Report of the Provincial Board of Health / Province of British Columbia.

PROVINCE OF BRITISH COLUMBIA

Fiftieth Report of the
Provincial Board of Health

and

First Report of the
Department of Health and Welfare
(HEALTH BRANCH)

YEAR ENDED DECEMBER 31ST

1946

PRINTED BY
AUTHORITY OF THE LEGISLATIVE ASSEMBLY.

PROVINCE OF BRITISH COLUMBIA

•

Fiftieth Report of the
Provincial Board of Health

and

First Report of the
Department of Health and Welfare
(HEALTH BRANCH)

YEAR ENDED DECEMBER 31ST

1946

VICTORIA, B.C.:
Printed by DON MCDIARMID, Printer to the King's Most Excellent Majesty.
1947.

OFFICE OF THE MINISTER OF HEALTH AND WELFARE,
VICTORIA, B.C., March 31st, 1947.

To His Honour C. A. BANKS,
Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to present the Report of the Department of Health and Welfare (Health Branch) for the year ended December 31st, 1946.

G. S. PEARSON,
Minister of Health and Welfare.

DEPARTMENT OF HEALTH AND WELFARE (HEALTH BRANCH),
VICTORIA, B.C., March 31st, 1947.

The Honourable Geo. S. Pearson,
Minister of Health and Welfare, Victoria, B.C.

SIR,—I have the honour to submit the Fiftieth Report of the Provincial Board of Health and the First Report of the Department of Health and Welfare (Health Branch) for the year ended December 31st, 1946.

I have the honour to be,
Sir,
Your obedient servant,

G. F. AMYOT, M.D., D.P.H.,
Deputy Minister of Health.

DEPARTMENT OF HEALTH AND WELFARE (HEALTH BRANCH).

Hon. G. S. PEARSON - - - - - - *Minister of Health and Welfare.*

SENIOR PUBLIC HEALTH TECHNICAL STAFF.

G. F. AMYOT, M.D., D.P.H. - - -	*Deputy Minister of Health and Provincial Health Officer.*
J. S. CULL, B.A., M.D., D.P.H. - - -	*Deputy Provincial Health Officer.*
J. M. HERSHEY, B.Sc., M.A., Ph.D., M.D., D.P.H.	*Assistant Provincial Health Officer.*
R. BOWERING, B.Sc. (C.E.), M.A.Sc. - -	*Public Health Engineer.*
J. J. CARNEY, M.R.S.I., B.C.Sc. - - -	*Consultant in Milk and Food Control.*
Miss D. E. TATE, R.N., B.A.Sc., M.A. -	*Director, Public Health Nursing.*
Miss M. FRITH, R.N., B.A., B.A.Sc., M.P.H.	*Consultant, Public Health Nursing.*
Miss K. MCNEVIN, B.Sc., M.S.P.H. - -	*Consultant, Public Health Education.*
Miss E. M. YVONNE LOVE, B.Sc. (H.Ec.) -	*Consultant in Nutrition.*
C. E. DOLMAN, M.B., B.S., D.P.H., Ph.D. -	*Director, Division of Laboratories.*
W. H. HATFIELD, M.D. - - - -	*Director, Division of Tuberculosis Control.*
J. D. B. SCOTT, B.A., B.Com. - - -	*Director, Division of Vital Statistics.*
W. C. MOONEY, M.D., D.P.H. - - - (Deceased, July, 1946.)	*Acting Director, Division of Veneral Disease Control.*

TABLE OF CONTENTS.

Fiftieth Report of the Provincial Board of Health

and

First Report of the Department of Health and Welfare

(Health Branch)

YEAR ENDED DECEMBER 31ST, 1946.

G. F. AMYOT, DEPUTY MINISTER OF HEALTH.

INTRODUCTION.

This report, as the title indicates, covers a period of major change in the status of the Provincial public health services. For the first time since the formation of the Provincial Board of Health in 1895 these services have been given departmental rank. The " Department of Health and Welfare Act " was passed by the Legislature in April, 1946. It provided for the formation of the new department which came into operation in October, 1946, following an Order in Council which was given under authority of the Act. The Provincial Health Officer was appointed Deputy Minister of Health in charge of the Health Branch. This change simplifies certain administrative procedures and brings the allied branches of Health and Welfare into even closer working relationship.

The activities of the various bureaux, divisions, and services of the Provincial Department of Health are presented in the body of this report. The Divisions of Vital Statistics, Tuberculosis Control, and Venereal Disease Control publish more complete reports of their own activities. The sections in this report of the Department of Health as a whole which relate to these Divisions are, therefore, summaries. The remaining sections are the final annual reports.

Much reorganization and expansion of local health services were effected during the year. These followed upon, and were closely allied with, changes made by another department of government, the Department of Education. When the Report of the Commission of Inquiry into Educational Finance was accepted by the Government, the number of school districts was reduced from 649 to 74. The newly defined boundaries were deemed suitable for health unit areas and public health nursing districts. Consequently the health units and nursing districts were altered and, in most cases, extended in order that the area covered by each would include one or more school districts.

Important as they are in ensuring that no area is left without public health services through a misunderstanding in boundary-lines, these changes are of less significance than the public health administrative changes which accompanied them. Although these are described in detail in the sections of this report entitled " Bureau of Local Health Services " and " Report of the Director

of Public Health Nursing," the most important features may be summarized as follows:—

(*a*) Generalized public health services have been made available to all persons living within the boundaries of a health unit or public health nursing district. School health services have become a part of these generalized services.

(*b*) In a health unit area the number of School Boards with which it is necessary to make arrangements for school health services has been reduced from ten or twelve to only two or three.

(*c*) All local public health professional, technical, and clerical field staff, excluding those in Greater Vancouver and Victoria, have become employees of the Provincial Department of Health rather than employees of local Union Boards of Health or local School Boards.

(*d*) Local communities, outside the Greater Vancouver area and the City of Victoria, have become purchasers of health services from the Provincial Department of Health on a flat-rate basis of 30 cents *per capita* per annum. (The total cost of full-time services is somewhat more than $1 *per capita* per annum. The difference between this and the amount contributed by the local community is provided by the Department.) Heretofore the two major cities named above have been in a better position than smaller centres and rural areas to provide adequate public health services. The new plan has made it possible to increase local public health services and to make them more uniform and efficient throughout the Province. Local communities have been placed in a more favourable position with regard to their financial planning. The flat-rate basis makes it possible for them to compute the cost of health services without fear of having the cost changed during the year. Further, future changes in cost to a local community will be dependent only upon changes in population or the addition of a children's preventive dental service within the area served.

(*e*) It has now become possible to provide a superannuation plan for local full-time public health personnel.

Office, laboratory, and sanatorium accommodations have continued to be overcrowded. These conditions and the difficulties arising out of low-salary schedules for technical and professional personnel have not, however, been permitted to interfere with the Department's keeping pace with the needs of the people through their expanding local health service. In spite of the handicaps under which they have worked, public health personnel have given an extensive and well-integrated service through the special divisions. All concerned look forward with pleasure, nevertheless, to the completion of the building projects which are now proposed.

In September, 1946, the Consultant in Nutrition was granted leave of absence to pursue postgraduate study at the School of Hygiene in Toronto. She will resume her position with the Department on completion of her course

in the spring of 1947. A second nutritionist was appointed to the staff in July and has served as Acting-Consultant since that time.

A new member of the Public Health Education staff was granted a fellowship by the W. K. Kellogg Foundation. At the conclusion of his year's study in the graduate School of Public Health, University of North Carolina, in August, 1947, he will undertake duties in this field of the Department's work. This was the second fellowship provided by the Foundation and will give the Department two members with postgraduate training in public health education.

These increases in staff and the advanced training of personnel will equip the important services of nutrition and public health education to meet more adequately the ever-increasing demands placed upon them. Their work is closely co-ordinated with that of the other Divisions and the field staff of the Department. They give consultation and guidance to all public health personnel and to other departments of government and agencies, both official and voluntary. In addition, the Division of Public Health Education maintains a library and a film and pamphlet service. It also publishes the Department of Health's widely read monthly Health Bulletin.

CANCER.

Throughout 1946 the Provincial Department of Health has continued to take an active part in cancer-work. It has worked in close co-operation with the Cancer Department (Committee) of the British Columbia Medical Association, the Provincial Branch of the Canadian Cancer Society, and the British Columbia Cancer Foundation.

Monetary contributions to aid in the prevention, diagnosis, and treatment of cancer have been made to the British Columbia Cancer Institute, which is operated by the Cancer Foundation. Through the personnel of local health units and public health nursing districts, follow-up work and education of the public in cancer control have been maintained.

Both the Welfare Branch of the Department of Health and Welfare and the Hospital Branch of the Provincial Secretary's Department have played a large part in the control of this disease. Persons with cancer have been among those who have received assistance in transportation, medical care, and hospitalization from the Welfare Branch. The Hospital Branch, through its aid to general hospitals, has made available facilities for all types of patients, including those suffering from cancer.

ARTHRITIS.

The Provincial Department of Health, especially through its relations with the Dominion Council of Health, has maintained continued interest in this field of public health work. Increasing study of the problem of arthritis has been evident throughout the Dominion, and public health officials in British Columbia have shared fully in this. Leaders in public health throughout Canada have felt the need for a national organization to study arthritis and its control. They anticipate the establishment of such a body which will provide central leadership and direction in matters pertaining to prevention, diagnosis, treatment, research, education, and training of technical and professional personnel.

RED CROSS BLOOD TRANSFUSION SERVICE.

In co-operation with the Provincial Department of Health, the Department of Veterans' Affairs, the hospitals, and the medical profession, the Canadian Red Cross has completed plans for a blood transfusion service. British Columbia is the first Province in which such a peace-time service will be inaugurated.

Whole blood, dried plasma, and the necessary equipment will be provided free through hospitals and physicians to those needing transfusion therapy. The Red Cross has also stipulated that no service charge be made to patients for transfusions given with the facilities provided.

The larger hospitals will maintain refrigerated blood stores and the smaller hospitals will have adequate stocks of dried plasma.

The central depot for British Columbia will be established on the grounds of Shaughnessy Military Hospital, in Vancouver, in January, 1947. Funds have been made available by the Provincial Government to assist in the cost of the remodelling and maintenance of the depot. The physicians, nurses, and technicians who will form the staff of the depot are fully trained and have had extensive experience in providing such services under war-time conditions in England. Many new developments resulting from this experience have been incorporated into the design and installation of the special equipment. In addition to supplying whole blood and plasma, the staff of the depot will provide consultative services to physicians and hospitals on problems pertaining to transfusion therapy.

This great humanitarian service will provide blood transfusions to all patients who need them, regardless of ability to pay. The service can be given, however, only if the citizens of British Columbia maintain the supply of blood by serving as blood donors.

DOMINION COUNCIL OF HEALTH.

The two semi-annual meetings of this Council, under the chairmanship of the Deputy Minister of National Health, were held in Ottawa. Each Province was represented by its senior public health official, and the meetings were attended by the Deputy Minister of Health for British Columbia.

Discussions centred around the many problems of public health which affect the Provinces and the Dominion as a whole.

CO-OPERATION WITH OTHER DEPARTMENTS OF GOVERNMENT, PROFESSIONS, AND VOLUNTARY AGENCIES.

As in past years, the work of the Provincial Department of Health during 1946 has been simplified by the excellent co-operation received from other Provincial services and departments. The Provincial Police have continued to render material assistance in the rural areas. Their help in venereal disease control has been especially valuable.

Through the efforts of the Department of Agriculture, the Department of Education, the Department of Public Works, the Department of Lands and Forests, and others, it has been possible for the Department of Health to deal successfully with many problems.

The Welfare Branch of the Department of Health and Welfare, formerly the Social Assistance Branch of the Provincial Secretary's Department, has maintained services which have been closely co-ordinated with those of the Health Branch.

Co-operation has been received from the Provincial Secretary's Department, which calls upon the Department of Health for consultative services where general hospitals and other medical or health services are concerned.

Throughout the Province, School Boards and Councils, local health services, members of the teaching, medical, dental, legal, veterinarian, and pharmaceutical professions, and members of the British Columbia Branch of the Canadian Sanitary Institute have continued to give splendid co-operation.

Special attention is drawn to the many voluntary agencies which are interested in public health and which have aided in its advancement through both public health education and service.

Special mention is also made of the employees of the Provincial Department of Health itself. As in past years, professional, technical, and clerical personnel have continued to provide service of an outstanding character. Their loyalty and co-operation have been large factors in the work of providing health services to the people of British Columbia.

THE HEALTH OF THE PEOPLE OF BRITISH COLUMBIA.

In making an appraisal of the health of the people of the Province, mortality statistics provide an important criterion. Information concerning the longevity of the population, the incidence of deaths by age-groups, and the death-rates from the more common causes may be obtained from a study of the death registrations filed during the year. Together these present a revealing picture of health trends in the community. It should be pointed out, however, that important as they are in depicting the health of the community, mortality statistics alone do not constitute the entire story. The incidence of many non-fatal and chronic ailments is not indicated by mortality statistics.

During 1946 there were 10,153 current deaths registered, giving a provisional death-rate of 10.1 per 1,000 population. There was again an increase in the number and percentage of deaths occurring in the age-group 60 years and over, 62.9 per cent. of all deaths occurring in this group. The upward trend of deaths in this class is due partly to the increasing life-span of the population and partly to the increasing number of older people taking up residence in the Province. The trend shows that the wastage of life in the earlier age-groups is declining. Deaths in the 40- to 59-year age-group dropped from 19 to 17.4 per cent. of the total, while those in the under 20-year age-group dropped from 13 to 12.7 per cent. There was no change in the position of the 20- to 39-year age-group, which remained at 7 per cent. A study, excluding Indian deaths, presents an even more favourable picture, the deaths under 20 years dropping to 9.9 per cent. of the total and those over 60 rising to 65.7 per cent.

Particularly gratifying are the preliminary infant and maternal mortality rates for 1946. Infant deaths—those under 1 year—totalled 841, giving a rate

of 37.3 per 1,000 live births. If the 198 deaths of Indian infants are excluded, the infant mortality rate drops to 29.9. These rates can be compared with figures of 43.6 and 34.5 respectively in the year 1945.

Maternal mortality reached an all-time low for the Province in 1946. There were only 35 maternal deaths, 6 of which were Indian, giving rates of 1.6 per 1,000 live births for the total population and 1.4 per 1,000 live births for the population excluding Indians. The corresponding rates in 1945 were 2.8 and 2.6 respectively.

The leading causes of death at all ages were diseases of the heart and arteries, which accounted for 3,591 or 35.4 per cent. of a total of 10,153 deaths. Cancer, claiming 1,455 lives, took second place. Accidents were the third leading cause, resulting in 738 deaths, or 7.2 per cent. of the total. One-quarter of all accidental deaths were due to falls, and one-fifth to motor-vehicle accidents. The large number of accidental deaths is particularly regrettable, inasmuch as accidents are, for the most part, preventable.

Tuberculosis ranked fourth as a cause of death, there being 575 deaths from this disease. Of these deaths, 194 were Indian. The preliminary tuberculosis death-rates thus established for 1946 were 57.3 per 100,000 for the total population and 39 excluding the Indian population.

Pneumonia was the fifth leading cause of death, accounting for 439 deaths. Again the high percentage of Indians in this group is noteworthy, as over 20 per cent. of pneumonia deaths occurred among the Indian population. It is significant that pneumonia strikes particularly at the aged and the very young. One-fifth of all pneumonia victims were under 1 year of age, and three-fifths were over 60 years of age.

Intracranial lesions of vascular origin was the sixth cause of death, followed in order by diseases of early infancy, nephritis, diabetes, and suicides.

A study of mortality by age-groups is even more pertinent in showing the state of health in the community than is the over-all mortality picture. The reduction in infant deaths was noted previously. In this group prematurity was responsible for 238 of the 841 deaths, or 28.3 per cent. Congenital malformations resulted in 120 deaths in this group, pneumonia in 94, injury at birth in 72, and diarrhœa and enteritis in 67. It is felt that continuing emphasis on prenatal and postnatal care can further reduce the infant mortality rate.

There were 268 deaths of children between the ages of 1 to 9 years, inclusive. Accidents claimed the largest single toll in this group, taking 62 lives. Again the preventable nature of these deaths is stressed. Tuberculosis caused 58 deaths, of which 37 were Indian.

In the 10- to 19-year age-group there were 67 deaths from tuberculosis and 58 from accidents. In the non-Indian population of this group, however, accidents took first place with 55 deaths, followed by tuberculosis with only 10.

Tuberculosis was the leading cause of death in the 20- to 39-year age-group, resulting in 200 deaths, or 28.3 per cent. of the 706 total. Accidental deaths at these ages totalled 134.

Diseases of the heart and arteries were the leading cause of death in the 40- to 59-year age-group with 505 deaths, or 29 per cent. of all fatalities, followed by cancer with 366 deaths. The accident toll remained considerable, accounting for 166 deaths in this group.

In the age-group 60 years and over, diseases of the heart and arteries accounted for 47.1 per cent. of all deaths, cancer for 16 per cent., and intracranial lesions of vascular origin for 5 per cent. Accidental deaths claimed 244 lives in this group.

Attention is directed to the fact that Indians, within the meaning of the "Indian Act," are wards of the Federal Government and, as such, are not a Provincial responsibility. Mortality rates among the Indian population differ materially from the rates among the remainder of the population, and where the inclusion of Indian figures has significantly affected the rates for the total population in any one group or class in the foregoing summary, special mention has been made of the differences. The preliminary death-rate for Indians was 24.3 per 1,000 population, compared to the non-Indian rate of 9.7 per 1,000 population. Thirty-one per cent. of all Indian deaths occurred among those less than 1 year of age, and only 22.4 per cent. among those at age 60 and over. Tuberculosis was the leading cause of Indian deaths, followed by pneumonia in second place, and accidental deaths in third. The percentages for these deaths were 30.2, 13.9, and 6.2 respectively.

A graph illustrating mortality from specified diseases, British Columbia, 1900–46, is shown in Chart A.

Charts B, C, and D show infant mortality, maternal mortality, and tuberculosis mortality respectively for British Columbia, 1922–46.

These four graphs depict the downward trends of important mortality rates over a period of years.

CHART A.—MORTALITY FROM SPECIFIED DISEASES, BRITISH COLUMBIA, 1900–46.
(Excluding Indians.)
(Three-year average rates per 100,000 population.)

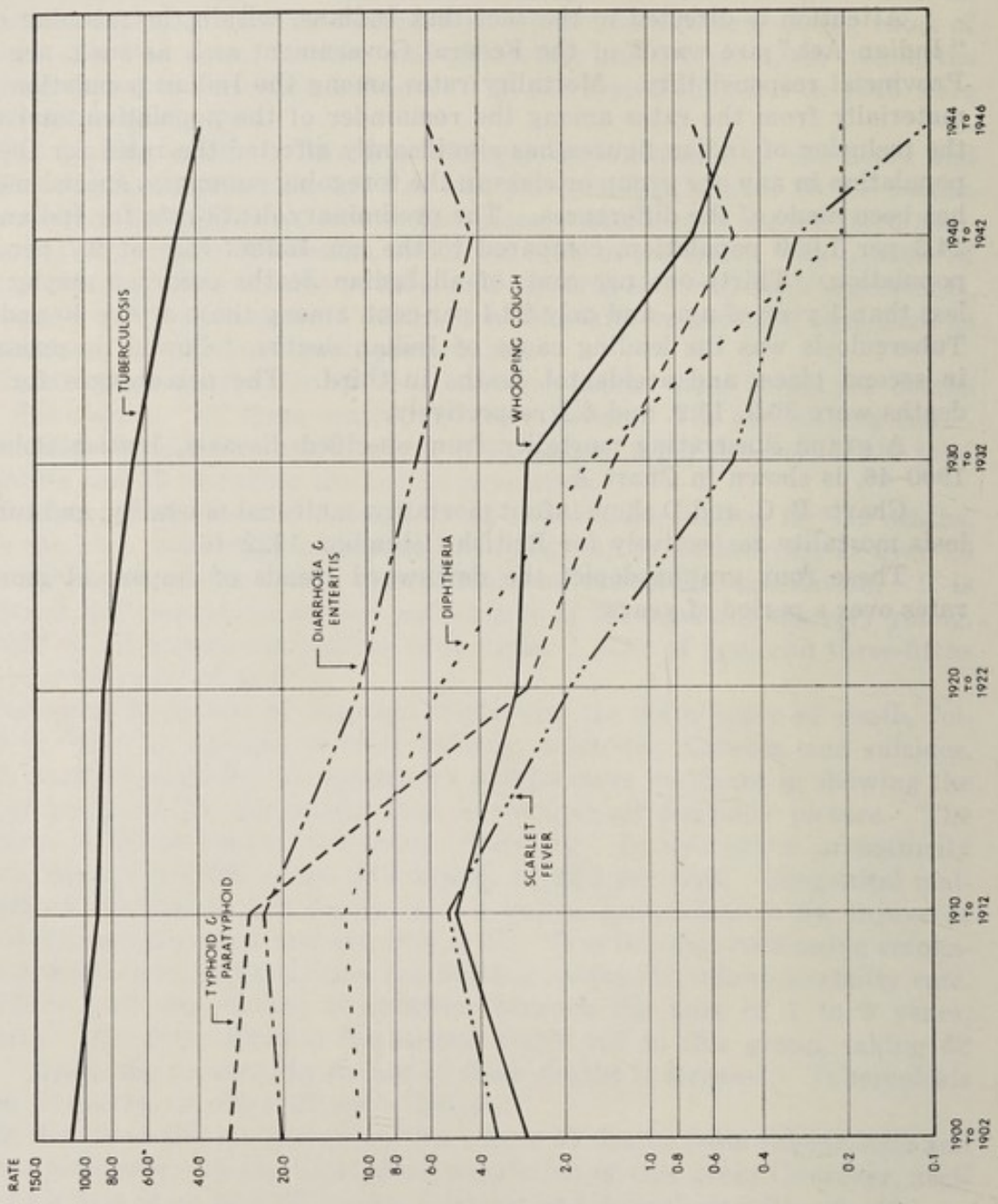


CHART B.—INFANT MORTALITY, BRITISH COLUMBIA, 1922–46.
(Rates per 1,000 live births.)

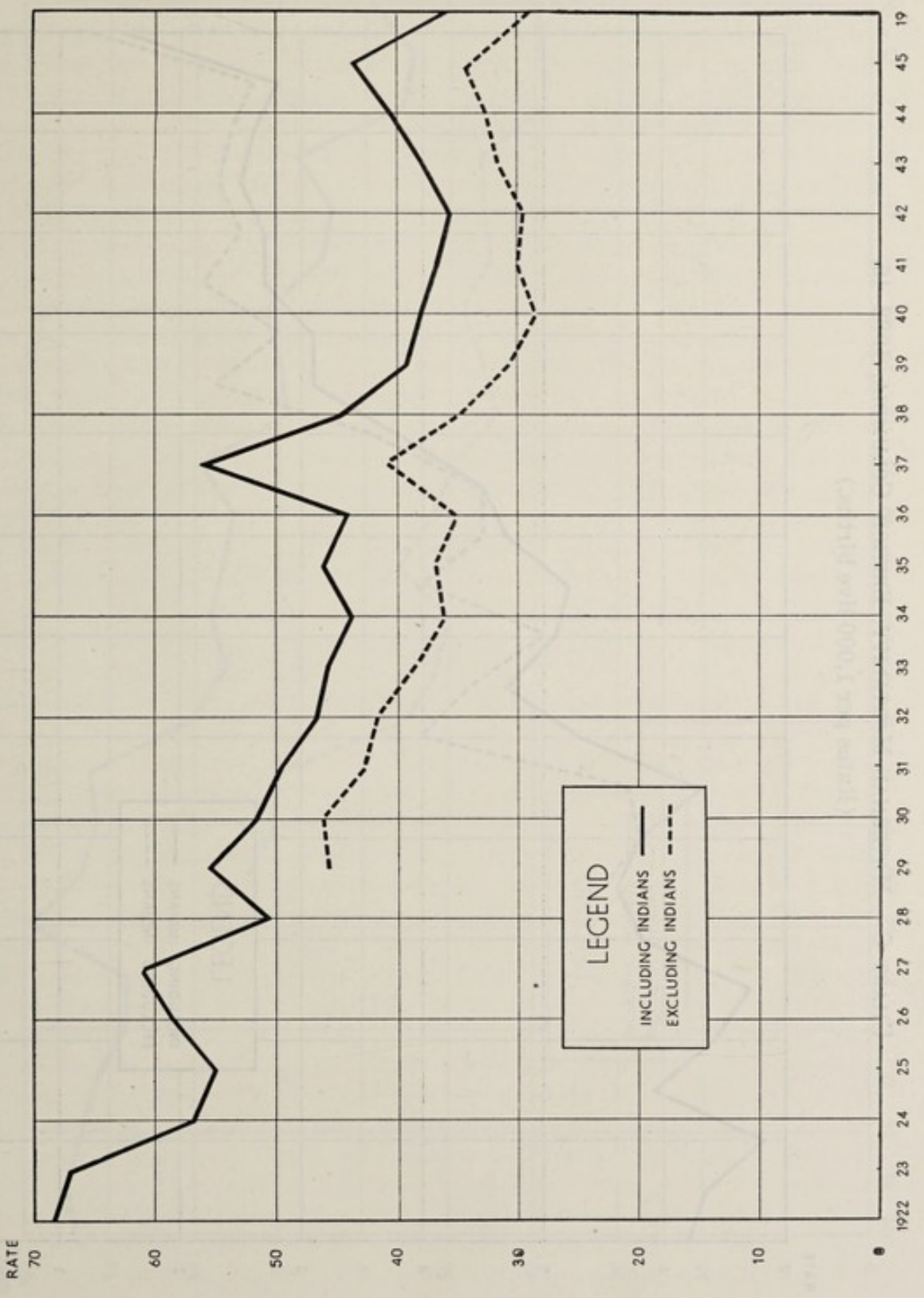


CHART C.—MATERNAL MORTALITY, BRITISH COLUMBIA, 1922–46.
(Rates per 1,000 live births.)

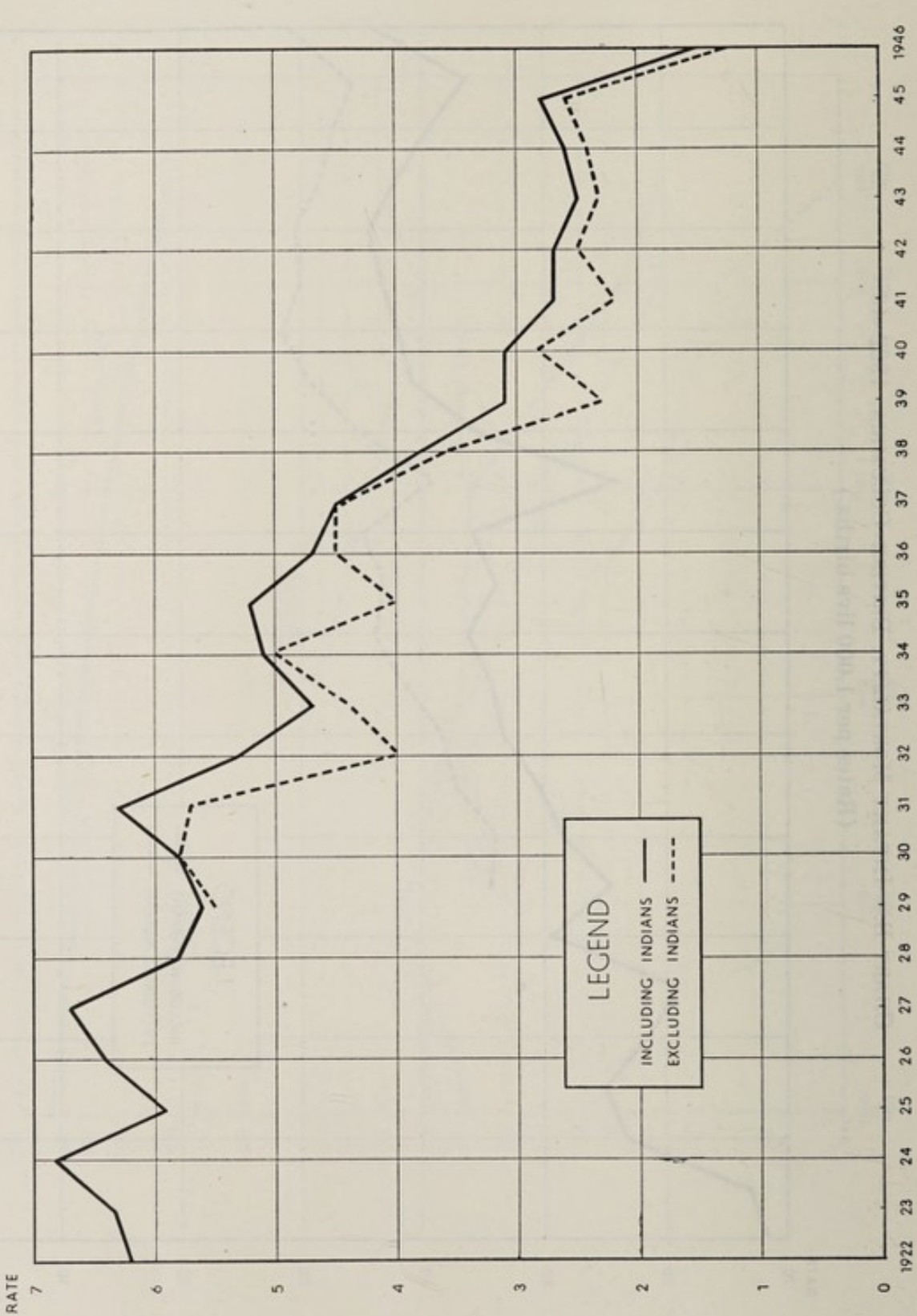
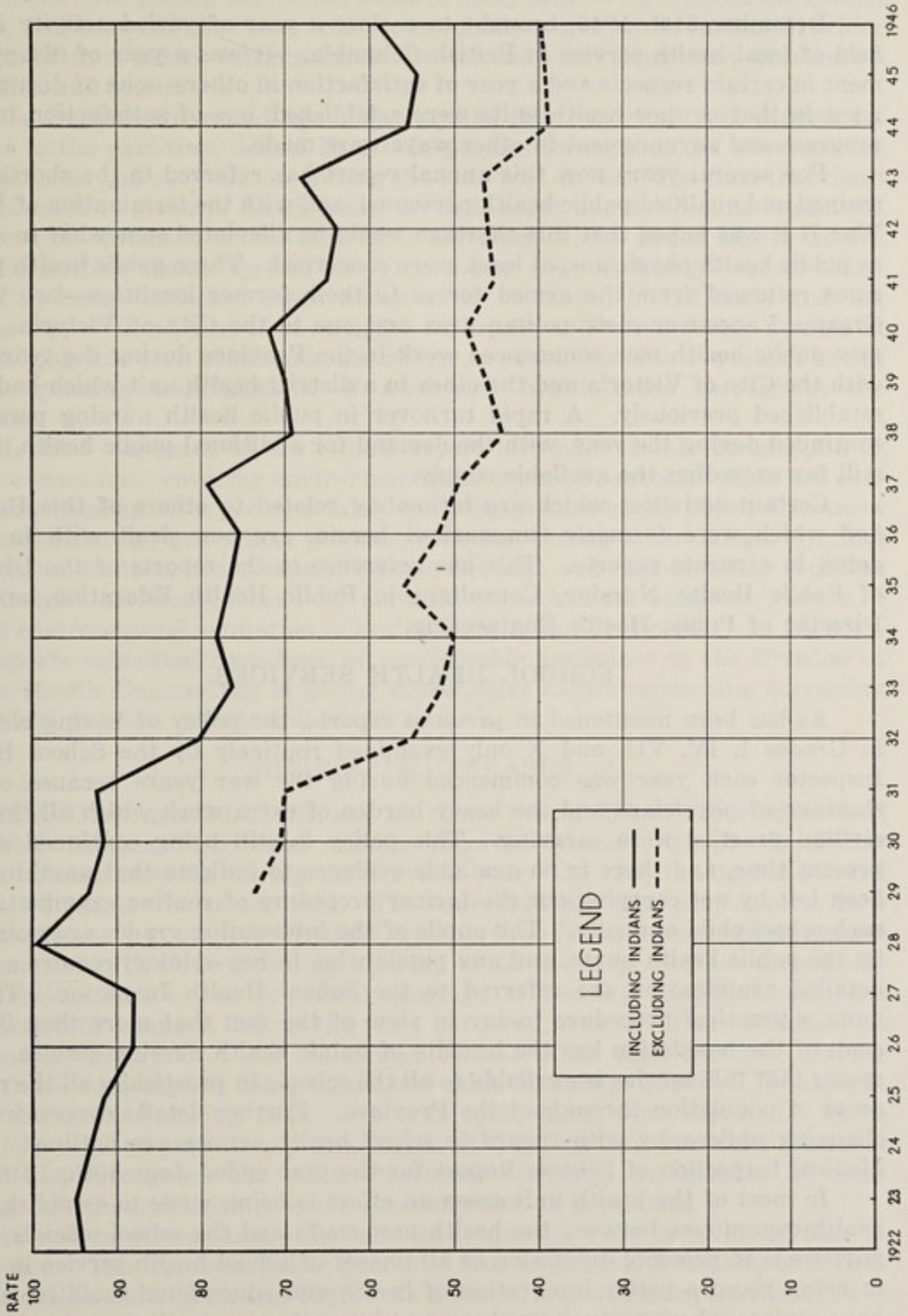


CHART D.—TUBERCULOSIS MORTALITY, BRITISH COLUMBIA, 1922–46.
(Rates per 100,000 population.)



BUREAU OF LOCAL HEALTH SERVICES.

December 31st, 1946, brought to a close a year of varied activity in the field of local health service in British Columbia. It was a year of disappointment in certain respects and a year of satisfaction in others—one of disappointment in that no new health units were established, one of satisfaction in that progress and advancement in other ways were made.

For several years now this annual report has referred to the shortage of trained and qualified public health personnel, and with the termination of World War II it was hoped that this shortage would be alleviated somewhat in so far as public health physicians, at least, were concerned. Three public health physicians returned from the armed forces to their former localities—two to the Greater Vancouver metropolitan area and one to the City of Victoria. Two new public health men commenced work in the Province during the year—one with the City of Victoria and the other in a district health unit which had been established previously. A rapid turnover in public health nursing personnel continued during the year, with the demand for additional public health nurses still far exceeding the available supply.

Certain activities which are intimately related to others of this Bureau, and which were formerly summarized herein, are now dealt with in more detail in separate reports. This has reference to the reports of the Director of Public Health Nursing, Consultant in Public Health Education, and the Director of Public Health Engineering.

SCHOOL HEALTH SERVICES.

As has been mentioned in previous reports, the policy of having children in Grades I, IV, VII, and X only examined routinely by the School Health Inspector each year was commenced during the war years because of the shortage of physicians and the heavy burden of extra work which all those in civilian practice were carrying. This policy is still being continued at the present time, and there is no available evidence to indicate that anything has been lost by not carrying out the former procedure of routine examination of each school child annually. The pupils of the intervening grades are examined by the public health nurse, and any pupils who, in her opinion, require a more detailed examination are referred to the School Health Inspector. This is quite a practical procedure to-day in view of the fact that more than 90 per cent. of the population has the benefits of public health nursing service. This means that this service is available to all the schools in practically all the major areas of population throughout the Province. Further details concerning the changing philosophy with regard to school health service are outlined in the Medical Inspection of Schools Report for the year ended June 30th, 1946.

In most of the health unit areas an effort is being made to establish joint health committees between the health unit staffs and the school officials. The purpose is to promote discussion of all phases of school health service in order to bring about a better integration of health and educational facilities and to have a place where mutual problems and interests may be discussed. On such committees would be the School Health Inspector, the school public health nurse, the sanitarian, the school principal, a member from the School Board, one or

two school-teachers, and on occasion the school janitor. Such co-ordinating committees have proven well worth while in many centres throughout the United States, and it is felt that they will prove equally worth while in this Province and result in a better integration of two already complementary services — education and health.

The Department would again like to take this opportunity to express its thanks to the part-time School Health Inspectors throughout the Province for their interest and co-operation during the year just ended. The time that these physicians have given to school health work is much appreciated, as is also the help and co-operation which they have extended to the public health nurses working in their areas. To find time from a busy practice to make school visits, which in many instances mean many miles of travel, is not easy, and the willingness of these men to investigate outbreaks of communicable disease in such schools has been of material assistance in providing effective school health service pending establishment of additional health units throughout the Province.

Mention was made in the annual report last year of the introduction of a new report form covering environmental sanitation of schools. This is a considerably detailed form giving a fairly complete picture of the physical features of school buildings and school grounds, covering, among other things, lighting, heating, ventilation, water-supply, sewage-disposal, and food-handling facilities in cafeterias or lunch-rooms. As a result, a much more complete picture of school environmental sanitation is available now than previously. In addition, the reports submitted have been of considerable assistance to the Division of Public Health Engineering in giving consultative advice concerning correction of various physical defects and health hazards.

NOTIFIABLE DISEASES.

Table I, on pages 30, 31, 32, and 33, shows the number of reported cases of notifiable diseases. The total number reported—namely, 27,958—is similar to the number reported during the previous year. In 1945 the figures showed a total of $27,588 cases reported. The year 1946 has thus continued to be a favourable one in general for British Columbia in so far as communicable disease is concerned. The overcrowding existing in all the large centres throughout the Province due to the continued shortage of housing accommodation has not materially changed during the year, but in spite of this there has been no widespread outbreak of any particular disease other than mumps. During 1945 there were slightly more than 1,000 cases of mumps reported throughout the Province and during 1946 more than 5,500 cases were reported. These were not concentrated in any one centre of the Province but were scattered fairly well throughout the whole Provincial territory, the number of cases having definite relationship to the concentration of population.

As was mentioned last year, measles frequently runs in cycles of four to five years. This has been fairly generally true in British Columbia, with definite peaks in 1937, 1941, and 1945. As a result, one would expect the number of cases in 1946 to be reduced considerably. This actually happened, as is shown by a reduction of from slightly more than 9,000 cases in 1945 to approximately 2,500 cases last year.

Cancer is a notifiable disease in this Province, and the co-operation of the physicians in reporting individuals suffering from cancer has improved considerably. Reported cases reached a total of 2,521 in 1946, as compared with 1,979 for the previous year. This represents almost two known cases for every death, in view of the fact that there were 1,445 deaths from this disease during the past year. However, as has been mentioned before, it is important that the increased number of cases be not taken as indicative of a real increase in the prevalence of this disease. No very accurate figures are yet available as to the actual incidence of cancer in the general population.

Cerebrospinal meningitis and chicken-pox show approximately the same incidence as in the previous year. Scarlet fever, whooping-cough, septic sore throat, and German measles all show considerably fewer cases reported during 1946 than during the previous year.

No cases of botulism were reported during the year.

Poliomyelitis (infantile paralysis) was considerably less prevalent, with only 21 cases being reported in comparison with 51 cases during the previous year.

Paratyphoid fever showed a considerable decrease from 28 cases for the previous year to 9 cases for the year just ended, there being no widespread outbreak of this disease. Salmonellosis showed a very considerable increase, from 46 cases in 1945 to 174 cases. Of these, 151 were reported from the Greater Vancouver area. As was mentioned last year, this does not mean that there is necessarily more of this type of infection in the Greater Vancouver area than elsewhere, since the identification of this type of infection has been a matter of special study with the health authorities in this area in co-operation with the Division of Laboratories of the Health Branch, Department of Health and Welfare. It is reasonable to assume that there is a considerable amount of this type of infection throughout other areas of the Province. Infection with the *Salmonella* type of organism is a gastro-intestinal infection and, like typhoid and paratyphoid fevers, is spread by the contamination of food with human excreta. As with certain other diseases, there exist carriers of the organism who show these organisms in their discharges but do not suffer from the disease itself. The importance of careful personal hygiene and safe food-handling techniques on the part of all food-handlers is at once apparent in its relationship to the spread of this disease. Careful, adequate, and periodic education of food handlers and preparers will go a long way in preventing outbreaks of *Salmonella* infection.

Epidemic hepatitis (infectious jaundice) showed a very marked decrease from 1945, in that only 62 cases were reported, in comparison with 390 cases for the previous year. A great deal of research is being done on this disease with regard to its cause and mode of spread, and it is hoped that the picture will be clarified as time goes on.

The number of individuals who developed diphtheria during 1946 showed a very considerable increase. There were 63 cases reported during 1946, in contrast with 36 for the previous year. This is the highest number of reported cases since 1932. Almost 50 per cent. of the individuals were in school and preschool age-groups. This incidence is all the more regrettable when it is realized that diphtheria is a preventable disease which can be wiped out when

all parents assume their responsibility in seeing that their children receive the benefits available through the simple and painless procedure of immunization. A great deal of immunization-work has been done by the various local health services throughout the Province, which has, no doubt, materially assisted in keeping the incidence down in comparison to what it might otherwise have been. British Columbia had the fourth lowest incidence in actual number of cases of any Province in Canada during 1946. It can still be said that while much has been accomplished in the matter of immunization and the prevention of diphtheria, still much remains to be done.

In February, 1946, hæmorrhagic smallpox occurred in the City of Seattle, and, in all, 28 cases were reported, 8 of which were fatal. As a result of this outbreak in the State of Washington, concrete evidence was seen of the changing attitude of the public toward acceptance of immunization as a means of safeguarding against preventable disease. Quarantine authorities closed the Border to all travellers except those who could show proof of vaccination within the previous year, and travellers to the State of Washington were advised to be vaccinated before leaving British Columbia. Transportation companies placed physicians at points of embarkation of boats and trains leaving the United States, to make vaccination available to passengers.

Meanwhile a Departmental release was issued to the British Columbia press in March advising all persons not recently immunized against smallpox to obtain this protection. The public response was immediate and at times overwhelming. Special clinics were organized by the health departments of Victoria and Greater Vancouver in order to accommodate the tremendous demand for protection through immunization. Although the major response was in the Coastal area, the rest of the Province was also aware of the danger. Requests for supplies of vaccine came from all parts of the Province, and vaccination clinics were arranged. The Connaught Laboratories, Toronto, employed extra staff to prepare large supplies of smallpox vaccine, and arrangements were made for shipments by air express to the Division of Laboratories, Vancouver, from where the vaccine was distributed throughout the Province. As shipments of vaccine arrived, an estimated one day's supply was allocated to each centre requesting it, so that all clinics could be kept in operation. Special clinics continued from ten days to two weeks in the Coastal area, and in Vancouver more than 100,000 persons and well over 25,000 in Victoria were vaccinated. More than 125,000 points of vaccine were distributed, and, in all, it is conservatively estimated that 250,000 persons were vaccinated. An interesting point of comparison is that in 1931–32 a severe outbreak of hæmorrhagic smallpox occurred in Vancouver, with 56 cases and 16 deaths. At that time the public health authorities had considerable difficulty in persuading citizens to take advantage of the protection available through vaccination. It is estimated that some 80,000 people were vaccinated at that time, while in 1946, with no smallpox actually in the Province, over 250,000 persons were immunized. This would indicate a definite advancement in public understanding of the value of preventive public health measures.

Unfortunately venereal diseases showed a very definite increase in incidence—from slightly more than 3,000 cases of gonorrhœa in 1945 to more than 4,600 cases in 1946 and from slightly more than 1,400 cases of syphilis in 1945

to more than 2,100 cases in 1946. Further details of the problem of venereal disease are discussed in the report of the Division of Venereal Disease Control. Tuberculosis also showed an increased incidence, rising from 2,015 reported individuals previously to 2,536 individuals reported infected during the year just ended.

Further details of the problem of tuberculosis and its control are dealt with in the report of the Division of Tuberculosis Control.

FULL-TIME HEALTH SERVICES.

The implementation of the Cameron Report brought establishment of seventy-four large school districts throughout the Province, as compared with the very much larger number which formerly existed. This represented a tremendous simplification for this Department with regard to local health service administration. Formerly, in a health unit area, there were as many as ten or twelve separate School Boards with which it was necessary to discuss health services and make arrangements for payment to the local Union Board of Health. Now there are only two or three. In addition, it has been possible to make health unit boundaries coincide with school district boundaries, and now a health unit can serve the entire population within two, three, or possibly four school districts. This makes it possible to define accurately health unit boundaries using the same definitions as school district boundaries, and also to arrange that no area will be missed in the planning for ultimate coverage of the Province by health units due to inaccurate definition of the limits of the area.

Until the middle of 1946 the public health personnel of health units were employed locally by a Union Board of Health composed of representatives from official elected bodies of the entire area served by the health unit. The cost of the service to the local area was determined on a 75-per-cent.–25-per-cent. basis. In unorganized territory the local area paid 25 per cent. of the cost of the service for that group of population served, and in organized territory these areas paid 75 per cent. of the cost of the service to the population within municipal limits. The proportion of the cost for the various local areas was determined on a *per capita* basis. The remaining amount of money required to operate the service was made available to the Union Board of Health through grants from the Provincial Department of Health. This method of administration and finance worked fairly well but brought up a number of difficulties, among which were the question of arranging transfer of staff from one area of the Province to another, considerable variation in cost to different communities throughout the Province and even within an individual health unit district, lack of uniformity and certain limitations of service within circumscribed areas because of the responsibility to local boards, and lack of a superannuation plan available to full-time public health personnel. In addition, the drawing-up of the budget was cumbersome in that each time an additional staff member was added or a change in the total cost of the service took place, it was necessary to revise completely the amount of the local contribution, a procedure which was not readily accepted by Municipal Councils.

An appreciation of these difficulties led to considerable time and thought being given to the development of a more satisfactory basis for the administra-

tion and financing of full-time local health services. The objectives of senior officials of the Department and also representatives from the local services who dealt with the problem were (*a*) the provision of a uniform type of public health service throughout the Province generally, (*b*) an increase in services and more efficient use of personnel, (*c*) the making available of a superannuation plan for the local full-time public health personnel, and (*d*) the establishment of a fixed, uniform *per capita* cost for local areas, with the total amount being calculated on a population basis at definite periods. A study was made of various plans put into effect in certain Provinces and States with a view to benefiting from their experience, and also incorporating such principles from their plans applicable in British Columbia. The final plan as it evolved met the requirements outlined.

In its simplest form it provides for contributions from the local communities on a flat-rate basis of 30 cents *per capita* per annum. The population figures used were, for organized territory, a compromise between those of the last census and the 1944 municipal estimates published by the Department of Municipal Affairs. For unorganized territory the figures used were a compromise between those of the last census and the 1944 estimate of population for the area made by the Division of Vital Statistics. These population figures are to be corrected every two years, thus making the local cost for health service follow as closely as possible the increase or decrease of population in an area. The remaining cost of the local service will be provided through the Health Branch, Department of Health and Welfare. In view of the fact that the cost for local health service averages approximately $1 *per capita* per annum, it follows that the Department will be providing approximately 70 cents *per capita* per annum. It is hoped that a grant may be made available by the Federal Government before too long for local health service. In that case the cost of such service would be borne approximately one-third locally, one-third Provincially, and one-third Federally.

Under the new plan the public health personnel throughout the Province will be employed directly by the Provincial Health Department, and in this way a superannuation plan will be available to them. It is felt that this will also make for a better esprit de corps among public health workers throughout the Province, and also facilitate the transfer of personnel from time to time to adjust to their capabilities or various problems as they arise in the communities. Obviously the opinions and feelings of the local Union Board of Health will be taken into consideration in the matter of replacement and transfer of staff.

The new plan will make possible the addition of more staff when they become available, and if conditions in any community warrant it, this could be done without any change in local cost. The only preventive health service which will not be included in the plan would be children's preventive dentistry. This service could be added on the request of the local community, when trained qualified dentists become available for this work, at an estimated additional local cost of 5 cents to 10 cents *per capita* per annum. Under such a plan the dentist would be attached to the staff of one or two health units and with portable equipment would bring the benefits of preventive dentistry to the preschool children and the lower grades of school-children in the entire area served by the local health service. This would be one method of making a

very definite attack on the terrific problem of dental caries in children as it exists to-day, and provide a very beneficial service for this group of children, who to-day in most of the Province are receiving very little dental treatment.

When the plan was very carefully outlined and reviewed, visits were made to all health unit areas and discussions held with the local Union Boards of Health, Municipal Councils, and new district School Boards as established through the implementation of the Cameron Report. The reception given to the new plan at these meetings was favourable, and subsequent discussions were held with a view to working out the details for each area and arranging for the commencement of the new plan in the areas at a time mutually satisfactory to all concerned. By the end of the year, Okanagan Valley Health Unit, North Okanagan Health Unit, and Central Vancouver Island Health Unit were all operating satisfactorily under the new plan. It is anticipated that January, 1947, will see Prince Rupert Health Unit and Saanich Health Unit operating on a similar basis. Due to the local circumstances it is unlikely that the Peace River Health Unit will be reorganized along these lines for several months yet.

Mention was made in the annual report for 1945 of a considerable amount of interest shown in the health unit service in the City of Armstrong and Municipality of Spallumcheen, and it was hoped that these two areas would utilize before long the services available from the North Okanagan Health Unit. As expected, consolidation took place in the fall of 1946 between these areas, and included also the City of Enderby. As a result, the North Okanagan Health Unit now provides modern and adequate local health service to all the area in the north end of the Okanagan Valley, extending from the northern section of Oyama in the south to and including the Municipality of Salmon Arm in the north, as well as all the unorganized territory in the immediate vicinity. The new plan of financing played no small part in making this consolidation possible, and it is hoped that it will not be too long before the City of Revelstoke will see the advantages of health unit service so that this area may also be served. It is a matter of no small satisfaction to be able to report that in all the municipal areas served by the North Okanagan Health Unit the milk is 100 per cent. pasteurized. The residents in these areas are extremely fortunate in this elimination of the potential health-hazard of raw-milk consumption.

The Director of the Okanagan Valley Health Unit left in the summer of 1946 to serve a period in the Orient with U.N.R.R.A., leaving this unit temporarily without medical supervision. However, the Department was fortunate in being able to secure a physician who was interested in public health work and who was willing to take charge temporarily of this health unit, prior to taking her postgraduate training in public health, until a fully qualified director could be obtained. It is anticipated that this will be done early in 1947. Mention was made last year of the heavy load which the two public health nurses were carrying in the Kelowna-Rural area, and fortunately it was possible to add an additional public health nurse during 1946 in order to bring this health unit up to a more desirable strength. Mention was also made last year of the fact that the boundaries of this health unit have been extended in the north to include Oyama and in the south to include Allen Grove. Very considerable interest is being shown in the Oliver and Osoyoos districts, and it

is likely that it will be possible to extend the boundaries of the Okanagan Valley Health Unit farther south to include these areas and the unorganized territory as far south as the International Boundary.

The City of Kelowna is carrying on a very interesting experiment in the provision of a community housekeeper service for shut-ins or hospitalized residents who might require help in the home for varying periods. Such a service should be of assistance in enabling certain types of patients to leave hospital earlier than they might have otherwise, and will also be the means of allowing other types of patients to remain home who would require hospitalization if the service were not available. It is felt that this service will prove to be one which other municipalities might initiate to meet a need not uncommon in many centres throughout British Columbia. The value of such a service should also be reflected in some easing of the hospital bed shortage. The Okanagan Valley Health Unit is co-operating in the service through the provision of a limited bedside nursing service. It was possible for the Department to send in a senior well-experienced public health nurse for a few months at the commencement of this service to assist in streamlining the generalized public health program as much as possible in order to secure additional time for the staff to co-operate with the housekeeper service. This is an experiment which is being watched carefully by those interested.

The Prince Rupert Health Unit has had to continue during 1946 without a medical director, but it is anticipated that this situation will be corrected early in 1947. The kind co-operation of Dr. W. S. Kergin, who has continued to act as Medical Health Officer and Acting-Director of the health unit on a part-time basis, is much appreciated. It was possible to add an additional public health nurse to the staff of this health unit during the year to serve Hazelton and district. In this way the boundaries of the health unit have been extended to include this area, and it is hoped that when additional public health nurses become available, it will be possible to extend boundaries to include the area as far east as Smithers and Telkwa. This would then make this health unit area, when established, contiguous with the area served by a health unit for the Cariboo District operated out of Prince George.

The Peace River Health Unit has also had to carry on without a director during the year, and much credit is due Miss K. Read for the ability which she has shown in acting as supervisor for the group of personnel in that area. In this she has been ably assisted by Mrs. P. Yaholnitsky, who was promoted during the year to act as district supervisor for the Cariboo and Peace River Districts.

The Central Vancouver Island Health Unit was also expanded during 1946 to include the City of Duncan, the Municipality of North Cowichan, and the surrounding unorganized territory reaching as far south as Cobble Hill and Bamberton. The new plan of health unit administration and financing played a very definite part in enabling consolidation in this health unit district. This revision also saw the closing of one of the historical chapters of British Columbia, as the Cowichan Health Centre, which formerly employed four public health nurses working in the Lake Cowichan, Duncan, and North Cowichan districts, was the first community public health nursing service to be established in British Columbia. This service was commenced in 1920 under the supervision

of Mrs. C. Moss. Much credit is due Mrs. Moss for her devotion and foresight in the establishment of such a community service, and this opportunity is taken to commend the interest and enthusiasm of the various committee members who have carried on this splendid work. The following is the introduction to the twenty-fifth and final annual report of the Cowichan Health Centre at their last annual meeting, just before the Central Vancouver Island Health Unit took over the health service in that area:—

"We have reached a memorable stage in the history of the Cowichan Health Centre with a quarter of a century of public health service to our credit. Like many new ideas placed before the public, it has taken years of struggle for the service to be understood and incorporated into the lives of the people. Now we are seen as a people demanding the latest that science has to offer, expecting further extension in the field of public health. It is a satisfactory feeling when we have the help, co-operation, and sympathetic understanding of the public in general, members of School Boards and Councils, local public health and other officials, men's and women's organizations, public-spirited leaders in the communities and business, all co-ordinating in the success of the work. Here in Cowichan at this time with the people awakened to the value of prevention, public health should make unbounded progress in the next twenty-five years. From this meeting we wish health and happiness to the future generations of this district."

Another development of historical significance took place toward the end of the year when satisfactory arrangements were made for the Saanich Health Unit to be expanded to include Sidney and district to the north, and also the unorganized territory to the west, including View Royal, Colwood, Langford, Happy Valley, Sooke, Metchosin, and Jordan River. The Saanich Health Unit was the first full-time health unit to be established in the Province and, since its inception in 1927, has served the municipal territory of Saanich only. The Esquimalt rural nursing service, serving the Langford, Sooke, and Jordan River areas, is also one of the early public health nursing services established in the Province. This fusion of two long-established services is a happy event and will be the means of bringing modern and adequate local health service to the rural areas, and will also make for a more efficient service within the municipal area. Here again the new plan of health unit administration and finance assisted considerably in bringing this consolidation about. It is anticipated that the enlarged health unit will be in full operation early in January, 1947.

Another development of considerable significance took place during the year when the City of Victoria and the Municipality of Esquimalt agreed to the amalgamation of their health services, with central administration from a joint Board of Health. The plan has developed well and should form the basis of demonstrating the value of amalgamation of health services in a large metropolitan area as a logical means of providing uniform, consistent, well-integrated, and efficient public health service at a reasonable cost for the residents of those areas.

The Greater Vancouver Metropolitan Health Department has continued to bring the benefits of such an amalgamated service to the residents of that area. However, the shortage of trained and qualified public health personnel has

interfered in no small way in provision of that continuity of service which makes for the most effective results.

While this section of the report deals with full-time health services, nevertheless, time must be taken to express the appreciation of the Department to the many part-time Medical Health Officers throughout the Province. These physicians are to be commended for their help and co-operation during the past year. All of them are busy in the private practice of medicine, and the amount of time and effort which they give to public health work and health problems of their areas is much appreciated. It has been possible this year to have more senior officials from the central office of the Department visit local areas and discuss various problems with the Medical Health Officers of the area. This has assisted in no small way in a better interpretation of the policies of the Department and in the interpretation of procedures which a physician without public health training finds difficult to appreciate. It is hoped that the time will not be too far distant when several additional health units can be established to relieve these busy physicians of these extra duties which they have willingly accepted.

PREVENTIVE DENTISTRY.

There is nothing new to report in this particular phase of public health. Many of the rural areas are still without dentists, while in others the resident dentists have been too busy to find time for children's preventive clinics. This is not in any way indicative of a lack of interest among the people for this work, since the reverse is true. Numerous communities would be extremely anxious to assist to the best of their ability in the establishment of local dental clinics if the dentists were available. A few small areas, through heroic efforts, have been successful in transporting a small number of children in their communities a considerable distance to dentists in other areas. This does not begin to scratch the surface of the tremendous health problem which is building up year after year because of the lack of widespread dental care for school- and preschool-age children throughout many of the rural areas of British Columbia. The dental clinics in Victoria and Greater Vancouver areas have continued to carry on a successful planned program of preventive dentistry.

TABLE I.—TABLE SHOWING RETURN OF CASES OF NOTIFIABLE DISEASE IN THE PROVINCE OF BRITISH COLUMBIA FOR THE YEAR 1946.

	Cancer.	Cer. Sp. Meningitis.	Chicken-pox.	Conjunctivitis (Acute).	Diphtheria.	Dysentery (all Forms).	Encephalitis.	Epidemic Hepatitis.	Erysipelas.	Gonorrhœa.	Influenza.	Measles.	Mumps.	Ophthalmia Neonat.	Poliomyelitis.	Rheumatic Fever.	Rubella.	Salmonellosis.	Other.	Scarlet Fever.	Septic Sore Throat.	Syphilis.	Trachoma.	Tuberculosis.	Typhoid Fever.	Undulant Fever.	Vincent's Angina.	Whooping-cough.	Total.
Abbotsford			18	21								34	94				6			5	1				1	2		1	183
Agassiz			3									7	12		1		1											24	48
Alert Bay			19								5	3	4				1				1								33
Armstrong			2	3							10						8			2	1		1					4	31
Ashcroft												1	4															7	12
Atlin									1		19																		20
Bella Bella			47			1			3		30	27																	108
Bella Coola			4	47							9	1																	61
Blubber Bay				2		6					6		2																16
Bralorne			28																										28
Britannia Beach			2									13	13				2												30
Burns Lake			1			1						3									2								7
Campbell River			17						1		5	1	1							2									27
Castlegar			38									8			1		8		1	1									57
Ceepeecee			2								118																		120
Central Vancouver Island Health Unit		3	199	5								79	288		5		23		7	25	1				1	1			637
Chase			8	3							33									3	1								48
Chemainus													3																3
Chilliwack			92		1							5	206				32			5	1					1		26	369
Cloverdale																				2									2
Coal Creek																													
Cobble Hill																													
Coquitlam		1	64		1							67	20							2									155
Courtenay			28	2				2			108	20	56		1		2	3	3	1	9					3			238
Cranbrook			15									23									2								40
Creston			9					2	4			175	9				3			5								1	208
Cumberland			18									1	6							23									48
Duncan			154	29	1						36	2	6							1	1								230
Enderby			2								6	5	3		1		7			2	6								32
Esquimalt					1								1																2
Essondale																				2									2

Fernie												119	1																120
Field			3								5										3				1				12
Fraser Lake																													
Garden Bay			1																										1
Gibsons Landing			24									2	49				2	1		1	2								81
Golden			1									3					1												5
Granthams Landing																													
Grand Forks			18					1			1	1									1		1					2	25
Greenwood			15									2	1							1									19
Hammond			2								6	14	1																23
Hazelton			17																										17
Hedley			13									1	63				4			1									82
Hope													2																2
Invermere			2									9	1							6					1				19
Ioco			18	2									1				2												23
Kamloops			7					1			70	52	16					2		15			2		6			2	173
Kaslo			3																		3								6
Keremeos																													
Kimberley			1																										1
Ladner		1	25									12	67				2		1	9									117
Langley Prairie			39		6			1				30	73				6			1	4							3	163
Lillooet												4	16																20
Lytton			16								45										1						1	3	66
McBride			26									2					2				7								37
Massett			2																										2
Mayne Island			2					2			10	2	10				2												28
Merritt			1										8																9
Michel		1	25									95																	121
Mission City			21								1	54	127							9	1						2	1	216
Nakusp			17									49					3												69
Nelson			41	1				8	7		7	8	88				2			11									173
New Denver			13						1		2	8								2									26
New Westminster		5	244		7	83	1		8			125	203	1						18	6				2				703
North Okanagan Health Unit		1	161	5					2		11	80	11		2		10		1	13	3		1		1	1	2	26	331
Oak Bay		1	33						2			2	45				3		1	2									89
Ocean Falls													2																2
Okanagan Valley Health Unit			383	50				12	2			31	68		2		11			21							1	4	585
Oliver			91	2				2				5	1								4				1	2		6	114
Osoyoos			3																	4									4
Peace River Health Unit			104	12	1			7	1		110	7	2			10	15				3								272
Pender Harbour			1																										1
Port Alice			40	28									1																69
Port Coquitlam		1										3																	4
Carried forward		14	2,183	212	18	91	1	33	37		653	1,195	1,585	1	13	10	158	6	14	192	64		5		14	12	4	110	6,625

TABLE I.—TABLE SHOWING RETURN OF CASES OF NOTIFIABLE DISEASE IN THE PROVINCE OF BRITISH COLUMBIA FOR THE YEAR 1946—*Continued.*

	Cancer.	Cer. Sp. Meningitis.	Chicken-pox.	Conjunctivitis (Acute).	Diphtheria.	Dysentery (all Forms).	Encephalitis.	Epidemic Hepatitis.	Erysipelas.	Gonorrhœa.	Influenza.	Measles.	Mumps.	Ophthalmia Neonat.	Poliomyelitis.	Rheumatic Fever.	Rubella.	Salmonellosis.	Other.	Scarlet Fever.	Septic Sore Throat.	Syphilis.	Trachoma.	Tuberculosis.	Typhoid Fever.	Undulant Fever.	Vincent's Angina.	Whooping-cough.	Total.
Brought forward	.....	14	2,183	212	18	91	1	33	37	.....	653	1,195	1,585	1	13	10	158	6	14	192	64	.....	5	.....	14	12	4	110	6,625
Port Haney	.....	.....	35	.....	.....	.....	.....	.....	.....	.....	.....	253	14	.....	.....	.....	1	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	306
Port Moody	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	2	2	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	10
Powell River	.....	1	18	.....	.....	.....	.....	1	.....	.....	.....	1	51	.....	.....	.....	10	.....	.....	1	40	.....	.....	.....	.....	.....	.....	.....	123
Prince Rupert Health Unit	.....	.....	130	.....	.....	.....	.....	.....	.....	.....	.....	17	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	160
Prince George	.....	.....	202	.....	3	.....	.....	.....	.....	.....	.....	9	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	216
Princeton	.....	.....	47	16	1	.....	.....	.....	.....	.....	.....	.....	5	.....	.....	.....	3	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	76
Qualicum Beach	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Queen Charlotte	.....	.....	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	9
Quesnel	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	2	2	.....	.....	.....	2	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	8
Revelstoke	.....	.....	30	.....	.....	.....	.....	.....	.....	.....	2	25	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	3	62
Saanich	.....	.....	66	66	.....	.....	.....	7	3	.....	.....	37	406	.....	.....	.....	18	.....	1	39	20	.....	.....	.....	.....	.....	.....	10	673
Salmo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salmon Arm	.....	1	.....	.....	.....	.....	.....	1	.....	.....	12	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	16
Saltspring Island	.....	.....	48	.....	.....	.....	.....	.....	.....	.....	.....	10	5	.....	.....	.....	.....	.....	.....	.....	17	.....	.....	.....	.....	.....	.....	.....	80
Sardis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sidney	.....	.....	17	3	.....	.....	.....	2	.....	.....	.....	15	6	.....	.....	.....	4	.....	1	4	.....	.....	.....	.....	.....	.....	.....	.....	52
Slocan City	.....	.....	2	.....	.....	7	.....	.....	.....	.....	54	213	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	276
Smithers	.....	.....	28	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	42
Sooke	.....	.....	21	12	.....	.....	.....	2	.....	.....	.....	4	24	.....	.....	.....	2	.....	.....	12	4	.....	.....	.....	.....	.....	.....	1	82
Squamish	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	5	1	11	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	22
Tashme	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12
Telegraph Creek	.....	.....	1	.....	.....	7	.....	.....	.....	.....	310	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	319
Terrace	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	3	.....	.....	.....	.....	.....	.....	.....	10
Tofino	.....	.....	1	.....	.....	1	.....	.....	.....	.....	35	.....	.....	.....	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	41
Trail	.....	1	54	.....	.....	.....	.....	.....	1	.....	.....	252	198	.....	1	.....	6	.....	.....	18	.....	.....	.....	.....	.....	.....	.....	.....	531
Greater Vancouver Metropolitan Health Committee	.....	13	1,711	.....	25	3	.....	15	30	.....	15	398	2,626	.....	4	.....	69	.....	151	272	.....	.....	.....	.....	2	7	.....	42	5,383
Vanderhoof	.....	.....	1	.....	14	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18
Victoria	.....	1	105	23	.....	3	.....	1	2	.....	.....	76	604	.....	3	.....	63	.....	6	45	.....	.....	.....	.....	.....	.....	4	1	937
Wells	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	2	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	5

White Rock																												
Williams Lake			4	9								14	4				1				8		11					51
Woodfibre			4									7	1															12
Whole Province—																												
Cancer	2,521																											2,521
Gonorrhœa									4,618																			4,618
Syphilis																					2,126							2,126
Tuberculosis																							2,536					2,536
Totals	2,521	31	4,725	356	63	112	1	62	74	4,618	1,086	2,546	5,558	1	21	10	343	9	174	597	160	2,126	17	2,536	17	19	8	167	27,958

REPORT OF THE DIRECTOR OF PUBLIC HEALTH NURSING.

MISS DOROTHY E. TATE, DIRECTOR.

INTRODUCTION.

Previous activities in public health nursing of the Department of Health could not have foretold the changes to be made and the problems to be solved in 1946. Many developments in related professional fields have created unforeseen changes which involved nursing and the general health field. The outcome seems to have been favourable, although results cannot all be measured by tangible means. Natural growth within the service has taken place this year, which has required a great deal of effort in order to meet the anticipated developments.

It is significant that in the past year the percentage of population receiving public health service has increased from 85 per cent. to 91 per cent. The increase is through organization of public health nursing service in districts previously not covered and in extending the boundaries of existing health units. Requests for service in many other districts have been received and will be fulfilled in the next year in the order which requests have been received, as well as the importance of the centre in public health matters. The Department's ability to obtain public health workers determines the extent to which expansion can take place. The field staff have made a very definite contribution in the past year in interpreting the public health service, so that forty-three public health nurses have been attracted to the generalized public health field.

REORGANIZATION.

The acceptance by the Government of the Report of the Commission of Inquiry into Educational Finance, by Dr. M. A. Cameron, placed the Department in an advantageous position for planning further developments in the public health nursing field. The boundaries for adequate school units, as recommended, in the Province were suitable for this purpose. This can best be explained by quoting from the report:—

"There are limits to largeness as well as to smallness of districts. The unit should be understandable or comprehensible to the local people. It should, if possible, be a community, an economic entity, or a trading area. This does not mean that the unit need always be small in extent. In some parts of the Province the local people are accustomed to travelling great distances on relatively minor matters. Further, the boundaries of districts should on occasion be pushed well out in order not to leave some small school dangling."

As a result of the rearrangement of school districts, conditions arose which affected the public health nursing service:—

(*a*) In some areas existing public health nursing districts were being disrupted. New school districts were asking for the same type of public health nursing service which had been in operation in part of the district, even though it was impossible with existing nursing staff to service the enlarged school district.

(*b*) All existing public health nursing districts did not coincide, either *in toto* or in part, with the new school district administration boundaries.

In the districts where public health nurses were covering only part of the area being administered by a School Board, it became necessary to readjust public health nursing boundaries and to secure additional public health nursing personnel in order to provide uniform public health service throughout the area.

In practice the population, as well as the extent of the district, governed the consideration in proposing that one public health nurse serve more than one area or that several public health nurses serve within one district. Public health nursing districts were therefore readjusted to coincide with those suggested for educational units.

While reviewing the public health administration as it operated in the past, recognition was given to the fact that there was a wide variation in local costs of public health nursing service when estimated on a *per capita* basis, due to the fact that the population served by public health nurses varied considerably because of geographical differences, while grants from the Provincial Department of Health remained fixed. Local districts in the past were required to make up the balance of the cost of the service.

Because public health nurses in the past were employed locally and the services financed jointly by local public health nursing or school boards and the Provincial Department of Health, it was impossible to provide public health nurses with an adequate superannuation scheme.

As a result, personnel of the Bureau of Local Health Services drew up a plan to be presented to the boards concerned. The proposals were: That public health personnel become employees of the Provincial Department of Health, that a local fixed maximum rate of 30 cents *per capita* be charged by the Provincial Department of Health to cover the local cost of the public health nursing and school medical inspection service (dental service excluded), and that the Provincial Department of Health assume the balance of the cost of the service in lieu of the grants formerly paid to the local districts.

The guide prepared on the operational details of the public health nursing service is as follows:—

(1) The Provincial Department of Health shall pay the salaries of the public health nurses in order to provide a practical plan of superannuation. The salary and increments to follow the Provincial public health nurses' salary scale.

(2) The Provincial Department of Health shall assume financial responsibility for transportation within the nursing area.

(3) The Provincial Department of Health shall outfit the district with special equipment—baby-scales, nursing-bags, record-binders, etc.

(4) The local district, as in the past, shall continue to supply adequate office space with basic equipment—desks, chairs, cupboards, etc.

(5) The funds for the public health nursing service determined at the fixed maximum rate referred to above shall be paid by the new School Board to the Provincial Department of Health.

(6) In assessing local public health nursing service costs on a *per capita* basis, the following population estimate shall be used and adjusted every two years:—

(i) In organized areas the population figure to be midway between that given at the last census and the figure reported to the Department of Municipal Affairs by the local Council.

(ii) In unorganized territory the population figure to be midway between the last census figure and the last estimate of population made by the Division of Vital Statistics.

(7) A local Advisory Public Health Committee shall be set up wherever a public health nursing service is established.

(8) The Provincial Department of Health shall grant annually to the local Advisory Public Health Committee a sum of $120 per public health nurse, to be used for local running expenses—telephone, medical supplies, meals, library books, advertising, etc. The money to be budgeted and accounted for each year.

(9) Existing public health nursing equipment, including cars, shall be turned over to the Provincial Department of Health. Wherever an existing Public Health Nurses' Committee has a large bank balance, it is recommended that it be placed in a trust fund and disposed of in consultation with the Provincial Department of Health in a manner or for a purpose of benefit to the local public health. It is also recommended that a statement of existing assets be submitted to the Provincial Department of Health.

In public health nursing areas an Advisory Public Health Committee shall be set up in consultation with the new School Boards and former Nursing Committees. Functions of the Advisory Public Health Committee are outlined below. In health unit areas the Union Board of Health shall assume the administrative functions of the Advisory Health Committee outlined below. In these areas special provision is made for local advisory committees.

REGULATIONS FOR THE FORMATION OF A LOCAL ADVISORY PUBLIC HEALTH COMMITTEE.

1. The Advisory Public Health Committee shall consist of from four to six members, chosen from elected representatives of the people.

(1) From organized communities, they shall be members of Municipal Councils or School Boards.

(2) From unorganized communities, they shall be members of the School Board.

2. The elected board shall appoint one member to represent the interests of the community at large. This person need not be an elected representative, but may be chosen because of his interest in public health and the community.

3. The members shall be chosen to represent geographical units of the nursing district, the number of members appointed from each unit being in approximate relation to the population of the unit compared with the total population of the district.

4. Members of the committee shall serve not less than two years. Representation on the committee is recommended for a maximum period of four

consecutive years. It is desirable for some members to continue serving on the committee during the period of introduction of new members.

5. A chairman and secretary-treasurer shall be appointed by the committee from amongst its members. The secretary-treasurer shall be a committee member or a qualified individual in the community who is paid for his services, or a secretary already serving an official body, for example, a School Board or Municipal Council.

The local committee shall approach the Provincial Department of Health regarding special local circumstances which require adjustment in administration to meet local needs.

DUTIES.

A. *Administrative.*

1. The local committee shall be responsible for estimating and managing the budget under their control. Local expenditures shall include telephone, medical and office supplies, library books, meals, advertising, etc. The local budget shall be submitted to the Provincial Department of Health and Welfare for approval annually prior to December 1st of each year.

2. The local committee shall be responsible for securing office accommodation and equipment for the nursing service. It is recommended that space in a public building be secured. The following requirements are suggested as a guide:—

(*a*) Heated room to serve as an office.
(*b*) Running water in room or available near by.
(*c*) Telephone in room or use of near-by telephone.
(*d*) Desk, chairs, and cupboard.
(*e*) Additional nursing supplies, secured with guidance of nurse following her appointment.

3. The local committee shall assume responsibility for assisting the nurse to secure satisfactory living accommodation in the community. It is well to keep in mind the nurse's need for congenial and comfortable arrangements for her personal life.

4. The local committee shall be consulted by the Provincial Department of Health regarding the appointment and transfer of public health nursing staff.

B. *Educational.*

1. Meetings shall be held at sufficiently frequent intervals to keep the members informed of public health activities. The agenda shall contain a discussion of public health nursing activities. The public health nurse is the local representative of the Provincial health services and as such shall be present at and throughout all meetings.

2. Members shall be familiar with the recommendations of the Provincial Department of Health in regard to local nursing services and with the work of the public health nurse in the community.

3. Members shall be prepared to interpret the public health nursing service and trends in public health work to individuals and groups in the community.

4. Members shall take an active part in community groups organized to sponsor health education.

5. Members are citizens of the community and as such have an opportunity to learn about community attitudes and needs in relation to the public health nursing service. They can assist the nurse to develop her program by discussing with her significant community reactions. Suggestions will be appreciated and given every consideration.

The method adopted in presenting this proposal—that is, conferences in the districts with official groups, citizens of the community, and all staff members—proved successful, in that all public health areas but one adopted the new plan for the reorganization of the public health nursing service.

PUBLIC HEALTH NURSING PROGRAM.

The recognized and accepted public health nursing program of 1946 is not the same as it was twenty-five, ten, or even two years ago. The specialized worker, the school nurse, the tuberculosis nurse have been replaced by the worker in the generalized field. The public health nursing program with its aim to prevent disease, reduce sickness, and to produce positive health, is to-day carrying the following activities:—

Maternal.

Getting in touch with prospective mothers and assisting them in securing complete medical and dental supervision throughout pregnancy.

Interpreting doctors' orders, explaining details of nutrition, personal hygiene, physiology of pregnancy, advising adequate clothing for mother and baby.

Helping the family carry out specific medical advice for the mother's and baby's care.

Assisting in planning for confinement in home or hospital, stressing importance of change in household following the addition of the new member.

Demonstrating special techniques required for the care of mother and baby in the home and supervision of care given by relatives, attendants, etc.

Helping to secure post partum medical examination.

Child Health.

Infant and Preschool.

Assisting parents to recognize the need for a suitable environment for the child, demonstrating special techniques of child care, for example, bathing the baby, preparing formula, etc.

Assisting in health supervision of the child in order that physical and mental growth may be maintained. Encouraging better child-care practices by stimulating more complete medical health supervision, by the establishment of child-health conferences, and through visits to the home.

Assisting in promoting health by securing medical supervision, dental examinations, and correction of defects for every child.

Assisting in the control of communicable diseases by teaching the recognition of early symptoms, the importance of isolation, and the value of immunization.

Encouraging the early protection of children from known preventable diseases by providing opportunities for protection at group immunization clinics and by referrals to the family physician.

Assisting the family to utilize good nutrition practices, interpreting specific medical advice concerning feedings.

Participating in programs for the prevention of handicaps, finding of orthopædic cases, and the correction of known physical or mental defects.

School.

Visiting all schools in district on planned schedule.

Participating with school personnel in developing a school health education program suited to pupil needs; providing teachers with the latest scientific information on health subjects.

Assisting the School Medical Inspector with the physical examination of school-children; interpreting findings and recommendations to teachers, parents, and children. Assisting in obtaining correction of defects.

Assisting in the control of communicable diseases through teaching the recognition of early symptoms, the importance of isolation, and the value of immunization.

Providing opportunities, with the assistance of School Medical Inspector, for the protection of students against communicable diseases by organizing and assisting with school immunization clinics.

Promoting the maintenance of a physically healthful school environment, including sanitation, seating, lighting, and ventilation.

Promoting the maintenance of an emotionally and socially healthful environment. Encouraging teachers and parents to recognize normal health and deviations from it.

Promoting school nutrition programs suited to pupil needs.

Planning with school authorities for the care of emergency and minor illness in school. Supervising first-aid facilities and treatments.

Visiting in homes. Interpreting public health nursing program in school to parents with a view to encouraging more healthful living.

Co-ordinating public health nursing activities for school-children with all other health services in the community.

ADULT HEALTH.

Teaching the fundamentals of health in personal hygiene in order to assist in the prevention and retardation of diseases specific to adult life.

Demonstrating nursing care, supervising care given by individuals in the home, when indicated.

Encouraging periodic health examinations.

Promoting health through the assistance and support of community projects—special classes, etc.

COMMUNICABLE DISEASE CONTROL.

Teaching the need for early diagnosis, treatment, and convalescence.

Assisting the family to carry out isolation technique, quarantine regulations, and specific medical instructions.

Assisting, under authority of Health Department, in making epidemiological investigations.

Planning and organizing for protection from communicable diseases through immunization and by stressing the need for better sanitation in home and community.

Tuberculosis.

Assisting in finding tuberculosis individuals through individual and group examination methods.

Educating all contacts of tuberculous patients of the necessity of regular examination; assisting them to obtain these examinations.

Arranging for necessary nursing care, teaching through demonstration, and supervising the care of patient given by responsible persons.

Teaching patients and contacts the importance of personal hygiene, and the precautions to be taken to prevent the spread of infection.

Assisting in the integration of local and Provincial health and welfare services, so that the patient and family may make emotional and social adjustments necessary to a long-term communicable disease.

Venereal Disease.

Stimulating case-finding methods so as to discover all cases of venereal disease.

Promoting the reporting of infected individuals, and the results of epidemiological investigations of early infections, so that medical examination and supervision is obtained.

Assisting in preventing the spread of infection by teaching patient and groups the scientific facts of the disease.

Promoting continuity of treatment by explaining its value and by interpreting medical directions.

SANITATION.

Ascertaining the source of water-supply and the means of excreta-disposal in homes and schools visited, referring them for investigation when necessary.

Inquiring about the source of milk-supply; teaching standard methods of milk production and handling, including need for pasteurization.

Observing ventilation and screening, lighting; teaching proper measures in relation to them.

Teaching the importance of correcting unsatisfactory sanitary conditions, and the methods of immediate protection pending correction.

PUBLIC HEALTH EDUCATION.

Encouraging public health education through distribution of literature, films, pamphlets, etc., in home, school, and community.

Stimulating community groups to develop active interest in community health.

Student Program.

Student field experience is provided for students from the University of British Columbia in selected areas throughout the Province to provide a period

of orientation to the public health nursing program in rural communities, and to provide definite experience in the various phases of a generalized service. Fifty students from the University of British Columbia had from two to four weeks of planned student experience during the past year.

Other Activities.

Up to this point some of the phases of public health nursing have been briefly outlined. In addition, there are other phases which are receiving concentration in certain areas now, and which will be expanded in other areas as personnel is available. Examples of these are cancer, arthritis, industrial hygiene, mental hygiene, adult education, accident-prevention, nutrition, oral hygiene, and public health education.

PERSONNEL.

Each public health nurse on the staff deserves credit for her contribution to the progress in the work this year. Again this year a number of changes beyond the Division's expectations have occurred.

Changes in personnel from 1942 to 1946, inclusive, are shown in Table II, as follows:—

Table II.—Comparison of Provincial Public Health Nursing Staff Changes during the Five-year Period 1942–46.

	1942.	1943.	1944.	1945.	1946.
Positions available	47	52	56	64	77
Total staff changes	31	37	33	48	88
Percentage staff turnover	66	71	59	75	117
New appointments	11	17	13	22	42
Resignations	9	12	11	16	27
Transfers	11	8	9	10	19

In 1946 there were seventy-seven positions available to public health nurses, for which a total of eighty-eight changes were necessary. The 117-per-cent. turnover is high and is to be expected in a transition period from war- to peace-time activities. Marriage was the reason for more resignations than any other single factor, and three of the public health nurses who had been married in previous years left to return to their homes. Six nurses resigned to attend university for further study; four accepted positions in other fields of nursing—three in other Provinces; two joined allied branches of the service; and one public health nurse retired.

In comparing the changes in public health nurses for 1942 to 1946, it is noted that advances have been encouraging in the increase of 63 per cent. in positions available. New appointments have been 31 per cent. higher than in 1942. The new appointments, or 20-per-cent. increase over last year, is the factor responsible for satisfactorily meeting the additional positions available.

The Division is grateful to have Mrs. Pauline Yaholnitsky in her new position as Supervisor of Public Health Nursing in the Cariboo, Prince Rupert, and Peace River areas. Her understanding of problems in this widely scat-

tered district is an advantage. Mrs. Yaholnitsky has had public health nursing experience in Saskatchewan and in British Columbia. She was appointed to the Peace River Health Unit in 1935 and organized the public health nursing service in Quesnel. She took advantage of the course in supervision at McGill in 1943. Soon after her return she assumed the supervision of the Peace River Health Unit, where she carried on admirably without the services of a Unit Director. The Division welcomes Mrs. Yaholnitsky as a supervisor and hopes she will enjoy her new work.

Miss Lyle Creelman, in her brief period with us, made a contribution through time studies, which will be invaluable when discussing a change of emphasis in public health nursing duties. Miss Creelman had valuable experience as a public health nurse in British Columbia and as Director of the Metropolitan Health Service in Vancouver. She was employed with U.N.R.R.A. for two years, where she was administrator of nursing activities in the British zone in Germany.

In anticipation of the first position being filled as Supervisor of Public Health Nursing within a health unit, the Division looks to Miss Dorothy Priestly for a contribution in guiding public health nursing students. Preparation for the position has been a long one. It is hoped that similar positions will be created as qualified and experienced public health nurses are available.

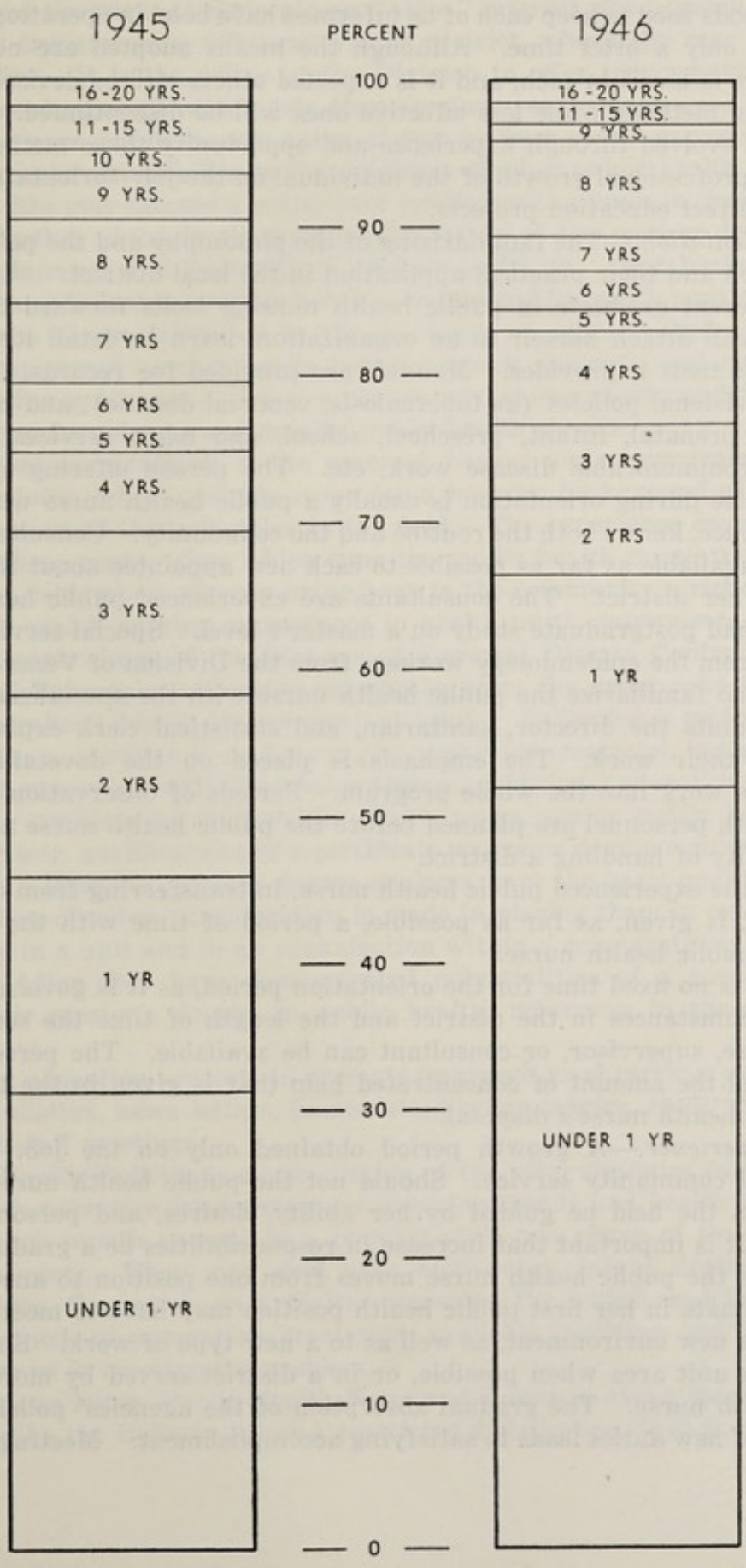
In reviewing the records of the presently employed public health nurses, notice is drawn to the fact that 51.9 per cent. have been field staff members for less than one year, 31.2 per cent. have been in the field from one to five years, 14.3 per cent. from five to ten years, and 2.6 per cent. over ten years. However, among the group who have been with the Department of Health less than a year, 15 per cent. have had from three to sixteen years' experience in other public health nursing agencies.

TABLE III.—LENGTH OF SERVICE OF PUBLIC HEALTH NURSES IN PROVINCIAL PUBLIC HEALTH NURSING BY NUMBER OF YEARS OF SERVICE, DECEMBER, 1946.

Years of Service.	Number.	Per Cent. of Total.
Less than one year	40	51.9
One year	11	14.3
Two years	4	5.2
Three years	4	5.2
Four years	5	6.5
Five years	1	1.3
Six years	2	2.6
Seven years	2	2.6
Eight years	5	6.5
Nine years	1	1.3
Ten years	0	.....
Eleven to fifteen years	1	1.3
Fifteen plus	1	1.3
	77	100.0

CHART E.—LENGTH OF SERVICE OF PUBLIC HEALTH NURSES IN PROVINCIAL PUBLIC HEALTH NURSING.

(By per cent. of total as at December, 1945, and December, 1946.)



EDUCATION.

The need for in-service education increases with changes in policy, changes in emphasis of program, increase in number of staff members and population. Some methods used to keep each of us informed have been in operation for years, others for only a brief time. Although the means adopted are not of equal value, there is merit in each, and it is expected others will be devised to add to the existing methods while less effective ones will be discontinued. Gradually there have evolved through experience and opportunity three methods for the continued professional growth of the individual on the job—orientation, experience, and direct education projects.

1. *Orientation.*—The familiarizing of the philosophy and the policies of the organization and their practical application in the local district.

The recent graduate in public health nursing looks forward to the time when she can attach herself to an organization, learn in detail its operation, and use the tools it provides. Manuals are provided for records, for instructions of divisional policies (as tuberculosis, venereal disease), and information governing prenatal, infant, preschool, school, and adult services, sanitation program, communicable disease work, etc. The person offering guidance to the appointee during orientation is usually a public health nurse who, through her experience, knows both the routine and the community. Consultant nursing service is available as far as possible to each new appointee about the time she arrives in her district. The consultants are experienced public health nurses who have had postgraduate study on a master's level. Special services include guidance from the epidemiology workers from the Division of Venereal Disease Control, who familiarize the public health nurse with the specialized program. In health units the director, sanitarian, and statistical clerk explain various phases of their work. The emphasis is placed on the dovetailing of the individual's work into the whole program. Periods of observation with other public health personnel are planned before the public health nurse assumes the responsibility of handling a district.

Even the experienced public health nurse, in transferring from one district to another, is given, as far as possible, a period of time with the previously employed public health nurse.

There is no fixed time for the orientation period, as it is governed entirely by the circumstances in the district and the length of time the senior public health nurse, supervisor, or consultant can be available. The personal factor does control the amount of concentrated help that is given in the time at the new public health nurse's disposal.

2. *Experience.*—A growth period obtained only on the job, to provide better local community service. Should not the public health nurse's various positions in the field be guided by her ability, desires, and personal circumstances? It is important that increase in responsibilities be a gradual process, assumed as the public health nurse moves from one position to another. The recent graduate in her first public health position may have to meet and adapt herself to a new environment, as well as to a new type of work. She is placed in a health unit area when possible, or in a district served by more than one public health nurse. The gradual absorption of the agencies' policies and the assuming of new duties leads to satisfying accomplishment. Meeting the every-

day problems in public health stimulates the new worker. As the public health nurse learns to cope with the everyday problems, she is stimulated to seek experience with more difficult problems.

To assist the nurse to maintain an " alive " interest, she is given the opportunity of a transfer to a different type of district, where she may have more responsibility. It is the policy of the Division to offer inducements to public health nurses to transfer every two, three, or four years.

The average public health nurse of two to four years' experience is also ready to accept responsibility in the guidance of other public health nurses and students. She may become a senior over public health nurses in the generalized field. A further phase in the growth experience of the worker develops as a result of planning and executing a student program. Her background has usually been sufficient to prepare her to organize public health nursing in a new district; she shows initiative in the guidance of others—student-nurses in training, registered nurses, public health nursing students, and recent public health nursing graduates. She is a person who shows ability and foresight in developing and guiding a community public health service.

Positions are available in the venereal disease control program and child-guidance clinics, which provide scope for a broader background of knowledge and application of the principles to the field. The experience covers a period of one to three years, after which time the public health nurse returns to the generalized field, where she can bring back to the community a richer program.

Public health nursing supervisors in health units, supervisors of a group of nurses, supervisors of the Division of Venereal Disease Control and of the Division of Tuberculosis Control are chosen from the group who have served in the generalized field in two or more districts. Following a period of special training, the supervisor is no longer just supervisor material, but assumes the position of supervisor with knowledge through additional education.

In the positions of staff public health nurse, senior public health nurse, and supervisor, qualifications of a certificate course or degree course are equally acceptable. However, as only degree students have the basic qualifications for consultant or director, consideration is made in placing them in centres to gain experience in a unit and in an organization within a comparatively short space of time. After they have demonstrated potentialities of a consultant, they obtain their master's degree in public health, returning to their consultant position.

Direct education projects to promote improved local services are many and varied—bulletins, news letters, pamphlets, library service, study groups, institutes, and staff meetings.

The Health Bulletin is a compilation of the vital statistics for the current month with narrative interpretations stressing trends and health implications. Articles each month present in a popular style one phase of the work in its broader aspects. They may deal with birth-rates, infant deaths, accidents. For instance, the article on arthritis presented the widespread incidence and known methods of prevention, treatment, available facilities, and the challenge still before us in meeting the problem.

The news letter, Public Health News and Views, is also a monthly publication. Unlike the Bulletin it has a restricted distribution, that is, for technical

employees of the Provincial Department of Health and Welfare and representatives of other public health organizations. Policies, special studies, group activities, book and article reviews, new pamphlets, and personnel items are circulated through this publication. It forms a medium of exchange of ideas from central office to the field and thus results in free expression of ideas and modifications of programs.

Pamphlets are continually being brought to our attention. All new pamphlets are appraised in the office before being distributed to the field. Now that there is a public health educator on the staff of the Department, pamphlets are gradually being compiled by staff members. "Understanding the Normal Child" and "Feeding the Normal Child" are examples of successful material written by one of the health unit staffs to meet local situations and present in a brief way the authentic material in child-care that is published in books and journals.

Library services, although always available, have been improved and give stimulation to all. Inquiries for books, films, and material on specific subjects have increased markedly in the past few years, indicating growth in the field staff.

Staff meetings in the health units and larger public health nursing centres continue to be a regular medium for exchanging information. Minutes are kept and any resulting discussion which might assist other workers in the Province is forwarded to the central office for consideration and action.

Public health nursing study groups have proved to be one of the most democratic of educational methods. Study groups are made up of the public health nurses in each geographical area of the Province. Many of the nurses voluntarily travel 100 to 200 miles to join their fellow members in discussion of local and Provincial public health policies.

In these sessions the public health nurses interchange ideas and discuss articles which they have found interesting. They also work on such practical projects as constructing form letters and simplification of record systems. As a group they discuss how they may best use the equipment and material provided. As a group also they will often discuss more frankly their opinion on suggestions sent out from the central office.

The Institute is the largest joint effort of the central office staff and the field staff to keep pace with developments in the many branches of public health. Complete field staff, health unit directors, public health nurses, sanitarians, statistical clerks, representatives of other public health organizations in the Province and central office personnel meet for a four-day concentrated study period.

Speakers from allied fields are invited to present descriptions of their work and phases of it which will lead to a better understanding and closer co-operation.

Examples of the educational methods could be cited indefinitely, but the specific ones presented will give you an idea of the system we have adopted.

Plans for 1946 were ambitious in the face of problems which had to be overcome. Progress has been made in the last year and leads one to believe that ambitions for the coming year can also be met in part, if not completely.

REPORT OF THE CONSULTANT IN NUTRITION.

MISS DORIS L. NOBLE, ACTING CONSULTANT IN NUTRITION.

During the four years since the establishment of a Nutrition Service with the Department of Health in 1942, the program has been continually extended in line with information being made available through research and other channels. In order to provide the most practical service, various approaches to nutrition-work have been introduced, and the most effective ones incorporated into a continuing program.

In recent years increasing evidence of the relation of nutrition to all other factors of health has shown the necessity of developing the program of the Nutrition Service as an integral part of the total public health program. In view of this, considerable work during 1946 was concerned with establishing a policy and program which would facilitate the provision of a more continuous nutrition service through the local health program. Advances made in this regard have, in turn, served to influence the type and extent of the various services provided during the year. Highlights of the complete program are reviewed in the ensuing report for 1946.

ORGANIZATION OF THE NUTRITION SERVICE.

The nutrition policy now adopted emphasizes the importance of the participation of the field personnel in all local public health nutrition-work. The nutrition program is therefore administered by the local public health worker as part of the generalized program of local health service. The provision of all services which will assist the public health personnel with local nutrition-work is now recognized as the most important task of the Nutrition Service. The variety of services provided to local public health personnel during the year has included assistance with nutrition education in the local health education program, school-lunch work, and other community or individual nutrition problems.

In addition to the local or field service, the nutritionists provide a consultant service to Provincial organizations. During the year assistance was given, on request, to the food-service departments of hospitals and institutions, in addition to co-operative work with other Government departments and various agencies.

GENERAL PROGRAM.

Progress toward developing nutrition education as an integral part of the total public health education program can be reported in 1946. Educational work previously done in part through local nutrition committees, or by the Nutrition Service directly, is now being carried out by or with the co-operation of the public health personnel as part of the general health education program in the area concerned. With a view to assisting the local public health workers with nutrition in the health education program, the Nutrition Service, in collaboration with the Division of Public Health Education, provided the following services during 1946:—

Nutrition information was furnished through articles in regular publications such as the Public Health News and Views, the Health Bulletin, The Rural School Teacher, and The Fisherman.

Considerable work was done in evaluating and revising nutrition literature and illustrative material used for general distribution. Sample copies of all approved material available for local distribution were compiled in reference files and distributed, with recommendations to all public health nurses in the field.

A display of the educational material on nutrition made available to teachers by local health services was shown at the Victoria Summer School of Education.

Further assistance with nutrition education was provided to field personnel as well as to various agencies through correspondence, discussions, the preparation of special material, and other channels.

Emphasis on administration of the Nutrition Service through the local program has increased the need for public health workers to be well informed in the science of nutrition. During the year just completed, considerable time was spent in planning a program to this end. Nutrition reference manuals, which include a series of lectures on public health nutrition, have recently been compiled for distribution to health units and public health nursing study groups. It is hoped that this manual, in providing material for study and discussion, will assist effectively as both a reference and study guide for field-work.

In addition, regular field-trips to be made by the nutritionists for the purpose of assisting with local staff education, through provision and discussion of the latest information on various aspects of nutrition, are planned for the coming year.

QUANTITY FOOD SERVICE.

1. Assistance provided through Local Health Service.

School-lunch Programs.—Local public health personnel, by giving assistance with school programs in their areas upon request, have increased this nutrition service during 1946. Considerable information through correspondence and school-lunch literature has been provided public health personnel assisting with lunch programs. Requests for further help, such as technical guidance and direction with food-service problems, have been followed by a visit from a nutritionist whenever possible. Through this close co-operation on the part of public health personnel, assistance in planning of nutritionally adequate lunches as well as sanitary lunch-room management and guidance with other essential health problems in lunch programs have been made possible. The larger proportion of assistance requested and provided has been in small rural schools.

Summer Camps.—During 1946 the services provided to summer camps in various parts of the Province increased over previous years. Through the co-operation of local public health workers, the number of camp leaders given assistance with planning of adequate camp meals was extended. Information on camping facilities and equipment, camp sanitation, and quantity food service was made available through the distribution of the Camp Feeding Manual, recently prepared by the Federal Nutrition Division. A number of copies of the manual were distributed for study and reference purpose during the camp-leadership training courses at the close of the camping season. The increased number of requests for this type of service during the summer is indicative of the need for further extension of this work. Comments and suggestions

received from local public health personnel, camp leaders and workers during the past year are recognized as the most concrete guide for extension of this service in 1947.

2. Institutional Service.

Following arrangements with the General Superintendent, visits were made to the Provincial Mental Hospital in order to assist with special food-service problems. Consultant services have also been made available on request to the food-service departments of a number of private and general hospitals as a result of arrangements made with the Chief Inspector of Welfare Institutions and Hospitals for this Province. This service has been facilitated through the co-operation of the Hospital Inspectors, who have referred requests for assistance with food problems to the Nutrition Service.

3. Cafeteria for Provincial Employees, Victoria.

Previous to last September the cafeteria for Provincial employees in Victoria was managed by a committee from the Provincial Government Employees' Association, of which the Consultant in Nutrition with the Department of Health was chairman. Work carried out in this position included supervision of menus, equipment, and supplies, as well as general assistance with quantity food service.

SPECIAL PROJECTS.

1. Nutrition Demonstration Clinics.

Early in the year nutrition surveys followed by demonstration clinics were conducted in five representative urban and rural areas by a group of trained personnel from the Federal Nutrition Division. Areas chosen were Vancouver, Nanaimo, the Fraser Valley, the Cariboo, and Vernon. A total of 1,500 schoolchildren were examined during the survey, in which physical examinations, biochemical analyses of blood, and dietary studies were utilized.

The aim of each clinic was to acquaint public health workers with local nutrition problems through general discussion of survey findings compiled by the Federal Nutrition Division staff. A comprehensive study of the report has indicated where future emphasis in nutrition-work will be needed most in the generalized public health program.

2. Food Allowances and Costs.

Late in 1945 a Report on Food Allowances and Costs was prepared and submitted to the Provincial Social Welfare Branch for reference in social assistance work, particularly in connection with social allowances. Further study on food allowances was carried out during the past year in co-operation with a committee of nutritionists from other agencies. A weekly food list, based on an adequate nutritional standard endorsed by the Canadian Council on Nutrition, was compiled. Practical trials were made by families in various areas to evaluate the list from the standpoint of economy, variety, and quantity. Because of interest and co-operation of families participating in the four seasonal trials, considerable information was gathered on seasonal food short-

ages and food availability and cost in relation to representative areas of the Province.

The Consultant in Nutrition has also given advice to the Social Welfare Branch during investigations on social allowances.

Co-ordination with other Nutrition Services.

Nutritionists employed by the Dominion and Provincial Departments of Health are members of the Dominion-Provincial Nutrition Committee, formed late in 1945. At meetings held twice yearly, the committee discusses Dominion-Provincial problems and plans. The Consultant in Nutrition attended meetings of the committee, which were held in June and December of 1946.

Nutritionists with the Department of Health and nutrition workers with other agencies in the Province have met together at intervals during the year to discuss programs and to work jointly on special projects. The co-operation and assistance offered by nutritionists serving with other agencies during the year have been greatly appreciated. The work of the nutrition service of the British Columbia Division of the Red Cross Society in providing assistance with the nutrition-work in the Province until the conclusion of this service in December, 1946, should be given particular mention.

GENERAL REMARKS.

Changes and temporary reduction of staff has tended to influence the type and extent of work carried out by the Nutrition Service during 1946. Mrs. E. Trenholm, appointed to the staff as junior nutritionist in August, 1945, resigned her position at the end of May. Miss Yvonne Love was granted leave of absence in September in order to undertake postgraduate study in public health at the School of Hygiene in Toronto. On completion of her course in the spring, Miss Love will return to resume her position as Consultant in Nutrition. Miss Doris Noble, appointed to the staff in July, has been Acting Consultant in Nutrition during Miss Love's absence.

Considerable time during 1946 was spent in evaluating the service previously given and in planning extension of nutrition-work through the local public health program. In consequence a somewhat greater degree of nutrition service was provided through work of field personnel, and coincident with this comparatively little of the nutritionists' time was spent in meeting the public directly for local nutrition-work.

It is anticipated that the policy for nutrition adopted during 1946 and the nutrition-service guide for field-workers now in preparation will be basic factors assisting with the closer co-ordination of nutrition with all other phases of health in the future.

Although much remains to be done and many of the plans made during 1946 are not yet completely implemented, it is evident that the nature of the work done has represented progress toward the following goals: First, that the program of the Nutrition Service is being worked out in light of the needs, experience, and special problems of the local public health worker who is actually dealing with local nutrition problems, and, second, that through the field-worker a continuous program of nutrition service, administered according to the needs of the community and assuming its proper place in the local public health service, is being established.

REPORT OF THE DIVISION OF VITAL STATISTICS.

J. D. B. SCOTT, DIRECTOR.

INTRODUCTION.

In this report the emphasis has been changed from a detailed outline of administrative procedures in order to highlight the services rendered to the public by this Division. It is felt that the Division has carried on its work on a relatively high level of efficiency, chiefly on account of the splendid support and co-operation existing among the staff, which has done much to solve successfully the many problems which have arisen.

It will be noticed that many of the activities of the Division have been summarized under the heading " Summary of Registration and Related Services." Under the heading of " Preservation of Records " it is to be noted that all birth, death, and marriage registrations on file in the office have now been preserved on microfilm. Steps have been taken to improve both Indian and Doukhobor registration, the two most difficult problems confronting the Division. The most important resolutions of the Vital Statistics Council for Canada have been summarized. The report finally concludes with an outline of the problems confronting the Division in the immediate future.

SUMMARY OF REGISTRATION AND RELATED SERVICES.

Registration. — One of the principal functions of the Division of Vital Statistics is to effect accurate registration of every birth, death, still-birth, and marriage occurring in the Province. The Division is especially vigilant in ensuring that such registration is complete. To this end a number of checks have been instituted, such as the physician's notice of birth, hospital returns, school returns of children enrolling for the first time, periodic checks of marriage registers, coroners' reports, motor-vehicle accident reports, cemetery returns and others. In order to assist the public in connection with delayed registration, the Division has, over a period of years, done everything possible to obtain early records of baptisms, burials, doctors' personal records, and other pertinent documents.

Volume of Registration.—There was again an increase in the volume of registrations handled by the Division, the total exceeding by 17 per cent. the previous all-time high of the year 1945. The following table shows the number of registrations accepted over the ten-year period from 1937 to 1946:—

Year.	Live Births.	Deaths.	Marriages.	Still-births.	Adoptions.	Divorces.	Total.
1937	13,033	7,981	6,232	254	109	536	28,145
1938	13,812	7,455	6,158	259	134	652	28,470
1939	13,176	7,626	7,897	279	150	608	29,736
1940	15,616	8,386	9,694	280	163	687	34,826
1941	17,025	8,617	9,828	308	191	563	36,532
1942	18,346	8,916	10,905	313	157	847	39,484
1943	20,068	9,918	9,476	338	249	886	40,935
1944	19,969	9,833	8,552	321	303	1,030	40,008
1945	20,234	9,855	9,327	352	373	1,405	41,543
1946	23,870	10,212	11,875	331	402	2,052	48,742

The 23,870 birth registrations filed in 1946 exceeded the volume of any previous year. Of these birth registrations, 1,385 were for Indians within the meaning of the "Indian Act." The number of delayed registrations of births accepted continued high, amounting to 1,307 for 1946, as against 1,092 in 1945. A thorough investigation of the evidence submitted is made before a delayed registration is assented to.

Marriages solemnized in the Province during 1946 totalled 11,875, exceeding even the peak reached during the war in 1942.

Legitimation of Birth. — The provisions of the "Vital Statistics Act," whereby the birth of illegitimate children may be legitimated subsequent to the marriage of their natural parents, were invoked in 169 cases during the year. When investigation concerning the facts of each case has been satisfactorily concluded, a substitute registration is filed showing the child as legitimate from birth. The annual check of children entering school for the first time provides a means of intimating to natural parents who subsequently married the possibility of legitimating the birth of any offspring born prior to their marriage.

As a routine procedure, all cases of intended legitimation are referred to the Superintendent of Child Welfare to be checked, except in instances where both natural parents had acknowledged parentage by registering the birth promptly and by jointly signing the original document showing the child to be illegitimate.

Statutory Notations entered.—Notations were made upon 462 registrations which had previously been filed. Alteration of Christian name of children under 12 years of age accounted for 110 notations, while errors involving spelling, dates, or incomplete answers composed the remainder.

Change of Name.—Three hundred and eighty-three applications for change of name were granted during the year, making a total of 993 names so dealt with since the "Change of Name Act" was assented to on December 6th, 1940. All applicants must be British subjects, 21 years or over, and domiciled in the Province.

Section 13 of the "Change of Name Act" specifies that notice had to be filed with the Division within three months after the Act was proclaimed of any changes of name in the twenty years prior to the passing of the Act of persons resident in the Province. Since that date 2,531 notices have been filed. In many instances certificates have been issued which have proved useful to people in helping to provide proof and explanation of their change of name at some date prior to December 6th, 1940. The Division has continued to receive notices of change of name because the Act does not limit it from receiving such notices, although it is mandatory for persons who had changed their name to file notice within a three-month period.

Adoption Orders. — Notations of adoption were made on original birth registrations for the 402 adoptions ordered by the Supreme Court during the year. Of this number, 36 were for ex-Province adoptions of children born in British Columbia. A notation of adoption is made on each original registration, showing the name of the adopted child and its parents by adoption, the date of adoption, and place of adoption. Any certificate which is subsequently issued

from the document is issued under the name by adoption of the child and does not give any indication of previous status.

Notices of adoption and of change of name ordered in British Columbia are forwarded to other Provinces concerned, and to certain States and countries, so that suitable notations of the event may be made on the registrations of that Province or State.

Decrees of Dissolution and Nullity of Marriage.—Divorces again showed a marked increase during the year. Copies of decrees of dissolution and nullity of marriage filed with the Division by the Registrars of the Supreme Court totalled 2,052, of which 2,005 were divorces, 38 were nullities, 7 legal separations, and 2 dismissals. Details of divorces pertaining to ex-Province marriages are sent to the Province of marriage in order that the necessary notations may be made on the original marriage registration.

Administration of the "Marriage Act."—Administration of the "Marriage Act" is one of the primary duties of the Division. Such matters as the qualifications of persons for marriage, caveats, adequate proof of divorce, proof of age and consent of parents for minors, presumption of death, and orders for remarriage are all included in the responsibilities of the Division.

The "Marriage Act" provides that ministers and clergymen must be duly registered with the Division to be eligible to perform marriages in the Province. The recognition of a religious denomination previously unregistered under the Act often involves considerable investigation into the background of the organization, its present status, and its possible continuance. Denominations of a "mushroom" type of growth are not registered. Once a denomination is recognized, any number of applications for registration of ministers and clergymen may be made by its governing authority. Every marriage registration is checked to ascertain if the marriage has been performed by a duly registered clergyman.

During the year no new denominations were registered, although one application was pending at the end of the year. Appointments granted to ministers totalled 328, a number of these being of a temporary nature covering short periods only. There were 132 cancellations due to deaths, transfers from the Province, etc.

Notice of Filing of a Will.—Increasing use has been made by the public of the provisions of the "Wills Act Amendment Act, 1945," whereby notice of the filing of a will may be made to the Division of Vital Statistics. Such notices state the date and location of the will, and a search of the notices on file can be made by the Division upon proper application. Since the amendment was assented to on March 28th, 1945, 445 notices have been filed.

Statistical Services.—The Division provides detailed analyses of the data received through its registration functions. This data is available to the public free of charge. Information pertinent to the program of the Health Branch of the Department of Health and Welfare, such as leading causes of death, infant and maternal mortality rates, communicable-disease morbidity, and associated statistics, is prepared on a current basis. Considerable statistical work is carried out for the other Divisions of the Health Branch, especially in the preparation of periodic reports. Special studies are undertaken as they are required for both Governmental and private agencies.

PRESERVATION OF RECORDS.

Microfilm.—Microfilming of the registration records of the Division continued throughout the year. All birth, death, and marriage registrations are now preserved on microfilm. An offer has been made to all physicians in the Province whereby they may avail themselves, free of charge, of the microfilming facilities of this Division to ensure preservation of their medical records. Such records often furnish valuable evidence concerning delayed registration of births.

Current registrations are now microfilmed and the film dispatched to Ottawa weekly for use in compiling the National Register of Vital Records, under the terms of the agreement outlined in the report for 1945.

In anticipation of the plan to issue positive enlargements from the microfilm to replace typed certificates, an enlarger has been acquired. A shortage of photographic paper suitable for the enlargements has delayed the inauguration of this scheme, but the supply situation is expected to improve in the coming year.

Filming of all indexes of the Division will be commenced shortly, and further applications of the microfilm technique are being considered. Wherever photographic copies can be used in place of typed transcripts, possible sources of error are eliminated.

COMPLETENESS OF REGISTRATION.

Indians.—Eagerness on the part of many Indians to benefit from receipt of family allowances meant that the increase noted in Indian registrations for the latter part of 1945 continued during the first eight months of 1946. In August of this year a conference of Indian Agents of British Columbia was held in Vancouver, one of the sessions being largely devoted to the subject of vital statistics. At the invitation of the Indian Commissioner for British Columbia a representative of the Division attended this meeting, with the result that many registration problems were discussed and certain difficulties were thereby overcome.

Arrangements were completed whereby, commencing in October, 1946, a commission of 50 cents is paid to Indian Agents and their deputies for registration of each birth, death, marriage, and still-birth accepted by the Director of Vital Statistics. Payments are made quarterly.

A directive was forwarded in October from the Indian Affairs Board in Ottawa to all Indian Agents, requesting they concentrate on obtaining complete birth registration records of Indians, including cases of delayed registration, as far as possible. In addition, routine inspections were made by the Inspector of Vital Statistics in nine agencies, and considerable assistance was given in an effort to raise the standard of vital statistics registration among the Indians.

These positive steps, along with loyal and whole-hearted support given by the Indian Commissioner for British Columbia and his staff, has resulted in a very marked increase in the submissions of both current and delayed registrations to the Division during the last several months of this year. It is therefore felt that there will be a vast improvement in the completeness of registration of Indian vital statistics during the coming year.

There appear to be two main difficulties confronting Indian Agents in their vital statistics work, namely, transportation of personnel and sometimes disinterest on the part of the Indian population. In the former case there are many settlements which are extremely isolated and seldom visited by white men. A visit to these bands may entail lengthy, dangerous trips by boat or arduous journeys by foot or pack-horse. There is also the ever-present possibility that persons to be contacted may be absent on fishing-trips, logging-jobs, hop-picking, or other forms of employment. The second difficulty results from lack of knowledge and tribal beliefs, which cause many to express disinterest or to refuse registration of vital statistics. An improvement in travel and educational facilities should have a notable effect in overcoming such situations.

Doukhobors.—Following the termination of the appointment of the special representative among the Doukhobors in 1945, it was noted that registration of vital statistics among these people decreased considerably. The whole matter was investigated carefully, with a view to eliminating certain difficulties which were found to exist during the tenure of office of the late representative, and in an effort to form the closest possible liaison between Government departments dealing with Doukhobors, contact was made with a large number of officials in numerous departments. As a result, a definite policy has been evolved for future efforts in effecting registration of vital statistics among this minority. An additional representative for the Division was appointed in the latter part of 1946 and given a course of two months' duration in vital statistics work at the central office in Victoria. He commenced duties early in 1947.

Registration of Births.—Due to an increasing consciousness on the part of the public of the necessity for registration, practically all difficulty in obtaining birth registrations has ceased to exist, except among minority groups mentioned previously, those employed in seasonal work, or persons attempting to conceal illegitimate births. Physicians have remained very co-operative in forwarding notifications of live births and still-births. Hospitals, both public and private, have continued to send in regularly, and without exception, monthly returns of births, and in many instances are now supplying carbon copies of these reports to the District Registrars as a further aid in obtaining completeness of registration. The return from public, private, and elementary correspondence schools in the Province is still being used as a check on completeness of registration and continues to bring in a number of unregistered births, as well as make possible a certain number of legitimations, alterations of Christian names, and corrections. The commencement of family allowances has been a very great help in obtaining registrations with a minimum of delay and a maximum of completeness.

Registration of Deaths.—Registration of deaths has continued as in previous years and with little difficulty, except with Indians and Doukhobors. It is anticipated that this problem will be reduced in future due to the additional emphasis being placed on such records.

The first Province-wide return of burials and cremations, prepared by superintendents and managers of cemeteries, as required by section 17 of the "Vital Statistics Act," was instituted, commencing with the quarter July, 1946, to September, 1946, inclusive. The preparation of this report proved a ponderous task for larger cemeteries in the vicinity of Vancouver, therefore an

alternative method of obtaining the same information was evolved and will be given a trial, commencing in January, 1947. Under the proposed new scheme practically all of the work hitherto placed on the cemetery offices will be eliminated with the use of a revised burial permit form.

Registration of Marriages.—Registration of marriages has not presented any new problems during 1946, and little difficulty has been encountered in obtaining registration, except among Indians and Doukhobors. In these latter instances, steps have been taken to increase the completeness of registration during the coming year.

The policy of requiring return of completed marriage registers to the Division for checking is being continued. Each time a clergyman requests a new register, the old book is called in. As a result of this check, eighty-six delayed registrations of marriage were effected during the year under review. In cases where only a few marriages are entered, the registers are called in periodically rather than being allowed to remain out until they are filled. There are still many registers, issued a number of years ago, which cannot be located, but efforts are being continued to ascertain their whereabouts in order that they may be checked.

District Registrars' Offices, etc.—During the year a review of the definition of the boundaries of all the registration districts in the Province was made, and as a result certain boundaries were redefined. The purpose of this action was to make the boundaries of as many vital statistics districts as possible coincide with those of the school district, which are, or will be, boundaries of health districts also. Consolidations were made in instances where exceedingly few returns had been received from a district office, or where an office had been closed out previously but district boundaries had remained unchanged. Maps of redefined districts in the Kootenays have been draughted and forwarded to the District Registrars concerned, but those for the rest of the Province remain to be completed in 1947. At the close of the year the Division of Vital Statistics had eighty-two district offices and fourteen sub-offices. There are also eighteen Indian Agents acting as District Registrars for Indians.

Thirty-eight district offices and sub-offices and nine Indian Agencies were inspected during the year. In several cases visits constituted first inspection of the offices concerned, and results showed that in a few instances much work will be required in replacing copies of registrations which have become lost or destroyed. Records for the last several years are almost invariably in good condition, but those of prior years in a few cases leave much to be desired. This indicates considerable improvement since regular inspections were instituted. Inspections proved worth while from both the standpoint of checking records kept in district offices and instructing the District Registrars and their deputies on points in connection with their work. In all instances the District Registrars and their deputies have shown an interest in this work, and the Division is keenly appreciative of their co-operation.

It has been invariably found that where records have been properly bound rather than being allowed to accumulate on Shannon files or similar equipment, a much greater interest is taken in their preservation. With this in mind, many thousands of records have been brought in to the central office, bound in full canvas, and returned. There are, however, many more records to be collected

and bound at the earliest opportunity. A considerable amount of work is usually involved at the time such records are being checked at the central office of the Division, as it is then that missing registrations are replaced and other missing details are added from the original records. Such checking has also revealed among the District Registrars' records a number of original registrations which had hitherto never reached the central office and which are immediately indexed and placed on file.

MECHANICAL TABULATION.

The advantage of operating and controlling all the mechanical equipment used in the statistical functions of the Division was constantly demonstrated during the year. As well as handling an augmented volume of routine work, the mechanical tabulation department was able to meet a number of special assignments. Considerable progress was made in alphabetical punching and tabulating of a backlog of work built up by revision and standardization of the birth, death, and marriage indexes of the Division. A great amount of work still remains to be done before this project is completed.

The ready availability of mechanical equipment this year enabled the Division to undertake several statistical studies that otherwise would have been impossible, and in this respect the Division has been able to provide a higher standard of service to both the Department of Health and Welfare and the public at large.

Defects in the system of handling and processing the statistical work, sources of errors, and delay in the past were removed by centralization of mechanical tabulation, and greater efficiency was thereby attained.

The mechanical equipment of the Division comprises a horizontal and a counter sorter, three alphabetical key-punches, two alphabetical verifiers, and an alphabetical tabulator. In addition, the Division shares in the part-time use of a numeric key-punch.

THE VITAL STATISTICS COUNCIL FOR CANADA.

The second meeting of the Vital Statistics Council took place in Ottawa from May 9th to 11th, and the Director attended the session. The following is a summary of the most important resolutions:—

No. 9.—That a committee be set up to study the respective Marriage Acts with the intention of the drafting of a proposed model Marriage Act. The purpose of this resolution is to obtain uniformity between the Provinces and to eliminate confusion in the mind of the public.

No. 10.—That each Province study the advisability of requiring from an applicant for a change of name, certificate of birth and (or) marriage of each person included in the application. This resolution was passed because of the variation in the vital statistics records of the name of a person included in the application for a legal change of name.

No. 11.—That Provincial Registrars evolve a practical procedure of supplying to local health services and other official agencies current vital statistics information for their effective use.

Some progress has been made at the close of the year by the Division to supply the Central Vancouver Island Health Unit with current vital statistics

data routinely on a weekly basis. If the procedure proves workable, it will be made Province-wide.

No. 13.—That copies of the records of adoption, divorce, and change of name be transmitted by each Province to the Province of birth and (or) marriage. This resolution was seen necessary inasmuch as allocation of all vital events records must be made to the Province where the birth occurred before the National Register of Vital Statistics can function efficiently.

No. 14.—It was felt that greater accuracy would result in the statement of cause of death on the registration of death if the statement of cause of death was not required to be shown on any certificate issued therefrom. Therefore, it was resolved that each Province issue regular certificates of death, omitting any statement of the cause of death, and that each Province study the advisability of adopting a confidential medical certificate of death.

No. 16.—That a limited trial be given to the tentative National divorce form in co-operation with the Vital Statistics Branch of the Dominion Bureau of Statistics.

PROBLEMS OUTSTANDING AT THE END OF THE YEAR.

Goal in Registration.—The first and perhaps most fundamental problem of the Division is to maintain complete registration of all births, deaths, and marriages. Doukhobor registration remains the largest single problem, followed closely by Indian registration, although the latter has shown very encouraging improvement during the last few months of the year. Every effort is being made to overcome the difficulties which have hampered the collection of registrations in the past.

Even if rationing were discontinued during the forthcoming year, the payment of family allowances would constitute sufficient incentive for prompt birth registration.

Standards for Correction of Documents, Legitimation Procedures, etc.—No National standards for the above procedures have as yet been adopted, though work is being done with this end in view. For obvious reasons, every precaution must be taken to ensure that the information which is to be corrected or substituted will be, as far as possible, more accurate than it was formerly.

Instruction Manuals.—During the year Part I of the Manual of Instructions for District Registrars, Marriage Commissioners, and Issuers of Marriage Licences was printed and distributed to all District Registrars of Births, Deaths, and Marriages, Marriage Commissioners, Issuers of Marriage Licences, and Indian Agents within the Province. Part I of the publication is a comprehensive set of instructions, completely indexed, which has reference to the "Vital Statistics Act." Very favourable comments have been received from many District Registrars, who report that a large amount of correspondence has been unnecessary since these up-to-date instructions were issued. The manual, when completed, will consist of three parts—Part II referring to the "Marriage Act" and Part III to the "Change of Name Act." It is anticipated that the latter will be compiled and distributed within several months.

Completeness of Divorce Records.—Copies of final decrees of dissolution and nullity of marriage were first filed with the Division in April, 1935, and

have been forwarded monthly by District Registrars of the Supreme Court Registries within the Province. In each case a notation of dissolution or annulment is made on the original registration of marriage if such marriage occurred within the Province of British Columbia. In order to maintain all records as up to date as possible, it will be necessary to obtain information regarding dissolutions and nullities recorded in each Supreme Court Registry from March, 1935, back to its inception. Necessary details have been obtained from several registries, but the bulk of the work will fall on Vancouver and New Westminster registries. Completion of this work will be aimed at this year.

Introduction of Plasticized Birth Certificates.—As furnished in last year's report, this Division is preparing to introduce to the public tamper-proof pocketbook-sized birth certificates, which will be birth cards placed between strips of plastic and laminated together under heat and extreme pressure. At the end of the year certificates had been printed by the King's Printer and the necessary equipment obtained. However, the Division delayed introduction of the card until definite clearance was obtained from the Dominion Bureau of Statistics for a uniform numbering system for all Provinces. It is anticipated that these certificates will be issued in the spring.

Development of Further Services to Department of Health and Welfare.—Following creation of the Department of Health and Welfare during the year, the Division has been expected to expand its statistical services to provide the Department with a greater range of information on matters pertaining to health. Statistics will be needed to check the progress of the various public health programs, as well as to evaluate the effectiveness of the work and to point the way to future development. The work which the Division has already done in supplying information for the Royal Commission on Provincial-Municipal Relations, on the brief concerning Provincial health services, and also for the hospital survey provides an indication of what may be expected of the Division in the future. Guidance on statistical matters will have to be given to health units, which are rapidly increasing in number.

REPORT OF THE DIVISION OF LABORATORIES.

C. E. DOLMAN, DIRECTOR.

During 1946 tests performed in the main laboratories in Vancouver totalled 292,999, an increase of 18 per cent. over the previous year's figure. This increase, amounting to nearly 50,000 tests, actually exceeds the annual turnover of tests done a decade ago. Every annual report since 1935 has referred to the expanding work of the Division despite grave difficulties in organization and handicaps in accommodation. Until 1946, additions in space were made periodically to the Laboratories which, although never adequate to the enlarging needs, at least permitted the adoption of new improvisations to cope with recurrent emergencies. Since the summer of 1945, when the quarters loaned to the Red Cross blood donor service reverted to the Laboratories, there has been no extra space available. In 1944, when the two rooms in question were used for Red Cross activities, the laboratory was seriously overcrowded, with a turnover of just over 200,000 tests. Two years later, with an increment of less than 15 per cent. in floor-space, nearly 50 per cent. more tests were being done. Nor do

these comparisons adequately convey the especially critical situation in the first quarter of the year, when the peak of demobilization from the armed forces was reached. During these three months 84,239 tests were carried out in the Vancouver laboratories, representing a rate of more than one-third of a million tests anually. Fortunately the turnover thereafter began to decline, and it appears likely to level off for the next year or two, at around one-quarter of a million tests annually.

TESTS RELATING TO VENEREAL DISEASE CONTROL.

Tests for syphilis and gonorrhœa continued, as in previous years, to account for a high proportion of total examinations made. In 1946 about 78 per cent. of all tests related to the diagnosis and control of these infections. The percentage remained at this high level, despite marked increases in the number of many other types of tests performed, because of the accelerated discharge of personnel from the services during the early months of the year, and also because of an increasing awareness of the value of such tests on the part of physicians, health officials, employers, and the general public. In the Vancouver laboratories 126,766 blood specimens were submitted to the Kahn test for syphilis.

In the later months of the year, as demobilization drew to its end, there was an appreciable decline in the numbers of blood specimens submitted to the presumptive Kahn test. However, as the year closed, there were signs that the numbers would soon be rising again.

A factor discouraging acceptance of heavy mandatory commitments is apparent in Table IV, which compares the numbers of the various tests done in the Vancouver laboratories during 1945 and 1946. The presumptive Kahn tests increased from 119,207 to 126,766, or by 6.4 per cent., whereas the more elaborate standard Kahn tests increased from 17,351 to 23,645, or by 36.3 per cent., while the much more complicated and time-consuming complement fixation tests increased from 14,362 to 21,387, or by 48.9 per cent. These heavy increases in the more complex serodiagnostic tests reflect in part the higher incidence of syphilis in the community, and in part also the quicker rates of progress toward cure made by patients under modern methods of treatment. The advent of penicillin therapy has also made it important for physicians to be furnished quantitative assays of the reagin present in the blood or cerebrospinal fluid of patients under this treatment. This service to practitioners throughout the Province began in November and is indicated by the 801 quantitative Kahn tests listed in Table IV.

Marked increases also occurred in the various types of tests carried out upon cerebrospinal fluid specimens. This affords gratifying evidence that physicians are becoming more aware of the importance of excluding early neurosyphilis through laboratory examination of the cerebrospinal fluid. The increase in the number of dark-field examinations for *Treponema pallidum*, from 666 in 1945 to 1,093 in 1946, is also indicative of a more widespread use of this earliest of all methods of diagnosis for syphilis. Dark-field outfits have been distributed by the laboratories to every hospital in the Province in an effort to facilitate further resort to this method.

In regard to laboratory tests for gonorrhœa, direct microscopic examinations for the gonococcus underwent an 11-per-cent. increase, while cultures for gonococcus showed a 19.3-per-cent. increase. There is no sign of any diminution in the reported incidence of gonorrhœa in British Columbia. The introduction of these drugs has apparently rendered more difficult the establishment of a laboratory diagnosis of gonorrhœa. As was pointed out in previous annual reports, there is urgent need for intensive laboratory and epidemiological research into improved methods for isolating and identifying gonococci.

TESTS RELATING TO TUBERCULOSIS CONTROL.

All types of tests for *M. tuberculosis* showed continued increase. Direct microscopic examinations of specimens other than sputum doubled in turnover. Cultural examinations increased by 27 per cent., and guinea-pig inoculations by 10 per cent. For the first time in several years it can be reported that satisfactory arrangements appear to have been made for assuring a supply of healthy guinea-pigs.

LABORATORY DIAGNOSIS AND CONTROL OF GASTRO-INTESTINAL INFECTIONS.

The gastro-intestinal infections due to the *Salmonella-Shigella* (typhoid-paratyphoid-dysentery) groups of micro-organisms continued to mount. The extent of this increase is illustrated in the figures below, which give the total numbers of specimens of human excreta cultured for these micro-organisms during each year from 1940 to 1946:—

Year.	Specimens from Vancouver.	Specimens from Province at Large.	Total.
1940	547	296	843
1941	744	411	1,155
1942	789	881	1,670
1943	1,117	860	1,977
1944	1,717	957	2,674
1945	2,346	498	2,844
1946	4,673	499	5,172

The total number of persons giving positive cultures during each of the three years 1944 to 1946, arranged according as they lived inside or outside the Greater Vancouver area, were as follows:—

Year.	Inside Greater Vancouver.	Outside Greater Vancouver.	Total.
1944	75	56	131
1945	99	42	141
1946	222	67	289

The above figures suggest that the Greater Vancouver area has increasingly become an endemic centre for these infections, while the Province at large has shown little change of incidence, and also that practising physicians and health officers outside Vancouver should be less reluctant to collect and

forward specimens of this kind to the laboratories. In 1944 the laboratories identified 24 cases and carriers of *Salmonella* strains (excluding *S. typhi*, the cause of typhoid fever) among inhabitants of the Greater Vancouver area. The corresponding figures for 1945 and 1946 were 67 and 202 respectively. By contrast, during the same three years, the detected incidence of cases and carriers of typhoid fever was 20 in 1944, none in 1945, and 6 in 1946, while dysentery bacilli of Flexner and Sonne types were detected in 31 persons in 1944, 32 in 1945, and 14 in 1946. Not only did the numbers of cases and carriers of *Salmonella* strains greatly increase during the period, but the identity of the more prevalent types changed, and covered a wider range each year.

These micro-organisms may be spread not only from person to person, but also by the excreta of certain infected rodents, and by eggs, milk, flesh, and excreta of certain domestic animals. Moreover, pollution of raw milk or unchlorinated water-supplies by man or animal carrying these micro-organisms could give rise to extensive milk- or water-borne epidemics.

From outside the Greater Vancouver area, *Salmonella* strains were isolated in an equally great variety of types, but on far fewer occasions; whereas typhoid and dysentery bacilli were isolated more often during the last three years from persons living in the Province at large than from the Greater Vancouver population.

These facts suggest that physicians practising outside the Greater Vancouver area comparatively seldom requested laboratory examinations of fæces for the milder and more transitory forms of *Salmonella* infection, but sought a laboratory diagnosis chiefly when typhoid or dysentery bacilli had caused relatively severe symptoms. It is unfortunate that the branch laboratories are not equipped to undertake the complexities of fæces-culture work. However, physicians should realize that fæces specimens, collected in the laboratories' proper outfits, can be satisfactorily shipped over long distances. Moreover, despite the disproportionately heavy work entailed in these cultural examinations of fæces, it is important to stress that in the early stages of gastro-intestinal infection they are of far greater diagnostic value than the blood agglutination, or Widal, tests which the laboratories are much more commonly asked to do. Admittedly a high percentage of fæcal specimens yield negative cultures, even when the appropriate symptomatology was present, but we need not consider here the possible explanations of this almost universal experience.

Throughout the year, final identification of the *Salmonella* strains isolated in the laboratories was made by Dr. L. E. Ranta at the University of British Columbia, where the official *Salmonella* typing centre for Canada is located, under the auspices of the Western Division of Connaught Medical Research Laboratories. Some of the strains thus identified from persons domiciled within this Province proved of extremely rare type, and in one or two instances had hitherto been isolated only from animals.

Bacteriological Analyses of Milk and Water.

Bacteriological examination of milk samples declined slightly in number, largely due to the consolidation of dairies. Inspectors are now collecting a smaller variety of samples, but each dairy is submitted to collection of samples at more frequent intervals than was formerly possible. Intelligent interpreta-

tion and discussion of the laboratory findings by city health department inspectors and with dairy operatives played a notable part in the changing attitudes which finally led to passage of the compulsory pasteurization by-law in Vancouver, and its enforcement as from November 1st, 1946. The incidence of brucellosis (undulant fever) among Vancouver residents should henceforward be noticeably reduced. Our laboratory findings suggest no decline in the incidence of human brucellosis in the Province at large. In 1946 nearly one-third of the requisitions for blood agglutination tests for brucellosis came from outside the Vancouver area, whereas only 15 per cent. of all tests performed in the main laboratories originated there.

Bacteriological examinations of drinking-water samples were more numerous, especially coli-ærogenes tests, which increased from 2,709 to 3,833, or by 41.5 per cent. This is in keeping with the Division's policy of expanding its water-testing facilities. There still exists throughout the Province a great need for more frequent checking of municipal and private water-supplies.

The war-time agreement between the Federal Government and the Greater Vancouver Water District respecting chlorination of the water at the Capilano, Seymour, and Coquitlam intakes became inoperative on April 1st, 1946. On this date the chlorinators were disconnected. Promptly thereafter the laboratories' findings on the water revealed characteristics evident in pre-chlorination days, so that Vancouver's supply again failed to meet the internationally accepted bacteriological standards for safe drinking-water.

THROAT-SWAB CULTURES.

The prediction made in last year's report that sporadic outbreaks of diphtheria were likely to occur has been fully borne out. Several such outbreaks occurred in Vancouver and elsewhere. An always important phase of the Division's work—namely, the identification of cases and carriers of diphtheria—has now been reinvested with special significance. Throat-swabs cultured for *C. diphtheriæ* in the main laboratories in 1946 numbered 15,897, as compared with 9,599 in 1945, or an increase of 65.6 per cent. There were at least equivalent increases in the numbers of positive cultures isolated and of virulence tests performed. Positive cultures were again, as last year, forwarded to Dr. E. T. Bynoe, Laboratory of Hygiene, Ottawa, for serological typing and confirmation of virulence. This service proved most helpful in verifying our own findings as to virulence and in providing epidemiological clues bearing upon routes of spread of the infection. Dr. Bynoe's typing results on British Columbia cultures suggest that the population of this Province harbours a rather wide variety of serological types of *C. diphtheriæ* with an unusually high proportion of atypical strains. With an extensive reservoir of carriers established in our midst, recurrent sporadic outbreaks of diphtheria may be anticipated, their extent and distribution in a given community depending mainly upon the degree of effective immunization characteristic of that community.

Cultures of throat-swabs for hæmolytic streptococci and staphylococci also increased during the year, from 3,137 to 3,652, or by 16.4 per cent. We have not as a general policy undertaken grouping, by Lancefield's method, of hæmolytic streptococci. The presence of hæmolytic streptococci or staphylococci is not reported in throat-swab cultures unless there develop significant numbers of these micro-organisms of characteristic colonial and microscopic appearance.

BIOLOGICAL PRODUCTS.

The amounts of biological products distributed free to practising physicians and health officers during 1946 greatly exceeded previous records. Despite the remarkably low costs of these products, as supplied to the Department of Health by the Connaught Medical Research Laboratories of the University of Toronto, over $35,000 worth were released by the Division to authorized persons during the year under review. Nearly one-third of this amount represents vaccine virus, which was called for in extraordinary quantities during a period of a few weeks in March and April, at which time cases of virulent smallpox, with several deaths, were reported from the States of California and Washington.

During a brief period of a few weeks at least 100,000 persons were vaccinated against smallpox in the Vancouver area alone. So urgent and widespread was the demand at the emergency vaccination clinics that approximately $800 had to be spent by the laboratories upon air-mail express charges for supplies of vaccine, while the manufacturing capacity of Connaught Medical Research Laboratories was temporarily overtaxed.

A desirable public attitude toward immunization procedures resulting from widespread education by the public health field staff is reflected in the increased distribution of diphtheria toxoid, scarlet-fever toxin, pertussis vaccine, and typhoid-paratyphoid vaccine.

BRANCH LABORATORIES.

Total tests performed in the six branch laboratories are listed under various categories in Table V. There was a decline in their turnover from 86,561 in 1945 to 72,512 in 1946. This is more than accounted for by a reduction of some 20,000 in the number of presumptive Kahn tests carried out in the Victoria laboratory. In the previous year this laboratory had exerted extraordinary efforts to cope with the rapid discharge of naval personnel through the Esquimalt base. The Prince Rupert laboratory also showed a marked decline in total tests, to almost one-half the previous year's figures. This was likewise due to withdrawal of most of the special war-time demands upon the Prince Rupert laboratory. In keeping with this lowered activity no replacement was made when the assistant bacteriologist resigned, after having been maintained there by the Division on a full-time basis throughout the peak of war-time activity. The branch laboratories at Kamloops and Kelowna showed slight increases in turnover, while that at Nanaimo underwent a considerable expansion. The figures for the Nelson laboratory remained stationary. As in previous years, in 1946 the Victoria laboratory, at the Royal Jubilee Hospital, performed many more tests than all the other branch laboratories combined—58.5 per cent. of the total.

These branch laboratories operate under subsidies which are subject to periodic adjustment, according to turnover, on the understanding that their public health work is carried out according to methods and standards approved by the Director of the Division. Many desirable reforms are overdue in these arrangements, but meanwhile they will provide valuable services to their local communities, especially where they operate with a full-time health unit, and their contribution is important in reducing the load upon the main laboratory.

GENERAL COMMENTS.

As in all recent years, numerous staff changes and shortages complicated operations of the Division. It seems likely that for a few years at least the problem of recruitment of junior staff will become simpler, although well-qualified replacements for senior staff remain practically impossible to find. Despite many difficulties a high standard of work was performed, and the Division maintained its prestige with the medical profession and the general public of the Province.

During May, Miss D. E. Kerr, Assistant Director, attended the Annual Conference of Provincial Laboratory Directors at the Laboratory of Hygiene, Ottawa, under the sponsorship of the Deputy Minister of National Health. At the pre-Christmas meeting of the Laboratory Section, Canadian Public Health Association, held at Montreal, a paper was presented on behalf of Dr. Dolman and Miss Kerr entitled " Botulism in Canada, with Report of a Type E Outbreak at Nanaimo, B.C." This paper will be published shortly in the Canadian Public Health Journal.

The Director wishes to express his warm appreciation of the excellent work done, and the good spirit shown, by members of the staff.

TABLE IV.—STATISTICAL REPORT OF EXAMINATIONS DONE DURING THE YEAR 1946.

Examination.	Out of Town.	Metropolitan Health Area.	Total in 1946.	Total in 1945.
Animal inoculations	161	605	766	522
Blood agglutinations—				
Typhoid-paratyphoid group	1,204	8,776	9,980	8,028
Brucellosis	1,166	2,465	3,631	2,167
Infectious mononucleosis	51	286	337	231
Miscellaneous	2	9	11	70
Cultures—				
M. tuberculosis	280	1,037	1,317	970
Typhoid-paratyphoid-dysentery group	499	4,673	5,172	2,844
C. diphtheriæ	1,919	13,978	15,897	9,599
Hæmolytic staphylococci and streptococci	597	3,055	3,652	3,137
Gonococcus	.....	12,664	12,664	10,619
Miscellaneous	744	390	1,134	492
Direct microscopic examination for—				
Gonococcus	4,259	30,484	34,743	31,275
M. tuberculosis (sputum)	2,882	4,188	7,070	6,671
M. tuberculosis (miscellaneous)	280	1,037	1,317	970
Treponema pallidum	91	1,002	1,093	666
Vincent's spirillum	36	366	402	359
Ringworm	2	3	5	62
Intestinal parasites	63	229	292	224
Serological tests for syphilis—				
Blood—				
Presumptive Kahn	14,794	111,972	126,766	119,207
Standard Kahn	5,167	18,478	23,645	17,351
Quantitative Kahn	153	648	801	.....
Complement fixation	4,887	16,500	21,287	14,362
Cerebrospinal fluid—				
Kahn	451	1,850	2,300	2,067
Complement fixation	589	2,367	2,956	2,166
Quantitative complement fixation	9	44	53	.....
Cerebrospinal fluid—				
Cell count	446	1,398	1,844	1,220
Protein	429	1,898	2,327	1,542
Colloidal reaction	577	2,371	2,948	2,084
Milk—				
Bacterial count	200	1,208	1,408	1,577
Coli-ærogenes	200	1,208	1,408	1,577
Phosphatase test	159	738	897	918
Water—				
Total bacterial count	.....	631	631	534
Coli-ærogenes	2,527	1,306	3,833	2,709
Unclassified tests	76	236	312	188
Totals	44,899	248,100	292,999	246,408

Table V.—Number of Tests performed by Branch Laboratories in 1946.

Examination.	Kamloops.	Kelowna.	Nanaimo.	Nelson.	Prince Rupert.	Victoria.	Total, 1946.	Total, 1945.
Animal inoculations	.....	.....	.....	.....	.....	30	30	56
Blood agglutinations—								
Typhoid-paratyphoid group	377	80	903	204	4	58	1,626	
Brucellosis	377	33	829	52	9	142	1,442	2,116
Miscellaneous	.....	22	.....	.....	.....	.....	22	
Infectious mononucleosis	.....	2	.....	.....	.....	21	23	.....
Cultures—								
M. tuberculosis	.....	.....	.....	.....	.....	81	81	46
Typhoid-paratyphoid-dysentery group	18	17	.....	18	10	200	263	268
C. diphtheriæ	26	7	102	15	1	1,373	1,524	1,002
Hemolytic staphylococci and streptococci	31	13	.....	94	.....	1,209	1,347	1,343
Gonococcus	.....	.....	.....	.....	3	1,439	1,442	1,901
Miscellaneous	53	5	.....	6	.....	2	66	134
Direct microscopic examination for—								
Gonococcus	536	210	721	623	114	3,183	5,386	7,484
M. tuberculosis (sputum)	215	336	1,198	1,559	270	3,922	7,500	7,278
M. tuberculosis (miscellaneous)	19	4	.....	24	6	80	133	91
Treponema pallidum	13	.....	.....	.....	30	62	105	201
Vincent's spirillum	23	7	79	52	9	112	282	459
Ringworm	1	2	3	4	.....	32	42	36
Intestinal parasites	18	7	.....	16	.....	277	318	125
Serological tests for syphilis—								
Blood—								
Presumptive Kahn	.....	.....	.....	.....	36	20,469	20,505	40,118
Standard Kahn	3,860	1,362	4,023	4,788	1,238	1,928	17,199	13,192
Quantitative Kahn	.....	.....	.....	.....	.....	3	3	.....
Complement fixation	.....	.....	.....	.....	.....	1,928	1,928	2,294
Cerebrospinal fluid—								
Kahn	65	.....	83	.....	23	262	433	507
Complement fixation	.....	.....	.....	.....	.....	248	248	151
Cerebrospinal fluid—								
Cell count	52	9	75	37	29	298	500	479
Protein	57	7	71	.....	20	206	361	
Colloidal reaction	1	19	82	.....	29	250	381	302
Milk—								
Bacterial count	.....	39	54	479	296	1,018	1,886	1,569
Coli-ærogenes	72	39	.....	482	296	1,001	1,890	1,591
Miscellaneous (phosphatase and reductase)	.....	1,083	.....	.....	.....	1,426	2,509	1,769
Water—								
Total bacterial count	.....	44	.....	26	.....	290	360	317
Coli-ærogenes	72	402	352	323	556	785	2,490	1,498
Unclassified tests	69	6	.....	38	4	70	187	234
Totals, 1946	5,955	3,755	8,574	8,840	2,983	42,405	72,512	.....
Totals, 1945	5,326	3,582	6,178	8,889	5,792	56,794	.....	86,561

REPORT OF THE DIVISION OF VENEREAL DISEASE CONTROL.

J. M. HERSHEY, ACTING DIRECTOR.

This report of the Division of Venereal Disease Control for the year 1946 provides an outline of the problem of venereal disease as it exists at the present time in this Province, and affords an opportunity for a review of the services and facilities which are available for the control of these infections and for a consideration of the various agencies responsible for venereal disease prevention and control.

THE PROBLEM IN VENEREAL DISEASE CONTROL.

Venereal disease constitutes a very serious problem in communicable disease control at the present time. During the year 1946 the incidence, as reported through the clinics operated by the Division and by private physicians, reached an all-time high of 6,790. Of this total, 4,618 reports were for gonorrhœa and 2,126 were for syphilis. In 1945, 5,245 cases of venereal disease were reported.

The increase in total venereal disease for 1946 over 1945 was 29.5 per cent. Cases of gonorrhœa increased by 24.4 per cent. and syphilis (all types) increased by 27.8 per cent. New cases of primary and secondary syphilis together increased 29.3 per cent.

The reported incidence of venereal disease in British Columbia was higher than that for any other disease, not excepting the minor diseases of early childhood, and was approximately three times the reported incidence for tuberculosis.

The incidence of venereal infections for 1946 was almost exactly twice that reported in 1942.

The greatest reported incidence of venereal disease occurred in single male persons, who represented 72 per cent. of the total males infected, or 46 per cent. of the total number of infected persons, male and female, whether single, married, widowed, divorced, or separated.

The period of highest incidence in both male and female was in the age-group 20–30 years.

Facilitation reports of the Division indicate that public places were named most frequently as places of meeting, and hotels and rooming-houses as places of exposure, with the "pick-up" as the most frequently named source of infection. New infections allegedly acquired in bawdy-houses amounted to approximately 1 per cent. of the total.

From a consideration of the figures given, it appears that the promiscuous single male in the age-group 20–30 years and the infected female "pick-up" have replaced the bawdy-house prostitute as the most important problem in venereal disease control because of the large number of infected persons in these groups. It should be emphasized in this respect that professional prostitutes, in or out of bawdy-houses, as well as the promiscuous female "pick-up," show such a very high rate of infection as to justify the general statement that all such persons are infected with venereal disease. The operation of bawdy-houses in this Province, however, has been so greatly curtailed as a result of the activities of the Provincial and municipal police that, as stated previously, only 1 per cent. of the total cases reported allegedly were acquired in such

places. It should be stressed, however, that this figure applies only to reports concerning the origin of infection and does not allow for secondary cases resulting from contacts with persons originally infected in bawdy-houses.

The reported incidence of venereal disease in this Province has increased steadily for a number of years. Part of the increase shown unquestionably represents a true increase, but it is becoming apparent that a number of factors have played a very definite part in increasing the number of infections reported. These include the following:—

(1) Greater knowledge on the part of the public concerning venereal disease—that is, better public health education—with the result that more persons who have become infected seek out the diagnostic and treatment services of the private physician and those provided by the Division.
(2) Better reporting on the part of physicians.
(3) Better epidemiological service provided by the Department of Health and Welfare, resulting in better follow-up and contact tracing of individuals infected with or exposed to venereal disease. In 1946 an estimated 1,300 of the total of 6,790 cases were reported as a result of the follow-up work of the public health personnel.
(4) The increase in population in this Province in the past year accounts for an increase of approximately 5 per cent. in the total number of cases reported.

PROVINCIAL SERVICES.

Services provided by the Division of Venereal Disease Control and the Division of Laboratories of the Department of Health and Welfare include:—

(1) Free diagnostic and treatment service (clinics at Vancouver, Victoria, New Westminster, Oakalla, and Dawson Creek).
(2) Free consulting service for private physicians treating venereal disease.
(3) Free laboratory diagnostic service provided by the Division of Laboratories for patients of private physicians, as well as for clinic patients.
(4) Free drugs, including penicillin, for clinic cases and patients of the private practitioner treating venereal disease.
(5) Free medical care for those unable to pay the private physician.
(6) Epidemiological service—follow-up, contact tracing, etc.
(7) Public health education.
(8) Social service investigations and follow-up.
(9) Administration.
(10) Legislation.

DIAGNOSTIC AND TREATMENT CLINICS.

Clinics providing free diagnostic and treatment services are located at Vancouver, Victoria, New Westminster, Oakalla, and Dawson Creek. Clinics are in charge of physicians specializing in the treatment and the diagnosis of venereal disease, and the services of qualified consultants in the various special-

ties are available as required. Approximately 50 per cent. of all persons reported as receiving treatment for venereal disease in this Province receive their treatment in clinics operated by this Division. Associated with the Vancouver clinic is a small ward in the Vancouver General Hospital, which has been used throughout the year for the rapid treatment of selected cases of syphilis with combined penicillin, mepharsen, and bismuth therapy. In Vancouver, because of the increased demand made on the Division for treatment and other services, arrangements have been made to enlarge the quarters occupied by the Division at 2700 Laurel Street. It is hoped that this additional space will be available early in the coming year.

CONSULTING SERVICE.

Through this Division a consulting service is provided to assist medical practitioners in the diagnosis and treatment of their private patients. Considerable advantage has been taken of this service in the past year, especially in the treatment of difficult cases. In addition, consultants of the staff of the Division are responsible for advising both private practitioners and clinic physicians with respect to current changes and advances in the treatment of venereal disease.

LABORATORY SERVICES.

A free laboratory diagnostic service is provided by the Division of Laboratories of the Provincial Department of Health and Welfare for clinics operated by this Division and for private physicians throughout the Province. A tremendous number of specimens are reported on by the Division of Laboratories, and the dependence of physicians and patients alike on the laboratory for diagnosis is readily apparent to all familiar with the procedures required, and the part played by the Division of Laboratories in providing information essential to both diagnosis and treatment of venereal disease is a very important one.

DISTRIBUTION OF DRUGS.

Distribution of free drugs, including penicillin, for use by both private physicians and clinics, has increased progressively in recent years. The free distribution of penicillin was begun in 1945, and its distribution has increased steadily with the recognition of the important part played by it in the treatment of venereal disease.

PROVISION FOR FREE MEDICAL CARE.

The provision of free medical care through payment by the Division of the private physician, where free clinics are not provided, for the treatment of those persons unable to pay for his services has made it possible for such persons to receive treatment for venereal disease. A revised schedule of fees to be paid by the Division to private physicians treating these cases has been approved recently and will go into effect on the first of the coming year.

EPIDEMIOLOGY.

The epidemiological service through which investigations are made of contacts, and follow-up of delinquent patients is carried out, plays a very

important part in venereal disease control. Reference has already been made to the fact that approximately 1,150 cases of venereal disease were diagnosed and placed under treatment as a result of the activities of those engaged in this work. With better understanding of the problem the private physician also is playing an increasingly important part in the control of venereal disease by obtaining better and more complete information from his private patients regarding the source and spread of their infections. Information regarding the change of address of contacts to venereal disease from one place to another also is exchanged with health departments in other Provinces and States. This exchange of information has been of great assistance to all concerned.

In this Province the problem of epidemiology is gradually being turned over to the local health authorities, whose responsibility it properly is, and the epidemiologists on the staff of the Division are now located in the Vancouver office and visit the field periodically in a consulting capacity to deal with special epidemiological problems. This is in line with the policy of the Provincial Department of Health and Welfare, as adopted with respect to other services.

Meetings of the staff of the Division with representatives of the armed forces and with the senior Medical Health Officer of the Vancouver Metropolitan Health Committee have been held periodically throughout the year. While the problem of venereal disease control, as it concerns active members of the armed forces, has been greatly reduced in proportion to the reduction in the number of such personnel, these meetings have continued to prove beneficial to all concerned. In April an agreement was reached with the Department of Veterans' Affairs whereby this Division became responsible for follow-up of ex-service personnel having a history of syphilis in the armed forces or a positive or doubtful blood test on discharge. This has resulted in a very substantial increase in epidemiological work throughout the Province. Arrangements were completed at that time also for army personnel who have been treated for syphilis to come to the Vancouver clinic for epidemiological interview prior to discharge. The same procedure is being carried out through the Victoria clinic with regard to navy personnel. In September a male epidemiology worker was appointed to the staff to assist with follow-up of male cases and contacts, particularly ex-service men.

VENEREAL DISEASE EDUCATION.

During the past year efforts have been continued to inform the public generally regarding the problem in venereal disease control. At the same time the efforts of those responsible for the educational program have been directed increasingly toward reaching groups of persons most in need of such education.

In April the Vancouver Junior Board of Trade carried out an educational program in an effort to reach every householder in the Vancouver area through the distribution of letters, pamphlets, posters, and by means of newspaper advertisements and articles, and by radio. In all, some 250,000 pieces of literature were distributed, and this organization is to be congratulated on the active educational campaign carried out by it. During the year the Vancouver Health League also took an active part in promoting education related to venereal disease prevention and control.

Throughout the Province generally, literature has been made available to all persons interested in or in need of information concerning venereal disease. Films concerning this subject were shown throughout the Province 194 times by personnel of the Division or of the local health services, and forty-eight lectures by various members of the staff were given during the year. The assistance of the Department of National Health and Welfare in supplying grants for education was greatly appreciated. Additional help from this Department, in the form of recently developed educational media, has contributed considerably to the educational effort of the Division.

Through the efforts of voluntary organizations such as Junior Boards of Trade and the Health League, and with the aid of the press and radio, it is felt that public health education in respect to venereal disease has reached a point where the subject has been brought out into the open. This, obviously, is an essential step in any realistic approach to the problem of venereal disease education.

Following the opening of schools in September, through the co-operation of the Provincial Department of Health and Welfare and the Department of Education, and the local educational and health authorities in Vancouver, plans were made for the inclusion of instruction regarding venereal disease as a part of the regular health course in British Columbia high schools. The details regarding the method of teaching this subject were dealt with by a special committee meeting in Vancouver for this purpose, and it is anticipated that venereal disease education will be carried out experimentally in the near future in selected schools in Vancouver and in certain health units with a view to making education of this type more general. In September D. A. R. Peyman, who had been in charge of educational work for the Division, resigned from the staff, and the work initiated by him having to do with the school curriculum and other matters concerning venereal disease education was taken over by the Division of Public Health Education of the Provincial Department of Health and Welfare. Through this Division the activities concerned with venereal disease education have been carried out in a very satisfactory manner, and under this arrangement it will be possible to incorporate venereal disease education more easily into the general public health educational service. The advantages of this procedure are readily apparent to those familiar with the whole problem of public health education.

SOCIAL SERVICE.

In any consideration of the problem encountered in dealing with persons infected with venereal disease, it will be apparent that the social service worker has a very definite place in a program developed to deal with the question as a whole. Social problems as factors in venereal disease control are numerous, and the various forms of facilitation represent some of the most important from the point of view of the public generally and of those particularly concerned with control of venereal disease. It is apparent that the solving of this problem will take time and the co-operation and interest of all concerned.

ADMINISTRATION.

The administration office plays an important part in the efficient operation of the services provided by the Division, and a large staff is constantly employed in this aspect of the work. The matter dealt with under this heading covers all phases of local clinic operation, as well as administration of the Provincial service generally.

LEGISLATION.

In recognition of the importance of venereal disease and the necessity of providing for the control of infected unco-operative individuals, the "Venereal Diseases Suppression Act" was passed in 1938. Since that time it has been found, on the basis of experience, that the Act, as written, needs clarification and revision, and it is hoped that in the near future a new Act will replace the existing one so as to make possible a more effective venereal disease control program in this Province.

The sponsoring of legislation for the control of the infected individual menacing public health generally is the recognized responsibility of the Provincial Department of Health and Welfare. The control of facilitation in a given community, however, through licensing procedures and the drafting and enforcement of local by-laws, obviously is a responsibility of the local community.

RESPONSIBILITY IN VENEREAL DISEASE CONTROL.

Responsibility for the control of communicable disease generally, including venereal disease, is shared by three agencies—in the Provincial authorities, local authorities, and the individual.

In this Province the Provincial authorities, through the Department of Health and Welfare, have assumed the responsibility of providing diagnostic, treatment, and other services, as outlined above, for the benefit of the people of the Province as a whole. This service is much more extensive and complete than that provided in many other Provinces and States of this continent, and in view of the services provided, it cannot be said that the increase in venereal disease at the present time is due in any way to lack of diagnostic and treatment facilities. The responsibility of local authorities in venereal disease control on the other hand has to do with law enforcement, the provision of recreational facilities, the control of facilitation, and public health education. While Provincial and local authorities can contribute much to the control of venereal disease, the chief responsibility in this respect must be assumed by the individual, and until he assumes much greater responsibility for his own actions, not only with regard to taking treatment after he has become infected, but in avoiding infection, little decrease in venereal disease incidence can be expected.

REPORT OF THE DIVISION OF TUBERCULOSIS CONTROL.

W. H. HATFIELD, DIRECTOR.

The year 1946 proved to be a most active one for the Division of Tuberculosis Control. The Division, in endeavouring to press its case-finding program in an effort to locate every possible case of tuberculosis, was able to examine more people per day by improving procedures within the mobile units. Because of this, the number of new cases of tuberculosis diagnosed was greater in 1946 than in any year previously, and the majority of cases were found to be in the minimal stage. With the growing consciousness among the general public of the necessity for chest X-ray examinations, there is an ever-increasing number of people coming to the stationary diagnostic clinics, particularly in Vancouver, Victoria, and New Westminster.

Although the Division has found these cases and is able to institute some measure of control by public health teaching through district nursing services and other educational facilities, the work has been considerably hampered by the great lack of beds for patients. There has been at all times during the year an active waiting list of 200 or more patients for admission to hospital. In computing this waiting list, the Division has only considered cases of active pulmonary tuberculosis, but it is felt that there should also be sufficient bed facilities to handle patients suffering from other types of tuberculosis, including pleurisy, pleurisy with effusion, tuberculous peritonitis, genito-urinary tuberculosis.

An attempt was made this year to obtain temporary bed facilities from the Air Force, which has had in its possession for the major portion of the year an empty, fully equipped hospital at Jericho Beach. At the year-end this hospital was still not obtained, but it was hoped that it would be early in the new year.

With regard to construction, land has been cleared for a new sanatorium and plans are well under way for the buildings. It is sincerely hoped that, with the acute emergency that exists, construction of this sanatorium will start at the earliest possible date.

Plans for modernizing existing institutions, the one at Tranquille in particular, were not rounded out during the year. The Public Works Department completed plans, and tenders were submitted for construction at Tranquille, but prohibitive cost delayed construction. The contemplated improvements in surgical facilities in Vancouver were also not forthcoming, although an increased volume of surgery became evident in the Division. It is hoped that a surgical unit will be initiated during the forthcoming year, as it is urgently needed in order that work now necessary in British Columbia hospitals can be carried out adequately.

It was hoped that in 1946 staff problems would begin to decrease, but this has not materialized. Although there has been a great influx of doctors to the Province, few have shown interest in full-time positions available within the Division. This is primarily because of salary-levels, which should be adjusted to compare somewhat more favourably with the opportunities that physicians have in private practice.

The nursing situation has remained acute and has shown no improvement during the year. It has been easier to obtain staffs for institutions not in

the rural areas, and consequently Tranquille has particularly suffered from a nursing shortage.

In a previous annual report the Division recommended that a general superintendent of nurses be appointed to co-ordinate the nursing services of the Division with other services. Because of a contemplated increase in bed facilities, this addition will become even more necessary, and it is again recommended that this appointment be made. Another senior appointment advocated a year ago was that of business manager for the Division. It is again urged that this position be established.

The general picture throughout the Province in 1946 in regard to tuberculosis control remains the same as in the previous year. There has been no general improvement in housing conditions, and approximately the same number of cases are being referred to us from the Department of Veterans' Affairs. Japanese cases continue to be handled by the Dominion Government Department of Labour. However, some definite improvement has taken place in the work among the Indians through opening-up of bed facilities for the treatment of Indians by the Indian health service.

It is felt that facilities of the Division have been taxed to the maximum, and the only improvement to report during the year is an increase in case-finding work. There can be little further improvement in the control of tuberculosis until a considerable number of new beds are added for treatment of patients. It is felt that a basic minimum of 300 beds is needed now and that plans should be made for addition of 500 beds.

The new tuberculosis regulations under the "Health Act" have now been in effect over a year, but have been used directly to force only one patient into institution. However, without proper accommodation to handle recalcitrant patients, it becomes almost impossible to keep such patients in institution when they are placed there. Also, with the lack of bed facilities, there remains a constant and large waiting list, and it is impossible to handle even those patients who are willing to co-operate. The very fact that the law does exist, however, has had the effect of bringing certain other individuals into institutions without the aid of police authority.

The Division has watched with interest the work that has been done with streptomycin, which became available at the end of 1946. All indications are that streptomycin will have some place in the treatment of tuberculosis, but will not replace time-honoured methods of treatment currently in effect.

CLINICS.

The Division continues to operate four types of clinic—stationary survey clinics, mobile survey clinics, stationary diagnostic clinics, and travelling consulting clinics.

The consultation service which is offered throughout the rural areas of the Province between clinic visits continues to be used extensively. Over 3,000 X-ray films were taken under this plan.

Two mobile units have been in use during the year. These two units X-rayed 99,112 persons, and this figure, coupled with the stationary survey clinics, totalled 146,227. Equipment for taking of 70-mm. X-ray films had arrived at the end of the year, and will be put into use early in 1947. Of those

X-rayed in all survey clinics, 2.19 per cent. were referred to diagnostic clinics for further study. The analysis of this group is as follows: 901, or 28 per cent., were diagnosed as tuberculous, and 68.2 per cent. of these cases were minimal, 27.5 per cent. moderately advanced, and 4.3 per cent. far advanced. The total of those diagnosed requiring active treatment was 232, or 25.7 per cent. These percentages constitute approximately the same distribution as in the previous year.

The work of the diagnostic clinics continued to increase, with an upward trend being shown in survey clinics. During the year 28,344 patients were examined in diagnostic clinics. This was an increase of 18 per cent. over the previous year.

There was a total of 174,571 examinations in all clinics.

Because of a lack of trained personnel, it was necessary to make certain changes in the operation of the travelling clinics. During 1946 only one clinic, the Kootenay travelling clinic, was under the directorship of a full-time travelling tuberculosis officer. All other clinics became attached to the various treatment institutions, and senior staff members of those institutions now travel out to supervise the travelling clinic work.

During the year the New Westminster clinic started a survey program under which 12,098 persons were examined in the survey clinic. At the end of the year, certain alterations were made in the Victoria clinic, and it was planned that an X-ray department would be installed and put into operation early in 1947. This equipment will make the Victoria clinic a self-contained unit and will facilitate work there. A new X-ray department has been added to the Vancouver unit to relieve the load in the diagnostic clinic, and in the future all specialized types of X-ray films will be done in this new department. The original diagnostic equipment will be used for the ordinary routine type of chest-work.

INSTITUTIONS.

The work of the Division of Tuberculosis Control has been hampered by the lack of sufficient beds. No new beds were added during the year. The list of active urgent cases awaiting admission continued to mount in spite of the fact that patients were being discharged from institutions much earlier, so that at least some treatment for as many patients as possible could be provided. It was found necessary to ask local hospitals to look after a certain number of cases. Some minimal cases are observed as out-patients, instead of being brought into hospital for observation, and are brought into hospital only when active therapy is indicated. No attempt has been made to admit to hospital any cases of non-pulmonary tuberculosis. This whole situation is very unsatisfactory, and until an adequate number of beds is available, the Division cannot expect the tuberculosis control program to work to full effect.

If an Air Force hospital located in Vancouver can be obtained for use early in the new year, it will provide a maximum of between 90 and 100 additional beds only. As has been previously pointed out, a minimum of 300 beds is needed, and in order to handle all types of tuberculosis, 500 beds are required.

The Division is still utilizing one floor of the Vancouver Isolation Hospital, where the main surgical unit of the Division is located. Because surgery is

now playing an increasing rôle in the treatment of tuberculosis, new surgical facilities are badly needed.

St. Joseph's Oriental Hospital continues to be used as previously, and, as has been repeatedly emphasized, accommodation at that hospital is not considered satisfactory for the treatment of tuberculosis. It is necessary to point out also that Japanese-Canadian patients will probably come there under the care of the Division in the near future.

The staff situation at all institutions remains extremely acute, and housing accommodation for nurses must be improved before full staffs can be obtained. The plans which were prepared for the modernization of Tranquille Sanatorium included additional staff accommodation, but because satisfactory tenders were not received, no progress was made in this regard. It is trusted that plans which have been prepared will be implemented during the forthcoming year.

NURSING.

The nursing service in hospital wards, clinics, and districts is a vital part of the tuberculosis program.

Tuberculosis nursing within sanatoria is passing through a stage of development which has a direct bearing on the future of this nursing field. Although progress has been made, the major problem is still the lack of a sufficient number of interested and well-prepared nurses to staff the tuberculosis hospitals. A low ratio of nurses to patients, and even to auxiliary *aides*, is general across Canada, particularly in the sanatoria located in isolated areas. One reason is a preference among nurses for living accommodation apart from the place of employment. Other factors responsible for the lack of nurses are the fear of contracting tuberculosis and inadequate preparation. Consequently nurses do not appreciate the scope and opportunity in this branch of nursing.

To offset this problem, the nursing profession has introduced tuberculosis affiliation into student curricula for schools of nursing. Featured articles have appeared in the official journals to attract and inform graduate groups. However, the ultimate solution is dependent on a reorganization of nursing services within institutions, as the routine of sanatorium nursing has not been conducive to the obtaining or retaining of staff. Emphasis placed in institutions on bed-making and other routine bedside and non-nursing duties uses up individual time and energy which should be directed toward the application of the nurse's specialized knowledge and skill in the total nursing care of the patient. Plans for conservation of professional nurse-power for essential services such as skilled observation, supervision, and education of the patient should attract more nurses to tuberculosis nursing and raise the standard of care given the patient, thus safeguarding his investment in sanatorium treatment.

Reorganization of the nursing service on such a basis would require employment of a number of auxiliary workers sufficient to permit redistribution of duties and routine. During the past year auxiliary workers have been utilized at the Tranquille and Vancouver units with satisfactory results. A continuous plan for training and orientation was instituted to provide a degree of basic training and give necessary specific instruction. In addition, a handbook was prepared in the Vancouver unit giving general information and work schedules for all branches of the auxiliary services. The time and effort

involved in the compilation of this handbook has been justified in the assistance it has been to individual workers, which brought improvement in the co-ordination of various branches. The value of auxiliary services could be increased to a marked degree if provision were made for the training of selected applicants as nursing *aides*, ensuring a source of supply of adequately prepared personnel. The institutions would then have to give only the specific instructions required to meet their own particular needs, and present waste of time and effort in the partial training of individuals with widely varied backgrounds of experience would be eliminated. Rapid turnover and instability among this auxiliary group is currently due, in all probability, to the lack of uniformity in the training and status.

Continued employment of auxiliary workers for hospital staffs is desirable. The practical value of reorganization, as outlined, has been demonstrated in the Vancouver unit, to the extent that the professional nurse quota has been maintained at a satisfactory ratio despite an obvious nurse shortage in the area. This situation is gratifying, in view of the fact that a previous advantage of salary differential for tuberculosis nursing is no longer available because of general increase of salary-levels in other institutions.

The educational program has been particularly progressive in both graduate and student training. During the past year the following groups have obtained instruction and experience in the Vancouver unit:—

(1) Two hundred and twenty student-nurses from four schools of nursing, who completed the affiliation course of five weeks' duration.
(2) Twenty-one graduate-nurse students from the public health nursing course at the University of British Columbia—one week each.
(3) Three graduate-nurse students from the teaching and supervision course, University of British Columbia—six weeks each.
(4) Three graduate nurses took the five-week affiliation course to qualify for reciprocal nurse registration in British Columbia and for entrance for postgraduate study at the University of British Columbia.
(5) Nine students to date from the practical nursing course sponsored by the Canadian Vocational Training Plan for service women—one month each. Auxiliary nursing staff will be recruited from this group on completion of the one-year course, as some of the students have expressed a preference for duty in tuberculosis institutions. The first group will finish training in May.

Accomplishments of the past year provide encouragement and incentive for the many interesting developments which are possible in a progressive program for a tuberculosis nursing service set up to meet the needs of the present and build a sound structure for expansion in the future.

SOCIAL SERVICE.

The work of the social service department was curtailed for several months at the beginning of the year because of a shortage of staff. By the end of the year this situation had been relieved, and there were five full-time workers, including the Provincial supervisor, in the Vancouver unit plus one full-time

worker at the Victoria unit and two full-time workers at Tranquille. Fortunately there was a change in the Provincial Social Welfare Branch policy, which brought an alleviation in pressure of correspondence. Under a plan of decentralization of supervision, trained supervisors have been appointed to the district offices in all the regions but one. As a result, the tuberculosis social service section no longer has the responsibility of providing detailed supervision by mail to the local social worker.

The social service department has taken an increasing responsibility for training and orientation of public health nursing students, student-nurses, new social workers, and senior social-work supervisors. For instance, all workers taking the Social Welfare Branch in-service training course have spent time at the tuberculosis unit, and all new workers appointed to the Social Welfare Branch staff have spent an orientation period at the unit.

During the year the City of Vancouver social service department opened a much-needed boarding-home for women. This has, to a certain extent, solved one difficult problem by providing an adequate home for discharged women patients who need to continue with treatment. There is still no such provision made for Chinese patients who should be under supervision.

STATISTICS.

The record and statistical system of the Division remains the same as in the previous year. It is believed that a system has finally been evolved which will require only minor changes from time to time, thus permitting a more uniform comparison of statistics year by year. The Division of Vital Statistics has given close co-operation and continues to aid the Division in the handling of its statistical analysis and in surveyance of the record system from time to time during the year. Accumulation of statistics on a standardized basis now provides the Division with material for special studies.

The ratio of new cases to deaths in 1946 was 5.1 : 1 and the ratio of known cases to deaths was 31.7 : 1.

BUDGET.

The budget for the ensuing year remains on the same basis as in 1946, except for raising of salary-levels due to reorganization carried on through the Civil Service Commission. Temporary bed facilities attached to the Vancouver unit continue in use and additional temporary bed facilities to accommodate ninety to ninety-five patients are expected to be made available early in the year by acquisition of the Air Force hospital at Jericho Beach, Vancouver.

Because of expanding services of the Division, it is again reiterated that the plan recommended for staff reorganization should be implemented. As the Division's facilities are spread widely throughout the Province, it involves the operation of its own hospitals, plus hospitals under different types of agreements with local general hospitals, and stationary clinics, travelling diagnostic clinics, and mass X-ray clinics. It is strongly urged, as has been recommended repeatedly, that the position of business manager be recognized. It is suggested that for sound administration there should be greater separation between what might be termed business and medicine. Although the Director of the Division should be a physician, as should the directors of the various institutions

of the Division, the business manager and his staff in various institutions should carry the complete day-by-day responsibility for all business details.

The Division regrets that it cannot report progress on improvements planned for Tranquille Sanatorium, or further progress toward a new sanatorium in the Vancouver area. It is hoped that the plans which are in hand can be implemented during the forthcoming year. These capital allowance costs do not appear directly in the budget of the Division, but in the estimates of the Public Works Department.

LOCAL HEALTH SERVICES.

There continues to be close co-operation between the Division and local health services. Plans for mass X-ray surveys have been made further in advance to allow more careful preparation in the local areas. The Division continues to act, as far as the local areas are concerned, in a consultant capacity, and furnishes staff and equipment for survey and diagnostic work. The responsibility for organizing surveys and referrals to the clinics remains with organizations in local areas. Further establishment of health units continues to improve the organization in this regard. There has been increased use of the consultative X-ray service in times between clinic visits by many of the local areas.

GENERAL REMARKS.

If recommendations in this report regarding the appointment of a business manager and a general superintendent of nurses are implemented, the organization of the Division will then be well rounded out, except for one position. An Assistant Provincial Director should also be appointed when some of the new facilities which are planned become available. The close relationship existing between the Division and voluntary groups within the Province, each completely organized and differentiated from others, makes for an ideal tuberculosis control program.

The concentration of the work on case-finding has brought to light the extent of the tuberculosis problem. It has also led to a review of present concepts of the epidemiology of tuberculosis. With the compilation of the many statistics now available through this Division, it becomes apparent that there are a number of factors in the development of tuberculosis still unexplainable to-day. With the opportunities that exist through this Division, it is recommended that consideration be given to provision of a research fund, such as is provided in some other centres, so that by utilizing present opportunities the Division can make some contribution to the furtherance of understanding of this problem.

The annual meeting of the Canadian Tuberculosis Association, held in Calgary, was attended by the Director of the Division, and at the same time a meeting of the advisory committee was held in connection with the control of tuberculosis among the Indians. The annual staff meeting of the Division was held in October as usual, with full reports from all units of the Division being presented. Details are available through the Divisional headquarters. The review of literature for patients, which was initiated the previous year, resulted in the printing of several new pamphlets. The Division is planning during the

ensuing year to have representatives attend some of the national and international conferences.

There has continued to be close co-operation between the Division of Tuberculosis Control and the Metropolitan Health Committee, the local health units and public health nurses, the Social Welfare Branch and other departments of government. Further correlation of work with local health services has been developed, particularly with the mass X-ray survey program. The British Columbia Tuberculosis Society continues to play an important rôle in the tuberculosis program of the Province. This voluntary organization, with its many local committees, has provided funds for equipment, education, and study purposes, and at the end of the year plans were being evolved for the British Columbia Tuberculosis Society to take up the problem of rehabilitation and consider development of a central Provincial tuberculosis institute for education and scientific procedures, such as chest surgery. The Division has always received every possible co-operation and support from the officers of the British Columbia Tuberculosis Society. The board of directors of the Vancouver Preventorium has continued, as heretofore, to provide accommodation for children between the ages of 2 and 14, and every co-operation has been given to the Division by the Preventorium in its part of the tuberculosis control program.

REPORT OF THE DIVISION OF PUBLIC HEALTH ENGINEERING.

R. Bowering, Public Health Engineer and
Chief Sanitary Inspector.

The Division of Public Health Engineering is responsible for environmental factors that may affect the public health. Water-supply sanitation, sewage-disposal, milk-plant sanitation, cannery and industrial-camp sanitation, shellfish sanitation, and other miscellaneous items of environmental sanitation all come within the scope of the Division of Public Health Engineering.

WATER-SUPPLY.

One of the most important responsibilities of the Division of Public Health Engineering lies in the field of water-supply sanitation. The "Health Act" requires that whenever a public water-supply is constructed, extended, or altered, the plans and specifications must be approved by the Minister of Health and Welfare before construction may commence. These plans are always reviewed very carefully by the Division of Public Health Engineering, and a proper course of action in regard to the plans is recommended to the Deputy Minister of Health. In the course of an average year the value of waterworks plans approved is well over a million dollars.

There are over 150 water-supply systems in British Columbia. It is necessary for sanitary surveys of these water-supply systems to be made from time to time. Although it is impossible with the present staff to examine these water-supply systems annually, many have been examined, and a number of unsatisfactory features have been eliminated. The Division of Public Health Engineering of the Department of National Health and Welfare makes sanitary surveys of water-supplies used by common carriers. The above-men-

tioned Department makes available to the Division of Public Health Engineering the results of such sanitary surveys.

The question of treatment of water for the better protection of the public health has been very much to the fore in the past few years. In 1946 the citizens of Victoria voted to retain and operate the chlorination equipment which had been placed in Victoria by the Federal Government during the war. Bacteriological examinations of a large number of samples taken at the source and throughout the system show that this method of public health protection is very much worth while. The increasing use of chlorination plants will add to the work of the Division of Public Health Engineering because adequate inspection of this type of water-treatment plant should be made from time to time.

In 1946 a new standard of quality for water-supplies was introduced in the United States by the United States Public Health Service and officially approved by the American Waterworks Association. This latter association covers Canada as well as the United States. Among the recommendations is a new standard for minimum number of water samples per month from various water-supply sources. If British Columbia is to use this modern standard, it will be necessary to increase the staff of the Division of Public Health Engineering by the addition of more sanitary engineers, and it will also be necessary to increase the capacity of the Division of Laboratories for handling water samples.

SEWAGE-DISPOSAL.

There are two general classifications of the sewerage and sewage-disposal problem in British Columbia. The first is the question of sewerage and sewage-disposal in organized municipalities, and the second is the problem of sewage-disposal in unorganized communities in rural areas. The larger cities of the Province have sewerage systems, although these systems do not serve all the residents of the cities in question. Because the larger cities are located on the sea-coast, the most common method of sewage-disposal in British Columbia is by dilution in salt water. Although this method is generally satisfactory for the prevention of gross nuisances, some of the salt-water bathing-beaches in the Province which are near sewered municipalities have a fairly high degree of fæcal contamination. In the Interior of the Province it is general to require treatment of sewage. Where the disposal is into large bodies of water, sewage treatment is not insisted upon. There are no cases of raw sewage-disposal into rivers or lakes in British Columbia where the dilution factor is less than 1 in 2,500.

The problem of sewering unorganized communities still exists, although a great deal of study has been made on this problem by an interdepartmental committee under the chairmanship of the Deputy Minister of Health.

For the sewage-disposal for private homes and institutions, plans have been drawn up and printed for a widespread distribution in rural areas. Owing to the fact that people in rural areas are becoming better informed concerning the proper method of installing septic-tank sewage-disposal treatment plants, complaints concerning faulty sewage-disposal appear to be falling off from year to year.

MILK SANITATION.

The advance reported in 1945 in the number of pasteurization plants continued into 1946. There are now over fifty communities in which pasteurized milk is available, whereas five years ago there were only thirteen or fourteen.

There was one small typhoid epidemic, apparently caused by infected raw milk, during 1946. This occurred at Savona in March.

SHELL-FISH SANITATION.

There are two distinct problems in shell-fish sanitation. The first problem is in regard to contamination of oyster-producing areas. In British Columbia the bulk of oyster production takes place on ground leased from the Crown for the purpose. No leases are issued for the culture of oysters until approval of the beds is made by the Deputy Minister of Health on the advice of the Division of Public Health Engineering. At the present time in British Columbia there are no unsafe beds used for the commercial production of oysters.

Unfortunately, however, some areas that are contaminated with sewage produce oysters naturally. Three cases of typhoid fever occurred in the Province in 1946 due to the consumption of oysters taken from polluted areas by private persons. It is the intention of the Division to make a much more thorough sanitary survey of Ladysmith Harbour in 1947 than the survey that was made in 1945.

The second major problem with regard to shell-fish in British Columbia is the question of clam and mussel poisoning that has been apparent on the west coast of Vancouver Island for the past two or three years. The area that is known to be contaminated on an almost continual basis is the west coast of Vancouver Island from Otter Point around Cape Scott to Negei Islands. It is proposed that in 1947 a considerable amount of sampling of shell-fish be done by the Federal Department of Fisheries in co-operation with both Federal and Provincial Departments of Health, and the Provincial Department of Fisheries. No deaths from shell-fish poisoning have occurred in British Columbia since 1942.

CANNERY SANITATION.

Although at one time cannery sanitation was the main feature of the work of the Division of Sanitation, at the present time it is only a small part of the total work done. Owing to the surveys that were made in 1944 and 1945, and also to the scarcity of labour, many improvements have been made in the fish-canneries. In 1946 the Senior Sanitarian made an extensive tour of fish-canneries and reported vastly improved conditions. It is believed that the trend will be to make still further improvements in living conditions at canneries.

INDUSTRIAL-CAMP SANITATION.

A considerable amount of attention was paid to the sanitation of industrial camps in 1946. The reporting of inspections at industrial camps by Sanitary Inspectors attached to health units, together with the number of inspections made by the Senior Sanitarian, has probably made 1946 the major year to date in industrial-camp sanitation. Toward the end of 1946 there was prepared

a set of regulations which will make conditions in industrial camps in British Columbia better than those applying in any other Province in Canada.

SANITATION OF EATING AND DRINKING PLACES.

A major step forward was made during 1946 in the preparation by the Division of Public Health Engineering of new standards for sanitation of eating and drinking places. Regulations dealing with eating and drinking places were passed in the latter part of the year. These regulations will apply to all places where food or drink is sold, including beer-parlours and clubs. The enforcement of these regulations will be a responsibility of the local health departments.

SANITARY COMPLAINTS.

Sanitary complaints are complaints of nuisances which are brought to the attention of the Division of Public Health Engineering by various people throughout the Province. Although most of these complaints are of minor importance, a considerable amount of time is often required in their investigation. In areas where local health units were established, these complaints were referred to the local public health officials for attention.

In many of the places where the complaints originate, there is very little that can be done toward the abatement of the nuisance without the expenditure of money on a community basis. The 1946 amendment to the "Town Planning Act" has made it possible for the Government to regulate certain areas of the Province, and this work is done by the Supervisor of Regional Planning, Bureau of Reconstruction. It is felt that the work of this Bureau will lessen the load of sanitary complaints in the future. In general, complaints appear to be decreasing in number as the years go by. This is probably due to the fact that many conditions which have been occurring annually, causing complaints, have been abated permanently by proper application of public health engineering principles to public health problems.

AUTO CAMPS AND SUMMER RESORTS.

One of the major advances made by the Division of Public Health Engineering in 1946 dealt with auto camps and summer resorts. In 1946 a full-time Senior Sanitarian was added to the permanent staff for the purpose of sanitary inspection of auto camps and tourist resorts. The work of this sanitarian has been very closely integrated with the work of the British Columbia Government Travel Bureau, Department of Trade and Industry. A large percentage of the tourist resorts in the Province were visited by this Senior Sanitarian. In addition, he provided valuable consultative service to several of the health units regarding tourist resorts in their respective areas. It is felt that by next year the effects of this program will begin to be felt in the improvement of this type of accommodation in British Columbia.

GENERAL OBSERVATIONS.

In 1946 the Division of Public Health Engineering extended its services greatly. It is now felt by the Director that this Division should be called the Division of Environmental Sanitation because the field of work covered now

embraces more than what can be strictly entitled " public health engineering." As the work of the Division becomes more known, as the staff of the Division increases, and as the number of health units increases, more and more of the Director's time will be required for administrative purposes. For this reason, it is recommended that an Assistant Public Health Engineer be appointed in the near future.

The Division again wishes to express its thanks to the Division of Laboratories for its co-operation in the examination of samples of water, sewage, and milk. The Provincial Police department deserves mention for its valuable work in inspection of sanitary complaints and industrial camps in outlying districts. The Division would also like to record its thanks to officials of the Federal Division of Public Health Engineering of the Department of National Health and Welfare for their whole-hearted co-operation on many problems. Other members and staff of the Provincial Department of Health and Welfare have given invaluable assistance, for which the Division of Public Health Engineering is deeply grateful.

REPORT OF THE DIVISION OF PUBLIC HEALTH EDUCATION.

MISS KAY MCNEVIN, CONSULTANT IN HEALTH EDUCATION.

It is recognized that education of the public in health matters is an integral part of modern public health activity. Every public health worker uses educational procedures to promote the maintenance of a sound over-all state of health. The task of health education thus is the responsibility of every public health worker, who, through the utilization of proven methods of disease-prevention, attempts to make possible the reduction of illness, and consequently increase human efficiency and happiness.

Public health personnel working either in health units or nursing districts are responsible for all phases of the public health program in the particular area served. This responsibility includes planning and carrying out health education activities in conjunction with the services provided. It includes not only acquainting the community with the public health services available, but assisting individuals or groups through demonstrations or discussions to become aware of the available facilities for maintaining a healthful environment, preventing disease, and promoting a better state of health.

The responsibility of the Division of Health Education is to correlate, guide, and assist in the planning and conducting of health education programs in the public health service. Since the field-worker is the person who actually does the education in public health, then the chief responsibility of the Division is to assist the field personnel in solving problems encountered in their educational programs. This assistance must be provided in co-operation with other divisions concerned to maintain unity of planning and technical accuracy.

During 1946 assistance to the field staff has been provided in several ways —through conferences or discussions, and through letters, pamphlets, books, or other material. Much of the work this year has been devoted to the latter method. A number of new pamphlets have been produced to meet specific needs in the field program, and additional ones are in the planning stages.

Supervision of the ordering and distribution of health education material has been centralized in this Division. All requests coming to the central offices from a health unit area or a nursing district are referred to the health unit area. Through the staff news letter, Public Health News and Views, sample copies of new material available for distribution are provided to field staff, who order quantity supplies to meet local needs.

The monthly news letter, formerly distributed only to nurses, has been expanded to include material of interest to all public health staff. This publication provides a means of distributing information regarding new books, films, and other materials available, as well as digests of articles on current public health topics.

The Health Bulletin has also been expanded and revised. Statistical information is now supplied in narrative form, and articles on topics of current interest in public health are included. The mailing list of over 2,000 includes physicians, high schools, newspapers, and voluntary organizations interested in health, as well as the public health staff. This revision has resulted in a markedly increased interest in this publication.

The library of the Department of Health is maintained both for the use of the central office and the field staff. A number of newer books and periodicals in the field of public health have been added. The health educator has carried out certain library functions in collecting information on request for reports and speeches, and in referring articles of interest in current public health literature. The assistance of a librarian would be particularly valuable in making available information in current journals for the use of the field staff. The development of a plan for full utilization of the resources of the library is dependent on the appointment of such a person, a step which must await the provision of suitable accommodation. In the meantime the staff of the Provincial Library have been most helpful in providing assistance both in cataloguing new books and in giving technical advice and information.

The film library of the Department has been expanded considerably, but it has not kept pace with the rapidly increasing demand for public health films. A catalogue of all health films available from this Department, as well as other agencies, has been prepared and should be ready for distribution early next year. Through the co-operation of the National Film Board a large number of films have been previewed by the senior staff during the year, and those considered to be of value in the public health program have been purchased. Films are sent to the public health staff and to schools or other organizations on request. Films not available from the public health library are obtained, where possible, from other film libraries.

The continuous expansion of public health services and the frequent staff changes are accompanied by problems of staff orientation. During this year plans have been laid for the preparation of a manual of policies and programs for health unit directors. In addition, arrangements were made for three new health unit directors to spend several weeks in the central office and in one of the health units in order to become familiar with the program in operation. A similar program of orientation was arranged for a health educator prior to his taking postgraduate work in health education. It is felt that experience, or at least observation, in a local health unit is most valuable if it can be pro-

vided preceding postgraduate training in public health, since it constitutes a background of practical knowledge which greatly increases the value of the academic course. It will be necessary to devote more attention to this project before a satisfactory program of staff orientation for all public health personnel is completed, but a sound beginning has been made in the planning of an orientation program.

Since health education as a specialized field is new in this Province, considerable time has been devoted throughout the year to clarifying the functions of the health educator and to interpreting these functions both to individuals and to other agencies. The health educator has also devoted some time to gaining an understanding of the functions and programs of related departments and agencies, and at the same time to interpreting the policies and programs of the public health service.

During the year this Division co-operated with the Department of Education in planning and conducting experiments in venereal disease education in high schools as part of the instruction in communicable disease. This project is one which was begun during the previous year. Plans for the preparation of a manual on communicable disease control for teachers have been made, and it is hoped that the manual will be completed during the next year.

Much of the work during this year has been in planning for and initiating projects which will require several years to develop, and will require the assistance of additional trained health educators, who, it is to be hoped, may be trained in the near future. During the year a number of candidates were interviewed, and one from this group was selected to take postgraduate training. During the next few years further additions to the staff and the provision of adequate accommodation should make possible considerable expansion of the health education program.

VICTORIA, B.C.:
Printed by DON MCDIARMID, Printer to the King's Most Excellent Majesty.
1947.

725-1147-7093