of medical practitioners. The term pasteurized is also defined and the process is subject to the inspection of the M. H. O. of the municipality.

It is to be hoped that the medical profession and others interested in a question so closely related to our public health, will see that our municipalities avail themselves of the power given them under the Act.

Quebec and Saskatchewan have also admirable regulations regarding milk and we trust these, with those of Ontario, will not remain on the statute books unheeded but will be enforced, and we would like to see in the other Provinces of the Dominion the adoption of similar legislation.

Upon the improvement of our existing milk supply depends the lives of thousands of helpless Canadian babes.

## COUNTY OFFICERS OF HEALTH METHODS OF ORGANIZATION AND WORK

By P. H. BRYCE, M.A., M.D.

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In the two preceding articles\* we have seen the stages through which public health organization has been evolved whether in Canada or in England; but it is apparent that every stage of social development, urban as compared with rural, closely populated cities as compared with towns and villages, or large new and sparsely settled districts as of Northern Ontario or the prairie provinces, may each demand separate treatment. Of course, it always must be kept in mind that efficiency in all cases depends upon a Medical Officer of Health being appointed to give all his time and energy to the work and be one who by both training and experience will be able to solve the many difficult problems as they may come up.

While in Manitoba the old Ontario idea exists, where towns and villages have their health officers, the method is modified by having members of the Pro-

vincial Board of Health appointed from some five large districts over which each is expected to exercise general jurisdiction. In Saskatchewan there is a Commissioner of Health appointed by the Government who especially assists in and directs local health work either personally or by assistants, although, of course, the towns and villages have their own officers; or again in Alberta, the Provincial Board of Health has its executive Medical Officer and Secretary with officers at Edmonton and local boards of health appointed in cities and towns, but the Health Act contemplates the subdivision of the Province into some five health districts each under an all-time medical officer appointed by the Provincial Board and in part paid by the district. Thus it is apparent that there is already enough of variety in method in Canada to insure that we may obtain illustrations of the success which fol-

\* *The Public Health Journal* for March and May, 1911.



lows the adoption of any particular method.

Everyone will agree that to-day we have entered absolutely into the *scientific period* as applied to public health administration. Our knowledge of the causes of communicable diseases, of the direct effects of pollution of streams and of the methods of sewage disposal is now so exact and the scientific means at our disposal so many and available that we are in a position to state definitely that, given a Medical Officer of Health trained in his medicine, his bacteriology and his chemistry with a knowledge of their application to water supplies, sewage disposal, drainage, lighting and ventilation of buildings and so on, we have only to give him enough salary—to allow all his time and energy to be given to the work of public health and to supply him with simple but adequate machinery as adequate laws and regulations, a laboratory, inspectors, isolation hospitals, open air schools and homes for incurable cases as of consumption—to assure the public, who naturally wish for protection and who will pay when they understand, that their interest in all matters of health are being protected.

Within the last few years the State of Pennsylvania has evolved under a Commissioner of Health the most recent example of highly organized public health machine which has been witnessed anywhere, it being modelled largely upon the system developed in Cuba after the Spanish war, and as now exists at Panama. It is constituted by a chief of staff and subordinate officers placed over the several branches of work which extend down to the extreme limit of the establishment, maintenance and officering of state sanatoria and dispensaries all practically being paid for by State funds.

It may be quite true that the mountainous nature of much of the State and its sparse population except where gathered into mining towns, may prove that this is the best system there; but such a health machine in proportion as it becomes, a bureaucracy will probably show ultimately the defects of all schemes which fail to educate and cultivate the interest of the individual in what affects him personally and which serve to dull rather than stimulate the sense of responsibility for the maintenance of house, home and municipi-

ality as a matter both of personal duty and local pride.

Realizing that it has been the slow but gradual evolution of local self-government which has placed English municipalities in their leading position in sanitary development we cannot doubt, since the strength of the State is measured by the quality of its individual citizens, that the evolution of local public health organization will in the end prove best suited not only to the genius of our people but also ultimately to the highest and best results.

What, then, should the nature of that local organization be which is likely to produce the best and most permanent results and the most beneficial effect upon all phases of public health work?

It is scarcely necessary to say that it must primarily be based upon some carefully worked out system of general provincial health legislation in harmony with yet wider and more general federal health legislation. Essentially, however, it must provide for a comprehensive and perfectly clear definition of the powers and duties of local health authorities, with equally definite provisions whereby their power to obtain the requisite money grants to perform the work required will be assured. As has been amply proven during the past twenty-five years in Ontario the absence of any power in the Act creating Local Boards of Health for them, to levy or cause to be levied direct assessments for moneys for public health purposes has been the explanation of much of the unprogressive character of their work.

School Boards make their assessments for public health purposes, while receiving a proportionate amount out of Governmental funds, public libraries are allowed a definite levy for their needs; but a Local Board of Health has only the municipal council to depend upon, which, as the Act states, "may vote such sums as are deemed necessary by the Local or District Board for the carrying on of its work." The Act provides for the appointment of members of Local Boards of Health for three years; but it has been the routine practice in cities, in more recent years especially, to appoint such from amongst members of the council.

Thus we see that at the outset in Ontario, at least, any well-thought-out plan of

systematized health work may be, and is frequently, rendered futile by the whims of an indifferent or hostile council. The Local Board of Health must therefore, in order to be effective, have powers fixed by law, whereby their estimates for statutory routine work would be discussed and passed but assured, as are all other estimates, with a liberal grant to cover the emergency work due to epidemic outbreaks, which are always liable to occur.

Inasmuch, however, as the quality of the work to be done will be measured by the standard of fitness of the members of a Local Board of Health and its officers, it is essential that such be selected on account of some special qualifications. As, however, the possession of necessary qualifications must have been attained by special study and experience, it seems quite evident that the first member of such a Board should be a medical man carefully trained along public health lines. Naturally he should be supported by one trained to interpret the meaning and application of the law to the varied cases which may arise, and hence the County Judge might be associated with him as a second member of the Board. The third trained man would naturally be the chairman of the County Council, or the man, in fact, who has come up from the ranks to the position for the time being of chief representative of the people and guardian especially of their financial interests.

As it may be postulated that to-day with our wealthy counties such men ought not to be expected to do the work gratuitously, it is abundantly plain that it is only the larger cities that will be able and willing to pay for the whole time of the executive officer of the Board. So that in dealing with the county areas outside of cities, it is apparent that several of the rural municipalities, as townships, villages and towns, must be united under one local health authority as in England. If we assume that in Ontario the riding area set apart for a member of the Legislature, which usually has some 25,000 of population, is a good working unit, it would appear that the Local Board of Health should be composed of the Medical Officer of Health, the County Judge and the Warden or Chairman of the County Council. Such a Board being composed of officials, could meet as

the emergency demanded, while in the interim the routine health work would be carried on by the Medical Officer and his Inspectors in the smaller municipalities. It is plain that such an officer must be trained, not alone in medicine but also in the legal bearing of many problems, while necessarily he must prove to be a good executive and financial officer. He would report to his Board and would be readily in consultation with the County Judge whenever necessary.

Such a man, properly trained, must also be properly paid, and must further have security of tenure of office ensured. To lessen the local pressure which some temporary agitation in health matters often creates, it would be well that the Provincial Government, as with County School Inspectors, should pay a proportion of such officer's salary, with power to review on the one hand the thoroughness of local health work, and on the other to hold an investigation before a judge and have evidence taken and cause shown before a medical officer could be displaced. This principle of grants-in-aid has existed in Ontario and other parts of Canada in the matter of school expenditure and is increasingly being utilized in England to encourage municipal effort and promote governmental supervision. Were this adopted as a routine practice the proviso might naturally be inserted in the Act, that payments to the County Board of Health would be made based upon a certificate of the Secretary of the Provincial Board of Health that a county had made provision for an adequate salary for the Medical Officer of Health and that it had supplied sufficient funds for carrying on routine public health work in its several branches.

What in essence then must the work of such a Board of Health include?

1. It must include an office staff sufficient to maintain prompt contact by telephone and correspondence with every municipal clerk and sanitary inspector in the county area and establish a thorough system of files and records for the whole district.

2. The Medical Officer of Health must be provided with a laboratory well equipped for both chemical, bacteriological and physical investigations.

3. Such Medical Officer would have on his staff as registrars the municipal clerks

of the smaller municipalities and one or more sanitary inspectors in each.

4. The local officers, as well as the central office, would not only receive, but also act upon reports of outbreaks of contagious disease, and of unsanitary conditions in their particular areas, at the same time notifying the Medical Officer of Health for further instructions regarding isolation and disinfection.

5. As Medical Inspector of Schools the Medical Officer of Health would come into close touch with all the families of his area and begin what would become gradually a tabulated census of a whole population and of much value in later studies.

6. He would investigate every local industry, especially dairies, cheese factories, creameries and canneries, also the safe and sanitary construction of buildings and methods of production and conservation of the food products, as well as enforce all known methods to be used to prevent nuisances.

7. Both through qualified veterinary inspectors and the laboratory the Medical Officer of Health would investigate the health of animals as regards contagious diseases, affecting milk and meat supplies; while local outbreaks would be dealt with as promptly as are contagious diseases in persons.

8. As in many counties the health laboratory would be the only one properly equipped for purely scientific work, the Medical Officer would naturally become the medical examiner for his area in all cases where the coroner would order an enquiry into a death due to some suspected unnatural or illegal cause, and so at once correct the present situation, where a post mortem serves often to obstruct through clumsy or inexperienced examination, rather than facilitate the course of justice.

9. Since the practice is rapidly developing of having in county areas at least one sanatorium for cases of tuberculosis, whose management will naturally come under the

County Medical Officer, and as no more convenient nor necessary means can be found for a county officer keeping in touch with the local medical profession than a laboratory, where, in addition to the routine examination of swabs, sputum, etc., he can examine pathological specimens by definite arrangement, it is evident that an amount of work properly belonging to a county officer has been outlined, which, if performed, would entitle such an officer to the position which a medical officer of health ought to hold as the most elevated and important office in any community. But were such officers appointed for every county in Canada with power to do really effective work, they would form, as in England, the most useful and influential body of professional men in the whole country. Through meetings and common discussion they would determine causes inimical to public health, and by scientific co-operation would act for their prompt or gradual suppression. They would become the adviser and confidant of every practising physician, veterinarian, school inspector and teacher in the district; while to the producer and business man they would in proportion to their knowledge of scientific industrial processes, increasingly become the guide, counsellor and friend of all who desired to progress and the uncompromising critic of all who allowed manufacturing methods to remain unsanitary. When the many millions to be saved through improved sanitation, whether of men or of animals, is considered; when the loss of millions of dollars, which might be annually prevented by the development of more scientific methods in the production and preservation of food products is effected, and when the ideal of all public health workers and of all good citizens approaches realization, then will the prophet's dream be fulfilled in a sanitary sense: "The wilderness and the solitary place shall be glad, and the desert shall rejoice and blossom as the rose."

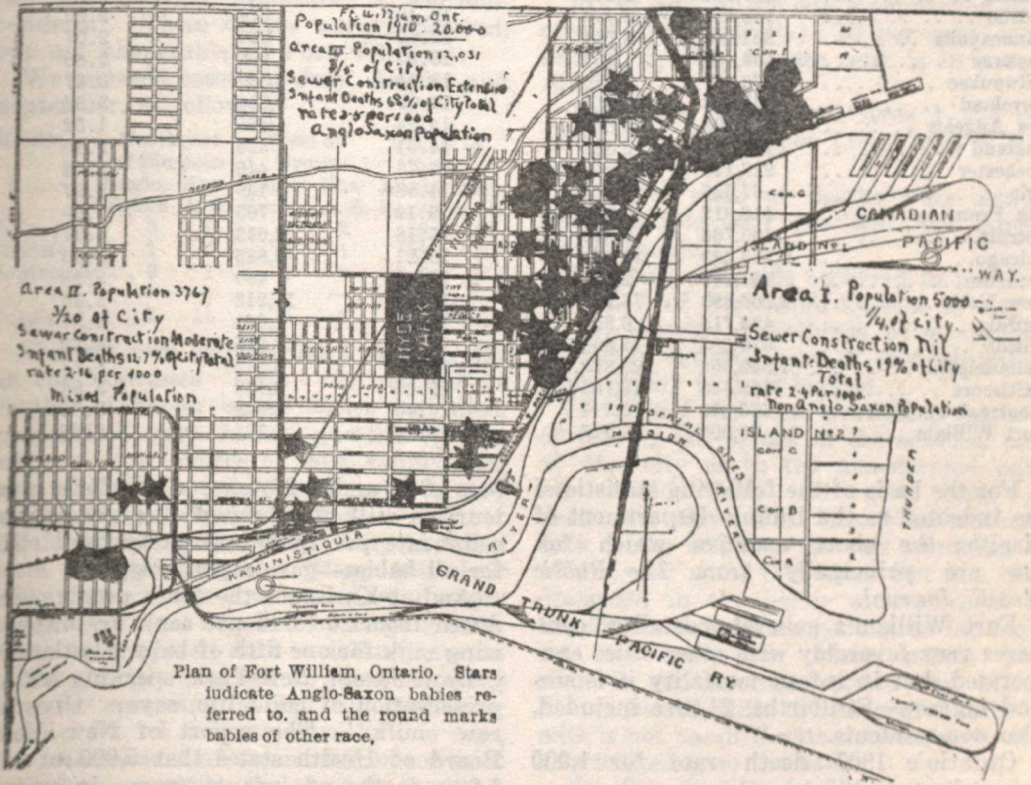
# VITAL STATISTICS PERTAINING TO INFANT MORTALITY

By ROBERT E. WODEHOUSE, M.D.

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Last year I assumed the position of Medical Officer of Health of Fort William, and was the only salaried person associated with the Health Department except the nurse in charge of the Isolation Hospital. I at once gained

When the infant mortality suddenly reached such proportions as I shall show you shortly, I found myself and department absolutely helpless to meet the contingency or remedy same at once. From that time on I have endeavored to arm my-



an appropriation from the city and established a laboratory for examination of milk and water, and endeavored to do three things during the year: 1st, "To connect up as many houses with public sewers as possible." 2nd, "Inspect and improve facilities for care of milk." 3rd, "Watch the handling of fresh meats."

self with more effective machinery and more help. I drafted a compulsory sewer connecting by-law which gives the city power to cause unconnected houses to be vacated until connected and permits the city to do the connecting.

I had a milk by-law prepared taking every power to ourselves as a city, that

Read at banquet given by his Worship Mayor Young "to all those who are actively associated with infants." June 7th, 1911.

the New Ontario Milk Act permits.

I obtained a sufficient grant to pay a District Health Visiting Nurse to go to the homes, to search out the cause of the trouble, and show the mothers how to protect their babies, babies' food and point out the dangers involved if they neglect same.

And the Board of Health has appointed a Sanitary Inspector, given him an outside assistant and the Health Office a lady stenographer.

72-8 are still living at the end of 24 months.

Of the 1,470 available children under three years of age in our city, 82 die annually of intestinal disorders, or 55 per 1,000.

Considering elements which tend to increase or decrease of child population: New York, before milk depots were opened, had an infant mortality of 136 per 1,000. In 1910 it was less than 50 per cent. of this. Sandhofen, Germany, had an average death rate for 5 years of 46

### INFANT MORTALITY IN CITIES.

|                         | Population | Total Deaths<br>1910. | Deaths per<br>10,000 | Total deaths<br>under<br>1 year. | Deaths under<br>1 year<br>per 1,000. |
|-------------------------|------------|-----------------------|----------------------|----------------------------------|--------------------------------------|
| Seattle . . . . .       | 237,194    | 2,462                 | 10.37                | 374                              |                                      |
| Toledo . . . . .        | 168,497    | 2,090                 | 12.40                | 374                              | 2.22                                 |
| Minneapolis . . . . .   | 301,408    | 3,738                 | 12.40                | 624                              | 2.07                                 |
| Spokane . . . . .       | 104,406    | 1,357                 | 13.01                | 292                              | 2.80                                 |
| Milwaukee . . . . .     | 373,857    | 5,199                 | 13.90                | 1,369                            | 3.67                                 |
| Cleveland . . . . .     | 560,663    | 8,034                 | 14.09                | 2,058                            | 3.67                                 |
| Los Angeles . . . . .   | 319,193    | 4,272                 | 14.24                | 485                              | 1.52                                 |
| Oakland . . . . .       | 150,174    | 2,023                 | 14.51                | 325                              | 2.16                                 |
| Rochester . . . . .     | 218,149    | 3,212                 | 14.73                | 446                              | 2.04                                 |
| Erie . . . . .          | 67,525     | 1,005                 | 14.88                | 199                              | 2.97                                 |
| San Francisco . . . . . | 416,912    | 6,305                 | 15.12                | 705                              | 1.69                                 |
| Detroit . . . . .       | 465,766    | 7,542                 | 15.18                | 2,033                            | 4.37                                 |
| Chicago . . . . .       | 2,185,283  | 33,241                | 15.21                | 6,885                            | 3.10                                 |
| Syracuse . . . . .      | 137,249    | 2,124                 | 15.48                | 450                              | 3.28                                 |
| New York . . . . .      | 4,766,883  | 76,742                | 16.09                | 16,213                           | 3.40                                 |
| Buffalo . . . . .       | 423,715    | 6,940                 | 16.37                | 1,641                            | 3.87                                 |
| Boston . . . . .        | 670,585    | 11,600                | 17.30                | 2,225                            | 3.32                                 |
| Philadelphia . . . . .  | 1,549,008  | 26,879                | 17.35                | 5,232                            | 3.37                                 |
| Baltimore . . . . .     | 558,485    | 10,753                | 19.25                | 2,148                            | 3.84                                 |
| Montreal . . . . .      | 455,800    | 10,211                | 22.40                | 2,968                            | 6.52                                 |
| Fort William . . . . .  | 20,000     | 327                   | 16.35                | 121                              | 6.05                                 |

For the basis of the following statistics I am indebted to the Buffalo Department of Health; the short excerpts which follow are principally from *The Public Health Journal*.

Fort William's general mortality compares very favorably with other cities enumerated, but in infant mortality it is second highest. Stillbirths, 21, are included, also non-residents.

Ontario's 1907 death rate for 1,000 babies born is 196.

Ontario's 1908 death rate for 1,000 babies born is 153.

Fort William's 1910 death rate for 1,000 babies born is 175.

Of 100 babies born in Baltimore, 75 are still living at the age of twelve months. 70 are still living at the end of 24 months.

Of 100 babies born in Fort William, 76-3 are still living at the end of 12 months.

per 1,000 under 2 years, where later pasteurized milk for most of the babies gave a 9.2 rate per 1,000 and pasteurized milk for all babies—gave a goose egg.

And at Karlsruhe the death rate was reduced from 26 to 16 per cent. by pasteurizing milk for one-fifth of baby population.

Prof. Jacobi, New York, speaking on the preservation of child life, says: "Give no raw milk." The report of New York Board of Health states that 5,000 of the 7,000 deaths of infants from intestinal troubles are due to flies. While the report of Dr. Helen MacMurchy, quoting Dr. Newsholme, points out that "deaths mostly are in crowded centres of population, among the poor and women who work for a living."

We, however, in Fort William, do not have to contend with such congestion of population as the following statistics dem-

onstrate. In fact, deaths here are highest among the better class of citizens, educationally, and in most sanitary portion of city, because sanitation is not taken advantage of as sewers galore have existed without private house connections.

The infant mortality of Fort William in 1910 from intestinal diseases was 82, or 4.31 per 1,000 population, the deaths occurring as follows: May, 3; June, 1; July, 35; August, 28; September, 9; October, 5; November, 1; or 82 deaths out of a total death rate from all diseases of 121. 70 of these 82 deaths have sufficient facts recorded to warrant classification.

June 2, one taken from train in transit; July 30, two non-residents; August 31, two non-residents; September 7, one non-resident. (These deaths were registered, but not chargeable to Fort William).

We have 63 cases for July, August and September, as follows:

| Month         | Northeast of Simpson |          | West of Brown. |          | Centre of city. |          |
|---------------|----------------------|----------|----------------|----------|-----------------|----------|
|               | Anglo-Saxon          | Non-A-S. | Anglo-Saxon    | Non-A-S. | Anglo-Saxon     | Non-A-S. |
| July . . .    | 0                    | 7        | 2              | 2        | 12              | 5        |
| August . . .  | 1                    | 3        | 3              | 1        | 18              | 3        |
| September . . | 0                    | 1        | 0              | 0        | 3               | 2        |
| Totals . .    | 1                    | 11       | 5              | 3        | 33              | 10       |

For my own satisfaction I made a list of the addresses from the register of deaths, of homes where babies had died, and visited these homes, questioning the mothers as to source of milk supply, history of feeding of child, and methods used in preparing the artificial food.

I found not one breast-fed baby had died from intestinal trouble. Many got their milk from a single cow, owned by a neighbor. Some were supplied by large dairies. Some fed prepared milk in different forms.

Not a single case had an exact changing formula according to age for modifying cow's milk. I did not learn of one case, the management of the modifying of milk for which was under the constant care of a physician.

Two cases had been allowed green uncooked fruit to eat.

One had been fed at three months with

half a common soda biscuit in each feeding, by an anxious and apparently intelligent mother.

One had been given two feedings in morning of sweet milk and the remainder of the day's feedings were from sour milk, as no cool place was provided for the milk.

Each case presented some variations of the above or similar gross discrepancies, showing absolute lack of knowledge of the dangers of improper feeding or what was proper.

19 per cent. of deaths were in area 1, northeast of Simpson street. (Foreign population). 12 per cent. were in area 2, west of Brown street; 68 per cent. were in area 3, in centre of city.

25 per cent. of the city's population is in area 1 (5,000 people); 15 per cent. is in area 2 (3,767); 60 per cent. is in area 3 (12,031).

The death rates were: Area 1, 2.4 per 1,000; area 2, 2.16 per 1,000; area 3, 3.50 per 1,000.

61.9 per cent. of deaths were Anglo-Saxon people, 38.1 per cent. not Anglo-Saxon people.

One-third of deaths occurred in non-sewered part of city where hygiene of city is at its lowest. Two-thirds of deaths occurred in sewered part of city where hygiene of city is at its highest.

If we had the same prevailing methods of feeding the babies in the sewered part of the city as in the non-sewered part, we would have 50 per cent. of death rate prevented. Breast-fed mother's milk is the antidote for this condition of affairs, and since this ideal diet has been discarded in the better sewered part of the city, with hygienic conditions the highest, we must use every means possible to educate this section and others how to handle milk, the dangers to baby if milk is not handled with extreme care, and how to feed it to the baby.

The Board of Health granted me an extra nurse this year to visit the homes and by kindness induce the parents to cast off careless methods and adopt new and proper ones.

# PREVENTION AND TREATMENT OF TUBERCULOSIS IN RURAL MUNICIPALITIES

By C. M. WHITE, M.D., Pittsburg, Pa.

The first question that naturally arises is: "Is there any necessity for special provision for suppression of tuberculosis in small towns and rural districts?" We have been taught that the rural district is the place of choice for recovery from tuberculosis, and, as a corollary to this, naturally comes the belief that tuberculosis cannot be plentiful in the place where we go for cure. The following table, which is applicable to all temperate zones, forms the best answer to this question:

The rural death rate is 11.6 per cent. of the total death rate as against 16.6 per cent. in cities.

(This ratio applies to England, Scotland, the United States and Canada.)

In Pennsylvania, however, this produces a large number of deaths. With 3,749,814 persons living in rural communities and a total death rate of 56,797, there were 4,446 deaths from tuberculosis.

It is a commonly accepted law that for each death we may reckon on three sick cases of tuberculosis living. For 3,749,814 of a rural population, then, in Pennsylvania, we probably had 13,338 cases that should have been cared for.

Such statistics, however, make little impression on people of other localities, and nothing is more true than the necessity in all such work for bringing the discussion home to the locality. This, unfortunately, I am unable to do just now for Ontario; but the necessity opens up the first problem which must be faced by any given state before considering any equipment for this work in rural communities.

As the first requisite I would place a careful stock-taking of the number of cases to be dealt with, the location of these cases, the danger of infection to others, the stage of disease, the means which the sick or their friends have with which to combat the long period of sickness, and similar information, all carefully prepared in chart form so that a judicious plan for future work can be promulgated.

In whose office lies the responsibility for such a stock-taking? Undoubtedly in the Provincial Board of Health's, where lies the care of rural health.

While impressions are scarcely to be allowed here as argument, still I cannot forbear the statement of the impression of dire need in rural communities and small towns for some immediate action in this field of work by the Provincial Health Department in all provinces. In a small neighboring town I have been familiar with conditions for a number of years. I have seen case after case succumb to tuberculosis with not the first attempt at care in the protection of others. I have seen whole families wiped out when it is reasonable to suppose, from the experience of other families in which care was exercised, that some, if not all, might have been saved. I have watched the cases diagnosed late in the disease shipped away to climates no better than the one in which the sickness developed, and the local doctor throw up his hands in despair at the expected outcome. I have seen those cases return improved, arrested and cured, and same thing happen to the same physicians again and again. The lesson was not learned; but if the case had been cared for and had progressed to recovery under proper conditions at home, it is probable that not only the doctor but the whole immediate neighborhood would have learned much of the valuable lesson of cure and prevention of tuberculosis.

This leads to the second problem in the handling of rural communities in the matter of tuberculosis, *i.e.*, the necessity for some means of provision for local object lessons in the matter of cure where all in a given locality may profit by it. I am sure it is true that while urban communities have many advantages in the way of education, yet rural communities make more efficient and valuable use of what is within their reach in the way of educational advantages. They assimilate it more

quickly because they do not suffer from surfeit.

A year ago I boarded a Grand Trunk train near London, and for an hour of my journey conversed with a man of wealth and more than ordinary intelligence from a small and beautiful town in the Province of Ontario. I remarked to him how necessary it was for some steps to be taken by towns and counties to handle such diseases as tuberculosis in the districts which they had jurisdiction over. He answered that if they attempted to establish any such provision near his home that he would strenuously oppose it with all means at his disposal. As he left the train I longed for the power to convert his antagonism into an enthusiasm in the opposite direction. He was perfectly willing in his ignorance to ignore the fatality going on around him rather than attack the malady at its source and help to provide a healthy community. A study of his attitude, however, lays bare one of the most potent obstacles to progress in this field of work, *i.e.*, the great fear of tuberculosis which pervades the healthy, and ignorance of the masses of the simple laws underlying the prevention and cure of this disease.

This suggests the third step of importance in handling tuberculosis in rural districts: The provision of a thorough systematic campaign of education carried on persistently among those susceptible to education. I am more and more convinced that such education should be carried on through the schools — aiming at maturity — trusting to what these can accomplish in the homes, for the adults are more often than not convinced of their own superiority of knowledge and no longer susceptible to change of attitude.

If we are willing to grant the necessity for care of the tuberculous in rural communities, and this our opening paragraph furnishes ample foundation for, and accept what I have offered as the simplest necessities in the operation of some scheme which will secure results in such localities, *i.e.*, (1) stock-taking, (2) local provision for care of cases, and (3) education, you have a right to demand of me that I go more into detail on the nature of procedure.

The duty and responsibility, as I have said above, is with the Provincial Health

Department, and its local agents, the municipal and county health officers. Have you five in Ontario in the small municipalities and rural districts that you can point to with pride and say of any one: This man has done what he could to suppress tuberculosis. What could he do? He could use the talent God has given him. First, secure the aid of the local paper in spreading the knowledge of prevention, or give simple talks in the schools, or secure the pamphlets of the Canadian Association for distribution, or secure speakers, for public meetings, or secure an exhibit. Many of them may say the newspaper will not do it, or the school board will not allow it, or who will pay? I doubt if there is a newspaper which would not rejoice to join in such work. Try them once, you county officers. And school boards — 99 out of 100 of the teachers and school boards would welcome the offer. Why is this not done? Because we have, as a rule, the wrong kind of officers. They are built on the passive, not on the active plan. They require outside force to move them. They do not realize that even a little active work in this and other preventive fields would make them. They have both power and authority and make little use of them, while organizations such as this and our local organizations, have power and no authority, and yet see by London, Hamilton and Brantford what they accomplish. Who is responsible for the apathy of our local officers? Both we and the Provincial head of the Department of Health. We submit to their appointments, when, if enough of us were of one mind, we could at least have a health officer to guard our health and the health of our families. The provincial head is to blame because he allows the apathy to persist. How could he help it? These officers are, as I told you, only faulty because of passivity. If some outside, active power stimulates, they will act, and often act very well. The preferable sources of this power is the head of the department, and he could with great gain follow the lead of other states in establishing health officers' schools, in which quarterly, semi-annually, or even annually, their officers are gathered together for education, report and instruction for a given ensuing period. This applies not only to tuberculosis, as you will readily see,



but to all questions of public health. Soon the poorer ones will drop and the talented ones will develop, and if the proper power is moving it will not be long before each quarter of the province is guarded by an officer who understands the necessity for stock-taking, education and provision for cure.

It is so simple a task for the province to lead in this field, equipped as it is with funds and authority. The cry from the exchequer will be: We have no money for this; but even a tyro could show them, if they were not blinded, how a small expenditure of money can save a great annual loss. So often our leaders are trammelled with the teachings, limitations and superstitions of youth which they carry with them to their high office. No superstition is more common than that consumption is a family curse, sent by God and consequently to be borne without complaint. I have heard this expressed by one of your own great political leaders in recent years. I can prove, I think, to all who wish the proof, that this is not so.

If the head of the department cannot be convinced of the necessity of this attitude and responsibility, then local voluntary organizations must continue to carry on the work as they have done in the past.

The latter valuable acquisitions to modern health work must never lose sight of the fact that they are powers without authority, and that both are needed to secure successful operation of this work, and all efforts that neglect this great principle fall to a great degree. So, as advice of the first importance, I would urge you each and everyone to be dissatisfied and unhappy until you have health officers of active material in sympathy with your movement. Make this one of the chiefest planks of your platform.

The objections I frequently hear raised that legal provision is necessary before many of the things we desire can be done, I am convinced is invalid. It is more a matter in such things of doing right and doing as much right as the people will stand, than of having a clear-cut legal permission for the act. One of the best leaders I have known followed this course. The question immediately follows: What is right? If proven to give best results in other places

this field—what is right—is what has been a quarter of a century ahead of us. Legal backing will follow fast as soon as the right has conquered in the minds of enough of the populace, and all that is wrong is bound, sooner or later, to fade away.

In many places, then, what has been responsible for progress in this work in the past must go on — the labor of those great forces for good, the voluntary organizations — these are usually led by some few who have passed the others in intelligence and education, perhaps often forced upon them by sad experience.

The duty of the Canadian Association is to secure such leaders in each community — leaders who will gather around them a group of workers to form a local society. The first duty of the local society is education. Education in the schoolroom with some pamphlets as I show you here and regard as the most efficient, least expensive, and most remunerative. We have used them with great success for the past few years. A little effort with the teachers will enable you to quickly reach the whole community through the children. The advantage of such a scheme is that the audience is ready, the room is ready, the audience is susceptible, and the audience possesses all the potentiality of the community. In addition to this, a travelling exhibit for the schoolroom and a lecturer who gathers special audiences to gain what immediate results can be obtained with the adults in the care of those already sick, and in legislation and appropriation of funds for the care of the sick in localities. Education in the schoolroom I regard, however, easily first in importance and returns in the matter of prevention, for what the child persistently desires it frequently gets, and if it desires preventive measures against sickness in the home, it will follow sooner or later.

As a result of this education there follows the necessity of local control of and provision for those already sick. I am convinced this must be a local affair. The day of large district institutions has had its death knell, and the local autonomy and provision for advanced cases is surely the present cry built upon both economy and common sense. Such places near the largest centre of population in the locality, are but a step from the beginning of educa-

tion. There should be small county hospitals, or a building attached to some existing hospital, upon some uniform plan and under provincial health authority government. From such places education can readily be sent to the home of the sick, and attached to such places in the neighboring town can be a dispensary as a clearing house and control centre for a wide district. This is not a matter of great expense. In the dispensary from the beginning will be established the record of your stock-taking; but along with it must go your record in the county health office or the provincial offices. These cannot long resist the constant dropping of a postal card, and a politician is afraid of nothing so much as the growing intelligence of his uselessness in his community, and he will soon become active to such a stimulation

or give place to some one more able than himself.

Do not forget that the object of this education and work is the management of this one problem, and all similar problems, by power plus authority, which alone resides in our municipal, county and provincial governments, and these must be educated to accept the duty, and may the day soon arrive when some at least of our provincial and local officers will see the golden opportunity of leading in this work and of utilizing all such methods of education leading up to local autonomy, and of the permission open to them of joining the goodly company of the charitable gathered in our local organizations, and so uniting their authority to this great power for the weal of the locality in which they operate.

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## THE CONTROL OF CONTAGIOUS AND INFECTIOUS DISEASES IN OHIO

By FRANK WARNER, M.D. Columbus, Ohio.

Recently a card was sent out to all the health officers of the State of Ohio, containing a list of infectious and contagious diseases which were requested to be reported to the State Board of Health. The object of this was that the board might be in more intimate and prompt touch with these diseases as rapidly as they developed. Even though some of these diseases are not quarantined, yet the board can frequently be of service to the various localities by knowing where these diseases are, and lend its aid in locating the cause of the outbreak of the various contagious and infectious diseases. If the board is notified promptly of the trouble, it is a more simple problem to extend efficient aid before time has elapsed to permit a real epidemic to gain foothold. It is but reasonable to suppose that the executive officer of the board, whose business it has been to study the causes of these various diseases and the best means of controlling them, should be better able with the board's extensive laboratory equipment

and efficient experts who do the work in the laboratories, to give prompt assistance in preventing various epidemics if reported early, than where a local authority deals with these problems single handed at the outstart.

I notice upon the list sent out the following contagious and infectious diseases: Asiatic cholera, bubonic plague, cerebrospinal meningitis, chicken-pox, diphtheria, measles, membranous croup, scarlet fever and whooping cough. The list does not pretend to cover a complete list of the infectious and contagious diseases, but only those that they desired to have reported when they arose in the communities. It was in these diseases that the board felt they could be most helpful in controlling them.

Another infectious disease, yellow fever, while of great importance to health officers in southern ports, has never gained foothold in Ohio. Influenza is too little understood to stay the epidemics which occasionally sweep this country. Pellagra

has not developed to an extent in our State to call for action of our health officers. Another disease which is now thought to be both infectious and contagious, and one which is attracting the attention and action of health authorities in some States, is acute infantile spinal paralysis. It has been found that it occasionally breaks out in given localities in considerable numbers, in much the same way that cerebro-spinal meningitis does. As the infectious character of acute infantile spinal paralysis subsides with the fever which accompanies the production of the paralysis, it is wise that such cases be isolated during their acute febrile career.

Syphilis and gonorrhœa, two infectious diseases that cause terrible destruction to life and cause untold misery, will call for the best efforts of the State at some time in the future. In different parts of the country some societies have already been formed to cope with these infectious diseases. Until recently, the argument has been to let those suffer who acquired the disease. There would be more justice in this argument if it were not for the fact that so many innocent persons suffer through the sins of others. Many young men who acquire gonorrhœa and suppose themselves to be cured marry a young, virtuous girl and infect her. The result often means some serious abdominal operation which unsexes the girl for life. The seriousness of syphilis may even extend to the unborn child through the mother. Perhaps as much as physicians can do at the present is to urge young men to see that they are thoroughly cured before marriage. They should understand that gonorrhœa is a disease that means severe trouble to the girl they marry unless it is thoroughly cured—the last vestiges of a discharge abolished, even the morning drop. This is a matter that is not generally understood among young men. These facts should be impressed upon them whenever opportunity arises. Try and prevent the young men from acquiring the disease, if possible; if not, urge them to find out that no gonorrhœa germs longer exist in the urethra before marriage.

Tuberculosis is an infectious disease communicable under certain conditions, which has been reattracting the vigorous attention of the medical world for some

years. It may seem to some of the medical profession that the progress made in the prevention and cure of the disease has not been quite what they had hoped it would be. And yet great progress has really been made in both these directions. Now that the cause is so thoroughly understood, and so many societies formed, and hospitals built to cope with the disease, we may look for even greater progress in the near future, if, indeed, we may not reasonably believe that a remedy will soon be found to cure the disease in all its stages. We can all do something towards its prevention by informing people how to live who have the disease. That they should remember that the germ which produces the disease is in the sputum. That if the sputum is carefully disposed of there will be no danger of their communicating the disease to another. That they should not sleep in the same bed with another, even if they sleep in the same room. While fresh air is important in the treatment of the disease it becomes doubly important to have ample ventilation in a room which is shared with another that they too may not acquire the disease through concentration of the germs in the room by lack of fresh air.

Hospitals for the treatment of this disease have been established in many counties of the State. Many of the counties have not availed themselves of the privilege the law has given them to construct them. The State has a fine sanatorium which is in operation in a limited way, expecting to be in full sway within a short time.

Among other things, better living conditions are required to aid in the prevention of the disease. This means a sanitary home, one free from dampness, and constructed so as to give ample light and free ventilation. But the employment of ventilation devolves at last upon the occupant of the home. In the cities greater demands are being made upon landlords to construct more sanitary homes for their tenants. Perhaps some of the less densely populated places will profit by looking after the problem of more sanitary homes not alone for those who rent, but also for those who own their own homes.

Cerebro-spinal meningitis has been proven to be clearly an infectious disease

which is contagious or communicable under certain conditions. Just what those are is not clearly understood. The best that can be done at present is to isolate all cases of the disease. The isolation should be prompt and decisive. It is not sufficient that most people visiting the house be kept out of the sick-room, but it should include all who are not absolutely needed in. This advice especially applies to those who have children back at home. This advice is not always sufficiently regarded by some who do not fear the disease and by others who do not believe in its contagiousness. Even though it may finally be shown that it is simply infectious and not contagious, it is better to carefully isolate all cases of the disease. We can only act in the best knowledge that is before us, and it is better to err on the side of safety. It is unlikely that isolation will prove useless in the prevention of the disease, even though the disease were not contagious. The same conditions of infectiousness still exist in the home where the disease first developed. Perhaps back at another home these conditions do not exist. So, above all, keep children away from cases of this disease wherever it is possible to do so.

Measles and whooping cough result in many deaths, especially in the very young. Still, there is an impression, which is rather widespread, that it is better for children to have the various diseases of childhood when they are young. This belief is based upon the fact that in some epidemics, of measles especially, the disease has proved rather disastrous, if not resulting in death at least being associated with some complications of an undesirable character, both in men and women. In the adult, inflammation and destruction of a testicle in men, and a like complication in the destruction of an ovary in women, or, perhaps, simply an inflammation of that part. Still, these are unusual complications in the adult. In the first place, it is unusual for adults to take these diseases under ordinary conditions. Adults seldom take whooping cough, even though they have escaped it in youth. Many deaths result from it in infants; pneumonia being a frequent complication in those of tender years. Both these diseases should not only be reported

to health authorities, but they should be isolated until the period of contagion has reasonably passed. The practice of many children with the whooping cough being allowed to run the streets or ride in the street cars or steam cars should not be permitted. If found doing these things they should be checked, by peaceable means if possible, by forcible means if necessary.

No physician objects to reporting smallpox to the health authorities nor having those cases subjected to a strict isolation. That is provided he has satisfied himself beyond question that the patient has smallpox. There is no objection to this, but there is an objection to his carelessly diagnosing cases of smallpox as chickenpox. Of course, this has not been done intentionally. I think frequently physicians jump at the conclusion the eruption is one of chickenpox without sufficient thought that the case may be one of smallpox. Many cases of smallpox are mild, making it rather difficult to differentiate between the two. The mild cases of smallpox are even more liable to start an epidemic than severe ones, because the patient is physically able to run around in the mild form, but is confined to his bed in the severe cases, thus isolating himself. All cases of chickenpox should be reported. If this is faithfully done the attending physician will be more careful that the disease really is chickenpox and not smallpox. Then it gives health authorities better opportunity to be of assistance to the attending physician in canvassing some of these cases. If they are of an obscure character, experts are sent out who naturally are better able to decide between smallpox and chickenpox by reason of their seeing many of these cases all the time compared to the usual attending physician, who may seldom see a case of smallpox, if, indeed, he has ever seen one.

Diphtheria has come to be so thoroughly understood by the general practitioner that little difficulty arises through the State by reason of his negligence in reporting cases or incompetency in treating them. However, he is occasionally guilty of regarding mild cases of diphtheria as those of tonsillitis. Even though these cases are mild, it is a commendable custom which some physicians follow of having a bac-

teriological examination made, especially if many cases appear in a given locality. This custom should be encouraged whenever possible. In some public institutions diphtheria has continued over long periods under the name of tonsillitis. It is not usual for tonsillitis to continue over prolonged periods, affecting a considerable number of people, more especially in mild weather. The spreading and continuing under all conditions of weather should suggest that the supposed cases of tonsillitis are really cases of diphtheria. An early bacteriological examination would have avoided the hold which such cases have sometimes gotten.

In the way of treatment of diphtheria, to the end of its prevention, the Ohio State Board of Health has established in every county of the State at least three or four depôts for the distribution of anti-toxin at a price not over one-fourth that which the people must pay in the open market for it. Many physicians are availing themselves of the opportunity to get this and use it in immunising those who have been exposed to the disease, but have not yet acquired it. It is sold through an order of the Health Officer in the given locality. This is doing much to check the spread of epidemics.

Membranes croup is diphtheria. It is simply a difference in location. It might with propriety be called diphtheria of the larynx.

I think it has generally become understood that the contagion of scarlet fever clings for a long time to anything that has been exposed to the disease. This is especially true of clothing and books. Many times clothing which has been about the sick-room and afterwards packed in a trunk, and long after transported, without sterilization of any kind whatever, has developed the disease in that manner. Books returned to libraries, or letters sent out under similar conditions, have communicated the disease. These facts naturally suggest the remedy. That great epidemics of scarlet fever no longer take place is due to the fact that health officers have had the unstinted co-operation of physicians in controlling the disease.

Nowhere has the brilliant work of sanitarians been better displayed than in the control of typhoid fever. Without the in-

telligent co-operation of the laity with the medical profession and health officers and public officials it is impossible to control this disease on a large scale. I know of no place where this harmony of action has better existed than in dealing with the different problems looking to the control of this disease. The problems involved in its control have often demanded the expenditure of large sums of money. I have frequently been surprised to see the alacrity with which these questions have been met. Oftentimes large sums of money have been authorized by citizens of the cities that their officials might make expenditures looking to the control of the disease when the idea was wholly altruistic. Notably has this been true where sewage disposal plants have been constructed that they might not endanger the water supply in the town below. They have often spent this money with even a greater willingness to aid towns below them than they were to improve their own water supply where they got the direct and immediate benefit themselves. This is certainly a noble tribute these citizens have paid to themselves for their broad humanity. But typhoid fever is not alone a water-borne disease. It is true, some of the worst epidemics have been caused by typhoid germ laden water, whether in streams, wells, or springs. Where an impure water is supplied to a town, typhoid has been a pretty constant factor for that community to deal with. While the water supply of any community is the principal thing to be considered in controlling typhoid fever, it is not the only one.

In every rural community when typhoid breaks out it is charged to an infected well or water supply. Frequently the charge is true. As you know, the typhoid germs that cause the disease are always contained in the stools of a typhoid patient. Now if it chance, as is so frequently the case, that these stools are thrown undisinfected into an unscreened privy vault in warm weather flies soon fill themselves with the offal containing these germs. From there they soon appear at the dining table or in the kitchen and alight upon food which is exposed to them, thus leaving infection upon it. There is no doubt that this is a frequent way of disseminating the disease. These same flies soon find their

way to neighboring houses, and in like manner infect some one or more members of these households.

At the time of typhoid in a family where the outside vault is used, it should be screened from flies. This may be done by a solid door covering the seat, or by a screen at the door, taking care at the same time that other loopholes are closed against their entrance. In addition to this precaution, it is well also to disinfect the stools before throwing them into the privy. In that way an adjacent well will less likely become infected.

Dairies have been frequent sources of starting epidemics of typhoid fever. I presume this occurs in different ways:—By using an infected water to wash the milk utensils; by diluting milk with the same kind of water; by the milk becoming infected with the typhoid bacillus through the agency of flies which have been reveling in typhoid filth. Dairymen themselves are coming to understand that it is better for them to co-operate with health officers in a way that will prevent a recurrence of these unfortunate experiences. In all rural communities where typhoid develops, watch the fly—not alone in its relation to the privy and kitchen, but also in its relation to the dairy, to the end that the milk may not become infected.

When infectious and contagious diseases develop in any locality it would frequently be of advantage if surrounding health officers were notified either by the local health officer or by the State Board of Health after they had first received this information from the local health officer. This would often enable the different neighboring localities to anticipate the development of these communicable diseases. And by anticipating them they could frequently head off the appearance of an epidemic in their locality. It would be of distinct advantage for a health officer to know of the appearance of typhoid in a dairyman's family who is delivering milk to that locality. It would even be of advantage to the dairyman himself. Because if the health officer into whose territory the milk was delivered could say to the families receiving this milk that everything was conducted in a sanitary manner the dairyman would be held blameless. Without this additional precaution he would often be unjustly blamed. While this multiple examination or inspection of the dairy might occasion some little friction occasionally, it could at last only result in good.

Everybody's interest lies in controlling contagious and infectious diseases, and it is only by the co-operation of everybody that these can be controlled.



## Editorial

### Report of the Committee on Public Health of the Commission of Conservation on the Ottawa Typhoid Epidemic.

The thoroughness with which the appointees of the Committee on Public Health of the Canadian Commission of Conservation prosecuted the work of investigation into the causes of the late epidemic of typhoid fever at Ottawa is manifested in their report on the subject now published.

The report—which is signed by Charles A. Hodgetts, M.D., Medical Adviser to the Commission; R. W. Bell, M.D., Medical Inspector of the Ontario Board of Health; G. C. Jones, Colonel, Director General of Medical Services, and Lorne Drum, M.D., Major, Permanent Army Medical Corps, General Secretary of the Canadian Public Health Association — is excellently presented in 28 pages, accompanied by numerous illustrations and appendices, consisting of maps, letters and subsidiary reports.

In a summary statement, the immediate cause of the typhoid epidemic which was recognized in Ottawa on January 1st, 1911, is located in the water supply infected by polluted matter coming mainly from the south shore of the Ottawa River in the vicinity of Lazy and Nepean Bays; the infection having found entrance through the emergency valve at Pier No. 1, whenever opened and possibly through joints on the intake — the old aqueduct here being improperly used as a sewer from September, 1910, to the middle of January, 1911. In order to arrive at these conclusions an epidemiologic study of all cases reported between January, 1st and March 18th, 1911, a total of 901 out of perhaps 1,200 existing, was undertaken together with a sanitary survey of the premises where such cases had been reported; a sanitary survey of the north shore of the Ottawa River above the intake to, and including the town of Aylmer; a sanitary survey of the south shore above Pier No. 1, including Britannia on the bay; a study of the milk and other food supplies; an inquiry into the sewerage system; an in-

quiry into the water works system, including the pump-house intake at Pier 1, and the operation of the "emergency valve" situated at the latter point, as well as the old aqueduct; an examination of the plumbing in some of the infected houses, and a study of meteorological and other climatic conditions.

In the report, the typhoid fever mortality tables in Ottawa and Hull from the year 1901 to 1910 are compared; and the mortality for 1911 considered, after a classification of cases by sex and groupings by place of birth, occupation and place of treatment. Of the 901 cases investigated, 52 are stated to have died before March 18th, when the inquiry ceased, a death rate of 5.7 per 100. While the sanitary survey of the Ottawa River, finding the south shore to be at fault, inspires a comment as to the danger from an intake suction system for domestic water supply. And this comment is followed by a full description of the surprisingly crude and extremely unsanitary conditions in parts of the city of Ottawa, with an analysis of samples of water taken from Nepean and Lazy Bays.

When considering food supplies, the report adverts to the fact that pasteurization does not destroy the toxins generated in any milk that may be infected — which, with equal logic also, we believe, would apply to the filtration and boiling of contaminated water. Foods, however, being questioned especially from the standpoint of their handling, are excluded as possible primary causes of Ottawa's epidemic, as are also the bad general sanitary conditions of many Ottawa premises. And it is pointed out that Ottawa was lucky from the fact that the seasonal conditions excluded flies and dust, which otherwise might have added largely to the seriousness of the epidemic.

It is surprising that a city of the prominence of Ottawa, or any Canadian city, should have been allowed by health officials to develop within her boundaries and in her neighborhood the unsanitary conditions discovered by

Dr. Hodgetts and Dr. Bell, Colonel Jones and Major Drum. These gentlemen found from a careful survey of the shores of Nepean Bay and points above that it was quite evident that polluting matter of both human and animal origin was reaching the Ottawa River. Open privies were found lining Cave Creek, which empties into Lazy Bay on the south shore; Cave Creek being shown to have existed for years past as a common sewer of the worst description for many hundreds of persons resident in Mechanicsville and Hintonburg. And to this were added the contributory factors, in the typhoid outbreak, of unusually low water during midwinter—the meteorological conditions whereby, owing to the shallowness, the river became frozen to the bottom in places, blocking some of the ordinary channels, and the freshet during the first week of January — the occurrence of typhoid fever in Mechanicsville last autumn — the opening of the emergency valve at Pier No. 1 — the pollution of the old aqueduct by sewerage — the possibility of pollution of the water in its passage from the intake pipe — and the effect of neglect to carry out Mr. Hazen's recommendation of October 5, 1910, regarding hypochlorite treatment.

Mr. Hazen had pointed out that, pending the installation of a proper water supply and sewerage disposal system, partial treatment of the water might be adopted with advantage, such partial treatment consisting of the use of hypochlorite of lime.

Finally, the report points to the cause of the continuance of the epidemic as in the main due to a continued contamination of water supply; and shows that after the hypochlorite treatment became effective in efficiently disinfecting the water on or about the last week of February (eighth week of the epidemic), there was a marked decrease in the number of cases displayed in the returns of the week ending March 11th (tenth week of the epidemic); the practical termination of the epidemic occurring in week ending March 18th, the eleventh week of the epidemic. The report concludes by saying that doubtless other secondary causes were operative after the epidemic had started, such as personal contact, the washing of uncooked foods and household utensils in the infected water;

as well as the defective and general unsanitary conditions of many premises, following inadequate public health government and laxity of inspection.

#### Inter Alia.

Much has been written and said about unclean milk as the cause of many infections and contagious diseases.

That milk may be the means of transmitting typhoid fever, diphtheria, scarlet fever and other diseases we have indisputable proof, so conclusive that no one who has made a study of the milk question will doubt it. Yet many people do not yet realize the importance of clean milk, and not until they do will there be a radical change in the quality of the bulk of milk that is supplied.

We do not mean to infer that all the dairymen produce unclean milk, as there are many dairies that are the height of perfection. That our standard of milk might be more generally raised, we would suggest that systematic instruction with reference to the sanitary relations of milk as an article of diet, and other foods, be made a part of the curriculum of public schools. That popular articles be frequently prepared for the press by local Medical Health Officers; that lectures and demonstrations be given; that pamphlets in plain language be prepared for general distribution, and that rules and suggestions, accompanied by statements of the reasons therefor, be placed in the hands of dairymen and dairy attendants.

A systematic sanitary inspection of dairy farms and milk distributing depots is essential for the production of a better milk supply. Examinations of many samples of milk have conclusively shown that conditions on many of our farms and at many milk depots are anything but ideal. Stables are poorly lighted, many having no windows whatever, and ventilation is not provided for. Little attention is yet paid to floors, ceilings, walls, or stable yards; swine, horses and poultry are often found in the same barn with the cows. Manure is not removed, or, when removed, is thrown through an opening in the wall or just outside the door, frequently near the



milk room. The necessary appliances for sterilizing and cooling in the milk room are often lacking, making it impossible to properly wash and sterilize pails, cans, bottles and other appliances, or to properly cool and hold at a low temperature the milk before delivery.

Every consumer of milk has doubtless observed the presence of more or less foreign matter at the bottom of the bottle in which it is kept. This is a matter of such common occurrence that it hardly excites attention, and people are disposed to look upon it as a matter of course. Examination of this sediment in the majority of cases shows that it is mostly cow manure, hair, dirt, dust germs and other filthy substances — all of which are not only disgusting, but extremely suggestive of danger.

It must be apparent that it will require time and education to secure compliance with even reasonable safeguards, and it is equally evident that the number of dairy farms now in a position to live up to sanitary requirements will supply but a small percentage of the population, although it is hoped that such dairy farms will be stimulated into existence by trade competition and the refusal of the public to buy dirty milk at any price.

Until this is accomplished, health authorities should advise that no one patronize a milk dealer at any price whose milk after standing for two hours reveals a visible sediment at the bottom of the bottle. It is evidence of dirty habits, and entirely preventable by clean, decent methods without greatly increasing the cost.

In many cases it is well to advise that all milk be subjected to home pasteurization, by bringing it to the boiling point, and after cooking it to keep the milk on ice in order to destroy germ life and reduce the chances of milk borne diseases

to a minimum; and, if we can reduce our typhoid fever rate even ten per cent. by this simple method, not to mention infantile diarrhoea and other infectious diseases, it is clearly our duty to do so.

Milk should never be sold by grocery stores nor milk shops unless it has been delivered to such establishments in original sealed bottles, and then only when there is provision for maintaining the milk at a temperature of 50 degrees Fahrenheit.

Speaking of milk bottles, there are several makes of sanitary, non-refillable bottles that are good. The receptacles are made of paper, covered with paraffin and are water proof, and experiments have shown that they will stand heat and cold. These, when emptied, are thrown away, and the danger of dirty milk bottles is obviated.

The glass milk bottles used by certain milk dealers cost in the neighbourhood of five cents apiece. The non-refillable wax and paper cylinders, we believe, cost a little more than one cent each. The milk dealers state that the largest item of cost would be the change from glass bottles and the installation of the paper receptacles. But the difference in the running cost would be neutralized by the elimination of breakage and loss of glass bottles.

The peddling of milk in cans is objectionable inasmuch as the cans are opened on the streets where dust and dirt is flying about. The health department opposes this plan and condemns it as unsanitary and dangerous. Many milk dealers are themselves in favor of the paper bottles as being more sanitary and in the long run cheaper than the glass bottles because of the heavy losses entailed through breakage and theft. Their only argument against the installation of the paper receptacles at once is the initial expense.

**Hygiene for Nurses.**

We do not remember to have seen previously a work of so comprehensive a character in so small a space as *Hygiene for Nurses, Theoretical and Practical*, by Herbert W. G. Macleod. The information given therein is not only suitable for nurses, but in our opinion would add to the knowledge of many of our medical confreres and largely prevent that groping in the dark which has become a habit in many of our municipal councils.

Dr. Macleod points out that hygiene, otherwise known as "preventive medicine," "public health," "state medicine," is the science of the preservation of health and the prevention of disease, and teaches us how, under suitable conditions, life may be prolonged to its farthest limit. He shows that the preservation of health is of importance not only to every single person, but to a nation as a whole, and gives examples of the brilliant results which have already been obtained by the wider extension of this knowledge; such fatal diseases as smallpox, plague, typhus fever and hydrophobia, having been stamped out in many cases by applying the principles of public health, while consumption—that scourge which kills thousands of people in the prime of life every year — has been greatly diminished by proper ventilation, lighting, heating, building and drainage, by proper personal habits and the use of pure food and water.

The work is divided into eleven chapters, extensively and suitably illustrated, followed by an appendix regarding important Acts of Parliament, etc., relating to public health. The chapters are entitled, in order: Heating and Lighting; Water — General Sources of Supply; Water—Purification, Domestic Supply; Drainage and Sewerage; The Disposal of Sewage; Infection; Disinfection; Food, Milk, etc.; and Personal Hygiene.

Dr. Macleod gives a list of diseases resulting from impure air, points out fully the way to avoid these diseases by means of natural and artificial ventilation while

naming six important conditions which should be fulfilled, and remarking that "it is essential to understand that neither draught nor chill is caused by proper ventilation." The constructive suggestions in this part of the work are very valuable, as they are, also, in the chapters dealing with Heating and Lighting, the Purification of Water, and the Disposal of Sewage.

Had the information given in this little work been possessed by some of our public health officials, the recent epidemics of typhoid in certain Canadian cities might not have occurred.

Under the heading "Water Filtration" it is pointed out that dissolved poisons cannot be removed by this method, and their presence, whether putrescent animal or vegetable matter, such as originates in metal works or dye works, is, or should be, guarded against by Acts of Parliament, etc., concerning the pollution of rivers and streams. And in this connection the question of the purification of drinking water by distillation in the home is discussed. *Hygiene for Nurses*, by Herbert W. G. Macleod, B.Sc., M.D., M.S., Edin.; M.R.C.P., Lond.; D.P.H., Lond.; D.P.H., Camb. Crown 8vo., 233 pages, 48 illustrations. London: Smith, Elder and Co., 15 Waterloo Place, 1911. Price, 3/6 net.

**Hand Book for Medical Advertisers.**

Apart from a few typographical errors and mistakes in classification, which, while annoying to those (our own experience) to whom they relate, we presume may be inseparable from a work of this kind, this is the best book for medical advertisers that we have seen, being well bound, comprehensive and full of otherwise reliable data regarding medical, drug, dental and allied journals published in Canada, the United States and other countries. It gives useful information to medical and drug advertisers and is a book small enough to be carried in the pocket. We congratulate Dr. Harrower, the compiler and publisher, upon the perfection of this, his most recent publication, and prophesy a deserv-

edly large sale for the same.—*Henry R. Harrower, M.D., 921-931 Schiller Building, Chicago. Bound in soft leather. Price, \$1.50.*

### Rural Hygiene.

A valuable addition to the Rural Science Series, published by the Macmillans in a volume on "Rural Hygiene," by Henry N. Ogden, C.E., Professor of Sanitary Engineering in the College of Civil Engineering, and special assistant engineer in the New York State Department of Health. The subject is treated from the broad standpoint that presents man's mode of living as reacting on those domiciled in this vicinity. Carrying human interdependence to its consistent conclusion, the author reaches the broad question of the cause of spread of disease and the transmission of bacteria, and the natural influences which, more or less under the control of man, affect a large area if allowed to develop. The point of view of the engineer leads him to quarantine, disinfectants and prevention rather than to etiology and treatment, especially as the new methods apply to the populations of the country, where authority is lacking and public hygiene, to a certain extent, must rest on a sense of honor.

Vital statistics are given and the way is pointed out to raising the standard of living, so that without specific laws, individual will or instinct may lead the normal countryman to live according to hygienic rule and in harmony with his environment. The chapter on diseases is especially informing. Pellagra, a complaint peculiar to the country and formerly supposed to be connected with spoiled corn, is hard to dislodge when once established, and is accompanied by intense suffering. It is common in Italy, and recently has made its appearance in the United States, where it is on the increase. The work will be found truly useful and well worth a careful perusal. — *Rural Hygiene, by Henry N. Ogden, C.E., Professor of Sanitary Engineering in the College of Civil Engineering and Special Assistant Engineer in the New York State Department of Health. New York: The Macmillan Company.*

### A Study of Race and Environment.

The Jewish people being dispersed among the nations and living under very various conditions in every part of the world, it becomes a matter of great interest to ascertain how far they exhibit characteristics which may be considered peculiar to themselves and differing from those of the peoples in the midst of whom they dwell. The subject is very thoroughly treated in a recent work by Maurice Fishberg, of New York, entitled *The Jews: A Study of Race and Environment*.

In the author's opinion, the generally accepted idea that Jews are an example of an absolutely pure race is altogether erroneous. This view is likely to find little favor among his co-religionists, who have always been assured and proud of the purity of their race. It may, however, be said that the author is not alone in his opinion, which is held by many of the more thoughtful followers of the creed. The probability that, during the time polygamy was customary, there was a constant admixture of foreign blood cannot be ignored, and the author is undoubtedly correct in the assertion that at times large groups of strangers or even whole peoples have adopted the Jewish faith and have been absorbed into the race. At the same time, it must be remembered that for many centuries the rule of monogamous marriage has been generally adopted, and that since the Middle Ages at least, there has been little intermarriage with other races until within quite recent times. The author calls attention to the absence of a cranial type common to all Jews, and asserts that every variety of cranium has been found among them, from an extremely round head in Caucasian Jews to heads of an equally marked dolichocephalic character in those of Africa and Arabia, the prevailing type in every case resembling that of the people among whom they dwelt. This would seem to go far in support of the contention that there has been a mixture of race, but the author is on less sure ground when he cites the variety of stature and complexion in support of his view. It cannot be held to be by any means certain that changes in habit and conditions of life may not have their influence in producing the varieties mentioned. Marked increase of stature, for instance, has been observed in the

course of only two or three generations in Jews whose parentage was known when there had been no mixed marriages.

As might have been expected, the author, holding the view stated, finds few, if any, characters which he considers could be described as Jewish. The chief pathological characteristics are held to be a somewhat undue liability to suffer from diabetes and insanity. This Mr. Fishberg puts down to a general nervous instability, and he is, no doubt, quite correct in assuming that the hardships and persecutions to which the bulk of the people have been exposed for centuries, have produced an hereditary tendency in this direction. It is also noted that, these diseases being more common in urban populations and among those engaged in exciting or hazardous business pursuits, Jews, who belong largely to these categories might be expected to show a larger proportional morbidity, and that it is not necessary to assume any racial tendency. The comparative immunity from tuberculosis which has been remarked in English Jews is shown to obtain in every country for which statistics are obtainable. This the author ascribes to a process of natural selection by which the Jewish race, accustomed for centuries to live in crowded and insanitary quarters of large cities, has acquired a special capacity for resisting the adverse conditions resulting from such a life. It is, however, probable that the freedom from a tendency to alcoholic excess plays a considerable part in giving an increased power of resistance, and it is noteworthy that consumption has of late become more frequent among Jews in New York, as well as in London, while many observers are of opinion that they are more prone than formerly to adopt the habits of their neighbors in respect to alcoholic indulgence.

As regards cancer, Mr. Fishberg seems to incline to the opinion that there is neither immunity from, nor excessive tendency to, this disease. He states, however, that several gynaecologists in New York have given him information as to the rarity of cancer among Jewesses. This is certainly not the case in London, where, allowing for the difference of age distribution, cancer appears to occur as often in Jewesses as in women in other sections of the population. As to other diseases, the

author finds no difference in the morbidity or mortality among Jews from that obtaining generally in the locality where they reside. Their special tendency to suffer from diseases of the gastro-intestinal system is considered to be confined to functional disorders. This again somewhat differs from the conclusion to which the English recent statistics would seem to point. In addition to the subjects referred to, there are interesting chapters on Jewish criminality, and on their social and economic conditions. Altogether the book is a careful and almost exhaustive account of Jewish characteristics; the bibliography and index at the end are remarkably full and complete. — *The Jews: A Study of Race and Environment*. By Maurice Fishberg. London, New York, and Melbourne: Walter Scott Publishing Company. 1911. (Cr. 8vo. pp. 597. \$1.75.)

#### The Dangers of Dust.

An article on street sanitation in a recent number of the *New York Medical Record* says that a much needed campaign of education must be carried on to train the people to fear the dangers of filthy streets and to enlist their interest in keeping them clean; that it ought to be possible to stop the shaking of dust-cloths and rugs from the windows and the sweeping of dirt into the street. To this should be added the custom, offensive to the eye at least, of throwing paper into the street, and it should be the duty of the police to demand an explanation from the occupants of the houses in case newspapers or rubbish are found on the street or sidewalks.

The writer holds that the broom and shovel method of dust removal is unsatisfactory, resulting in stirring up the dust rather than in taking it away. Two efficient methods for taking away the dust are given. The first of these is by flushing the streets, carrying the dirt to gutters and sewers, and the second by means of automobile suction cleaners, a method which is available on all smoothly paved streets for the greater part of the year.

#### A Proposed Measles Research.

A forthcoming research of public health importance is announced by the *British Medical Journal*, which states that Mr. Howard McFadden, a well known English

philanthropist, proposes to set on foot a plan for thoroughly investigating the origin and spread of measles; moreover, that the work involved will take place at the Lister Institute at Chelsea. In making this announcement, the organ of the British Medical Association emphasizes the fact that, "Rich men cannot devote their wealth to a better purpose than the furtherance of scientific knowledge which will help to rid mankind of scourges such as measles, that, in addition to the immediate suffering which they cause, levy a heavy toll on the rising hope of a nation, and thereby tend to undermine its efficiency."

#### Free Health.

Frederick Aling, in *The Survey*, points out that free education was once considered radical, but it was followed by compulsory education as neither charity nor justice, though free schools began as charity. It was protection, for revenue only, for society saw that ignorance was costly and dangerous.

Free health is now as radical, but it will come, and compulsory health will follow. No child is now allowed to be ignorant, whether its parents are willing or unwilling; but disease is both more contagious and more dangerous than ignorance. Conversely, health is more precious than knowledge, both to the individual and to the community. The tenement father who sees his boy go through the grammar school, and then die of tuberculosis, would rather have a live son than a wise one. The wages of unskilled labor in the tenements do not permit of health, but education is given free. Which would any father choose for his child? Which should humanity or policy, first give?

Public health is quite as important to the community as public education, and we shall at some time have free doctors as well as free teachers, leaving the private doctors, like the private schools, for the few who can afford them and prefer them.

#### The Influence of a Tropical Climate on Europeans.

Dr. J. H. F. Kohlbrugge, of Utrecht, has for several years been carrying out investigations on the influence of tropical climate on Europeans, and has arrived at some interesting conclusions. These were

published recently in German. The original paper has now been translated into English by Mr. J. H. Koeppern, and published in the "*Eugenics Review*." He states that although Europeans become pale in the colonies, this is not necessarily due to ill-health.

"The main reasons for paleness in hot climates," he says, "are the following: The skin becomes saturated with perspiration and the corneous layer of the epidermis softens and thickens. The same phenomenon can be observed at home in summer, when, owing to swollen fingers rings often cause discomfort. The second reason is that in the tropics the atmosphere is charged with moisture, which prevents perspiration from evaporating, and so the epidermis grows opaque. The fact that moisture encourages the formation of adipose tissue may be another reason. People living in a dry climate are generally lean and gaunt; the inhabitants of the desert and North America are examples. The Javanese, on the other hand, owing to their very moist climate, are not stout, but the beautifully rounded contours of their body prove the presence of a well-developed, fatty layer under their skin. Most Dutchmen become plump in their colonies. In the dry air of the hills Europeans regain their healthy rosy appearance, the old corneous layer sloughing off. This holds good for natives also, although the natural darkness of the skin hides the pallor which originates in any climate which resembles a hothouse."

If a white man be a wise man he can acclimatize himself to tropical conditions perfectly well; but the chief conclusion that Dr. Kohlbrugge has drawn from his observations is that until now no white race has been able to survive in the tropics unless race mixture has taken place. He has only been able to find one family which has survived four generations while remaining racially pure. This was in the Dutch East Indies. The present generation consists of four brothers, all married, but childless. Thus it will be impossible for Europeans to take the place of the native in the tropics. We cannot do without him as a laborer now, if his country is to be made prosperous, nor can he do without the white man, and this for a peculiar reason. This is best expressed in Dr. Kohl-

brugge's own words. He says: "The experience that the nervous system of Europeans suffers in the tropics has been corroborated by science. The first symptoms are chiefly insomnia and an increased irritability. It has been said that this is due to overwork and restlessness observable in all new colonies where individual effort is so much more essential than at home, but this opinion is contradicted by the fact that the nervous system of individuals who do not participate in the accumulation of wealth and influence also suffers. Letters, reports, etc., show the highly strung state of the nerves; and the tears ready to appear at any sad opportunity are but a symptom of the protean malady of neurasthenia.

"The native in his natural state does not show this irritability, but if he is 'educated' to the same degree as ourselves, and if his intellectual life is as intense as our own, he suffers as much if not considerably more. The inference is that a tropical climate induces a certain intellectual indolence, and that any work carried out with European energy very soon causes neurasthenia. This is why the best and most highly gifted intellectually are the first to succumb. Scientists and officials are mostly worn out at the age of 50. The colonies suffer, because the higher posts are naturally held by the older individuals, who already require rest, and are, therefore, opposed to innovations. Medical men, in observing children, are struck by their inability to suffer pain, and by their lack of control when subject to disagreeable sensations. The natives who have not been under the influence of our civilization can suffer the greatest physical pain without a murmur, but as soon as they are educated they dread trivial surgical operations even more than white children."

Of course, the native can be educated, and, as is well known, the Malays, for instance, are able to learn everything; they show great promise at the schools and universities, but, both in the Dutch and English Colonies, although examination results are excellent, the students lack what the author, or rather his translator, calls "character." He believes that this is to an enormous extent due to the low position occupied by women in the tropics. It is only when the future mothers are educat-

ed towards individualism that they will be able to give that training to their children which helps them to form "character," which will grow with their culture. "Even then," he says, "the question would remain unanswered whether the relaxing climate would not prevent further progress, whether the European, Japanese, and Chinese races will always have to be providers of energy for the real inhabitants of the tropics. We must wait. Centuries will have to pass before we can reply to these questions, and in the meantime we cannot do better than study our own history, in order to learn how slow our own progress has been and how often our progress has been suppressed."

"We shall then learn not to underestimate the value of the native. The first maxim for any colonial policy ought to be: We cannot do without the native, because we must acknowledge that we cannot take his place.

"This is a sound policy, sound in our own interest. We also pay due regard to the future if we always remember that colonies are only then worth while having if we cultivate them in order to educate the natives for independence in the course of centuries. It is therefore the duty of the State, on the one hand, to prevent any selfish exploitation of the natives, and, on the other hand, to see that only the best types of humanity the Motherland can produce are sent out to act as educators. It is true this elite of the nation will perish if their offspring seek their field of work, as they often do, in the Colonies. In that case the possession of Colonies acts like bleeding, and the lack of energy which the Netherlands have shown during the last few centuries must be attributed to such bleeding, the motherland being too small for colonies of such large dimensions."

#### Flat Foot.

A specialist, writing in a recent number of the *London Hospital Gazette*, in reference to "flat foot," points out that this painful condition is "so common because people do not know how simple it is to prevent, and solely from ignorance persist in standing in bad positions." Among other useful exercises advised by this surgeon for the prevention and remedying of flat foot is one which appears especially applicable

to those numerous cases in which the arch of the foot has given away from the strain of prolonged standing — a state of things frequently found amongst factory hands, shop assistants, waitresses, hospital nurses, and others who have to be on their feet for many hours daily. This exercise consists in standing up and raising the heels from the ground a number of times; it is commonly known as a "tip-toe exercise," and should be carried out slowly and regularly each morning on rising, before boots or shoes have been put on. The weight of the body should be lifted an increasing number of times, up to 100, as the feet get stronger.

### A Weak Spot in School Inspection.

Gradually we are realizing the value of medical inspection in schools, and also the work of the school nurse. Specific cases, says *The Sanitary Record*, can be pointed to where great improvements have taken place in children through parents acting upon the advice they received. With bad teeth extracted, defective vision corrected, and throat troubles removed, the children set about their work in a better spirit, and the task of the teacher is considerably lightened. But there is room for still further improvement, and managers and teachers are realizing that something more than exclusion will have to be done in the case of infectious disease and "dirty heads." The other day a case in point was brought under our notice by a master. A boy was excluded because of fever in the family and a suspicion of he himself having contracted the disease. Yet that evening he was at one time in the street playing with other children, and at another in a shop handing food about. In a girl's school several scholars were sent home by the nurse because of dirty heads. They were to be away at least a week; yet on the following Sunday they were in the Sunday schools mixing with the other children. We have made inquiries, and these cases are not exceptional. It must be obvious to all that exclusion in this way is worse than useless. Parents must not only be told to cleanse their children; they must be warned against letting them mix with others until this has been done. A system of notification to the Sunday schools should also be established, and superintendents should refuse to admit until the doc-

tor or nurse certify that all is well. The same policy must be adopted in the case of measles or fever in the house. Isolation, to be effective, must be rigid in its character; unless it is so, it is almost worse than useless.

### Public Sanitation and its Revenues.

In a recent issue of *American Medicine*, appeared the following editorial:

"The unearned increment does not seem to have the slightest relation to medical matters, but as it is a subject of intense interest to publicists, sanitarians must learn the arguments now being worked out to justify society in taking what is said to belong to it and not to the individual. It has always been accepted as an axiom that no rapidly growing community can possibly tax itself sufficiently to provide those sanitary necessities which cities of slower growth obtain only after decades of effort. It is now claimed that increased real estate values really belong to the people who created them and not to the man who was lucky enough to own the property and who did absolutely nothing to add to those values. It is therefore said that the unearned increments of valuation should yearly be taken to construct water and sewer systems, to pave streets, and to use in removing wastes and combatting disease. The idea is so revolutionary and borders so closely on the propositions of certain radical socialists, that there has been a great outcry against it, particularly from the English bankers who represent the people possessing this unearned wealth. Nevertheless the proposition is being seriously discussed by statesmen and has been taken up in America by conservative men who cannot possibly be accused of ill considered radicalism. The subject is thus brought into the sphere of practical sanitation and the medical profession must study the arguments, pro and con, to determine whether they are not justified in joining in the movement to put an end to preventable disease by methods never tried because money was never available.

"The ownership of increased valuation is the question in dispute. It is now openly claimed that if New York City should tax itself fifty millions to build subways which would add fifty millions to the property value of the regions served, the increase

belongs to the community, who can take it ethically by special taxation. A few noblemen, whose ancestors happened to own a part of London, are now drawing millions in yearly rentals from the very people who made the land valuable, and the Government has announced the policy of partial confiscation to use in preserving the health and lives of these people. The men whose ownership has never before been questioned are saying that this is a revolution, and the statesmen are calmly replying that it is only one of the long series of revolutions which the progress of civilization has forced upon the nation peacefully or forcefully, and are proceeding with the plans. Owners of New York are squandering millions in Europe, and owners of London, millions in all parts of the world, while in each city disease and death are present for the want of just such money for sanitation. These are the facts which are directing the serious attention of statesmen to the practical problem of shaping legislation which will enable them to use this property value in defence of the people who created it. Public health is bound to be enhanced if these ideas are spread to a practical application, and the medical profession is more vitally interested than any other.

"The congestion of population in the last few decades has caused enormous changes in medical practice, and there is no reason to doubt that the ideas of a few dreamers are bound to make still further revolutions.

"The tremendous modern concentration of populations is responsible for those remarkable unearned increases of wealth, and it is not at all unlikely that the proposed new taxation, if it is ever levied, will be used to pay physicians for curing the diseases the sanitarians fail to prevent. It all depends upon whether or not it is decided that society owns what it creates."

Commenting on the above, Grace Isabel Colbron, book and magazine reviewer in "*The (Chicago) Public*," says:

"The sound ethical and fiscal common sense shown in that editorial makes one wonder if the writer is quite ignorant of the genesis and development of the proposed system of taxation. Probably it is needless to point out to him that 'radical socialists' are not responsible for it, and that it is not the idea 'of a few dreamers'

alone. But it is worth while to emphasize the justice of his view, that for the medical profession in particular this scheme of taxation is vitally important. Not merely in furnishing the means to enable the physicians of a great city to cope more successfully with disease and death among a crowded population, but to do away with this very crowding, with the greater depths of poverty which breed disease in all great centres.

"It will not be so necessary to furnish money for fighting disease under a just system of taxation. For an economic system which gives more equally of opportunity to every one has not place for conditions which above all are now the chief reasons for preventable disease and death. It must indeed be discouraging to a band of men who give all their powers, and even their very lives, as do our physicians in the effort to stem the tide of disease, and then to see it daily and hourly grow afresh in our tenement districts. Like the dwellers in the slums, our brave doctors themselves are often the actual victims of wrong conditions, and many a life the country can ill spare has been sacrificed, among the medical profession, to an economic system which permits the few to take what is earned by the many and should be used for the benefit of the many.

"The medical profession, first of all, are interested in just taxation, and if the physicians of our country could see this and join the ranks of those who are fighting openly for economic justice, they would prove of inestimable assistance. Many of them are now spending their lives and their strength in a splendid effort to stamp out the White Plague, a splendid fight indeed, but one sadly futile, for tuberculosis is not to be eradicated while slums exist, while hundreds of thousands of men, women and children live and work amid unsanitary conditions, ill-nourished, ill-clothed. And such conditions must exist while there exists the blatant economic injustice that puts a double burden on the earning power of the individual, to pour into the pockets of a few riches that the thrift of all has produced."

#### Dr. de Szendeffy's "Consumption Cure."

A certain amount of mystery appears to surround a new remedy for consump-



tion which was brought before the medical profession in Paris recently. In the first place, the compound used — administered by injections—is extremely complex, and as a therapeutic agent is regarded with some scepticism by not a few physicians. Its advocates, including Dr. de Szendeffy, of Buda-Pesth, who first introduced the remedy, described it as a radio-active mixture containing peptonized iodine and menthol. Peptonate of iodine is quite unfamiliar to medical men in this country, although it is understood to have been used in France for some time, as being a form of iodine which is very readily absorbed. Then, again, the supporters of this *radium-menthol-iodine cure* apparently consider that the bacillus tuberculosis discovered by Koch is, after all, not the essential microbe of consumption; this view is, of course, directly opposed to modern medical teaching, and is almost sufficient of itself to bring the new method into disfavor.

#### A Serum Snuff for Hay Fever.

A correspondent writes that he believes hay fever, which for more than three hundred and fifty years has defied all attempts of the medical profession to perfect a cure, has finally succumbed to the march of science. A new cure, a *hay fever serum*, roughly similar in its action and mode of preparation to the well known diphtheria serum, is now ready for use.

The history of the new preparation, which gave excellent results last year in Germany, was given him by a prominent West End, London, England, physician, who is an acknowledged authority on serum-therapy:

"Not long ago Dr. Dunbar, a German scientist, discovered that hay fever was the result of an irritation of the mucous membrane of the nose, due to the action of the pollen grains of certain grasses floating in the air. Dr. Dunbar also succeeded in isolating from these pollen grains a poisonous substance which is the actual cause of the unpleasant symptoms of hay fever.

"Horses were then used in the preparation of a serum from this pollen poison in exactly the same way as diphtheria serum is obtained from the diphtheria poison. A small dose of the irritant is injected into the tissues of a perfectly healthy horse. He

is a trifle upset by the small dose, but speedily recovers. A larger dose is given. Again he is slightly upset, but immediately recovers. The process is continued until even a maximum dose of the pollen poison has no effect on him. The curative serum is then prepared by drawing off a certain amount of blood from one of the animal's veins, separating out the blood cells, and drying the remaining fluid part.

"Treatment of the hay fever patient consists in sprinkling a few grains of this dried serum on to the nasal mucous membrane with a camel's hair brush or dropping it on the inner surface of the lower eyelid.

"Different people, of course, react differently to the serum, but in most cases the dry dust must be applied several times a day for a month or six weeks to give protection throughout the entire summer."

#### Sewage Purification by Carbonized Sludge.

Mr. Frederick Jagger, an English engineer residing in Leeds, has patented a system of sewage purification which he claims to be the only system that produces valuable manure and no sludge.

The mechanical portion of the system is explained by the patentee as follows: The sewage on entering the works passes through an iron screen that deprives the sewage of all the grosser solids. The screen is kept clean by scrapers automatically worked by a water-wheel and chains. These grosser solids are thus deposited on a perforated platform to drain. The sewage is then passed through screens or cages filled with 1-inch riddlings of carbon; it is then passed through another screen containing  $\frac{3}{4}$ -inch riddlings of carbon, and thence through another screen containing  $\frac{1}{2}$ -inch riddlings of carbon. These screens replace the present generally adopted system of settling tanks, etc., and these automatic screenings are raised and placed in the carbonizer, fresh screens taking their place automatically. The carbonizer is specially constructed of iron, with a grate at the bottom and sides, and with doors to regulate the draught. There are also lids on hinges on the top to allow the men to put the screenings into the carbonizer. It is also provided with a chimney to carry away any obnoxious fumes. It requires no

fuel, as it is self-slow burning. The effluent from the screens, which is half purified, is then allowed to flow on to the surface of the filters. They are constructed generally 100 superficial square yards, and 3 feet deep, the filtering material being filled in as follows: 6 inches of clinker at bottom, then 6 inches of 1-inch riddings of carbon, 6 inches of  $\frac{3}{4}$ -inch riddings of carbon, 6 inches of  $\frac{1}{2}$ -inch, 6 inches of  $\frac{1}{4}$ -inch, and finally the powder on top. As the effluent passes on to the surface of the filter the top layer of carbon absorbs all the impurities from the sewage, and the purified water percolates through the remainder of the filter through an effluent pipe into the inspection chamber.

As the filters become choked, and the water rises on the surface of the filters, the water lifts floats. This actuates a lever that closes the channel which carries the sewage on to the filter, and opens another, and allows the sewage to pass on to another filter with fresh carbon. When the choked filter has drained in a few hours the top layer is dry; it is scraped off and another fresh layer put on. This constitutes a fresh filter. The filter runs from a week to a month and longer, according to the density of the sewage. The top layer that is scraped off, being carbon, contains all the manurial properties in the sewage, making it the most valuable manure that can be obtained. The filters are, it is said, capable of dealing with at least 2,300,000 gallons per day. The patentee claims that the system is complete, as the sludge produces almost sufficient carbon to purify the sewage; that it is economical, as the top layer of filter produces valuable manure, the sale of which helps to pay the cost of working, and there are no expensive chemicals to buy, no expensive sludge tanks and presses, and no scientific labor to employ; that it is simple, as any unskilled laborer could work the plant; and that the plant can be extended to deal with any quantity of sewage.

#### Standardization of Digitalis.

Standardization of Digitalis has been receiving special attention at the hands of

Professor Hale, in *Bulletin 74 of the Hygienic Laboratory of Public Health and Marine-Hospital Service, Washington*. The author regards the view that the leaves of the second year's growth are more potent than those of the first year, as founded merely upon tradition, and his experiments show that the first year leaves are from 28 to 40 per cent. more active than the best second year leaves procurable. He similarly disposes of the idea that the leaves of wild growing plants are more potent than those of cultivated plants. Nevertheless, some of the former are more potent than the latter, but cultivation *per se* has nothing to do with the fact. As for the influence of heat and moisture, he finds that leaves dried in a vacuum or preparations made by macerating the leaves with cold water have no particular advantages. Fluid extracts, he says, are never as strong, relatively, as the tinctures, by reason of incomplete extraction of the drug, and he condemns the preparation of tinctures from such extracts. Weak alcohol (35 per cent.) is as efficient as stronger alcohol for extracting the leaves, but the more strongly alcoholic tinctures are better in that they contain less inert matter, and retain their potency much better. A comparison is drawn between extracts made by the official process and proprietary preparations, unfavorable to the latter in that they deteriorated to a much greater degree in the same period, the figures for the former being 4 to 8 per cent., those for the latter as high as 33.3 per cent., loss of activity. Further dealing with proprietary preparations, tablet triturates from different manufacturers were found to vary in strength by as much as 360 per cent., while hypodermic tablets of digitalin varied as much as 230 per cent. It is urged that makers of special preparations should submit them to much more rigorous tests than is done at present, and that physicians should use them as seldom as possible unless assured, by a system of dating, of their very recent preparation.

## Open Mail

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

### Let Us Help.

Sir:—Your recent suggestion that the medical profession should open the eyes of the public to the evils of quackery through the creation of bureaus of information and in other ways is a good one. The only wonder is that self-interest as well as concern for the public health has not shown the need of it long before this. The quacks have flooded the country with literature. The almanacs of the patent medicine men, with their descriptions of wonderful cures, are to be found everywhere. The only detailed exposures of the falsity of the claims made for these cures are to be found in our medical journals, which laymen seldom see.

One great point will be gained when the bold claims of a sure cure shall have been wiped off the labels of patent medicine bottles and the labels contain no more than a bald statement of the ingredients. That can be done through legislation.

The purging of the labels would not put an end to the game of false pretences and the appeals to popular credulity and ignorance. Almanacs would vaunt the virtues of valueless preparations. Handbills urging the purchase of this or that "certain remedy" for incurable diseases would be widely distributed. The members of our medical profession should do more than they have done to educate the public and weaken the effect of that deceitful literature. They might take up one quack preparation after another, tell what each is made up of, and explain why it could not do good and might do harm.

A. B.

### The Case of the Egg.

Sir:—It is not how fresh, but how good, in the case of eggs, say the egg packers. As a general rule freshness is considered a desirable quality in food products. This rule, they say, is not universal, however, as, while the consumer prefers fresh fish, fresh fruit, eggs and other articles, he wants his wine and cheese to be aged. The

term "fresh" has become synonymous with the idea of the desirable quality in eggs for the reason that eggs spoil very readily. But, commission men say, the actual age of an egg is only one of many factors that affect its quality.

An egg that has lain in a wheat shock for 48 hours in a warm July rain probably would be as unfit for human consumption as one that had lain there for a month, while an egg properly cared for in cold storage for eight or nine months would be as fresh as the day it was packed.

Most of the trouble with eggs, the packers say, is with the farmer who gathers them and markets them. For this reason I suggest that the war against bad eggs must be carried into the farming districts and must be a campaign of education among the farmers' wives, who usually have charge of the hens. In fact, in some places this is already being done.

Formerly it was customary for the farmer's wife to gather eggs whenever she had time. They would then either be saved up in a pail lowered into a well for storage until she had enough to take to the country store, or perhaps they would be kept in a basket of oats or bran in the heated country kitchen. Then they would be disposed of to the country storekeeper, who would barter them for merchandise, and incidentally would stack them up in his store until he had a load to take to market. When these eggs finally reached the city they had been subjected to many changes of temperature, had been shaken and roughly handled; some had lain in the sun and had embryo chicks in them, and all were in poor condition for packing.

Eggs are among the great trade drawers for the country storekeeper. The village merchant who pays the highest price for eggs gets the biggest trade, and inasmuch as all eggs are bartered for merchandise, the larger part of which is dry goods and notions, a country merchant cannot be very particular about candling eggs brought to him. Instead he is forced to fix a price that would protect him after the bad eggs were thrown out. He, in turn, sends all

of his eggs, without candling, to the commission houses, with the result that great numbers of eggs unfit for packing are placed in cold storage, while again others not fit for human consumption have been sold to bakers and confectioners for use in such combinations with other products as would disguise their taste and odor.

Many commission men have departed from this method this year. Country storekeepers have been advised to carefully candle their eggs, and to keep them in a cool, dry place where they would not be subjected to changes in temperature. Commission houses have emphasized this advice by paying a little more for eggs which have been cared for in this way, and the country storekeeper in turn is paying a trifle more for eggs properly gathered and cared for by the farmers' wives.

Eggs are hard to grade. This is because each egg must be considered individually, and there are many classes or qualifications. First of these is cleanliness. Clean eggs bring a much better price than dirty ones and large eggs bring a better price than small ones. Then there also is a preference in the color of eggs. Clear white eggs are said to be of a poorer quality than those slightly browned.

As it is impossible to examine the actual substance of an egg without destroying it, the art of egg judging can hardly be appreciated by one unfamiliar with the methods of commission houses. In the early spring when eggs uniformly are in good condition, some commission houses do not submit them to the "candling" process, but they are judged by experts, who from their very "feel" can pick out those unfit for packing. Others, however, use the "candling" process, as do many farmers who have learned the simple process.

As a matter of fact, any kind of a light may be used, but an ordinary electric bulb seems to be the favorite. It may be enclosed in a box or tin cylinder which has holes in it somewhat smaller than a half dollar, through which the light is emitted when the room is darkened.

The egg candler works with both hands, holding each egg to the light, large end upward. He gives the egg a quick turn, in order to view all sides of the egg and cause the entire contents to whirl.

This is the man who selects the eggs for storage. He can tell the actual condition of an egg to a degree a novice can hardly understand. He knows what eggs will keep through storage, and he also can tell just how soon another egg will spoil. On his judgment depends the condition of the egg market next fall and winter.

Few eggs are thrown away. Those which are specked and cracked are sold to bakeries, restaurants and hotels. Eggs of questionable quality are taken by low class restaurants. Eggs of this nature, when cooked with other foods, may have their flavor and appearance so disguised that they may be safely used, while if served alone they would be very repulsive. Every effort has been made by the health department of some cities to prevent the use of such eggs, but regulations covering them have been found difficult of enforcement. The sanitary regulation of restaurants and hotels, with the scoring system do much along this line. Careful watch for good eggs and vigilance for bad ones should be kept by the inspectors, and the condition and quality of eggs is an important point in the scoring.

K. A. M.



## Meetings and Reports

### DOMESTIC

#### Canadian Public Health Association Convention Programme.

Programme of the First Annual Convention of the Canadian Public Health Association, to be held in Montreal, 21st-23rd November next:

Tuesday, November 21st—

10 a.m. — General business meeting, including the adoption of the constitution.

12 noon — Meeting of the Executive and other committees.

2.30 p.m. — General meeting, at which papers of general interest will be read and discussed.

8.30 p.m. — Address of welcome. President's Address. Reception.

Wednesday, November 22nd—

10 a.m. — Meetings of sections.

Section I. Medical health officers. Convenor, Dr. Louis Laberge, Montreal.

Section II. Laboratory workers. Convenor, Dr. J. A. Amyot, Toronto.

Section III. Sanitary engineers and architects. Convenor, T. Aird Murray, C.E., Toronto.

Section IV. Social workers. Convenor, Dr. Grace Ritchie-England, Montreal.

2.30 p.m. — General meeting, at which the programme will consist of a symposium on Housing and Town Planning.

7.30 — Association dinner.

Thursday, November 23rd—

10 a.m. — General meeting, at which the programme will consist of a symposium on Sewage Installations.

12 noon — General business meeting, including election of officers and council.

2.30 p.m. — Excursion to local points of hygienic interest.

Evening — Departure.

A detailed programme will be published in the November issue of *The Journal*. Members desiring to contribute papers are requested to communicate with, and to forward an outline of their papers, to the General Secretary before the 1st of November.

Members intending to be present at the Convention are requested to kindly send their names to the Secretary of the Committee on Local Arrangements, F. C. Douglas, Esq., M.D., D.P.H., 51 Park Avenue, Montreal, to whom all enquiries should be addressed.

Members interested in the work of the special sections or wishing to contribute papers at the sectional meetings are requested to communicate with the various convenors.

#### The First D. P. H. from Toronto.

Dr. Hibbert Winslow Hill, Director of the Division of Epidemiology of the Minnesota State Board of Health, received the Diploma of Public Health (by examination), of the University of Toronto at the recent commencement, Friday, June 9th, 1911. Dr. Hill graduated from Toronto University in 1893, with honors and a post graduate scholarship, receiving the degree of M.B. In 1899 he received the M.D. degree, together with the Starr gold medal, awarded for a thesis on "Relation of Bacteriology to Public Health." The diploma of Public Health just granted is the first given by the University of Toronto, although the course has been open and the degree available for several years.

#### Maritime Medical Association.

The twentieth annual meeting of the Maritime Medical Association was held in the Nova Scotia Technical College at Halifax on July 5th and 6th. The attendance was large and the meeting was one of the most successful ever held.

On the morning of July 5th, his Worship, the Mayor of Halifax, gave the address of welcome, and papers by Drs. M. Chisholm, D. A. Campbell and A. I. Mader on "Polycystic Kidney" and "Infantile Paralysis" were read and discussed.

In the afternoon, the President, Dr. E. A. Kirkpatrick, of Halifax, gave his address. The Address in Medicine was made

by Dr. C. F. Martin, of Montreal, while Dr. M. G. Burris, of Nova Scotia Hospital, read a paper on "Pseudo-Muscular Hypertrophy."

In the evening the Address in Surgery was presented by Dr. S. J. Mixter, of Boston; Dr. MacCausland, of Boston, reading a paper on "Tuberculosis of the Bones and Joints, with Special Reference to Treatment"; Dr. J. A. Sponagle, of Middleton, N.S., read a paper on "An Unusual Case of Hip-Joint Disease," and Dr. McKay, of Halifax, on "Spinal Analgesia."

The morning of the 6th was devoted to the report of the nominating committee, election of officers, unfinished and new business and papers by Dr. Arthur Birt, of Halifax; Dr. A. B. Atherton, of Fredericton; Dr. P. C. Woodworth, of Wolfville; Dr. E. D. Farrell, of Halifax, and Dr. D. T. C. Watson, of Halifax; the evening being devoted to the consideration of papers presented by Dr. A. F. Miller, of Kentville; Dr. Jas. Ross, of Halifax; Dr. G. E. DeWitt, of Wolfville, and Dr. A. P. Reid, of Middleton, the Provincial Health Officer. Dr. Reid's paper discussed the "Sanatorial Treatment of Tuberculosis," and appeared in our July number.

**Winnipeg and Rats.**

That Winnipeg is threatened with a serious plague of rats is the inference to be drawn from a report which has reached us from the Health Department, which shows that an alarming number of the rodents are making trouble in several of the dairies to the west of the city and just outside the city limits. The report states that the rats are not only already numerous, but are breeding and multiplying at a most alarming rate. One dairyman recently found a nest under his dairy barn which contained 14 little ratlets that blinked in the bright sun and wagged smooth little rat tails before they were the victims of summary execution. The same dairyman states that rats are swarming under the floors of his barn where he can hardly get at them.

In another stable, built on a concrete foundation, the rodents have made a run-away in one of the walls by gnawing through every one of the 2 x 4 joists in the wall, and they scamper about as if they

had lived in Manitoba for years, occasionally coming out into the stable for their provender.

This particular case is pointed to as a strong argument for concrete floors in all dairy barns.

The invasion of rats into Manitoba from the States to the south has progressed steadily for some years past, the rodents appearing further north each year, and always in increasing numbers. Last year a few stray specimens were killed in Winnipeg, some of them in Elmwood. This latest report indicates that they are gaining a foothold close to the city and that the situation is growing genuinely serious. No action has yet been taken by the Health Department, but it is likely that the whole question of protecting the city from rats will come before the Health Committee at its next session.

**Toronto's Health Officer and the Slums.**

Dr. Charles J. C. O. Hastings, Medical Health Officer of Toronto, recently handed in his report to Ald. Rowland, Chairman of the City Board of Health. Dr. Hastings pointed out that first, a good housing by-law with provision for its adequate enforcement was needed; second (see article on the International Housing Conference and British Suburban Cities, under Meetings and Reports), garden cities with rapid transportation facilities at single fare were needed, and, third, proper city planning. The report was based upon the results of visits made by Dr. Hastings' inspectors to 4,693 houses in the city, and in part states:

"From an economic standpoint, is it reasonable to think that the mechanic and the laboring classes can be housed to as good advantage on land of city value as on land in the suburbs which is assessed at from \$1,000 to \$2,000 per acre?"

Dr. Hastings, in advocating the expropriation of the area surrounding the city for about five miles, gives the following comparative table:

|                        |               |
|------------------------|---------------|
| Toronto . . . . .      | 17,920 acres. |
| Buffalo . . . . .      | 26,880 acres. |
| Cincinnati . . . . .   | 27,840 acres. |
| Detroit . . . . .      | 23,040 acres. |
| Minneapolis . . . . .  | 34,080 acres. |
| Indianapolis . . . . . | 19,840 acres. |

"The following conditions, peculiar to great cities, are found to be present to a lamentable extent," says Dr. Hastings. "High rents are being collected for small houses, dark rooms, tenement houses, houses unfit for sanitation; inadequate water supply; impaired and filthy yards and lanes; sanitary conveniences, which, by their position, or for various other reasons, have become a public nuisance, a menace to public health, a danger to public morals, and an offence against public decency."

In speaking of the visits made to slum homes by his inspectors, Dr. Hastings says:

"Some houses were so inaccessible that they were at first missed, even by experienced inspectors. One house could be reached only by a curious tunnel-like passage from the street, down a dark and precipitous stairway, and up again into a back yard. Two houses were found built over stables with no evidence of any drainage."

He finds that the district lying between Yonge, College and Queen streets and University Avenue is the most densely populated part of Toronto. Of the 2,051 families visited in this section, 1,275 families lived in four or more rooms, 348 families in three rooms, 227 families in two rooms, 139 families in one room, 61 families in basements, and 1 family in a cellar; 108 of these houses were pronounced to be unfit for human habitation.

The report states that overcrowded, unsanitary lodging houses are increasing in Toronto. From 10 to 30 foreign men are crowded into a small house. Each pays from 75 cents to \$1.25 per week for lodging and washing, while he earns from \$1.75 to \$3.50 per day.

"Their ways are not ours," says Dr. Hastings. "Every effort must be made to familiarize our new citizens with our sanitary standards."

He reports that there are 92 tenement houses in Toronto; 447 people in the city are living in basements, and 22 in cellars. One dwelling near Niagara Street had four inches of water in the cellar; another, in the centre of the city, which rented at \$20 per month, had four feet. In the cellars and back kitchens of many houses, hens, ducks, and dogs are kept. In one basement 12 people live. Some of the houses do not even keep out the cold and wet. In one

the bedroom floor had a couple of inches or more of water on it. Two boards were laid down and the man and his wife got into bed without wetting their feet by walking on these boards. In one house of five rooms, five families lived. They kept two sewing machines, and conducted a tailor shop.

Altogether, the Medical Health Officer's inspectors condemned 390 houses: 77 in the Eastern Avenue district, 108 in the central district, 9 in the Niagara Street district, and 197 in other districts. In these condemned houses 2,133 people are now living, amid unsanitary conditions. Forty-eight houses with dark rooms were discovered. In one of these dark rooms seven people slept.

There are 1,348 dwellings in Toronto without drains; 619 of these are near the City Hall. In most of these the waste and slop water is thrown into the yard. 559 families have no water in their houses, although the rent is high enough to provide for a good supply. A row of ten houses was discovered where there was only one outside water tap for the whole ten, yet the landlord receives \$960 annually in rent.

Two hundred and forty-six "rears," or houses built on back lanes, were discovered. Some of these, being next another house or a stable, have no access to fresh air.

Dr. Hastings states that Toronto must solve the following problems connected with her slums: the lodging house evil, the tenement house, dark rooms, back-to-back houses, basement and cellar dwellings, unsanitary privy pits, lack of drainage, inadequate water supply, overcrowding, and exorbitant rents.

"Inasmuch as there is a legal rate of interest permitted to be collected, why should anyone be permitted to charge rent which is out of all proportion to the returns?" asks Dr. Hastings, "simply because he is dealing with a foreigner who is not familiar with conditions, and who is entirely at his mercy."

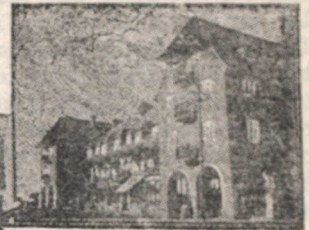
From the reports of his inspectors, Dr. Hastings estimates that 10,000,000 gallons of water are wasted daily simply because penurious landlords will not provide proper plumbing, which, in addition to inadequate intake, pumping and storage facilities, may have something to do with the water famine which occurs periodically in his city.

# INTERNATIONAL

The International Housing Conference  
and British Suburban Cities.



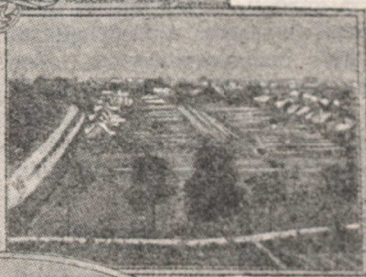
Houses for Old People at  
Hampstead, England.



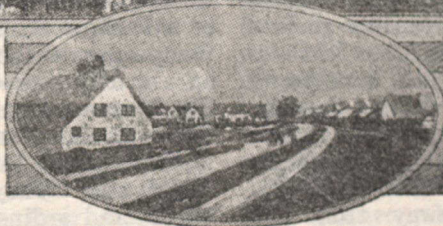
Community Shops in  
Finchley Road, Hamp-  
stead.



Cottage of Hampstead  
Within Twenty Minutes  
of London.



Beck Gardens and  
Houses at Bownville.



Ridge Road, Letchworth.

At the recent International Housing Conference in Vienna it was demonstrated that suburban cities on which ten houses per acre are built, will pay just as large dividends to the owners as other plots on which twenty houses, of similar size, per acre are built. This results from combination of various kinds. England, it was pointed out, has shown how it can be done in forty or fifty instances. The garden cities, garden villages, and garden suburbs there are solving the housing question. It has been found to be just as cheap for a man to live in his own house within twenty minutes of the heart of London as to crowd with his family into a tenement.

Several papers brought out the fact that England began some seven or eight years ago to develop the garden city idea. And there are now three kinds of settlements—the garden city, the garden village, and the garden suburb. The city, as the name implies, is built on a rather large scale. It is sufficient to itself. There are factories and stores, and everything necessary for the life of the community.

The village is the same sort of settlement on a smaller scale. Sometimes, indeed usually, it is partly independent and partly dependent for employment on some large city near by. Finally, the suburb is merely a settlement on the outskirts of some city whence people commute to work.



The fundamental idea is the same, however. In every case the settlement is co-operative. Rents are so arranged that tenants pay no more, and most pay distinctly less for an entire house in the country than for an undesirable apartment in town. Bit by bit this scheme has been worked out, transportation has been provided, and the railways and the Government officials have co-operated in such a fashion that manufacturers have found it to their advantage to move out into the country.

Within 20 minutes' ride of London it is possible now for a working man to have a house and garden at the same price he paid for an inferior tenement. Rents at Hampstead Garden suburb run from \$2 to \$2.50 a week for a house with four or five rooms, a kitchen and a garden. This means that the working man pays not more than a quarter of his income for rent. In New York the proportion of income paid for rent very greatly increases as the income diminishes, so that the poorest class pays as much as 50 per cent. of its entire earnings for a place to live.

Further off from London there are a number of other settlements, more or less suburban. Sometimes the tenants go into the city to work, sometimes they find employment in the factories which have found it to their advantage to move from the city, and what is true of London is true of Liverpool, Bristol, Birmingham, Manchester, and other large cities of England. Everywhere the movement is away from the slums back to what approximates to country life.

The charm of these settlements lies not only in their cheapness, but in the extreme beauty of their design. The property is owned in common by all the tenants, and there are architects who pass on all the buildings which may be proposed. The village is harmonious. No incongruities are permitted by the architect, and, indeed, the tenants have so keen a sense of pride in their property that they are perfectly willing to co-operate for the general beauty of the design.

By combining it has been found possible to make a great saving in various ways of building, in the laying of sewers, and in the grading of roads. Everything is done in co-operation and on a very economical basis. The idea in most settlements has been

to make perfectly straight streets and to have regular little blocks of houses lining them. In these garden cities and suburbs there has been no attempt to lay out a settlement on these stern lines.

When a hill came in the way the road went quietly around its base. No trees were sacrificed to make the way straight. The trees were preserved and the road turned. The result has been a very charming irregularity which has never been allowed to develop into eccentricity and a great saving in the laying out of the village.

The Co-Partnership Tenants Housing Council is the body which spreads the propaganda of this movement. The Co-Operative Tenants, Ltd., is the central financial body. The moving spirits of the work have been some of them financiers, some philanthropists, and some of them really representative labor men. With the exception of one or two cases the garden city movement in England has been really democratic. Only very occasionally, as in the case of a village built around one great factory, has there been a disposition to "do things" for the tenants. The control of the village, or suburb, is ordinarily rested squarely in the people themselves, and everything is on a strictly business basis. The Co-Operative Tenants Housing Council found it a waste of time, however, to appeal to the working people before the scheme was well under way. They had no money to put into it and ordinarily were not interested until they saw what the results would be.

On the other hand, financiers found it a perfectly safe investment for their money as well as an interesting thing to do. So they first got the money and after that had never any difficulty in getting all the tenants they could accommodate.

None of the bugbears held up before people who planned such co-operative schemes have turned out to be really serious. The working men liked the country, found the atmosphere of the suburb, or the village, or the city quite as congenial socially as that of the tenements, and ran their own affairs in a perfectly well-ordered manner without any more bickering than occurs in the ordinary town council, and perhaps less. There is usually a central amusement hall and a good deal of social life.

But when the first garden city began its career there were a good many rather odd people who came to settle. Some wore mediæval garments and some went bare-footed, and all had a new and infallible method of reforming the world. Tact was needed to handle the situation, and everything came right in the course of time.

Now the tenants are ordinary, everyday folk just like the rest of us. Nearly all of them had bad living quarters in the city. Some of larger means live in the settlement because they like it better than any other place. There is an attempt, and it has been quite successful, not to let the villages become class bound, not to have a settlement given over entirely to people of a certain social grade.

The financial organization is done in this fashion: The British Government is empowered to loan money at  $3\frac{1}{2}$  per cent. on all schemes that are for the public good. They will loan up to 66 2-3 per cent. of the value of the property. The co-partnership tenants get this loan, which is sufficient to start the work. Loan stock is issued bearing a fixed interest at the rate of 4 per cent., and ordinary shares with a higher rate of interest are also issued.

No tenant can be admitted to such a garden settlement unless he owns \$250 worth of share stock. As the possession of so large a sum as this is not to be expected of poor people, it is made very easy for them. They pay a very small sum down and then the interest on their shares is credited to them until \$250 has been paid into the treasury, after which they withdraw their annual interest in cash.

Two hundred and fifty dollars is the minimum value of stock a tenant may hold in a settlement. After the minimum has been paid in the tenant is encouraged to increase his holdings in the society until he has an amount of stock equal to the value of his house. Thus, though no tenant owns his house by itself, as it were, he owns that much property in the community, and, of course, he is entitled to live in the same house as long as he is a member of the settlement.

On the other hand, if he wishes to leave the community his house is at once taken over by the society. He has no fear of having his house unlet or of selling at a loss. He can retain his shares and draw his

interest if he wishes it, provided the society does not exercise its power to pay him out at par when he leaves.

The central body has drawn up these plans very carefully, and they are the result of years of experience. They work out perfectly, and every new community that is started to-day finds its problems settled for it. There is no floundering around and experimenting and failing. Within three years after the organization of the Co-Partnership Tenants the holdings of the society were more than two and a half million dollars, and since then the number of societies has increased two or three times over.

Only one or two of the most beautiful settlements of this kind are not democratic; these are among the garden villages. There is only one that might really be called philanthropy, not business. That is Port Sunlight, a very beautiful place on the River Mersey, near Liverpool.

The manufacturer who built that has made it extremely beautiful. He has installed hospitals, schools, kindergartens, playgrounds, gymnasiums, libraries, recreation centres, everything that could be desired, and has built charming houses which he lets at a small rent. He does not get a money return from the money he has invested, but he says that he finds his advantage in the increased efficiency of his workmen.

There is another village not far away, built also around a great factory. That is more democratic and pays something like  $3\frac{1}{2}$  per cent. on the owners' investment. There are several villages of this kind, but most of the settlements are run in a way that no person, however independent, need take exception to, even those which centre around a large factory.

These villages are interesting to show what can be done in the way of turning factories out of the cities into the country. The British Government encourages this sort of thing, and so do the railways. When a factory removes from the city the railway will run a siding up to its door, thus making the transportation cheaper; or, when that is not possible, the manufacturers will use one of the many canals which the Government has built to facilitate this return to the country. In fact, so many things are done to make it easy for the

manufacturers to work away from the city that they are every year turning to the country in large numbers.

The garden city, of which the settlement at Letchworth is an example, is the garden village plan in a very comprehensive and democratic way. The garden city centres around not one, but a score of factories. The community is quite complete in itself. Letchworth is the largest example of the scheme in England, and its success has been quite phenomenal.

Of course, there have to be transportation facilities to get to garden suburbs. London does pretty well in this way. There are working people's fares in the morning and evening hours, which are one-half what is charged in the middle of the day. A man can go from Hamstead suburb, for instance, to the heart of London for three cents.

All the settlements have co-operative stores. This is a scheme quite distinct from the garden idea, though always used in connection with them. The Rochdale co-operative stores are very widespread in England, and the society has established one in every garden settlement. So the tenants get back their rent in dividends and receive also a dividend from the grocery stores.

#### **The Dresden International Exhibition and German State Insurance.**

In Dresden there is now going on the world's exposition of hygiene and health, with kaiserliche patronage and the attendance of one knows not how many imperial councillors and geheimraths.

Not the least interesting exhibit at the show is the section illustrating the German system of state insurance. The walls of the building set aside for the purpose are hung with maps showing the frequency of accidents, disease and death in all parts of the empire. These are interspersed with photographs of new safety devices and protected machinery. And the corners are decorated with plaster figures of working men and women, all handsome types proudly proving that labor, in Germany at least, is no soul-wreaking curse, but the veriest

blessing, to judge from the rounded cheeks and the smiles on the faces of the models.

Supplementing these are models of hospitals and sanatoria scattered over the empire, for the express use of working people. They are replete with medical baths, gymnasias, reading and recreation rooms. At the end of the year 1910 there were 60 of these institutions, and in the year 1909 over 34,000 working people were treated in them, 20,000 of them for diseases of the lungs alone. And one tuberculosis hospital — that in Wasach, Wurtemberg — forms a special exhibit all to itself, probably the most imposing and important of its kind in all Germany.

The movement against alcoholism, still in its infancy in beer-drinking Germany, enjoys ample space all to itself. The national beverage is here treated to some hard knocks, and the advocates of "liquid bread" are left mighty few legs to stand upon. The visitor is informed that 29 per cent. of the imbecile children of Germany are in that unhappy state because of intemperance on the part of their parents. There are charts hanging up showing how the habitual use of alcohol lowers the working power of the body. It is shown that in Leipsic every 100 drinkers have 123 cases of illness every year, while the temperance advocates have only 49 per hundred. Statistics laboriously collected by Professor Demme show that in selected groups of 10 families of temperate habits, only 18 per cent. of the children die young or are abnormal and degenerate. In the anatomical department are vivid and gruesome models of alcohol-saturated livers, stomachs, kidneys and hearts, and on the walls are pictures of inebriates in the throes of delirium tremens. At the same time there is no total fanaticism about these exhibits, no appeal to the feelings. It is nothing but the impartial inexorableness of the photographer and the statistician.

The exhibition is being widely visited, alike by the Germans and the strangers within their gates, and there is small doubt but that benefit commensurate with its extent and elaborateness will flow from this unique congress.

## UNITED STATES

**The First Recipient of D. P. H. at the University of Michigan.**

The honorary degree of Doctor of Public Health was conferred upon Dr. William Augustus Evans, of Chicago, at the recent 67th annual commencement exercises of the University of Michigan. This is the first time this degree has been conferred at Michigan, and in honoring the Chicago physician, President Hutchins, of the university, said:

"The university, recognizing the inestimable value of preventive medicine to the people, has recently provided for a course of instruction leading to the degree of Doctor of Public Health. It is certainly fitting that the first recipient of this degree should be Dr. William A. Evans, of Chicago, a man who, for a number of years, has controlled the sanitation of the metropolis of the northwest, whose service in that regard has been conspicuous for its efficiency."

The courses leading to the degree of Master of Public Health and Doctor of Public Health have but recently been approved by the Board of Regents of the University of Michigan, and will be offered for the first time next fall. The only other universities in the United States offering these courses are Pennsylvania, Columbia, and Harvard. Some work in this course is demanded of all physicians practicing in Great Britain, and Canada is falling rapidly into line.

At the University of Michigan candidates for either degree must first have the degree of Bachelor of Science or Bachelor of Arts, and the further degree of Doctor of Medicine. The course leading to the degree of Master of Public Health is of one year, covering work in advanced bacteriology and parasitology, practical hygiene, physical education, sanitary engineering, building, sanitation, hydraulic work, autopsy technique, special pathology of infectious diseases, social and vital statistics, sanitary legislation.

The moral character of applicants for these degrees must be shown to be above question. The examination in the courses before the degree is conferred is both the-

oretical and practical. The candidate for a degree must carry out a piece of original investigation of sufficient value, present a thesis on the same, and successfully defend this thesis.

The course leading to the degree of Doctor of Public Health is of two years, identical with the one described above, but the second year must be spent in research work and a second thesis prepared and defended.

Dr. William A. Evans, as Health Commissioner of Chicago, transformed the Department of Health from little more than a name to one of the most useful branches of the city government. In scope and size it was increased three times. In the number of men and equipment it was doubled. In the matter of efficiency it became 50 to 75 per cent. better.

Among the new lines which Dr. Evans inaugurated, the bureau of publicity and education probably stands foremost. He has always maintained that the chief work of the Health Department in its prevention of disease lies in the education of the people. The bureau published a weekly health story in popular style and distributed it throughout the city. A corps of lecturers was established by Dr. Evans, who invited the organizations of the city to avail themselves of the department's lecturers. He himself gave on an average one lecture a day throughout his term of office.

Dr. Evans also enlarged the scope of the weekly health bulletin, eliminating much of the dry technical and statistical matter and substituting for it advice on health topics of more service to the public. It was probably the foremost journal of its kind in the world, and has been widely copied. Another branch of the educational side of the department was the bulletin board service which he started. Weekly health bulletins were posted in many of the factories, department stores, and commercial houses in the city.

Probably the most discussed of his innovations in the department is his work on ventilation and impure air diseases, a subject formerly entirely neglected by the department. He showed that the impure air diseases, such as pneumonia, tubercu-

losis, and bronchitis, caused ten times the number of deaths as smallpox, diphtheria, and scarlet fever, diseases which had formerly taken up the greater part of the efforts of the department.

Dr. Evans took up the question of tuberculosis not only from the educational side, but from the milk and housing side. He was instrumental in the establishment of the new Chicago municipal tuberculosis sanitarium. The ordinance requiring the milk sold in Chicago to come from cows tested for tuberculosis or else to be pasteurized came only after a hard fight by Dr. Evans.

Dr. Evans was personally responsible for a crusade to take bakeries and restaurant kitchens out of basements. His idea was to furnish the employees better sanitary surroundings and the people a better quality of food. The bureau of food inspection was increased during the term of Dr. Evans from a body of six or seven men to a bureau of eighty men, the majority of whom are working in the field.

The system of examining school children, which was formerly one merely for contagious diseases, was changed by Dr. Evans so that the children were examined for all physical defects. He brought to the department a squad of sixty nurses to work among the school children. Among the other things which he established was a contagious disease hospital for the treatment of diphtheria patients. He also established the Lake Michigan Water Commission, to prevent the pollution of Lake Michigan.

There was more real organized effort to prevent infant mortality in Chicago during the term of Dr. Evans than ever before. He organized the infant welfare commission from various clubs throughout the city, which has been instrumental in bringing about the organizations of similar commissions and exhibitions in other cities including Montreal. And one of his last acts was to influence the council to appropriate money for the establishment of a bureau of infant hygiene.

#### **Exhibitions of the National Association for the Study and Prevention of Tuberculosis.**

Exhibitions, showing in graphic form the prevention of consumption, have been

shown in every State in the United States, except Nevada, Arizona, New Mexico, and Wyoming, and also in most of the Canadian Provinces, and in Mexico, Porto Rico, and Cuba, according to a bulletin issued by the United States National Association for the Study and Prevention of Tuberculosis. The bulletin also shows that 25 States and 16 cities have permanent and travelling exhibits besides the two operated by the National Association itself, the total number of such displays being over 200, including about 150 small school exhibits.

The first tuberculosis exhibit in America was shown by the Maryland Tuberculosis Commission in January, 1904. In 1906 there were four such exhibits. To-day practically all of the larger cities of the country have such displays, and in twenty-five States comprehensive campaigns have been carried on with them. These exhibits are visited annually by millions of people.

The American Tuberculosis Exhibition of the National Association is completing six years of continuous service, during which time it has been shown under three flags, in the United States, Mexico and Canada, and has been displayed in 21 States, including every Southern State east of the Mississippi, except West Virginia, Maryland and Delaware. The Western Tuberculosis Exhibit of the National Association, just closing its season in Butte, Montana, has been shown in Illinois, Kansas, Nebraska, Missouri, Arkansas, Oklahoma, Colorado, Utah, Idaho and Montana.

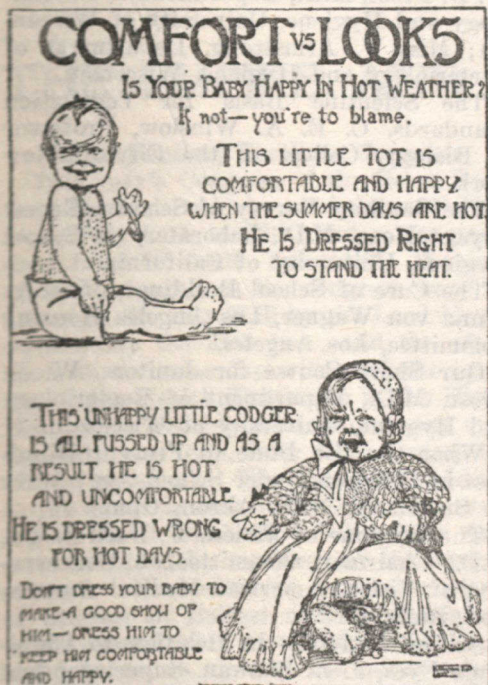
As a result of the general educational campaign through the various exhibitions on tuberculosis, millions of pieces of literature have been distributed; millions of people shown how to prevent consumption; and several States and cities have been roused to take legislative action against this disease.

#### **Chicago and the Babies.**

Dr. George B. Young, Health Commissioner, says the proper care of babies is one of his hobbies and that he and his department will give infants a good deal of attention from now on.

The problem of keeping the baby healthy and comfortable during the hot weather engrosses the attention of many mothers,

but the solution of the problem, according to Dr. Young, lies only in common sense clothing and perfect cleanliness, with a reasonable degree of caution in regard to what the child eats and drinks.



By means of pictures, such as the one on this page, illustrating the difference between the cool, comfortably clothed baby and the hot, stuffy, dressed-for-show infant, Dr. Young has made his point in regard to the proper care of the baby in summer.

The hot weather rules are as follows:

First—Dress the baby in a clean cotton diaper, a gauze shirt, and a light cotton slip. On extremely hot days the cotton slip may be dispensed with. If the baby is delicate, more clothes may be required. Abdominal bands should not be used unless ordered by a doctor. Pinning blankets should be discarded; baby should be allowed free action of its legs.

Second—Baby must have a tub bath every morning about the same hour, but never immediately after feeding. Regularity counts for much. If no bathtub is available use a common tub, but have it clean. The water should be a trifle (2 degrees Fahr.) warmer than the baby's body.

Use a thermometer to ascertain the temperature. Babies will enjoy baths in the right kind of water. Use a good non-irritating soap. In hot weather you may add to the baby's comfort by also giving it a late afternoon sponge bath. If you permit your baby to crawl on the floor, keep the floors clean and wash the baby's hands after it has crawled.

Third—Baby requires lots of fresh air; the more it gets the better its chances of being a strong, healthy baby. Of all the pure things the baby must have there is none more important than pure air. In hot weather keep the baby out of doors as much as possible. Permit naps in the open air, in a shady place, removed from dust and protected from flies. You can rig up a good sleeping place with chairs, and over these hang mosquito netting. When the baby sleeps indoors see that the windows are opened at night as well as day. Never have the baby sleep in the same bed with an adult.

Fourth—There seems to be a woeful lack of appreciation of the fact that baby must have water to drink. Many times when a baby cries all it wants is a drink of water. To be safe, use water which has been boiled and cooled. Never put ice in the water; it must not be ice cold.

Keeping the baby comfortable, happy, and well in hot weather is not a difficult proposition, and it entails much less worry on the part of the mother than does the care of a baby which is cross, irritable and sickly through neglect of these considerations.

#### The United States National Education Association.

The forty-ninth convention of the United States National Education Association in San Francisco was an event of unusual interest. It was in fact the deferred convention of 1906 for which every preparation had been completed by San Francisco when the destruction of the city made a meeting for that year impossible. At once an appeal was filed by California that the convention abandoned for that year should be held in the new San Francisco as soon as rebuilt. Therefore, the educational road last month led across the continent to the Golden West. The opening day of the conference was Saturday, July 8. The

next day was educational Sunday, and special sermons were preached in all of the city's churches. The real business of the meeting began on Monday, July 10, when at 3.30 in the afternoon the first general session was held in the Greek Theatre of the University of California. Among the interesting papers read, some of which have been handed to *The Public Health Journal* for later publication, were the following:

Progress in Public Education, Francis G. Blair, State superintendent of Public Instruction, Springfield, Ill.

The Health of School Children, Robert J. Ally, president University of Maine.

Physical Training in Public Schools, J. G. Collicott, Superintendent of Schools, Tamoca, Wash.

Playgrounds and Health, L. H. Weir, Field Secretary, Playground Association of America.

Laboratory Instruction in Hygiene and Public Health (with demonstration), William Freeman Snow, Secretary State Board of Health, Sacramento, Cald., and Ora Boring, Sacramento, Cal.

To What Extent Does Manual Arts Training Aid in Adjustment to Environment?, Clifford B. Connelley, Dean, School of Applied Industries, Carnegie Technical Schools.

The Public School Domestic Science Department as an Influence in the Community for Enforcing the Observance of Pure Food Laws, Civic Cleanliness, etc., Mattie P. Clark, Polytechnical High School, Oakland, Cal.

Health and Ventilation, Luther H. Gulick, Director of Department of Child Hygiene, Russell Sage Foundation.

Effects of Low Temperature and Open-Air Class Rooms upon Mental Alertness of Pupils, Frank L. Bruner, Assistant Director of Department of Child Study, Public Schools, Chicago.

How to Secure Good Ventilation in School Rooms, Luther H. Gulick, Director of Department of Child Hygiene, Russell Sage Foundation.

Sex Hygiene, Frances M. Greene, M.D., 5 Avon Street, Cambridge.

Report of Committee on Efficiency of Janitor Service in School Buildings, Helen C. Putnam, M.D., Chairman of Committee of American Academy of Medicine to In-

vestigate the Teaching of Hygiene, Providence, R.I.

Bacteriologic Tests of Methods of Cleaning, Ernest Bryant Hoag, Laboratory of School Hygiene, University of California; W. D. Frost, M.D., Department of Bacteriology and Hygiene, University of Wisconsin; Miss V. Armstrong, Department of Bacteriology and Hygiene, Wisconsin.

The Scientific Basis for Ventilation Standards, C. E. A. Winslow, Professor of Biology, College of the City of New York.

The Sanitary Survey of Schools, Ernest Bryant Hoag, M.D., Laboratory of School Hygiene, University of California.

The Care of School Buildings, Miss Johanna von Wagner, Los Angeles Housing Committee, Los Angeles.

Our Short Course for Janitors, W. D. Frost, M.D., Department of Bacteriology and Hygiene, University of Wisconsin.

What Can Be Done to Prevent Blindness in Children Under School Age? Mark D. Stevenson, M.D., Akron, Ohio.

The Hygiene of Vision, F. Park Lewis, M.D., Chairman Committee on Conservation of Vision, American Medical Association, Buffalo, N.Y.

School Activities in Relation to Children's Eyes, J. A. Shawan, Superintendent of Schools, Columbus, Ohio.

Causes of Backwardness and Mental Deficiency in Children, and How to Prevent Them, H. H. Goddard, Director Laboratory of Research, New Jersey Training School for Feeble Minded Children.

What Constitutes a Sub-Normal Child, and to What Extent Can he be Trained? Vinnie C. Hicks, Special Psychologist, Public Schools, Oakland, Cal.

The Physiology and Psychology of the Deaf Child, Charles D. Lowry, District Superintendent of Schools, Chicago.

Forests, E. T. Allen, Forester and Secretary of the Western Forestry and Conservation Association, Portland, Ore.

Waterpower, Lands and Minerals, Geo. C. Pardee, former Governor of California.

National Vitality, William F. Snow, M. D., Secretary California State Board of Health.

The Teacher's Part in Conservation, Frederic Burk, President State Normal School, San Francisco.

Societies meeting with the United States

National Education Association were:

- I. Federation of State Teachers' Associations.
- II. The American School Peace League.
- III. The School Garden Association of America.

IV. The Religious Education Association.

V. Educational Press of America.

An informal meeting of the Educational Press Association was held similar to the one at the Boston convention last summer.

## THE EMPIRE AND THE WORLD ABROAD

### Royal Sanitary Institute Congress.

This year's Congress of the Royal Sanitary Institute, which was held at Belfast from July 24th to 29th, had as its president Lord Dunleath, D.L., J.P. Members of and delegates to the congress were received in the City Hall by the Lord Mayor on Monday the 24th inst., and the afternoon of the same day witnessed the opening of the Health Exhibition in the Ulster Hall by his lordship, who, in company with the lady mayoress, later held a reception of the members. The inaugural address to the congress was delivered in the evening by Lord Dunleath. Subsequent days were occupied by meetings of the various sections. Excursions to numerous places of interest in Belfast and the immediate neighborhood were arranged, one of especial interest, in view of the recent report of the Royal Commission, being to the Belfast sewage purification and outfall works.

### Seventy-Ninth Meeting of the British Medical Association.

The chief event of last month in the British medical world was the annual meeting of the British Medical Association, which this year was held at Birmingham, under the presidency of Professor Robert Saundby, professor of medicine in the University of Birmingham. The presidential address was given on July 25, and the scientific business of the meeting—arranged under sixteen sections—was conducted on the three following days. The annual address in medicine was delivered by Dr. Byrom Bramwell, president of the Royal College of Physicians, at Edinburgh, whilst the corresponding address in surgery was given by Professor Pordan Lloyd, of Birmingham. This was the seventy-ninth congress of the kind, and considerable interest attached to its meeting

in a centre connected with one of the promising provincial medical schools founded in recent years.

A number of extremely interesting and important subjects were up for discussion in the various sections, and, as on previous occasions, the interest of the debates was added to by the presence of various distinguished foreign visitors. These discussions, amongst other things, dealt with the treatment and prevention of measles, the X-ray treatment of ringworm, the medical and surgical uses of radium, the causes of deafness, and dietetics. In the section of odontology three subjects of special importance to the public health were debated, namely, "School Dentistry and Conservative Dental Treatment Generally from the Physician's Standpoint"; "Dentistry and the Public"; "The Bacteriology of the Toothbrush." Not unnaturally, an important feature of the section on Medical Sociology was a discussion on State insurance, with special reference to the Insurance Bill, which was reviewed editorially in *The Public Health Journal* for June last.

### The Public Health (Scotland) Act (1897) Amendment Bill.

The object of the bill is to give statutory commissioners power within their own districts to lay and carry water pipes in exactly the same way as a local authority has power within its district under the Public Health Act to lay and carry sewers. Sir Frederick Banbury opposed the bill, which was presented last month for Parliamentary consideration, and wished to alter it so that a proprietor might have power to prevent the use of his land for water mains. The Lord Advocate refused to consent to any such amendment, and



after discussion it was negatived, and the bill was read a third time and passed.

#### Public Health (Ireland) Bill.

Last month in the British Parliament the Public Health (Ireland) Bill came in for a lively discussion. The bill provides in its first clause, which is the pith of the measure, for the inspection of meat on sale in each urban district, so as to protect the consumer from diseased carcasses. The bill was required because in some districts where public slaughter houses have been erected by the local authority, the butchers have not used them and there has consequently been insufficient protection against the sale of meat unfit for human food. The power to force inspection under the bill will, it is hoped, lead to more sanitary methods of slaughter and prevent diseased, especially tuberculous, meat, being sold. Mr. Booth and Sir F. Banbury criticized the proposals of the bill, but after considerable discussion all amendments were withdrawn, the report stage passed, and the bill read a third time.

#### State Aid for Research.

The President of the British Local Government Board has authorized the following special researches to be paid for out of the annual grant voted by Parliament in aid of scientific investigations concerning the causes and processes of disease.

1. A research into the causes of premature arterial degeneration in man, by Dr. F. W. Andrews, pathologist to St. Bartholomew's Hospital.

2. An inquiry by Dr. J. H. Thursfield, of St. Bartholomew's Hospital, into the causes of death in measles.

3. A comparison by Professor Nuttall, F.R.S., Quick Professor of Biology at the University of Cambridge, of the number and kind of fleas found on rats.

4. A continuation by Dr. C. J. Lewis, of Birmingham University, of his investigation into the degree of prevalence and the characteristics of micro-organisms known as non-lactose fermenters in the alimentary canal of infants.

5. An investigation into the same subject by Dr. D. M. Alexander, of Liverpool University.

6. An inquiry by Dr. Graham Smith, of Cambridge University, into the incidence

of non-lactose fermenters in flies in normal surroundings, and in surroundings associated with epidemic diarrhoea.

7. A study by Dr. F. A. Bainbridge, of the Lister Institute, of the anaerobic bacteria in the alimentary canal of infants.

8. An investigation by Dr. Graham Smith into the possibility of pathogenic micro-organisms being taken up by the larva and subsequently distributed by the fly.

#### An Address at the Institute of Hygiene.

Extraordinary eccentricities of diet were recorded by W. Soltan Fenwick, M. D., in an address delivered at the Institute of Hygiene in London recently.

Various odd devices, he said, were resorted to in former days to stimulate a flagging appetite, such as the drinking of spiced wines, the dropping of coins of old metal down the back, or sometimes a little exercise or gentle altercation was indulged in between the courses to "settle the food in the stomach." It became the habit at a later period to scratch or fondle the lobe of the right ear to stimulate the flow of gastric juice, as the nerve which supplies this part of the skin has a direct connection with the great nerve of the stomach.

Every one was said to possess the stomach he deserved, and there could be no doubt, that, within certain limits, our digestions were of our own making. The stomach was the most educable organ of the body, and one could reduce its activities to a degree which was only just compatible with the preservation of life, or could train it to perform twice the amount of work which nature ever intended it to do. An average man at the age of 50 had consumed about 25 tons of food, but some people easily consumed three times that amount. They never knew when they had had enough. There was an authentic case of a little girl who had to have a keeper to prevent her from eating the household goods. One day she consumed a raw cod-fish, several pounds of candles and a quantity of butter before she was caught. A boy, when placed under observation, got through 100 pounds of raw meat in twenty-four hours. Attempts to cure this insatiable hunger invariably failed. Another lad who was shut up and kept without

food was found to have eaten practically all his clothing.

"Many people," continued Dr. Fenwick, "possess an extraordinary relish for common salt. This often has the curious effect of increasing a person's weight. One young lady who devoured immense quantities of salt would increase as much as ten pounds in twenty-four hours. If you can persuade these people not to take salt so much they get well; if not, they die of dropsy. Many girls will devour slate pencils, chalk and vinegar because nearly all these have at some time or other beautifying properties."

Through eating meat on which flies or other insects had laid their eggs, or, similarly, green stuff which might contain insects, people often harbor larvæ in their stomachs. A wire screen was no real protection for meat, as flies dropped their eggs through it. Early examples were recorded in which strange insects and animals had been eaten and lived afterward. These included beetles, frogs, snakes, salamanders, leeches and the common garden slug.

Young children often acquire abnormal tastes, and one of the most common of these is paper eating. Hair eating is confined to girls, and a number of instances are on record in which death resulted from the formation of a great ball of hair in the stomach. Balls of thread, flock, tow or matting fibre were sometimes found in the stomachs of those who worked with these materials.

Substances, too, which were often taken, in the first instance, for amusement by frequent repetition led to insatiable desire. Thus sword swallows, knife eaters, glass chewers and the like not only continue their practice for years, but actually got to relish them. The speaker mentioned the case of a seaman who could not resist the temptation to chew up and swallow a tumbler after he had drunk its contents; and those of two boys, one of whom ate sand when he could get it, while the other begged, borrowed or stole watches in order to swallow them.

#### How Germany Grows.

The industrial development of Germany during the last quarter of a century has been the wonder and envy of all other Eur-

opean nations. The primary reason for its growth lies in the fact that since the establishment of the empire its population has increased nearly 25,000,000 — from 41,000,000 in 1871 to 65,000,000 by last year's census.

Another important factor is the improved health and increased longevity of the Germans, owing to improved health conditions in general. Better health means more time and ability to conceive and carry out business plans.

From the Emperor down, the authorities of Germany have labored for years to stay the flow of emigration to the American continent. As a result the last few years show a marked decrease in emigration to other places than German colonies.

But, while Germany has succeeded quite well in keeping her young men from going to other countries, she has not been able to keep them from leaving the farms for the cities and towns. In 1882 19,200,000 people, or 42.5 per cent. of the total population, were engaged in agricultural pursuits. After a quarter of a century she had only 17,700,000 people, or 28.7 per cent. of the population, on the farms.

The industrial increase in Germany has kept pace with the increase in population. While the "country population" has decreased 1,500,000 since 1882, there has been a great increase in the number of persons engaged in industrial pursuits in the towns and cities. So great has been the removal from the farms that only 43 per cent. of the town population is indigenous, the emigrants from the country forming 57 per cent. of the population.

In striking contrast with the statistics showing the decrease in the number engaged in agricultural pursuits are these: In 1882 some 16,100,000 persons were occupied "in trade," or 35 per cent. of the population of the empire. In 1907 those "in trade" numbered 26,400,000, or 42.7 per cent. of the population.

Ten per cent. of the people, or 4,500,000, were engaged in "commerce and traffic" in 1882. In 1907 the percentage had increased to 13.4, or 8,300,000 people.

In the order of their commercial importance, the leading branches of trade in Germany are mining, the stone and earth industries, machinery, soaps, oil, chemicals

and the textile and paper industries. Germany's greatest single industrial plant is the Krupp steel plant at Essen. It gives employment to 70,000 persons, which means maintaining a population of about 240,000.

The opponents of "race suicide" can find no fault with Germany. Its births in excess of deaths almost account for the whole increase in population since the formation of the empire, the rest of the increase being due to the improved health conditions.

#### China and Modern Medicine.

China is a perpetual menace to the world's health. Every ship which sails from a Chinese port is a possible carrier of cholera, bubonic plague and even of leprosy to the outside world. China has all the diseases of Europe and America and many others. Against them it has no adequate medical protection, according to a report of Dr. M. R. Edwards, head of the branch of the Medical School of Harvard University which is being established in Shanghai, China.

The establishment of the Shanghai school is the beginning of a world-wide movement to combat present conditions. China is only beginning to awaken to the necessity of modern medicine. Dr. Edwards found scarcely more than twenty-five well trained native physicians, and there are only 1,000 foreign doctors in the empire.

He found a young medical student studying a book of anatomy written 2,000 years ago. The book stated that the mouth opened into the heart, the heart into the stomach, and other such absurdities. No one has dissected in the 2,000 years on account of the danger of disturbing the spirit of the body, "which would be unhappy in the afterworld."

The spirit system is the foundation of their whole theory of medicine. They have no surgery, no physiology, no bacteriology, no science of medicine. Dr. Edwards saw a Buddhist priest treat a case of typhoid fever. The man burned a pile of paper on which were written prayers to placate the spirits of the disease, while his son wandered through the house beating a tambourine to dispel the spirits. As an example of their ignorance, the same word in Chinese means artery, nerve and

tendon. There is no distinction.

China awoke some years ago to the necessity of economic and educational change, but it is only during the last three years that the necessity for the adoption of western medicine has become apparent to the Chinese.

This state of affairs is a world menace. Three years ago bubonic plague was brought to our Pacific coast by ships from China; last winter Asiatic cholera was carried to Hawaii, and just now another little understood Chinese disease is epidemic on our Pacific coast. It is amœbiasis, or tropical dysentery, and it is more dangerous than cholera because it is less understood.

The Harvard school is a part of a world movement to remedy this condition. Work of three kinds will be attempted. First, there will be the laboratory for research work. Five men will give their time to this. Then comes the educational work of the institution, which will be carried on in conjunction with St. John's University, and last of all will be the effort made in co-operation with the Chinese Government to do the same sort of public health work which is being done in this country.

Public health officials will be instructed and the attempt will be made to clean up the coast cities.

The attitude of the Chinese toward modern medicine — the superstitious dread of dissection — is passing away and it will give way more and more.

The outbreak of bubonic plague in Manchuria has done much to change their views as to this. Toward the last they consented to having the bodies of the victims burned and even permitted dissection. The Government officials went in and saw the dissection of the plague sufferers.

A few years ago there was the same opposition to the building of railroads because the spirits of their ancestors would be disturbed. The convenience of rapid transit has removed this prejudice, and similarly the advance of medicine is hoped for. Already people travel 400 and 500 miles to reach one of the few modern hospitals.

Educationally and economically the advance has been great. There now are 14,000 modern schools of all descriptions, ranging from a grammar school to the universities.