extent. The subjects of immunology and serology are presented by a series of practical studies and in classes where the student is himself responsible both for a theoretical discussion and for a working demonstration. Parasitology is of relatively minor importance in Canada. A laboratory course of 30 hours is offered. A laboratory course in public health chemistry of 60 hours is designed to familiarize the student with the chemical methods for the examination of milk, water, and sewage, and the principles of water purification and sewage treatment. Lecture and laboratory courses in epidemiology and vital statistics comprise 220 hours; lectures and demonstrations in physiological and industrial hygiene, 65 hours. The time allotted for field work, including attendance at clinics, is 250 hours; sanitation, 30 hours; history of preventive medicine, 10 hours; public health administration and nutrition and dietetics, 42 and 30 hours respectively.

The emphasis upon the subjects taught has shifted in a striking manner during recent years in Canada. The time allotted to the study of environmental factors or sanitation has become less, while the personal factors or preventive medicine has received greater emphasis. The emphasis has thus shifted from the study of the influence of the environment to that of the factors concerned in the physiology of the individual—from sanitation to preventive medicine and physiological hygiene. This change has been brought about partly because of the appreciation of the achievements of sanitary engineering and partly because of the success resulting from the application of the knowledge acquired through researches in the fields of infection and immunity, epidemiology, physiology, and nutrition.

TRAINING OF THE SANITARY INSPECTOR.*

BY

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THE great advances in preventive medicine during the last twenty years in Canada have been brought about largely because of the efforts of those having direction of public health activities, federal, provincial, and municipal, in keeping themselves abreast of new developments in the field of sanitation and hygiene.

A quarter of a century ago none of the medical schools in Canada specified in its curriculum a special training in the branches of sanitary science having to do with the promotion and protection of health to enable a prospective graduate, in whatever community he settled, to utilize his accumulated knowledge and skill to the best advantage of himself and those around him. The care of the public health in those centres where the statute requiring the appointment of a health officer was not disregarded entirely was not infrequently entrusted to a recent graduate who needed the appointment and the stipendiary pittance attached, as a stepping-stone to something higher, or in other cases to some older member of the medical fraternity whom fate or destiny had doomed to failure in the practice of his profession.

In only two decades momentous changes have taken place, both in public opinion and in the attitude of the doctor himself towards the prevention of disease. To-day it is being recognized by progressive physicians and by most progressive units of popular government, but particularly where people are congregated in large cities and towns, that prevention is by far "the most reasonable, feasible, and most economic method in dealing with disease," also—and this is of great importance for the future—that the State is responsible for the physical and mental health of its citizens in as full a measure as it is for their education.

What sanitary science has accomplished in dealing with the great fatal diseases of former days, such as small-pox,

malaria, yellow fever, puerperal fever, typhoid and typhus fever, diphtheria, and tuberculosis, may be ascertained by every reader of the daily newspaper and the popular magazine throughout the land. It is not improbable that the life and work of such men as Jenner, Pasteur and Lister, of Trudeau and Koch, of Walter Reid and Gorgas and Manson, will, in the not distant future, become the literature of the boy at the public school.

Already the great wave of publicity which is being given to the spectacular accomplishments in the field of prevention, not to speak of the ever-increasing new and astonishing experiments in the field of research, has developed a critical judgement in the public mind which demands capability and efficiency in those selected for the direction of public health administration. No longer in our larger cities are the part-time, poorly paid, haphazard services of the private practitioner considered adequate or effective for this task. Experts in the solution of our social and economic problems, as viewed from the standpoint of health, are required for the duties involved.

Our medical schools have not been unheeding of the situation which has confronted them. Not only in Great Britain, but in this country as well, these schools have provided courses both in the principles and in the practice of preventive medicine which afford to the student a working knowledge of hygiene and sanitary science sufficient to warrant him in the assumption of the duties which pertain to the office of part-time health officer in the towns and rural communities to which most of our young physicians tend to move, and which may also serve as an introduction to the training for the diploma in public health, should he subsequently decide to devote himself to one or other of the many health specialties which present opportunities in increasing numbers every year to those who are qualified to accept them.

The evolution, or rather radical reform, which has taken place in our conceptions of the education and standards of training necessary to increase the effectiveness of the medical officer of health has been equally discernible in all the professional services subsidiary to his work. The more progressive the health department the more insistent is the demand for the trained specialist who shall devote his time and energy to some particular phase of public health protection. Epidemiologists, laboratory workers, school medical officers, directors of maternal hygiene, child hygiene, and infant hygiene, dentists, psychologists, psychiatrists, and public health nurses, cannot hope to meet successfully the problems which every enlightened health official has to face, unless and until, added to an initial capacity plus a good preliminary education, they are armed with a technical training sufficiently broad and exacting in its requirements to enable them to meet their own responsibilities in special lines, and, at the same time, to co-ordinate, where necessary, their activities with those of other official or voluntary agencies.

With respect to the education and preliminary training of the sanitary inspector in Canada we must admit that the state of affairs which I have sketched perhaps too optimistically as existing in the more technical branches of the public health programme does not everywhere apply, being in many sections of the country neither satisfactory at the present time nor promising hope for the immediate future. In the Western Provinces, local boards of examiners have been appointed to conduct the examinations of the Royal Sanitary Institute, and courses of lectures and demonstrations are periodically provided where a sufficient number of students register. In this way the local Departments of Health in the larger centres of these extensive areas have been able to secure competent persons to take charge of municipal sanitation, including food inspection. There are far too many instances, however, throughout the Dominion where the sanitary inspector is the Cinderella of the health department, dreaming among the ashes of the past. Too often we find him bound like Sisyphus of old to the perfunctory performance of his meaningless and unproductive task, and prevented by the limitations of his education and training from becoming the integral factor that he ought to be in the machinery of disease prevention. In many villages, towns, and townships, he may, in addition to his regular duties, be

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constable, assessor, tax collector, relief officer, truancy officer, or dog catcher, one or more, or a plurality of all combined, receiving in most instances a salary not in excess of \$900, or roughly speaking £200 per annum. There is no doubt in the minds of those familiar with conditions in many localities that a radical change is needed in that particular health service upon which the public traditionally places great reliance.

It is not my purpose to venture upon an appraisal of the sanitary inspector's work in comparison with that of other branches of community health service. On the one hand we find those who look upon the abatement of common nuisances, plumbing inspection, and the allied efforts of the sanitary inspector as having no connexion whatever with public health and as having a tendency to obscure and depreciate in the minds of the general public the real and invaluable work that is carried on by the health authorities. These duties, they submit, should be transferred to other departments where they more properly belong. Others, including, we think, a majority of the heads of municipal health departments, take the ground that proposals of this kind are radical and unwarranted by the experience of the past, and that the removal of the sanitary inspector from the jurisdiction of the medical officer of health would deprive him of an official who, notwithstanding his shortcomings, has been his chief dependence during the pioneer years of the struggle to obtain better conditions of health.

All participants in the argument concerning the importance of sanitation and food control are agreed on the tremendous significance of excremental filth as a cause of disease. All admit the role played by human parasites and by insect and animal carriers in the transmission of typhoid, malaria, and bubonic plague. To the contention that the construction of sewers and sanitary privies for the proper disposal of sewage, and the installation of pure water supplies, have been potent factors in the banishment of typhoid, cholera, and dysentery, there are no dissenters. Outbreaks of typhoid fever, scarlet fever, and septic sore throat that have had their origin in infected milk—amounting to hundreds in the aggregate—leave no room to cavil at the necessity for the strictest supervision of this food commodity. The frequency of small local outbreaks of typhoid fever in towns and villages where pasteurization is not in vogue illustrates this clearly, while the magnitude of the disaster which happened in the city of Montreal only three years ago demonstrated with terrible consequences that "eternal vigilance is the price of safety." According to a report of the United States Public Health Service 4,755 cases of typhoid fever with 453 deaths occurred during the period March 1st to June 28th. "It is evident," says the report, "that Montreal has suffered a severe epidemic of typhoid fever with a case incidence in proportion to population probably unprecedented by any other large city within the present century." Let those who would deny to the efficient sanitary inspector a place in the sun derive what satisfaction they can from the facts of this calamity.

That there is little relation between housing and health, or that the effect of insanitary conditions in home and school, workshop and factory, has been exaggerated, who will dare to dogmatize? These assertions and those of similar portent can be corroborated or proved false only by future investigation and research, such as is being carried on in many fields and by scores of students with the finest intellects. Only by an extension of our inspection service, not a limitation, can the inspector hope to be of assistance in the solution of these worth-while problems concerning the relation between overcrowding, bad housing, fatigue, poor ventilation, under-feeding, etc., on the one hand, and the existence of disease on the other.

The kind of inspection I have in mind can only be carried out by technical experts, and the thesis that I would maintain in this paper is that the sanitary inspector of the future must be more of a technical expert than he has hitherto aimed to be. Some one has said that real health work is 90 per cent. education, and the remark has become current phraseology. It is only the amateur health official who seeks to get results by a display of his badge and a show of authority. The present age is one of conviction by persuasion, not by com-

pulsion. It cannot be too frequently emphasized that the individual who looks upon his position as one to be prized because of steady employment, moderate hours of work, and fairly good pay, and who lacks the incentive to read and study cannot hope to become an asset to a health department. This is also the age of popular instruction, and the sanitary inspector must beware lest he find himself less well informed in sanitary matters than many a skilled artisan with whom his duties bring him into contact in the home. To become a good teacher he must not only have a full acquaintance with the details of his own subject, but also extensive information and reading in allied and cognate subjects. He must have the ability to speak forcibly and think clearly. These are qualifications that some inherit, others gain by experience, but the capacity to think and speak and write can be cultivated by study and practice. Space does not permit, in a paper of ten or fifteen minutes, the discussion in detail of a suitable curriculum which might be drawn up to meet the needs of the present situation. It would, however, include the following among other subjects:

1. Knowledge of legal machinery, Federal, State and Municipal, for controlling disease, and of the Provincial Public Health Acts and Regulations enumerating the duties of sanitary inspectors.
2. Elementary vital statistics, the stock-taking of Public Health.
3. The communicable diseases, their modes of spread, and the means of prevention; the part played by carriers. Information of a practical nature on the use of vaccines, serums, anti-toxins, and other such biochemical agents.
4. Water supplies and the disposal of sewage.
5. Milk supplies in relation to disease; the sanitary collection of milk samples; elementary bacteriology of milk and an intimate knowledge of the machinery of pasteurization.
6. Food supplies. Elementary chemistry. The diseases of animals. Meat inspection, including the post-mortem appearances of healthy and diseased animals. Cold storage. The relation of oysters and other shell-fish to infection. The preparation, packing, and canning of foods.
7. Personal hygiene, including instruction on proper food, bathing exercise, work and sleep, sex hygiene, the abuse of alcohol, dental hygiene.
8. The principles of good ventilation, plumbing, the sanitation of schools, hospitals, and public institutions, housing conditions.
9. Inspection of restaurants, bake-shops, and other food establishments, such as dairies, and markets where food is kept or offered for sale.
10. Public Health and publicity.
11. An outline of tropical medicine.
12. Disinfection.
13. Smoke prevention.
14. Nuisances.

How shall the training in the lecture room, the laboratory, and in the field, which I have outlined as the minimum requirement, be provided? My answer is that the necessary departments for the education of such an indispensable public health official as the sanitary inspector might become, should be created in connexion with our provincial universities, and that, for the practical instruction and field work of a curriculum similar to that outlined, these should co-operate with our various provincial and municipal health departments and perhaps in some cases with our volunteer public health and social agencies. Such a plan as this is neither visionary, nebulous, nor impractical, and would result, I feel confident, in materially raising the status of the inspector and in obtaining for him a corresponding increase in remuneration. The scheme of establishing boards for conducting the examinations of the Royal Sanitary Institute, which has been tried in the West, has produced favourable results, and the syllabus of subjects and courses of demonstrations, if adapted to the needs of a sparsely settled country like ours, are admirable; but the scheme has not become sufficiently nation-wide, it does not evidently appeal to the young man seeking to equip himself for his life work as would a university connexion, even if only partial, and it will not enlist the aid of social agencies and workers

in breaking down political opposition as would the plan to which I have merely alluded.

On March 3rd of this year Mr. H. E. Spencer, Member of Parliament for Battle River, Alberta, moved the following resolution which was adopted unanimously by the House of Commons :

"That, in the opinion of this House, the Government should take into consideration the advisability of making grants to the provinces equal to one-third the cost of establishment, and to cover permanently such full-time health units as may be organized."

In the discussion of this resolution Mr. Spencer said :

"The minimum staff necessary for one of these health units will be a medical officer, a public health nurse, a sanitary inspector, and a secretary. The area covered by each health unit comprises usually about six municipal units, serving a territory of 2,000 square miles, which would comprise a population of some 2,200 to 2,500 people. That, of course, would vary according to the particular province in which these health units might be organized and the density of population in the area concerned."

In the event of a county or combined area unit, modified by the various provinces to meet their individual requirements, being adopted—and since it has passed beyond the experimental stage in proving its effectiveness, it will become adopted, for it would appear that should the official health authorities neglect to take the leadership in the movement for the establishment of these, the people, through such bodies as the United Farm Women of Alberta, will themselves assume the leadership—success or failure will depend eventually upon the qualifications and training of those in charge of the important work these units will undoubtedly perform. Is it too much to expect that in this undertaking of the near future, and indeed in all efforts for the safeguarding of the public health, the sanitary inspector should be equipped with good mental endowment, sound education, and proper training, so as to perform intelligently and well the tasks assigned to him? For in the final analysis "progress in sanitation depends on scientific investigation, and at the same time the usefulness of new discoveries depends very much on the skill of those who have to employ them."

THE TRAINING OF THE HEALTH VISITOR.*

BY

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IN attempting to prepare a short article on the subject which has been assigned to me—"The Training of the Health Visitor"—my interpretation of what constitutes a "health visitor" may not exactly correspond with the interpretation accepted, for instance, in Great Britain.

On this side of the Atlantic, our nomenclature for similar officials in the motherland differs somewhat, and, in fact, in Canada or the United States the term "health visitor" is not generally or officially used. What I have to say, therefore, will refer more particularly to agencies in this country which include in their programme various forms of health visiting in its broadest sense, and I trust that in the discussions to follow we may be privileged to learn about the training and work of the "health visitor" from those who are familiar with the duties pertaining to this office.

There does not appear to be any definite standard required for those who may wish to become health visitors in America. There is of course the common requirement that the person must be a graduate nurse, but many training schools have a fairly low educational standard for admission, although this standard is gradually being raised. Inasmuch as the product of the training school must be accepted, the preliminary educational background, which is so flexible a requirement, should first be given consideration.

The work of a health visitor in a very large degree is that of teaching health; to do this to the best advantage, her

education, before entering her nursing course, should at least be equivalent to that of a girl entering the teaching profession. She is all the better fitted if she has taken her teacher's certificate, and has spent a year or more as a teacher, since much of her work will be directly or indirectly concerned with children. This is especially so if the health visiting is done as part of a generalized public health nursing service, including school inspection.

Her training course should be taken in an approved hospital which has a fairly high standard. The hospital should have bed service for surgical and medical cases, admitting children to both services; it should also maintain an obstetrical department or be affiliated with a hospital maintaining such a service. The course of study should include class-room instruction in anatomy, physiology, materia medica, ethics of nursing, bandaging and fracture dressing, surgical technique, infant feeding, maternity nursing (including pre-natal and infant care), and communicable diseases. Before taking any post-graduate work she should spend a year in private and institutional staff duty, as by so doing she will get much more out of her post-graduate course in public health nursing. A candidate for post-graduate study in public health nursing should not be younger than 22 years, and not more than 40 years of age. It will not always be possible for the candidate to comply with the preliminary educational standards mentioned above, in which case it might be necessary to set her an essay to write on a given subject to show her proficiency in expressing ideas, and to indicate the general character of her education.

Her public health training must fit her to take her place in the scheme of organized public health endeavour. She is to be the connecting link between the health official and the citizen. She must be trained to interpret to individuals the principles of right living, and strive to create a public health conscience, which will elevate standards of living in the community. She must be taught to seek personal contact with families in order to instil into them the essentials of health, before disease develops, always working forward to the prevention of disease. Through her public health teaching she must be taught how to make contacts for subsequent public health teaching, by working backward from sickness in the home, or physical defect in the school. Combined with the regular lectures some students will require the maximum of individual coaching and tuition.

Public health nursing originated from spontaneous good will and an altruistic spirit, and these characteristics are still necessary, in a degree, in the health visitor. As modern science has transformed the art of medicine, so has it transformed public health nursing in its various forms. The system has developed slowly and naturally. The early district nurses were required to be "educated gentlewomen." Every nurse is not fitted to do public health work. She must be tactful; she must possess a cheerful personality; she must be tenacious and have a broad vision, resourceful with plenty of common sense. She must go about her work with confidence in order to gain and retain the confidence of those she visits.

The functions of the public health nurse which should determine her training are to teach habits of healthful living in the home, to see to it that the physician's instructions are intelligently carried out, and to be on the alert for all that is suspicious or divergent from health. These functions differentiate the health visitor from the social worker, the vocational worker, the dietitian, etc., who also share in public health work.

In health visiting the emphasis swings from bedside nursing in its narrow sense to family health work with education as the basis; it has grown from including only the sick poor to an ever-increasing group of independent self-supporting members of society, who are in a position to pay for such service. It is important, therefore, that the health visitor should obtain through her public health nursing agency her ideals and technique of health teaching, community relations, and a concept of the family as a unit for care rather than the individual sick person alone.

In addition to health teaching she must also be able to give instruction through demonstrations to the family or friends regarding the home nursing of those who are ill. She must be trained to be observant in order to detect

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