

Annual report of the Department of National Health and Welfare [Canada].

Contributors

Canada. Department of National Health and Welfare.

Publication/Creation

Ottawa : [Govt. Printer], [1953]

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CANADA

DEPARTMENT OF NATIONAL HEALTH AND WELFARE

ANNUAL
REPORT

*for the fiscal year
ended March 31*

1953

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CANADA

**THE DEPARTMENT OF
NATIONAL HEALTH AND WELFARE**

ANNUAL REPORT

**FOR THE FISCAL YEAR
ENDED MARCH 31**

1953

**Edmond Cloutier, C.M.G., O.A., D.S.P.,
Printer to the Queen's Most Excellent Majesty
Ottawa, 1953**

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To His Excellency the Right Honourable Vincent Massey, C. H., Governor-General and Commander-in-Chief of Canada.

MAY IT PLEASE YOUR EXCELLENCY:

The undersigned has the honour to present to Your Excellency the Annual Report of the Department of National Health and Welfare for the fiscal year ended March 31, 1953.

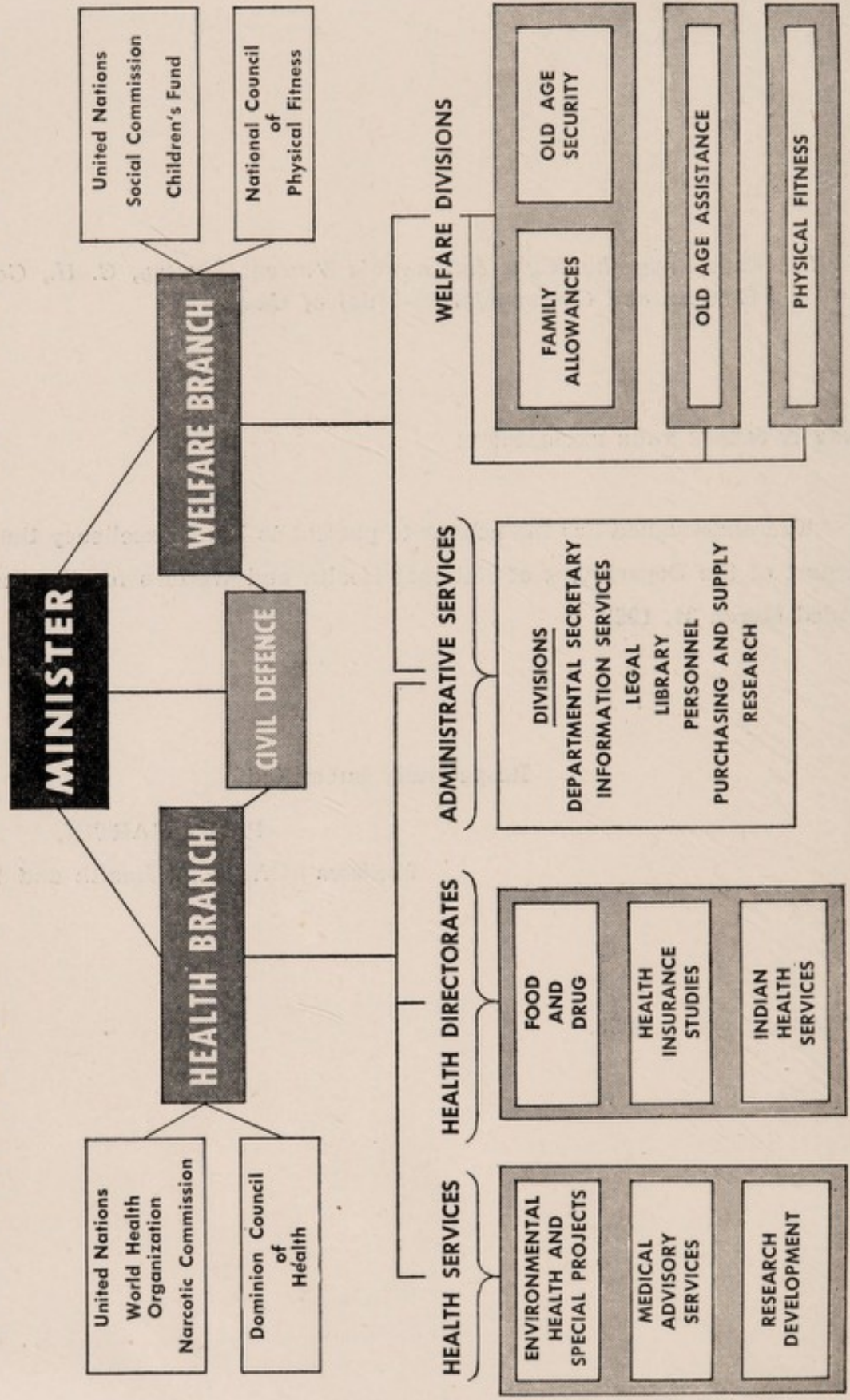
Respectfully submitted

PAUL MARTIN,

Minister of National Health and Welfare.

OTTAWA, April 1, 1953.

DEPARTMENT OF NATIONAL HEALTH AND WELFARE



MINISTER

HEALTH BRANCH

WELFARE BRANCH

CIVIL DEFENCE

United Nations
World Health
Organization
Narcotic Commission

Dominion Council
of
Health

United Nations
Social Commission
Children's Fund

National Council
of
Physical Fitness

HEALTH SERVICES

HEALTH DIRECTORATES

ADMINISTRATIVE SERVICES

WELFARE DIVISIONS

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HEALTH AND
SPECIAL PROJECTS

MEDICAL
ADVISORY
SERVICES

RESEARCH
DEVELOPMENT

FOOD
AND
DRUG

HEALTH
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STUDIES

INDIAN
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PERSONNEL
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RESEARCH

FAMILY
ALLOWANCES

OLD AGE
SECURITY

OLD AGE ASSISTANCE

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To the Honourable Paul Martin, Q.C., M.P., LL.D., Minister of National Health and Welfare, Ottawa.

SIR:

For the fiscal year under review, the widening scope of the Department's activities is indicated by the increase of some \$250,000,000 in the amounts voted by Parliament for its work. This increase was accounted for largely by the fact that 1952-53 was the first full year of operation of the new three-part program embracing Old Age Security, Old Age Assistance and Allowances for the Blind.

Other significant developments contributing measurably to the increase in departmental appropriations included the additional \$12,000,000 required for Family Allowances payments to keep pace with the nation's steadily rising population; the wider utilization by the provinces of federal grant moneys available under the National Health Program; the increase of nearly \$2½ millions in appropriations for Indian Health Services; and, finally, the initiation of a system of grants-in-aid to assist the provinces in developing civil defence projects, for which an amount of \$1,400,000 was set aside.

During the year under review, steady progress was evident in the various areas of departmental responsibility for health, welfare and civil defence. On the health side, the Department continued to carry out its traditional statutory responsibilities for such matters as the control of food and drugs; the maintenance of proper sanitary standards on trains, aircraft, and ships; the medical examination of prospective immigrants; the maintenance of a central laboratory of hygiene; and so on. Through its specialist advisory divisions, the Department also continued to provide a wide variety of consultative services to provincial departments of health and to various voluntary agencies.

Particular mention should be made of the intensive work which went into the preparation of new food and drug legislation which, at year's end, had received approval in the Senate and awaited introduction in the House of Commons (passed in the House of Commons April 21, 1953). The new Food and Drug Act, which will come into force on proclamation, will supersede all previous legislation in this field and will consolidate the many amendments and regulations made under the old legislation over a period of years.

Reference should also be made to the marked expansion in the facilities and services provided for the health care of Indians and Eskimos. During the year there has been a further encouraging decline in the death rate from tuberculosis, the greatest single threat to the health of Canada's native population.

On the welfare side, the outstanding development of the past year was the successful implementation, with the co-operation of the provinces, of the new three-part program to replace the Old Age Pensions Act of 1927. At March 31, 1953, 782,134 Canadians were benefiting under the three new measures.

Under the Old Age Security Act, 686,127 persons 70 and over were receiving payments of \$40.00 a month, administered and financed entirely by the Federal Government without means test of any kind. Another 87,675 persons in need between 65 and 69 years of age were receiving old age assistance payments, administered by the provinces with the costs shared equally by the federal and provincial governments. Under the Blind Persons Act, 8,332 blind persons 21 years of age and over were in receipt of allowances administered

by the provincial governments, with the Federal Government bearing 75 per cent of the costs. Federal payments under these three measures totalled \$345,255,669.68 for the fiscal year under review.

At year's end, the National Health Program, inaugurated in May, 1948, approached its fifth anniversary. Under this Program, some \$94,000,000 has been granted to the provinces to assist them in surveying their present health facilities and future health needs, in overcoming serious shortages in hospital accommodation and in improving public health services and facilities in various fields of activity.

One of the outstanding features of this Program has been the support given to more than 400 individual hospital construction projects to provide some 46,000 additional hospital beds; 5,900 bassinets for infants; 5,700 beds in nurses' residences; and various public health facilities in hospitals considered, for grant purposes, to be the equivalent of 2,600 beds. Other notable achievements include the training of nearly 5,000 specialized health workers and the employment of an additional 4,700 on provincial and local health staffs; the financing of more than 200 health research projects in various fields; and the strengthening of provincial and municipal health services. As a result, the provinces generally have been able to intensify their campaigns against major health hazards such as cancer, tuberculosis and mental illness and to lay foundations for the introduction of health insurance.

As in the past, the Department has continued to work closely with the various voluntary agencies and professional groups in the health and welfare fields, and, during the year, effective two-way co-operation has been in evidence. With the appropriate agencies of the ten provincial governments, the Department has also enjoyed the most cordial and understanding relationships.

The Department's greatly augmented administrative responsibility, reflected in its increased appropriations for the year under review, was successfully assumed with a very modest increase in staff. At March 31, 1953, the total staff reached 3,428—an increase of 207 over the preceding fiscal year. Of this number, 137 or 66 per cent were doctors, nurses and other health workers to staff the Department's expanded health services for Indians and Eskimos. It is worthy of note that only eight persons, or less than four per cent of the total increase in personnel, were added to the Department's administrative staff. This evident economy of staff is a tribute to the loyalty and efficiency of the individual members of the Department who carried out their duties with commendable effectiveness.

Respectfully submitted,

G. D. W. CAMERON,
*Deputy Minister of National Health
and Welfare (Health)*

G. F. DAVIDSON,
*Deputy Minister of National Health
and Welfare (Welfare).*

OTTAWA, April 1, 1953.

HEALTH BRANCH

Introduction

Administration

The Health Branch continued to discharge its statutory responsibilities and in addition worked with and through provincial, municipal and voluntary organizations in Canada.

Some changes in the organization of the Health Branch have taken place, particularly with respect to administration of Health Services. For administrative purposes, and according to their functions, the various Divisions under Health Services have been divided into three broad groups, each under the direction of a Principal Medical Officer. These groups, with their respective Divisions are as follows: Environmental Health and Special Projects, Medical Advisory Services, and Research Development.

Three Directorates within the Health Branch remain unchanged—Food and Drugs, administering the Food and Drugs Act and Proprietary or Patent Medicines Act; the Directorate of Health Insurance Studies, applying grants provided under the National Health Program, as well as carrying on a continuing health insurance planning assessment; and the Directorate of Indian Health Services, providing preventive services and medical and hospital care for Indians and Eskimos.

Health Trends and Developments

Published reports from health authorities in Canada and from other countries over the past few years have served to indicate the important trends and developments occurring within the health field. Many pressing health problems of the past few decades have been successfully dealt with and others now being attacked will undoubtedly be favourably influenced in the years that lie ahead. This section deals with only a few of the problems which are prominent at the present time and are under investigation by public health authorities in Canada.

Modern methods of prevention and improved treatment procedures have effectively reduced the incidence and mortality of many communicable diseases. The death rate due to tuberculosis, formerly one of the foremost killers of mankind, has fallen to a new low in Canada, namely, 18 per 100,000 in 1952. Maternal mortality and infant mortality rates have continued to decline, the maternal mortality rate for 1951 being 1.1 per 1,000 live births and infant mortality rate 38 per 1,000 live births. While our infant mortality rate is still high, this general decline is in keeping with changes occurring in other countries with comparable standards of medical care.

Man has made no more worthwhile advance than preventing disease and prolonging life. The success of medical care and health programs should be evaluated in a positive manner by the number of years the average person enjoys good health and not by the number of deaths recorded annually.

Estimated life expectancy in Western Europe in the 16th Century was 19 years; in the 17th Century—25 years; in the 18th Century—32 years. On this continent life expectancy in the 19th Century averaged 40 years. At the beginning of this Century the average had increased to 49 years and by the end of the first quarter of the 20th Century the average had increased to 57 years for males and approximately 60 years for females. In Canada, by 1947, the increase in life expectancy at birth had extended to 65.18 years for males and 70.05 years for females.

This trend in life expectancy has posed a host of new problems relating to the medical care of the elderly. This special field of medicine, "Geriatrics",

has made tremendous advances, especially in the United Kingdom, since 1945. Health administrators in Canada are becoming increasingly aware of their responsibilities in this relatively new field of caring for the aged. Having escaped the hazards of infancy and childhood, men and women enter upon a period of life when they are confronted by hazards of a different character, when degenerative diseases begin to take their toll and this trend in life expectancy, therefore, calls for a new emphasis in our health program.

Cancer

There has been an apparent increase in the cancer rate over the past few years. In 1931 malignant neoplasms came third in the list of importance as a cause of death in the community. In 1951, these same diseases had climbed to the second position on the list. As we know, malignant disease is especially prevalent amongst older people. While in 1931 the diseases which came second on the list were those classified under "Diseases of Early Infancy and Congenital Deformity", these conditions are now fourth on the list of all causes of death. These dry statistics tell the tale of many lives of infants saved by improved medical care.

Sellers and Mackay in 1951¹ pointed out that the trend in mortality from cancer is difficult to determine. Nevertheless, certain trends appear to be apparent. Compared with twenty years ago crude rates indicate that more deaths per year are ascribed to cancer. In terms of actual numbers of deaths this is correct, but when rates are adjusted to a constant sex and age composition, the increase is not so marked. This is shown by the following figures for Canada in 1931-1951:

1931 Crude Cancer Death Rate.. 92.4 per 100,000

1951 Crude Cancer Death Rate—123.6 per 100,000

1951 Death Rate Standardized to 1931 population— 98.7 per 100,000.

These figures suggest that there is a slight increase in deaths from cancer during the last twenty years, but whether this is a real increase or whether it is merely due to increasing accuracy in diagnosis and certification is an argument which cannot be settled at the present time. There does seem, however, to be a slight increase in cancer death rates in all age groups as is shown in the following table on Age Specific Death Rates for Canada, comparing 1931 and 1951:

Ages	1931	1951
0-5	3.5	5.3
5	2.6	3.0
10	2.1	4.3
15	3.7	5.1
20	5.7	6.8
25	8.8	10.1
30	19.5	21.5
35	35.2	39.3
40	66.4	68.0
45	122.9	123.2
50	186.6	195.5
55	295.4	302.7
60	421.1	438.9
65	580.1	599.5
70	797.7	812.8
75	1,029.4	1,137.2
80	1,130.1	1,353.4
85	1,218.8	1,571.1
90	918.0	1,515.9

It will be seen in this table that the differences are more marked in the older age groups than in childhood. As far as the apparent increase in childhood is concerned, it is possible that such an increase is a statistical artificiality, in the sense that, whereas in years gone by many children died of infectious diseases, certain of those children would have died of cancer at a later age if they had not succumbed to the infectious disease in question. It might be that it is this equivalent residual number of children who were harbouring early neoplasms who are now shown to have died of malignant disease. This suggestion is again only of a tentative nature and will be supported or disproved by future trends.

In his discussion of cancer mortality trends in different countries, McKinnon (1950)², concludes that there is no particular evidence that present cancer campaigns have as yet to any extent influenced death rates from this disease. This is indeed a sobering thought in the face of the large and increasing expenditures on cancer control. Further critical evaluation of the effects of such cancer preventive programs should be carefully and rigorously supported.

Influenza

This is one of the principal communicable diseases commanding the attention of scientists in the health and allied fields. Since the influenza virus was first isolated in 1933, considerable laboratory and epidemiologic experimentation has been carried out in testing the value of influenza vaccine.

In 1943 a Commission on Influenza established by the United States Army vaccinated 12,500 university students in different parts of the United States. The vaccine contained Influenza Types "A" and "B". An epidemic of Influenza Type "A" occurred during the clinical trial and the experimentors were satisfied that the vaccine had given a significant protection against Influenza "A". Similar protection with this bivalent vaccine was reported by Francis and Salk during the epidemic of Influenza "B" in 1945. However, in 1947 during an epidemic of Influenza "A" Prime, this vaccine showed no protective value.

From these various studies it became evident that two main problems were paramount in the protection of individuals by influenza vaccination. These are related to the degree and duration of immunity induced in the individual by vaccination, and to the adequacy of this immunity in respect to the entire antigenic spectrum for various types and strains of influenza. In 1951 Salk used mineral oil adjuvants with inactivated influenza virus, and with this vaccine was able to demonstrate higher antibody levels in monkeys than with vaccines prepared in aqueous solution. Similar responses were also induced by Salk in humans in 1952. Not only were higher antibody levels demonstrated, but a breadth of antibody response to type "A" strains not included in the vaccine and the persistence of this response was also shown.

In Canada a Committee on Influenza was established in 1951 to advise the Department of National Health and Welfare on influenza prevention and control. In the fall of 1951 and winter of 1952 field trials were carried out by the Department using Lederle's quadrivalent vaccine (PR8, FM1 Cuppette and Lee strains). Approximately 800 persons were included in these trials, about half of whom received vaccine and the remainder normal saline. Insufficient cases of influenza occurred to provide a valid clinical trial; however, complement fixing and haemagglutinating antibody levels were determined before vaccination, two to three weeks later, and finally three months after vaccination. Vaccine from the same lot was used the following winter on a group of medical students to compare their antibody response with that of individuals in the older age group. Results of these trials will be published later this year (1953).

During the winter of 1952-53 the Defence Research Board provided the Department with 4,600 doses of quadrivalent influenza vaccine (PR8, FM1, Cuppette and Lee strains), which was produced at the Connaught Medical Research Laboratories. This, along with 4,300 controls of normal saline, was distributed throughout Canada by Provincial Health Departments. Although Influenza "A" Prime was prevalent in the Southern and Western United States, Europe, and the Far East, this infection, according to reports, apparently was not widespread in this country.

With the chain of influenza information centres created by the W.H.O., an organization now exists which provides rapid information concerning the incidence and distribution of influenza. The value and efficiency of this organization was tested during the influenza pandemics of 1950-51 and 1952-53. Provided that rapid information regarding the antigenic structure of the current prevalent strains reaches unaffected countries in time, an effective influenza vaccine, if available, can be employed for the protection of key personnel. Unfortunately, the influenza virus can spread rapidly throughout the world by means of air transport and can become well established in a population before its presence is recognized. However, with the continued efforts of countries participating in the overall W.H.O. program to improve vaccines which will cover a broad antigenic spectrum, the future protective value of influenza vaccine is promising. Canada and Canadian investigators are playing active roles in the development of this program.

Poliomyelitis

Another communicable disease which is prominent in health investigations is poliomyelitis. The pessimism which long prevailed concerning the chances of preventing paralytic poliomyelitis has been modified by the discovery of two main factors. The first is the realization that poliomyelitis is a common, widespread disease, with the development of paralysis occurring as an occasional, but uncommon, complication. The second is the discovery that poliomyelitis virus is not, in fact, strictly neurotropic as had been thought but, in common with other viruses, causes a throat and intestinal infection in the early stages of the disease and probably spreads to the nervous system via the blood, thereby allowing the possibility of preventing this extension by setting up an antibody barrier in the blood stream.

Although earlier work by Flexner and Stewart in 1928, and later by Rhoads, Enders, Bodian, Howe, and others, demonstrated passive protection of monkeys with convalescent serum and gamma globulin, the first practical proof of the possibility of success in setting up this antibody barrier was the work of Hammon and associates in 1951 and 1952. Hammon inoculated a large number of children (54,772) with gamma globulin, causing a significant reduction in the occurrence of paralytic symptoms.

Since the controlled field trials of Hammon, public health and medical authorities have had some concern about the limited supply of gamma globulin that would be available for the poliomyelitis season in 1953. The Department of National Health and Welfare, therefore, agreed to give financial assistance to the Connaught Medical Research Laboratories to facilitate the production of gamma globulin in Canada. In spite of the limited time at their disposal before the poliomyelitis season, and various production problems, the Connaught Laboratories expect to produce approximately 25,000, 5 c.c. doses by the early fall (1953). This will be allocated to Provincial Health Departments, on the basis of need, by the gamma globulin committee set up by the Department, and will be distributed to areas having an unusually high incidence of paralytic poliomyelitis.

The use of gamma globulin, however, presents practical difficulties, which limits this method of conferring passive immunity and hinders it from becoming the answer to the problem of preventing paralytic poliomyelitis in large populations. The first is the physical difficulty of producing a sufficient volume of gamma globulin and the second is the comparatively short duration of the immunity conferred (5 weeks).

It would seem, therefore, that our hope of eventual success lies in the direction of active immunity, by means of either an attenuated or inactivated vaccine. Salk and associates have recently published promising results obtained from inoculating 161 persons with formaldehyde inactivated vaccine prepared in tissue culture, given intradermally in aqueous solution, and intramuscularly in a water-mineral-oil emulsion, which appeared to have an adjuvant effect. Significant rises in antibody levels to the three antigenic types are reported but, of course, the degree of permanency is not yet known. Owing to the need for rigorous tests before each batch of vaccine can be safely used, it will be some time before these vaccines are available in any quantity.

Fortunately, in Canada, Dr. Andrew Rhodes, of the Connaught Medical Research Laboratories, and the Laboratory of Hygiene have participated in the development of polio-typing facilities, using tissue culture methods. Dr. Rhodes is also well advanced in polio vaccine production methods. Such facilities will be valuable to the country as a whole and can be used for testing the antigenicity of polio vaccine, as well as immunity developed from attacks of the disease.

Fluoridation

Mention may be made of a significant advance in another field—the fluoridation of water supplies. By April, 1953, there were eight Canadian communities fluoridating their municipal water supplies to reduce the incidence of tooth decay. Several others are reported as making preparations which may lead to fluoridation by the end of the year. The Brantford-Sarnia-Stratford Water Fluoridation Caries Study being conducted by this Department continues to yield very encouraging evidence. In January, 1953, the Canadian Dental Association and the Canadian Medical Association, after examining this and other evidence, issued an official joint statement saying that they were convinced that water fluoridation brought about a considerable reduction in dental caries and that no ill effects had been detected from the concentrations of fluorides in use for this purpose.

Pesticides

One further field warranting recognition is that concerned with the use of pesticides. As a result of wartime chemical developments, a revolutionary change in the types of pesticides used in Canada took place after the war. The new compounds were found to be not only more effective against insects but more potentially toxic to man than the older classes of chemicals previously employed. One class, the rapid-acting organic phosphate insecticides, had been developed from a class of chemicals exploited during wartime as offensive chemical warfare agents.

The chlorinated hydrocarbon insecticides, of which DDT was the first notable example, were found to possess the typical specific effects of carbon tetrachloride, trichlorethylene, and others of this class which had been recognized for many years as an important source of occupational disease among industrial workers. During the past few years many reports of ill effects to orchard and field workers have confirmed the toxic potentialities of these new chemicals. Thus, public health authorities were faced with a problem heretofore of minor proportions. Careful review of proposed new compounds and close control of licensing at federal level become necessary. This has been

accomplished by setting up a National Health Pesticide Committee composed of experts in such aspects as environmental hazards, clinical problems, food contamination, labelling. The Committee advises the Department of Agriculture and thereby assists in ensuring that new pesticides brought into use in Canada may not possess excessive hazard to the exposed public.

References

1. Sellers, A. H., Mackay, E. N., (1951), Ontario Cancer Treatment and Research Foundation Annual Report, Toronto.
2. McKinnon, N. E., (1950), Cancer Mortality Trends in Different Countries, Canadian Journal of Public Health, Volume 41, page 230.

Dominion Council of Health

The Dominion Council of Health, consisting of the Chief Health Officers of each of the provinces and five appointees of the Governor in Council and originally created in 1919, continues to function as the principal advisory body to the Minister.

In the period under review the Council held three meetings. Much of the discussion related to problems arising in connection with the administration of the National Health Program. The achievements of the first five years of its operation were reviewed and consideration given to the areas into which the Program might be appropriately extended.

Other important health problems of national interest were discussed, including the provision and distribution of gamma globulin as a protective agent in poliomyelitis, the control of marketing of new drugs, toxic chemicals used as cleaning fluids, insecticides and the health aspects of Civil Defence planning.

International Health

Canada is a member of the World Health Organization, a specialized agency of the United Nations. The Department, which nominates the Canadian delegations to the annual World Health Assemblies, maintains a close interest in the work of the Organization, and endeavours, through its delegations, to ensure the development of sound and practical programs.

The Canadian delegation to the Fifth Health Assembly held in May 1952, was headed by Dr. O. Leroux, Assistant Director of Health Insurance Studies. Alternate delegates were Dr. W. H. McMillan, Member of Parliament for Welland, and Dr. J. T. Phair, Deputy Minister of Health for the Province of Ontario, Dr. T. C. Routley, General Secretary of the Canadian Medical Association, and Mr. Bruce Williams, Acting Permanent Delegate to the United Nations in Geneva, were advisers to the Delegation.

At the Fifth Health Assembly, Canada was elected to designate a member of the Executive Board of the Organization. Members are nominated by elected governments but serve in an independent capacity. Dr. Leroux was designated to serve this three-year appointment.

In addition a total of 10 senior officers of the Department and a number of other distinguished Canadians are now serving on Expert Advisory Panels set up by the Organization to render expert advice in various fields.

The Organization, in addition to its own program involving an annual expenditure of approximately 8½ million dollars, plans and co-ordinates international health work financed from the United Nations Expanded Program of Technical Assistance and the UNICEF.

During the year the Department was called upon for advice in connection with health projects being financed through the Colombo Plan Technical Assistance Program. These were mainly related to the provision of post-graduate training in Canada and the recruitment of experts for teaching posts in South-East Asia. A mission of senior public health administrators from India and Pakistan spent six weeks in Canada during May and June, studying public health organization and administration at federal, provincial and local level and in visiting university and hospital centres. It was hoped that in addition to gaining information which would be of practical value to them in developing their own health services, they would be able to assess ways in which Canada could assist them under the Colombo Plan. That the emphasis will probably be in the field of post-graduate training is indicated by the fact that at the end of the fiscal year thirty-five applications were under consideration for training in Canadian institutions.

FOOD AND DRUG DIVISIONS

Highlight of the year, in the field of food and drug control, was the presentation to Parliament, in December, 1952, of a Bill to amend the Food and Drugs Act.

The Food and Drugs Act and the Proprietary or Patent Medicine Act govern the safety, purity and quality, as well as the labelling and advertising, of all foods, drugs, therapeutic devices and cosmetics. Both Acts are administered by the Food and Drug Divisions of the Department, with advice, in the case of enforcement activity and the drafting of legislation and regulations, from the Department's Legal Division.

The Food and Drugs Act had its origin in the Adulteration Act which became effective on January 1st, 1875. This legislation has been the subject of continuous review and revision in the light of changing conditions and in 1951 was given further study. As a result of this study, suggestions were made by a committee consisting of officers of the Food and Drug Divisions and the Legal Division which formed the basis of a Bill to amend the Food and Drugs Act which was given approval by the Senate and received first reading in the House of Commons on December 16th, 1952.

This Bill embodies three kinds of changes: those which will clarify interpretation of the Act and arrange it in a more logical and rational order; those which will give additional powers deemed necessary for the protection of public health, by ensuring safe conditions of processing and recording of sale; and those considered necessary on a constitutional basis.

The regulations under the Food and Drugs Act requiring the submission of data by manufacturers regarding the safety of new drugs have been enforced throughout the year. Drug manufacturers must wait until their submission has been found to comply with the pertinent regulations before marketing new drugs. Submissions regarding 169 new drugs were reviewed from the inauguration of this control in September 1951 to March 31st, 1953, with 122 being reviewed in the current fiscal year. The Chief of the Laboratory Services with the assistance and advice of the Pharmacology and Toxicology Section, the Physiology and Hormones Section of the Ottawa laboratories, and the Biologies Control Section of the Laboratory of Hygiene, were largely concerned with the technical review of these submissions.

Effective working relationships with industry were maintained in the drafting of standards and regulations. The prescription drug regulations were the subject of considerable study and a number of conferences were held with representatives of the pharmaceutical profession and pharmaceutical manufacturers. The opinion of the medical profession as a whole and of those members of the profession on the panels of experts was also sought. It is hoped that the resultant draft regulations when completed and promulgated will receive the entire support of both professions.

The new standards of composition and quality for flour and bread which were the subject of much co-operative study last year have been included in the regulations. It is now permissible to sell enriched flour and bread anywhere in Canada and at present the great bulk of flour and bread on the Canadian market is enriched with vitamins. The enrichment program is optional, not mandatory, and any one of the kinds of flour or bread described in the regulations may be sold. In the preparation of these regulations attention was given to informative labelling. This is particularly evident in the labelling requirements for Brown Bread as compared to Whole Wheat Bread.

Regulations were also promulgated in 1952 which require that all cheese shall either be manufactured from pasteurized milk or be held under specified conditions for sixty days before being sold at retail. This measure is designed to protect the public from exposure to pathological organisms which have been found in fresh cheese made from unpasteurized milk. The Microbiology Section of the Ottawa laboratories has studied the problems associated with cheese manufacturing in detail and has presented at least fifteen illustrated lectures to interested groups.

During the year a constant check has been made for suspected adulteration of dairy products with vegetable fats and oils. This has necessitated the development of more refined and sensitive methods for detection of such adulteration.

Progress in technology has resulted in another medium of advertising being available in Canada. The scrutiny of commercials referring to foods and drugs for the Canadian Broadcasting Corporation formerly restricted to those for radio use has been extended to include those for use on television programs.

A laboratory was established this year in the inspection office in Sydney, N.S., to obtain more rapid examination of some kinds of import shipments at this port. The scheme for the use of scientifically-trained inspection staff has proved to be practical and satisfactory. It has also been possible to provide a limited number of automobiles to the inspection staff and as a result there has been more extensive coverage of some of the large inspectorial districts.

Constant liaison with other enforcement agencies is necessary if duplication and gaps in enforcement are to be prevented. In this connection, assistance of a technical or enforcement nature was given to a number of other government departments and agencies, including the Department of Agriculture, the Department of Fisheries, the Department of National Revenue, Crown Assets Disposal Corporation, and the Royal Canadian Mounted Police.

Canadian and International Standard preparations used in the assay of drugs were distributed to manufacturers and research institutions on request.

Since the Food and Drugs Act is international to the extent that it applies to imports, active collaboration must be maintained with other countries if the quality of imports is to be kept at satisfactory levels. The department takes an active interest in legislation and standards and methods of analysis of foods and drugs in effect in foreign countries and established by international or foreign authorities, including the World Health Organization, the United Nations Narcotic Commission, the British Pharmacopoeia Commission, the United States Pharmacopoeia Committee of Revision, the Association of Official Agricultural Chemists, and the United States Food and Drug Administration.

The Divisions have several panels or boards of experts to advise on technical and medical problems. These include: the Advisory Panel on Foods, the Advisory Panel on Drugs, the Advisory Board on Proprietary or Patent Medicines, and the Drug Advisory Committee. Members of all boards or panels are physicians, pharmacists or other scientists who are university professors, clinicians or technical people in industry. They are selected because of their knowledge and also because, in many instances, the advice of independent experts not in government service is of considerable advantage. Much of the work is carried on by correspondence, but the Drug Advisory Committee formerly known as the Canadian Committee on Pharmacopoeial Standards meets at least once a year, the last meeting having been held in Ottawa on November 24, 1952.

Enforcement—Inspection Services

This organization, which is charged with the enforcement of the Food and Drugs Act and Regulations, could be termed the "eyes and ears" of the Food and Drug Divisions. The inspection services consist of twenty-seven inspectoral districts covering the ten provinces, having in each district one or more inspectors. A number of inspectoral districts is attached to each of the five regional offices. The 45 inspectors may be compared to shock troops. They are in contact with the public, retailers, wholesalers and manufacturers and must sense when things are wrong and set the machinery in motion which may affect the whole organization. The aim is to correct at the source and, to that end, the inspectors have authority to detain imports until evidence of compliance with the law is established. The inspectors, working under the direction of the regional directors inspect shipments of food and drugs at the port of entry and submit samples to the regional laboratory for analysis when there is cause for suspicion. Random samples of foods and drugs are also purchased on the domestic market and are submitted for analysis to the regional laboratories.

The usual enforcement activities include: examination of import shipments and domestic foods and drugs for compliance with the relevant Acts; advice to manufacturers, importers and retailers on the requirements for compliance; scrutiny of radio and television commercials referring to foods, drugs and cosmetics for the Canadian Broadcasting Corporation under terms of the Broadcasting Act; examination of labels and advertising; assistance to other divisions and departments of government and prosecutions for violations of the Acts.

Enforcement action may take one or more forms depending on the circumstances of each case, and may consist of warnings, seizures or prosecutions. During the year 954 warnings were issued, 36 seizures of stocks of foods or drugs were made and there were 140 prosecutions including voluntary payments under Section 26 of the Act. Seizures and prosecutions are the last resort and serious efforts are made to correct deficiencies at the manufacturing level by warnings and advice. A total of 18,020 radio and television commercials were reviewed and 6,765 labels and advertisements were examined.

The enforcement of the holding regulations concerning cheese made from unpasteurized milk has received increased attention following a change in the pertinent section of the Food and Drug Regulations. Non-observance of this storage provision has led to court action in two cases in recent months with a considerable number of cases in the course of preparation.

The investigation of the sanitation of Canadian flour mills which was initiated two years ago was continued. In the course of this work 63 mills were completely inspected for sanitation and general condition. Many specimens for microbiological examination were obtained at each mill. Marked improvement over former conditions was noted in most establishments.

Continued attention was devoted to food colours, some of which, in the past, had represented a definite health hazard and it was gratifying to find that no large problems presented themselves in this field during the year. Similarly, foreign exporters of dried fruit and nuts appear to be aware of Canadian standards for these products and appear to be guided in advance of actual shipping by this knowledge. Although significant problems have not been encountered in the field during the year the vigilance must be maintained if the cumulative effect of the previous effort in these fields is not to be lost.

The regulations require that antibiotics and certain biological preparations for human parenteral use, offered for sale in Canada, must be manufactured under suitable conditions and meet rigid specifications. In order to be assured that suitable conditions are maintained in establishments in which these prod-

ucts are manufactured, a Canadian licence is issued only after inspection of the premises by a representative of the Laboratory of Hygiene and there is assurance that the manufacturing processes are under competent direction. The manufacturing premises of each of the 48 Canadian licence holders are inspected periodically thereafter. Much effort is devoted to the sampling and inspection of such products as serums, vaccines, liver extract injectable, and insulin, by the personnel of the Food and Drug Divisions and the Laboratory of Hygiene. The work connected with the control of antibiotics has increased markedly because of the increased activity in this field in industry.

Some indication of the amount of enforcement activity may be obtained by examining tables 4, 5 and 6, pages 112, 113 and 114. When it is considered that the specimens mentioned include representative numbers of all types of foods, drugs and cosmetics, it becomes apparent that food and drug inspectors must be well-informed on many subjects. The diversity of problems encountered by inspectors is increasing steadily with new developments in industry, technology and commerce. During the year, shortage of staff was eased somewhat by the recruitment of five inspectors, the establishment of an inspection office in Kamloops, B.C., and the purchase of a number of automobiles for use in inspection. The provision of automobile transportation to a number of inspectors has increased their efficiency to a marked degree at small additional cost and has facilitated the prompt investigation of consumer complaints, which together with random sampling and organized surveys provide most of the clues for investigation. It is becoming increasingly difficult to recruit and retain personnel who are qualified to carry out inspection duties.

Laboratory Services

Laboratory services consist of six laboratories. The central laboratory in Ottawa is employed chiefly in investigational and research work for the development of standards and methods of assay or the analysis of foods and drugs, and in the mode of action of drugs. It also carries out all assays requiring animal experiments and conducts special surveys of products. The central laboratory is divided into ten sections and a summary of the investigational work conducted in each section during the year is contained here.

There are laboratories attached to the five regional offices, each of which is equipped to analyze the majority of samples of foods and drugs collected by inspectors attached to the regional office. In addition, laboratory facilities have been established at Saint John, N.B., St. John's, Newfoundland, and Sydney, N.S., in connection with the Halifax laboratory, for the purpose of expediting the handling of imports. The regional laboratories collaborate with the central laboratory in the study of methods and standards.

Much of the analytical work done in the regional laboratories may be considered to be routine but the diversity of products which must be examined prevents the establishment of routine procedures of the type encountered in control laboratories in industry which are devoted to the study of a limited number and type of products. Again, the analysis of foods is becoming more complicated, because of the general realization that food must be conserved and, as a result, new foodstuffs and processes are constantly being developed. This activity extends to packaging and coating of products, all of which must be studied if the public health is to be guarded.

Vitamins are unstable under certain conditions and it is necessary that very close analytical control be exercised by the manufacturer if his pharmaceuticals are to meet labelled vitamin potency. It was evident from random sampling that many companies did not have proper control facilities and, as a result, a comprehensive survey of vitamin manufacturers was initiated.

Discussions with a number of manufacturers indicated that many were not aware of the need of control. For this reason an educational approach was taken in dealing with these cases. They were shown results of analyses of their products which had been purchased by food and drug inspectors at points across Canada and were advised that proper control would help maintain the potency of these products, thereby avoiding the possibility of court action. Only about 1% of products produced with proper control facilities were below potency while over 50% of products manufactured without proper control facilities did not meet labelled potency. A marked difference was noted in the stability of different vitamins in these products. Records indicate that there are more than 200 companies which manufacture or distribute products containing vitamins. The survey to date has included about 80% of these companies. (For further information see C.M.A.J. 68, 103-107, 1953.)

It was also evident from surveys conducted by the Pharmaceutical Chemistry Section that lack of proper control facilities in many drug manufacturing establishments was responsible for the production of adulterated products. In some cases these products were submitted to departmental agencies such as the Department of Veterans Affairs and the Department of National Defence for use in Department of Veterans Affairs hospitals and for the armed forces. Rechecking of products of previous offenders who had been warned, indicates that this method of approach has produced positive results.

Administrative Services

Administrative services were re-organized during the year and in addition to the responsibility for the administrative functions of accounts, purchasing, stores and estimates, have assumed responsibility for the maintenance of index records, the labelling library, the information centre, the handling of matters relating to accommodation and the maintenance of a stenographic and clerical pool. These services are also responsible for the clerical controls pertaining to prosecutions and new drug submissions and for the clerical work connected with the preparation and finally informing the trade regarding changes, deletions and additions to the regulations.

The information centre in its fifth year of operation has prepared and distributed 11 Trade Information Letters and 26 Staff Information Letters, and issued weekly reports on detained imports of foods, drugs and cosmetics. The cataloguing of all drugs manufactured in Canada, including the collection of specimen labels, was continued during the year.

Proprietary or Patent Medicine Division

The Proprietary or Patent Medicine Act, administered by the Proprietary or Patent Medicine Division, governs the manufacture and sale of secret formula prepared medicines offered to the Canadian public under proprietary or trade names.

Registration of any drug in this class is compulsory, and a licence must be obtained before the product is placed on the market. The manufacturer submits his qualitative and quantitative formula, stating his therapeutic claims and directions for use. This information is assessed and passed on by Medical Officers in the Department, and if the article otherwise meets the specifications of the Act registration may be effected.

The sale of all registered preparations is licensed on a year to year basis so that if experience in use or advances in medical knowledge make it apparent that it is not in the public interest to permit further sale a licence is refused.

Under this system of dual control by registration and licence, which has been in operation since 1919, worthless as well as harmful products are screened

out; promises of cures and false, exaggerated or misleading claims are prohibited. The dosage of potent drugs must be within strictly defined limits; alcoholic preparations must be sufficiently medicated so as to preclude their use as intoxicants. Narcotics, barbiturates, sulphas and prescription drugs are not allowed. Treatments for serious diseases are ruled out.

An Advisory Board of eminent physicians and pharmacologists, appointed by the Minister under Section 9 of the Act, prescribes what shall be deemed sufficient medication of medicines containing alcohol in excess of 2½ per cent to make them unfit for use as alcoholic beverages; also what shall be the maximum single and daily doses of any drug mentioned in or added to the schedule of the Act. The Board also advises as to the safety of other drugs, and investigates the suitability of unusual combinations.

During the year the registration of 3,387 preparations was reviewed. One hundred and thirty-two new medicines were examined for registration; seventy-eight were approved and fifty-four rejected. One thousand seven hundred and six labels, wrappers and newspaper advertisements were examined and criticized. In addition, approximately 8,369 radio commercials were reviewed in cooperation with the Canadian Broadcasting Corporation which requires that all radio announcements dealing with proprietary medicines be submitted and approved before broadcasting. Claims in these continuities which are considered to be false, misleading or exaggerated are marked for deletion or revision.

Samples were secured on the open market, and examined as to quality and quantity of drugs and labelling. In this connection the inspection services throughout Canada contributed by procuring samples and reporting irregularities in recommendations and methods of merchandising.

Throughout the year manufacturers were interviewed to discuss problems arising out of present requirements, and through these meetings cooperation of the trade has been maintained, resulting in improved standards of proprietary medicines in the interest of the public and in keeping with the spirit and intent of the Act.

Assistance was also extended to federal, provincial and other officials concerned with the administration of laws and regulations otherwise relating to the sale of such products.

Laboratory Studies

The following are examples of the studies conducted in the various sections of laboratory services in the central laboratory at Ottawa. Much of the fundamental research forming part of these studies has been reported in scientific literature.

Food Chemistry Section

A new group of substances known as polyoxyethylene compounds have recently been recommended for use as emulsifying agents in foods. A project was initiated to develop a satisfactory method for the determination of these compounds.

The behaviour of antioxidants, which are added to lard and shortening to prolong the shelf-life of these products, was studied when these shortening agents were incorporated into baked goods. A marked difference was found in the stability of these compounds. Some were destroyed immediately on mixing with the dough, while others were not affected by the entire baking process. These latter products were found to be effective in inhibiting the development of the undesirable flavours and odours in the finished product.

Approximately 200 processed foods were analysed for lead, zinc and copper.

A method based on the activity of the phosphatase enzyme which is present in unpasteurized dairy products was developed for the detection of cheese made from unpasteurized milk.

An intensive study has been initiated in the development of more accurate methods for the detection of foreign fats in dairy products. A promising procedure for the detection of vegetable oil has been evolved based on the tocopherol content. Many vegetable oils contain appreciable amounts of this compound while the concentration in butter is relatively low. Thus, the presence of these vegetable oils in butter can be detected by an increase in the tocopherol content of the product.

Microbiology Section

This section has continued its program of obtaining factual data on the relative attainment of various food industries in the practice of sanitation.

A survey of the sanitary aspects of the cheese industry in two provinces and an examination of market cheese was conducted. Cheese was examined for extraneous matter and an inspection of the milk used in the manufacture of cheese as well as the conditions of manufacture in a number of cheese factories was made. Extensive bacteriological examinations of market cheese and of milk delivered to cheese factories were also carried out. The survey revealed a number of deficiencies which have been drawn to the attention of the industry and suggestions for correcting the situation have been proposed.

A second survey of the sanitation of representative flour mills and of the bacterial and extraneous matter content of flour indicated positive improvement since the first survey made in 1950. The number of mills with severe infestation was reduced and the removal or preclusion of extraneous matter in flour was more effective. The use of positive effective measures for control of insect infestation was more intensive and more widespread. Mills with severe insect infestation continued to produce flour with a correspondingly high microbial content, including certain species capable of causing spoilage of significance for flour products.

Practicable screening methods for the detection of certain common bacterial toxins in foods have been developed for use in food survey work. Studies ultimately aimed at a more ready recognition of staphylococcal enterotoxin are in an exploratory phase based on the separation of pure toxin by paper ionophoretic methods.

Vitamin and Nutrition Section

As a result of criticism of the Morton and Stubbs correction procedure for the estimation of Vitamin A, a comparison has been made of potency obtained by this method, the uncorrected assay, and the antimony trichloride method with the results of biological assays. The Morton and Stubbs correction procedure was shown to be the most accurate method for the routine estimation of the Vitamin A content of fish liver oils.

The stability of Vitamin A in margarine has been studied during storage at room temperature and under refrigeration over a period of one year. In most cases only an insignificant drop in potency could be detected.

Close collaboration has been continued with the Vitamin B₁₂ Panel of the United States Pharmacopoeia. The U.S.P. micro-biological procedure has been studied and found to be precise and reproducible. A simpler modification including the six-point design has been developed on the basis of linear relationship between log-dose and log-response.

Market samples of liver extracts injectable which are now labelled in terms of Vitamin B₁₂ have been found to meet labelled claim. This is in marked contrast to the situation existing previously when these products were labelled in terms of units of activity and the Vitamin B₁₂ content was low and variable.

The effect of the addition of bone meal to enriched bread has been studied with both anemic and normal rats. At low levels of iron, bone meal appears to slow down the rate of hemoglobin regeneration in anemic rats. At higher levels it has no effect. The importance of this problem in relation to human nutrition is being studied.

A collaborative experiment is in progress with the National Research Council to study the effect of certain fats added to the diet of fat depleted and normal rats.

Alcohol, Cosmetic and Colour Section

Investigation of alcoholic beverages included analyses of liqueurs, wines and beers, and studies on methods of determining some of the less-known minor constituents such as acetal and acetoin. The examination of beers confirmed the trend away from full-bodied beers to a beverage lighter in body and flavour.

Most of the relatively small number of consumer complaints regarding cosmetics which were investigated, were traced to a specific sensitivity of the user to one or more of the ingredients while a few could be attributed to misuse or ill-advised use on the part of consumers.

Examination of food colours continued and a number of confections containing non-permitted colours were refused entry at customs. A most co-operative spirit in this matter was shown by a number of United Kingdom exporters.

Pharmacology and Toxicology Section

Four of the additives which have been proposed for use or are used in bread were subjected to a 52-week chronic toxicity feeding trial in rats. These additives, polyoxethylene monostearate, calcium propionate, chlorine dioxide, and a mixture of 3 antioxidants were incorporated in bread at 50 times the recommended level of use. The bread was fed to male and female rats as 75 per cent of the total diet from weaning age for 52 weeks. None of the ingredients under test exerted any significant effect on growth, mortality, or feed efficiency. The tissue studies revealed no effects of diet at 3 or 6 months. The year-end tissue examination and final evaluation of the data have not been completed.

Tentative specifications for blood expanders, (polyvinylpyrrolidone and dextran) have been drawn up. A survey of commercial products available for experimental use has been made and tests have been applied to assess the conformity of these preparations to the tentative specifications. The effect of polyvinylpyrrolidone as a drug carrier on the toxicity of morphine, on the anaesthetic action of several local anaesthetics and on the soporific effects of seconal and several antihistamines has been determined. The product showed no appreciable effect in potentiating the action of any of these drugs at the levels tested.

Conditions affecting the activity of a highly purified lactic dehydrogenase were investigated. The effects of several barbiturates, analgesics, anti-tubercular drugs and disulfiram on the activity of this enzyme were studied.

A survey was made during the year on market products of ACTH for both oxytocic and pressor contaminants. The chicken and rat blood pressure methods were used to detect these contaminants. It was found that all the lots examined contained less than one unit of pressor and one unit of oxytocic activity per 25 International Units of corticotrophin (ACTH).

A number of lindane vapourizer units were tested for emission rate. It was found that all the units with the exception of one gave off less than the declared amount of lindane per day.

A study was undertaken of Isoniazid and Iproniazid to ascertain if their use was contra-indicated when used along with a number of other drugs, and also to find out if tremors, a reported side-effect, could be controlled by additional drug therapy. A report of this investigation will be published in the American Journal of Tuberculosis.

Following the development of a suitable assay method in this laboratory, a survey of market products of purified extracts of Veratrum alkaloids was made. Significant differences in potency were found in different manufactured lots of this product.

The Methemoglobin concentration before and after oral administration of different doses of sodium nitrite was determined in cats, dogs, rabbits and rats. The results showed that a difference in sensitivity to sodium nitrite exists between the different species. Since the amount of nitrite permitted (200 p.p.m.) in meat causes a maximum of approximately 2% Methemoglobin in cats, the most sensitive species studied, it does not appear that it would constitute a health hazard.

Assays carried out on various mammalian hearts have shown that there were significant differences in potency among different lots of Cortunon (a non-hematopoietic liver extract). The details of these assays and the findings on the comparative coronary dilator activity of aminophylline, khellin, papaverine and Paveril have been published in the Journal of Pharmacy and Pharmacology, 5:94, 1953. Myocardone (a heart muscle extract) has been shown to have a coronary dilator and a heart stimulating action. Significant differences in potency have also been observed among different lots of this product.

Tocopherol, over fairly wide dosage range, has been found to have no coronary dilator or heart stimulating action. Glycocyanine has been found to cause a definite coronary constriction and heart stimulation. Betaine is ineffective on the heart. Simultaneous or previous injections of betaine do not potentiate the effects of glycocyanine. The two latter drugs have been proposed recently for the treatment of heart diseases.

Satisfactory results have been obtained using the tracheal chain method for the assay of broncho-dilator drugs.

Long-term chronic toxicity tests on some of the food colours are in progress.

Studies on the detection of insecticide residues on crops by means of an adult fly technique are underway.

Collaborative studies were undertaken with the U.S.P. Revision Committee on Digitoxin and d-tubocurarine chloride reference standards, hyaluronidase assay methods, and with the American Pharmaceutical Association Committee on Physiological Testing on the acute toxicity testing of drugs.

Market samples of Dimercaprol (BAL) were found to be uniformly toxic but less toxic than the proposed British Standard.

Physiology and Hormones Section

A study was made of the factors affecting the bioassay of adrenal cortical hormones using the deposition of reducing substances in the liver as the criterion of the response. Immature adrenalectomized male rats were employed in a collaborative assay of adrenal cortical extracts by this procedure with the United States Pharmacopoeia. An investigation of the involution of the thymus gland in intact weanling rats by the administration of adrenal cortical hormones

has been initiated and a satisfactory assay for these extracts has been developed. Thymic involution has been employed for the bioassay of corticotrophin (ACTH). The method involving the measurement of adrenal ascorbic acid depletion following the intravenous injection of ACTH into adult hypophysectomized rats, does not differentiate between the purified ACTH now available and the earlier "crude" ACTH preparations. Clinically, the potency of purified ACTH appears to be approximately three times that of "crude" ACTH as measured by adrenal ascorbic acid methods. Fortunately the thymus involution procedure, using intact weanling rats, does differentiate between the two forms of ACTH and this method of assay is being investigated thoroughly.

The bioassay of growth hormone was studied employing the increment in the width of the epiphyseal cartilage of hypophysectomized immature female rats, as the criterion of the response. A preliminary investigation of an assay for thyrotrophic hormone was initiated.

Factors influencing the mouse convulsion method for the assay of insulin have received further study.

Work on the chronic toxicity of stilbestrol has been continued, and it has been ascertained that a daily dose of 7.5 micrograms will inhibit normal breeding in the male rat. The investigation of the effect of stilbestrol in hypophysectomized adult rats is still under way.

Chemical methods of assay for hormones such as: cortisone, hydrocortisone, progesterone, testosterone and stilbestrol have been carried on as a continuing project.

Pharmaceutical Chemistry Section

A study undertaken in conjunction with the Vitamin Laboratory to determine a relationship, if any, between an *in vitro* disintegration time and *in vivo* availability of sugar coated tablets has been successfully concluded. A relationship has been established between the times obtained by using a modified U.S.P. XIV procedure and the disintegration *in vivo* as illustrated by the availability of the riboflavin from the tablets concerned.

In a project designed to obtain data on a sampling plan for the determination of weight variations of tablets several thousand tablets were procured directly from the tableting machines of a number of drug manufacturers. These were individually weighed and the results subjected to statistical analyses. The relative merits of a proposed weight deviation test and the current B.P. and U.S.P. tests are being evaluated.

A method of assay for calamine lotion was developed.

A nonaqueous method for the titration of caffeine using a visual indicator was established. Extension of this work into a rapid assay of A.P.C. tablet is being undertaken.

Collaborative work as requested by the British Pharmacopoeia Commission, the Revision Committee of the United States Pharmacopoeia, the World Health Organization and other agencies has been conducted at various times throughout the year.

Organic Chemistry Section

Advanced methods of instrumental analysis, the x-ray diffraction method, infra-red and ultraviolet spectrophotometric methods have been extensively studied for the application to identification of narcotics and barbiturates. The projects have been carried out in collaboration with the X-ray Diffraction Laboratory, National Research Council, Ottawa, and the Infra-Red Laboratory, Defence Research Laboratories, Ottawa. A series of one hundred basic

narcotics were purified and extensively characterized by the usual physical constants and used as standards from which the x-ray, infra-red and ultraviolet data have been obtained. Arrangements have been made with United Nations, Narcotics Division, to publish the data in a special form.

This section has applied instrumentation methods to help solve a number of cases involving the use of drugs for abortion, suicide and murder for the Royal Canadian Mounted Police Crime Detection Laboratory. The x-ray and infra-red methods were successfully applied to identify the drugs in a number of these forensic cases.

A new species of morphine bearing poppy, *Papaver setigerum* has been grown and studied with the help of the Dominion Experimental Farm. It was definitely found for the first time that morphine occurs in a poppy other than *Papaver somniferum*. This discovery has been published by the United Nations Bulletin on Narcotics.

The opium origin project has been continued. A paper entitled "Relation between 'Porphyroxine-meconidine' Lovibond red values and ultraviolet absorbance data" has been published by the Economic and Social Council of the United Nations in continuation of the Canadian research program.

A new method for the determination of structure and composition of cadmium halide complexes with narcotics has been found.

Methods for identifying the commonly occurring barbiturates have been developed. The new methods involve colour and crystal reactions with the barbiturates.

Biometrics Section

The work of this section has broadened considerably and in addition to preparing the necessary designs of experiment and relevant computations for the other sections of the Divisions, joint projects have been undertaken with other Departments.

Procedures for adequate sampling and the collection of useful data have been devised for several types of products including bulk commodities. An extensive study of the problem of weight variation in compressed tablets has been undertaken. This is proceeding satisfactorily and involves a great amount of time and labour since theoretical and practical considerations must be combined by purely experimental methods.

Animal Pathology Section

Histopathological studies on the tissues of over 700 animals treated with various chemical additives used in foods were made and in addition assistance was given to the Occupational Health Division in the post-mortem and histopathological examination of tissues of animals treated with insecticides. Vaccines were prepared and used in animals suffering from chronic respiratory diseases.

Over 20,000 rats and 3,000 mice were raised during the year and utilized by the Pharmacology and Toxicology Section and the Physiology and Hormones Section in experimental work. Thirty tons of feed were used during the year to feed the animal colony.

HEALTH INSURANCE STUDIES

National Health Program

The further development of the National Health Program during the fiscal year under review should be considered as one of the outstanding features in the development of health services in Canada.

Over \$27,000,000 has been paid to the provinces for the development of their health services and for the construction of hospitals and related facilities.

The year 1952-53 was the fifth year of the operation of the program inaugurated by a statement of the then Prime Minister on May 14th, 1948. The program, as announced in 1948, consisted basically of three aspects: survey of health facilities and services; expansion and improvement in the field of health, and assistance towards the construction of hospitals.

Surveys

The first aspect of the plan, namely, the surveying of health facilities and services, has been practically completed during the year under review. All provinces, with the exception of one, submitted survey reports which included a description of their services, an inventory of their existing facilities and, above all, recommendations and suggestions as to the further development of health services in Canada.

Data contained in the Health Survey Reports are being compiled and tabulated by the Research Division and it can be expected that within the next few months a comprehensive picture of the situation throughout the country will be available. The compilation would give for the first time in Canada an over-all picture of the existing situation as well as an indication of further development and expansion of health services.

The information obtained by the Health Survey is being supplemented by data obtained from the "Canada Sickness Survey". After the "Sickness Survey" was completed in the field, the Dominion Bureau of Statistics, in cooperation with this department, has undertaken to compile the information which will give, in the near future, a comprehensive picture of the over-all amount of illness in Canada and the amount of money spent on health care.

These two surveys, jointly, form the basic groundwork whereby every Canadian citizen may receive adequate health care.

Assistance Towards the Development of Health Services

It has been realized since the commencement of the program that the basic short-coming was the shortage of adequately trained personnel. During the year under review, as in the preceding years, very substantial amounts of money have been voted towards the training of personnel which, as in the years gone by, took the form of direct financial assistance to trainees, assistance towards the establishment and maintenance of training facilities, or to both of these forms jointly. Training facilities have been established in three specific fields where the shortage of personnel was particularly acute; namely in the training of mental health personnel, in the training of laboratory staffs, and in the training of nurses and their aides.

Training of mental health personnel, i.e., psychiatrists, clinical psychologists, psychiatric social workers, and psychiatric nurses, has been developed at Laval University, the Universities of Toronto, Montreal, McGill, Dalhousie, Queen's, and British Columbia.

Facilities for the training of laboratory personnel have been augmented by the establishment of a school for laboratory technicians affiliated with Laval University and at Regina College (Saskatchewan). A special course for the training of academically qualified bacteriologists is being assisted at the University of British Columbia.

Assistance towards the training of nurses primarily took the form of supporting experimental schemes which had as their aim the improvement of the quality of training as well as the shortening of the training period. The nursing school at the Metropolitan Hospital in Windsor and the special school affiliated with the Toronto Western Hospital could serve as examples in question. Several schemes for the training of nursing aides have received very substantial assistance. As has been mentioned, apart from training facilities assistance has been provided towards the training of a number of individuals. Over 5,000 health workers received or are receiving training with the assistance of the Grants Program. They include specialists in public health, psychiatry, diseases of the chest, cancer, radiology, pathology and in many other specialties. The training of nurses covers the fields of public health, child and maternal care, special hospital techniques, teaching and supervision.

A great number of other health workers including hospital administrators and record librarians have strengthened the staffs of health agencies and hospitals.

Specific Health Services

Generalized health services established or strengthened with the assistance of the National Health Program now reach about 60 per cent of the Canadian population. Nineteen health units have been established since 1948 and 51 more have been strengthened and extended, as have 47 city health departments. Provisions for treatment of arthritis and rheumatism have been made in all Canadian provinces.

As in the previous four years, during the year 1952-53 central provincial health services, as well as local services and their agents working in the health field, have been strengthened by additional services and additional staffs.

In the mental health field, while generous assistance has been provided under the Mental Health Grant to improve treatment facilities, emphasis was placed, however, on prevention. Seventy-seven mental health clinics were in operation by the end of the year 1952-53 while only 17 existed prior to 1948.

The dramatic decline in the mortality figures due to tuberculosis coincide with the establishment of the National Health Program. Many lives were saved by the provision of modern scientific equipment and the free distribution in sanatoria of life-saving drugs like Streptomycin, P.A.S., and Isonicotinic Acid Hydrazide. Again here, as in the field of mental health, emphasis is placed on prevention. Community health services have been strengthened and a program for x-ray hospital admissions has been established under the National Health Program. Over two million people are x-rayed every year. It is needless to say that the improvement of general health services, improvement in sanitation, school health services, etc., act as the most efficient method of preventing the spread of tuberculosis.

The development and expansion of cancer diagnostic and treatment services in several of the provinces should be considered an important achievement in this field. In addition, grants from the fund, either directly or through the National Cancer Institute, are spent on research into the causes and cure for cancer.

Cancer is not the only field in which research activities are being supported by the National Health Program. Over four hundred research projects covering the whole field of health are being supported. It should be emphasized that in the field of mental disease, for instance, there was no financial assistance provided prior to 1948 while now a great number of extremely important projects are carried out at various centres throughout the country.

Assistance to Hospitals

As in the previous years, the development of hospital construction exceeded expectations. During the five-year period 46,000 hospital beds have been constructed with the assistance of the Hospital Construction Grant. In addition, the Grant has provided about 5,000 bassinets for newborn babies, about 5,000 beds in nurses' residences and over 1,200,000 square feet of floor area to house community health centres and combined laboratories. It should be emphasized that under the heading "Community Health Centres" assistance is given for the accommodation of public health services as well as the construction of out-patient departments and areas devoted to the provision of diagnostic and treatment facilities available to in-patients and out-patients. The term "Community Health Centre" has been selected with the purpose of making the hospital, as such, the health centre of the community, bringing the various facets of health services under one roof. It has, as well, the purposes of removing the unjustified stigma from out-patient departments.

Assistance towards the cost of construction is not the only form of assistance that hospitals have been receiving from the National Health Program. As has been mentioned, practically all our larger hospitals have been provided with x-ray machines for the x-ray of hospital admissions, thus reducing the possibility of infection of other patients and nurses. Several hospitals received specialized equipment such as incubators for the care of new-born babies, equipment for cancer clinics, etc., but, most important was the assistance given in the training of personnel. Large numbers of qualified workers who received training with the assistance of the National Health Program are on the staffs of various hospitals. Provision of additional staff ranks in importance probably as high as assistance towards construction.

Summary

It would seem proper to mention in reporting on the fifth year of the operation of the National Health Program that close co-operation between provincial and local health authorities, voluntary health agencies and the Federal Department has created unprecedented development in health services throughout the country. The establishment of the National Health Program not only provided additional financial assistance but stimulated the efforts of the other agencies in the health field. Further expansion of the National Health Program, consisting of the Laboratory and Radiological Services Grant, the Medical Rehabilitation Grant, and the Child and Maternal Health Grant, can serve as an indication of the proper direction the National Health Program is taking.

Studies on Health Insurance

The term "Health Insurance" is very often taken as assistance for sharing or pooling the cost of illness. This narrow approach should rather be termed "sickness insurance", while health insurance, besides helping to remove the financial barriers to the best care available, should ensure that facilities are provided so that all people have adequate health maintenance services. This view was taken at the commencement of the National Health Program. As has

been mentioned, this program has as one of its important purposes the creation of a sound foundation for health insurance. The application of the Health Program during the past five years and the administration of grants to the provinces for their various facilities and services should be considered as the fundamental approach to gradual implementation of a program to assure positive good health. The Health Survey Reports and the results of the Sickness Survey are providing scientifically sound information for further development.

A number of specific studies related to sociological and economic aspects of health care have also been undertaken. Two worthy of mention were made possible by the Rockefeller Foundation which provided travel grants to Officers of the Directorate to investigate the provision of health care in the United States. Reports of these studies are on file in the Department.

The Research Division acts as a research arm of the Health Insurance Studies Directorate in investigations related to prepaid hospital and medical care programs. This includes the preparation of memoranda on costs estimates for various types of health insurance programs, data on health expenditures and information concerning services provided in various health care programs. During the year the Research Division published a comprehensive bulletin on "National Health Insurance in Great Britain 1911-1948", brought together documentation on the health insurance program in France and continued its exploration of voluntary medical and hospital prepaid plans in Canada with a view to the publication of a bulletin in this field. Various public hospital and medical care plans including those in British Columbia, Alberta, Saskatchewan, Manitoba and Newfoundland were studied and a bulletin covering these programs is in the course of preparation. Further, an analysis of the programs of personal health services for public assistance recipients which are in operation in five provinces was undertaken.

INDIAN HEALTH SERVICES

Function

The health service for Indians and Eskimos has evolved to augment the care normally provided by the home, the community and provincial agencies. Because of its role, this Service has expanded in response to demonstrated need and as newer methods in both active treatment and public health care have indicated that prompt action would preserve life and yield obvious economic returns. It stands ready to hand back the charge to the home, the community and the province when these agencies exhibit the will and the resources to take over.

The census of 1949 showed that there were 136,500 Indians and about 9,300 Eskimos. Although there has been enfranchisement of 500 to 1,000 Indians each year, the actual rate of increase of these people is such that the combined population in 1952 may be projected at 155,000. Their birth rates are high—between 25 to 50 per thousand. The death rates are high too, but the net gain parallels a normal population increase of about 1½ per cent per year. The groups are too small and too widely varied in culture and environment to provide meaningful statistics.

Facilities

The field unit in Indian Health Services is a health centre under the charge of a graduate nurse who conducts out-patient, pre-natal, well-baby and health educational clinics. From this centre the nurse extends her influence into the homes, schools and community life, driving home the fundamentals of good health habits and ensuring that protective procedures are applied.

Some of the health centres have beds and sufficient auxiliary staff to care for maternity cases and disabilities which do not require extensive hospital facilities. There were 33 of these nursing stations, with a total of 172 beds, in operation during 1952. Some of the health units consist of a medical officer only or a combination of medical officers and graduate nurses. There were 23 of these units. There were 32 dispensaries with a graduate nurse only for a total of 88 health units in operation during the year.

Supporting the departmental health centres is a chain of 18 departmental hospitals with 2,189 treatment beds. The larger of these are in the main Sanatoria for the treatment of tuberculosis, but even these, and all of the smaller hospitals, are equipped to serve as community general hospitals for all Indians in the vicinity.

The departmental hospitals are almost exclusively in the West. The most easterly is that at Moose Factory, Ontario, near James Bay. In the East entirely and everywhere that community hospitals or provincial sanatoria have been able to give the necessary care, these facilities are used. In the Northwest Territories and in the James Bay area the Mission Hospitals are very closely associated with Indian Health Services as almost all of the patients are native for whom a patient day rate is paid, but as well, the medical officer, expendable supplies and ward stationery are provided by the department.

Staffing the field units were 26 medical officers and 103 graduate nurses of which staff two medical officer and nine nurse positions were acquired during 1952. In addition, there were nine dental surgeons visiting the Indian Residential and Day Schools to provide instruction in dental health, preventive and curative attention to the school-age groups. Where time permitted, palliative and essential prosthetic treatment was provided to needy adults.

The professional staff of departmental hospitals consisted of 34 medical officers and 217 graduate nurses. The additions during the year were two medical officer and 36 graduate nurse positions. Not all positions were occupied, due to the continuing shortage of qualified doctors and nurses.

Supporting the medical officers and nurses were 1,150 valued employees whose skills and efforts make a medical service possible. Of these 295 were Indians or Eskimos. The additions during the year included 138 positions of appropriate classifications.

Preventive Procedures

Health education was continually stressed by all of the professional staff because in increased health consciousness of the individual lies the greatest hope of improved health standards of any, and especially of native, peoples. Material for this important work was provided in the form of department pamphlets and posters. Extensive use was made of the T.B. film strip "The Starlight Story" and all but the final stages were completed on two new strips "Safe Water" and "Infant Feeding." Some of the information material is developed around posters prepared by Indian children as a result of the health educational work being carried on in their schools.

Routine immunizations were pressed towards the goal of 100 per cent protection against the communicable diseases of childhood. This is a herculean task among the nomadic and semi-nomadic groups. Indian Health Services is satisfied that the use of the Bacillus-Calumette-Guerin vaccine is fully warranted and 4,600 inoculations were made during the year by departmental officers. Many community hospitals give the inoculations to all Indian babies born therein.

Case Finding

During the spring and summer of 1952, extensive surveys were conducted seeking an x-ray view of the chest of every Indian and Eskimo who could be reached. In addition to the continuous routine admission examinations carried on by departmental and an increasing number of non-departmental hospitals, 10 survey teams covered the more isolated groups. In all 60,704 chest x-rays were taken during the year.

The professional staff and survey teams were on the alert for any remediable disorder and provided appropriate treatment as well as inoculations in the settlements, or arranged evacuation to centres where more adequate attention could be provided. An example of a survey and treatment team is the medical party which accompanied the Eastern Arctic patrol vessel "C. D. Howe". This consisted of two medical officers, a dental surgeon and assistant and an x-ray operator. This team treated 77 patients, made some 200 dental examinations and treatment and took 1,007 chest x-rays, of which 113 proved to be pathological.

Active Treatment

The 18 departmental hospitals admitted 7,600 patients and provided 707,903 patient days treatment. Non-departmental facilities accepted 23,843 patients and provided 730,142 patient days treatment. The break-down is given in some detail as appendices. These statistics indicate that there is not a significant difference medically between Indians and Eskimos and the other racial groups in this country. In addition to services provided by departmental personnel and facilities, many hundreds of local physicians, dentists, nurses and lay persons have provided care to the Indians and Eskimos. Some of these were in part-time positions, most were on a fee-for-services basis, but there was a host of individuals of many vocations who gave time, skill and sympathetic attention gratuitously. These included government officers, such as those of Indian Affairs and the R.C.M. Police, missionaries, traders and others imbued with good will and community spirit. These people remain the heart of any health service.

Tuberculosis

While this communicable disease persists as the scourge of native peoples, marked advances have been made in its control among the Indians of Canada over the past few years and 1952 contributed new evidence of progress. Although the latest complete figures indicated a death rate of 262 per 100,000 (1951), 11 times that for the population as a whole, it is in marked contrast to a rate of 579 in 1946. As an example of a straw indicating the wind, in October 1952, for the first time since records have been kept, there was not a death from tuberculosis among the 28,000 Indians in British Columbia.

Unfortunately the picture was not as bright for the Eskimos. The results of surveys in 1952 indicate that tuberculosis is on the increase in certain areas. Their environment makes these people most prone to chest disease.

Extension of Services

The only increase in facilities providing additional treatment beds was the completion of a hospital of 35 beds at Norway House, Man., replacing the former dilapidated building which accommodated 22 only. However, there were extensive improvements in physical plants at several institutions and additional accommodation for staff was acquired at Aklavik in the N.W.T. and at Moose Factory in Ontario.

Cooperation with Other Agencies

It is implicit to its role that Indian Health Services should embrace every opportunity to integrate its activities with those of the communities adjacent to the Indian and Eskimo groups. The extensive use of local professional and treatment services has been mentioned. Wherever possible, provincial agencies have been encouraged to take charge or take part in case-finding and other public health endeavours. Everywhere provincial institutions have been used to the fullest practicable extent.

Obviously Indian Health Services is strategically placed in the department of National Health and Welfare and has made ample use of the advisory and laboratory services of this department. A close liaison has been maintained,

both centrally and in the field, with the administrators of Indian Affairs in the Department of Citizenship and Immigration and the administrators of Eskimo affairs in the Department of Resources and Development.

In addition, a fine working relationship has existed with the other government agencies operating in the areas inhabited by Indians and Eskimos and with religious and commercial interests serving these people, to the mutual benefit of all.

Indian and Eskimo health statistics will be found in Tables 7, 8, 9 and 10, pages 115 and 116.

ENVIRONMENTAL HEALTH AND SPECIAL PROJECTS

Occupational Health Division

In December 1952 the name of this Division was changed from Industrial Health to Occupational Health to indicate the expansion of the scope of service rendered, which now encompasses all gainfully-employed groups. Clinical, technical, laboratory, and informational services are provided to provincial health departments, industrial establishments, federal government departments, certain crown companies, and to other interested groups.

Clinical Services

During the year the medical staff, in its consultative capacity was able to be of assistance to a number of provincial health departments in providing information regarding industrial hazards and in regard to particular problems affecting the health of the workers. Assistance to the Department of Trade and Commerce took the form of information and material for transmission to one of their overseas branches. The National Defence Department was assisted in regard to a particular problem on heat, light, and noise, in a new building. An investigation into the problem of poisonous substances used in orchard spraying by the fruit growers of the Okanagan Valley in British Columbia was initiated and is continuing under provincial guidance with close liaison with the Division. Collaboration with the Department of Agriculture was maintained through the Pesticide Committee and with the U.S. toxicologists by visiting to exchange information. Assistance was also provided to the Post Office Department in the investigation of a special problem relating to the health of its workers. The investigation of air pollution by arsenic from mining operations in the Yellowknife area was continued. Useful service was rendered in other fields by personal interview and by surveys and by correspondence.

Industrial nursing activities included educational programs and visits to industries for discussion of problems and dissemination of information. Group meetings were organized in certain provinces, which proved very successful and revealed increasing organization of industrial nurses.

Papers were prepared and published and addresses given on scientific and technical subjects by various members of the laboratory and clinical staff.

Laboratory Services

The Toxicology Section has conducted research into the newer insecticides, particularly chlorinated hydrocarbons, which has proved valuable. It has been found that abnormalities in the growth rate of rats, disturbance in the sexual cycle, blood enzyme levels and oxygen consumption can result from relatively low absorption of these compounds. This research gives information on protection of agricultural and horticultural workers. The field and chemistry sections have continued their investigations into the arsenic pollution of air in the Yellowknife area, collaborating with the clinical studies. As a result of recommendations, collection devices have been installed for this poisonous effluent. Laboratory analysis of urine and other materials collected in the area reveal a gradual disappearance of arsenic since installation of control. The above sections also continued investigation and study of parathion exposure in Quebec apple growers and advised on protective measures. Permission to publish a report of this investigation was requested by the American Medical Association.

The Physics Section, using x-ray diffraction and the electron microscope, has established relationship between certain dusts and fatal lung disease, findings only possible by the use of this special apparatus. Detailed investigation, involving the use of the above apparatus, into air pollution in Windsor and in Ottawa has been initiated. Various sections of the Laboratory are represented on the Pesticides committee.

Health Radiation

The Health Radiation Section, established in January 1950, visited radioactive isotope laboratories in all provinces to grant and renew health approvals in the handling of radioactive isotopes. The film monitoring service, started in 1951, has been improved and extended to over 600 films each week, servicing some 65 groups throughout Canada. A special x-ray laboratory has been completed to conduct research into methods of detection and measurement of low-energy radiation from medical x-ray units. Surveys have been carried out for the purpose of estimating scatter radiation in hospitals and industrial establishments, and information regarding procedure and on the disposal of waste was supplied to many groups.

National Health Pesticide Committee

This Committee acts as technical advisor to the Department of Agriculture in the assessment of potential health hazards in new pesticides. Upwards of 50 new insecticides have been evaluated during the year and both field and laboratory research in connection with the work has been carried out. The Committee includes technical experts from the Occupational Health Division and the Food and Drug Divisions, and has advisors from the Animal Pathology, Chemistry, and Entomology divisions of the Department of Agriculture.

Publications

The Division publishes a monthly *Occupational Health Bulletin* with a circulation of over 40,000 copies, and a semi-annual *Occupational Health Review* calling for 12,000 copies. The *Review* is a technical publication intended for professional and other personnel concerned with the protection of the health of workers. In addition it has been found necessary to publish a *Pesticide Bulletin* for use by medical and scientific personnel associated with the use of pesticides. Pamphlets have been prepared, among which that on Artificial Respiration has called for several reprints.

Grants

Through Federal Public Health Grants, a total of \$39,476 was expended by certain provinces for various industrial health purposes. Of this amount, Nova Scotia used \$4,690 to provide salary and necessary equipment for an industrial hygiene engineer; the Quebec Industrial Hygiene Division used \$26,000 for further expansion and reorganization of the Division; and in Ontario, \$8,786 was expended for research on plumbism, air pollution, the physiologic effects of aluminium, biology and the problem of industrial noise.

Public Health Engineering

The World Health Organization has defined environmental sanitation as "the control of all those factors in man's physical environment which exercise or may exercise a deleterious effect upon his physical development, health and survival". Individual factors have different relative importance according to a

country's cultural viewpoint. Canada is recognized as having a high standard of living. Much of the work of this Division is directed towards improving conditions which are part and parcel of environmental sanitation as a whole.

The functions which first prompted the formation of the Division, and which are still important, are those relative to environmental health of the travelling public and operating personnel of vessels and railways. Much work still remains to be done by all concerned and interested in producing sanitary environment on vessels. Not only should adequate facilities be provided by building them into a ship during construction or major repair, but of even greater significance, is ensuring their proper usage. To these modes of travel has been added aircraft.

Activities also include the health of those visiting national parks and other federal property, as well as the staff employed in their operation. The enforcement of international requirements governing the handling and shipping of shellfish is a further responsibility of the Department.

The legislation under which these activities are carried out is contained in several acts and regulations. Other phases of the division's responsibilities are carried out on the basis of standards which have been generally accepted by the interests involved, notably requirements for the taking and processing of shellfish, and requirements for railway bunkhouses and mobile work camps.

Specific divisional operations include the surveillance of water supplies on federal property, ice supplies used by railways for chilling food and drink, the treatment and disposal of sewage, and garbage and other wastes on federal and railway property. The Division is also concerned with sanitation on the right-of-ways of interprovincial and international railways, including passenger stations, restaurants, bunkhouses and work camps. Other activities include consideration of working conditions in federal offices, including problems of lighting, ventilation, and space, and pollution of boundary waters between Canada and the United States.

In order that satisfactory solutions of the problems can be obtained, it is necessary that sanitary surveys, examination of supply sources, treatment processes and control measures be made and the findings evaluated. When requested, designs of sewage disposal plants and water treatment plants are prepared, including the necessary plans, and, in some instances, construction is supervised.

The steady development in the Yukon and Northwest Territories has given rise to many problems in sanitation, which have been referred to this Division. The rapid growth of new industries has been accompanied by the locating and establishment of new townsites and the enlargement of established communities. In this connection the increase and improvement in water supply and treatment and the disposal and treatment of sewage and trade wastes have all received attention by division engineers. Assistance has been rendered in investigations relating to the causative sources of paratyphoid and typhoid outbreaks.

Active co-operation not only continues but has increased with authorities and officials of the provincial health departments, and the United States Public Health Service, through the committees and boards concerned. Consultations have been held and advice given to other Federal departments such as Fisheries, National Defence, Public Works, Transport, Veterans Affairs, Citizenship and Immigration (Indian Health Services), Agriculture and such Crown organizations as Central Mortgage and Housing, Canadian Arsenal and Defence Construction Limited. There has been a notable increase in the work relative to the installation and operation of sewerage and water systems; sewage and water treatment; general sanitation, involving Indian schools and hospitals, military camps, and construction camps of private contractors engaged in construction work on Federal property.

The tripartite agreement, to certify approved shellfish producers, between this Department, the Department of Fisheries, and the United States Public Health Service continues to form the basis of shellfish control work in the Maritimes. Requirements governing the taking, handling, shucking and packing of shellfish are used as a guide in assessing compliance with acceptable standards. Certificates for the export of shellfish are issued when compliance with these requirements is obtained. Through joint sanitary surveys and co-operative supervision of processing plants, the shellfish control program of British Columbia has been endorsed and approved producers are certified for export purposes.

Through membership on various Advisory Boards of the International Joint Commission this Division is actively associated with water and air pollution problems and their control. Investigation of conditions existing in Rainy Lake, resulting from mining operations at Atikokan, were continued. Revised disposal methods for dredged material have improved conditions in these boundary waters. Also in co-operation with the United States Public Health Service, an investigation was carried out in the New Brunswick-Maine international portion of the St. John River. Through the two members of the division on the Board of Technical Advisors on Boundary Water Pollution Control, the Department has been kept informed of the progress and future planning for pollution control of international waters in the Windsor-Detroit and the Niagara River areas. A study of air pollution in the Windsor-Detroit area is continuing. Active participation has been continued in the program of the Pollution Control Council for the Pacific Northwest Basin.

Other activities included participation in the revision of the National Building Code, through its representation on the technical committees appointed to study the various phases of this Code. Special mention is made of time spent in conferences and the contribution rendered in the preparation of the Plumbing Code section. The work in this respect is closely related to activities associated with the Advisory Committee on Public Health Engineering to which time and effort has been given in the promotion of more uniform practices and standardization of equipment in the field of environmental sanitation.

In all, 1,586 sanitary surveys of water supplies, ice supplies (natural and artificial) and shellfish growing areas were conducted. Over 8,000 water samples were taken for bacterial and chemical analysis. Some 1,292 examinations of railway property, including stations, restaurants, bunkhouses, mobile work camps, and coachyards were made and 135 examinations of sewage treatment plants to check the efficiency and control of operating procedures were performed.

MEDICAL ADVISORY SERVICES

Blindness Control Division

The Blindness Control Division continued to encourage the preservation of vision through the medium of pamphlets, films and material for radio programs produced by the Information Services Division. Funds were provided to produce a French version of the Glaucoma film, "Hold Back the Night."

Attention was focussed on the four glaucoma clinics financed by Health Grants—one at Toronto, two in Montreal and one in Quebec. Glaucoma is Canada's greatest eye problem because it causes more blindness than any other eye disease. Furthermore its incidence is increasing, due in part to the strain of modern civilization. It is common after age forty and occurs in several forms, acute and chronic. The chronic type is particularly dangerous as it is usually insidious in onset without early symptoms and may progress for years before failing vision is noticeable. In its early stages, when treatment is most effective, it can only be diagnosed by a medical eye specialist. With treatment, vision can be preserved and blindness delayed indefinitely or for many years but lost vision cannot be regained. It is believed that the control of glaucoma could be aided by the establishment of more glaucoma clinics in association with medical schools across Canada.

Under Health Grants, research is being conducted in Toronto at the Banting Institute into glaucoma and virus eye diseases. Similarly, at the Hospital for Sick Children, the causes of cross-eyes in children and treatment are being investigated. Successful treatment should commence as soon as possible after the cross-eyes are noticed—usually between the ages of two and four years. Operation is required in about 20 per cent of cases.

The study of hereditary optic atrophy in a large family connection in the Ottawa area is continuing, in co-operation with the Nutrition Division.

Treatment Plan

The treatment plan for recipients of Blindness Allowances sponsored by the federal government in co-operation with some provinces is achieving success, especially in removing cataracts. Sixty per cent of patients operated upon have received useful vision. However, too few applications for treatment are being received.

Further efforts have been made to inform the public that half of all blindness is preventable and that about 12 per cent of those now blind (mostly cataract cases) could have sight restored by treatment.

Blindness Allowances

The bulk of the Division's work concerns the arranging of eye examinations for blindness allowance purposes and the issuing of blindness certificates based on oculists' reports to the provincial authorities, enabling allowances to be paid. Since January 1, 1952, a number of Indians and Eskimos have received blindness allowances under the Blind Persons' Act.

The number of blind persons registered in Canada by the Canadian National Institute for the Blind at the end of 1952 was just over 20,000. Of these, 8,299 are receiving blindness allowances. In addition, some 3,000 blind persons formerly receiving blindness allowances have been transferred to Old Age Security pensions, having reached the age of 70 years.

Civil Aviation Medicine

The Division of Civil Aviation Medicine has continued to serve as medical adviser to the Department of Transport (Air Services) on physical standards for aviation personnel and also to act in an advisory capacity to the Department of Transport, other government departments, interested organizations and the public generally, on the health, safety and comfort of aircrew, groundcrew and passengers by air.

Some 12,000 medical examination reports and 1,600 electro-cardiograms were assessed by the Division for pilots and other aviation personnel.

During the year, consideration has been given to re-organizing the procedures for the assessment of all medical examination reports. Decentralization, with assessment by a part-time physician at the district level, was initiated in Toronto on a trial basis on the first of February, and if satisfactory, will be introduced in all districts. A reorganization of the Regional Medical Consultant Boards was also initiated as part of the over-all decentralization plan.

During the year, investigation was continued in the following subjects associated with aviation medicine: psychological studies aimed at improving Commercial and Transport pilot selection; degree of hearing loss as evidenced by personnel licensed by the Department of Transport to fly commercially; high altitude aerial photography in unpressurized aircraft; crash injury reporting; colour perception requirements for Commercial and Private Pilots; hours of duty for Commercial Pilots and Air Traffic Controllers.

Liaison with the R.C.A.F. and the Air Cadet League of Canada was maintained. In connection with the R.C.A.F. "Exercise Chipmunk" program, approximately 600 medical examination reports were assessed according to Department of Transport and R.C.A.F. standards. Similarly, some 500 medical examination reports relating to the Scholarship Flying Training Program sponsored by the R.C.A.F. and the Air Cadet League of Canada were assessed according to R.C.A.F. and Department of Transport standards.

The R.C.A.F. Institute of Aviation Medicine and the Defence Research Medical Laboratories have continued to assist the Division in the instruction of civilian pilots on high altitude flying, in the investigation of borderline clinical cases, and generally on problems associated with aviation medicine.

Civil Service Health

With the close of the fiscal year ending 31st March, 1953, the Civil Service Health Division completed its sixth year of activity. It has continued to discharge its primary obligations in providing a comprehensive preventive health program for the conservation and promotion of the health of federal government employees.

The Health Centre in Ottawa, with minor changes in personnel, has rendered an advisory, diagnostic, and emergency medical service to some 32,000 government employees. It has also administered a nursing-counsellor service through its seventeen established Health Units to over 22,000 civil servants in government buildings in Ottawa. Health services for employees of the National Research Council, in the Montreal Road Laboratories area, have been expanded and moved to more suitable quarters, greatly facilitating the administration of our nursing-counsellor service to this rapidly growing employee group. Similarly, with the completion of the new Dominion Bureau of Statistics building at Tunney's Park, health services were transferred to ideal accommodation with facilities available to meet the projected needs of

the steadily increasing government employee population planned for this area. Certain isolated groups of employees, too small in number to warrant a full-time nursing counsellor, are now receiving a part-time visiting nursing counsellor service.

In another field, namely that of controlling food services in government buildings, this division has played a major role in association with the Divisions of Nutrition, Public Health Engineering, and the Laboratory of Hygiene. Until this past year the department had no clearly defined authority to exercise adequate control over the establishment, location, and operation of these food dispensing establishments. Two Orders-in-Council, passed in August, 1952, now give to the Department of National Health and Welfare clearly defined responsibility in the supervision and control of these establishments. Under this authority a Canteen Committee composed of representatives of the divisions named above has been most active in carrying out inspections and making recommendations for improving food services in government buildings. This division has given over-all direction to this program and has co-ordinated the activities of the divisions concerned.

One of the basic policies adopted at the outset has been to encourage government departments to have employees report to the health unit following an absence on account of illness. Early in the fiscal year the division completed a three-months' survey of such health unit return-to-work visits among a representative cross section of the health units in Ottawa. More than 10,000 return-to-work visits due to casual and certified illness were carefully analyzed. The results of this survey conclusively demonstrated the value of such return-to-work visits in controlling absenteeism, supervising the health of employees, protecting the health of their fellow workers, as a medium of health education and instruction, and finally as a means of interpreting the service program to the employee population.

The division throughout the year has continued to work in close harmony and with other departments of government and with other divisions of this department. Outside Ottawa, the division has called freely upon the facilities of the Department of Veterans Affairs, and within this Department on the Division of Quarantine, Immigration Medical and Sick Mariners Services for medical examinations and consultations. Also, the Occupational Health Division and the Public Health Engineering Division have assisted in the investigation and improvement of working conditions, and the Nutrition Division in the investigation of nutritional problems.

Senior officers have made significant contributions to several extra-divisional activities. The Chief Supervision of Nursing Counsellors, in addition to her duties within the division, has continued to serve in her capacity as the department's consultant in nursing. The Chief of the Division has served as a member of the Board of Trustees of the Group Hospital-Medical Insurance Plan of the Public Service of Canada, and the Assistant Chief has served as a member of the Planning and Advisory Committee for Civil Service Civil Defence.

The Certificate Review Section has continued to collect statistical data on sickness absenteeism in the Civil Service. The data is coded and analyzed by personnel of the Public Health Section of the Bureau of Statistics. This material forms the basis of an Annual Statistical Report on "Illness In The Civil Service", which is a detailed analysis of the certified illnesses in the government service.

Over the past six years sickness absenteeism has been given careful study. Impressions formed in the early years have been further strengthened and substantiated in the light of growing experience. It is believed that the reported number of man-days lost, both from casual and certified illness, is in excess of that occasioned by actual illness. Under the present system of

administration and recording it is impossible to state how much sick leave not properly chargeable to illness is granted in various departments. The impression is that it must be substantial. This is particularly true with respect to casual leave. It is increasingly apparent that government departments must make important changes both in their attitude to the problem and in their system of record keeping if this gap is to be narrowed and if any tangible reduction in absenteeism chargeable to sickness is to be achieved.

In the first place, employees must be taught to conserve and not to squander their sick leave. More intelligent interpretation and administration of sick leave regulations is essential. Too often a junior clerk is assigned both the duty of record keeping and sick leave administration. Certainly, in this Division's opinion, the administration of these important regulations should be the responsibility of a senior personnel officer. Departments must assume greater responsibility for the over-all control of sick leave and not rely on the Civil Service Commission, or in many cases upon the advice of this division, to make their administrative decisions. These factors, together with some modification of existing sick leave regulations, designed to eliminate major abuses, will do much to reduce unnecessary absenteeism presently attributed to sickness. Secondly, departments should adopt a more uniform system of records, make available age and sex distribution of their employees, in order that morbidity rates can be calculated. Only by this method will it be possible to determine where, in what age groups, in which sex, and in what employee groups or particular occupation, deviations from reasonable norms are occurring. Then, and only then, can appropriate measures be taken to bring about material reduction in absence morbidity.

Table 1 with accompanying chart, and Tables 2 and 3, pages 109 to 111, present a fairly accurate picture of the services rendered during the fiscal year. Table 1 summarizes by months the visits made to the seventeen Health units operating in Ottawa, by sex, nature and classification of visit, and disposal. A total of 177,413 visits, an increase of 8,500 over the previous year, have been recorded. Of this total, 75 per cent were first visits resulting from new disabilities, the remainder being repeat visits for a condition previously reported. The broad distribution of visits by month and by cause is depicted in Chart I. The seasonal variations in work load at the Health Units, and in particular the seasonal fluctuation between respiratory and digestive diseases, is clearly shown and is similar to that experienced in previous years. Once again an extremely low percentage of employees, 2.5 per cent, were sent home following a first visit to the Health Unit.

The above table and chart do not tell the whole story. In almost one quarter of the visits made to the Health Unit socio-economic factors or welfare factors have been found primarily responsible for the visit or at least to play a major contributory role. The factors most frequently occurring are those relating to personal health and hygiene, nutrition and budgeting, family health problems, emotional disorders, and factors associated with the severely physically handicapped. It is in the handling of these problems that really skillful counselling is important.

An analysis of employee visits to our Health Units provides a most interesting barometer of the pressures of office, home, community, and world events. The high cost of living, high employment, and acute housing shortage were factors of major significance. High employment means a shortage of adequate personnel and results in the placement of many individuals beyond the comfortable limits of their physical or mental capacity. These people require a good deal of help and guidance from the nurses to enable them to give regular and adequate service. After six years of operation the Health Units, particularly those open from the beginning, have become very much a part of the

life of the employees in the departments which they serve. Deepening mutual understanding of functions, problems, and needs, has increased the demands on the Health Units both in volume and in depth. Nursing counsellors are constantly striving to eliminate superficial and unnecessary visits through education and encouragement of independence and by alertness to the significance of underlying problems.

The ratio of employee health unit visits to the total number of persons supervised is a clear indication of the extent to which departments are utilizing this service. This "Index of Participation", expressed as the average monthly number of employee health unit visits per 100 personnel supervised, was 63 for the past fiscal year compared to 70 in the previous year. This would appear to represent the maximum load which can be handled by the present staff of nursing counsellors.

Table 2 summarizes the work conducted at the Health Centre. Approximately 6,500 examinations and consultations and emergency treatments have been carried out. All sections of the Health Centre have worked to full capacity throughout the year. Due to lack of space much important work has had to be turned away. The psychologist, in developing his program, has conducted a total of 631 consultations or interviews, and has worked very closely with all other services of the division, and in particular with the psychiatrist, the welfare supervisor, and the nursing counsellors. He is called upon to advise and make recommendations on a host of personal problems, chief among which are problems relating to job efficiency and adjustment generally, suitable placement for emotionally disturbed or physically handicapped employees, vocational guidance to youthful or dissatisfied employees, and employees not making the most of their capacities, and lastly, reorientating the attitudes of maladjusted employees to their jobs and life in general.

Table 3 gives a breakdown of retirements from the government service, for medical reasons, by cause and age groups. In keeping with the experience of previous years, diseases of the circulatory system, the nervous system, and of the bones and organs of movement, constitute the chief causes of separation. Of the 170 separations reported, 144 (approximately 85 per cent) occurred within the 50 to 60 year age group.

Hospital Design

When the Health Grants program was inaugurated in 1948 it was decided to re-examine the program in the light of experience at the end of the first five years of its operation. It is interesting to note that 603 hospitals were assisted under the Hospital Construction Grant during that period, in providing a total of 46,714 new patient beds, plus 5,928 bassinets for the newborn. Assistance was also given in the construction of 5,685 nurses' beds. A further breakdown of new beds added, by types of hospitals, is: 26,271 active treatment, 11,385 beds in mental hospitals, 4,308 T.B. and 4,750 beds for chronically ill and convalescent patients.

The total amount of moneys available for Hospital Construction for this five-year period was \$66,389,048. Of this amount, \$56,890,232 was committed and approved for various projects and of that amount \$35,635,481 was actually spent. The smaller amount spent is understandable when it is realized that grant payments are made in quarterly instalments as construction progresses.

The Hospital Design Division continues to provide a consultant service for those concerned with hospital planning and, during the year, the Division has also provided sketches for hospital and laboratory buildings required by other Divisions of the Department.

Narcotic Control

General

No difficulty was experienced by officials of the Division of Narcotic Control in co-operation with licensed narcotic distributors in maintaining adequate stocks of narcotic medication within the country during the year. The policy of close co-operation with the United Nations Narcotic Commission was effectively maintained. These two factors ensured that those needing medication of this nature experienced no difficulty in obtaining it at any time. Similarly, every co-operation was extended to us by those countries providing our source of supply.

While there was no apparent increase in our addict population during the year, the problem of juvenile addiction entered the picture to a somewhat larger extent than heretofore. Administrative and enforcement efforts on the part of this Department in co-operation with officials of the R.C.M. Police, and the various provincial and municipal judicial and enforcement units are largely responsible for the fact that such summary treatment was accorded those found responsible for contributing to juvenile delinquency in respect to narcotic matters that we have good reason to believe the problem of addiction among juveniles will not become an important one in Canada.

It can only be reiterated that illicitly imported Heroin is the chief drug of addiction in Canada. Over 90% of the cases involving infractions of the Opium and Narcotic Drug Act during the year were in respect to this drug, whereas the quantity diverted from legal channels was entirely insignificant, amounting in fact to less than nine ounces. Of this total quantity eight ounces were involved in a loss from a shipment in transit to Canada from another country and in respect to which it has never been determined at what point either in Canada or outside the country the actual loss occurred.

Prices asked for narcotics in illicit channels remained at such a steady level that it was apparent a ready source of supply from other countries was available to addicts.

Legitimate Trade

Through the medium of 147 licensed narcotic wholesalers adequate supplies for legal purposes were constantly maintained. There were 146 licences to import granted during the calendar year 1952, 50 licences covering exportations were also issued during the year. A strict system of licensing of imports and exports is maintained in compliance with regulations laid down by International Authorities and our internal control is such that narcotics and medication having a narcotic content may only be distributed by licensed firms to other wholesalers, physicians, druggists, dentists, veterinary surgeons and hospitals, on a system of requisition which may only be signed by individuals authorized or entitled to do so.

Each licensed distributor, who dealt in narcotics other than Codeine Compounds, was required to submit monthly reports of all sales transactions involving narcotics. This information is carefully catalogued and by so doing we are in a position at all times to know the purchase requirements of all persons entitled to have narcotics in their possession for commercial or professional reasons. Similarly this method of records makes it possible for the Division to enquire where it is felt that there is a possibility of excess narcotic medication being obtained. Moreover, as an added measure of control, three auditor-pharmacists are employed to check the transactions of all narcotic wholesalers. These auditors also investigated security measures afforded narcotics at hospitals and Government institutions. During the year under

review, the narcotic activities of 119 licensed wholesalers were audited. Moreover, 877 hospital inspections and 45 visits of a special nature were completed across Canada by these three auditor-pharmacists.

Estimated consumption of narcotics, as also the volume of imports, remained at steady levels, bearing in mind the increase in population. The actual quantities involved in these two factors may be reviewed by and compared with previous years by consulting table 11 and table 12, pages 117 and 118.

Crime and Convictions

During the judicial year ended September 30th, 1952, there were 371 convictions under the Opium and Narcotic Drug Act. Of these, 350 were for illegal possession and 21 for illegal sale or offering for sale. Of these convictions, 336 involved Heroin and the remainder were divided as follows: Opium 1, Poppy Heads 6, Morphine 13, Dicodide 1, Codeine 1, Cocaine 5, Marihuana 3, Demerol 4, and alleged drug 1. The foregoing is a further indication that illicitly imported Heroin is the predominant factor in the Canadian addiction picture.

With respect to the convictions noted above, it is interesting to observe the categories of penalty that were assessed by the Courts.

6 months and less than 1 year	143
1 year and less than 2 years	120
2 years and less than 3 years	63
3 years and less than 4 years	22
4 years and less than 5 years	9
5 years and less than 6 years	11
6 years and less than 7 years	1
7 years	2

Five Chinese, 1 Pole and 1 Hindu were involved in the convictions under consideration, the remaining offenders being British, Canadian, or American.

Further to convictions during 1952, here follows a brief review of two cases, both involving known traffickers:—

On September 11 last, R.C.M. Police officials in Vancouver watched while a well-known trafficker cached a cigarette package containing 100 capsules of heroin in a laneway in that city. Careful surveillance of this cache was maintained during the balance of the day by officers hidden at strategic points and others equipped with "Walky-Talkie" equipment posted at greater distances. At about 8.30 in the evening another trafficker was observed approaching the area and he was seen to retrieve the cache and discard the cigarette package which had been marked for identification, and depart in a taxi. His arrest and conviction followed and he was sentenced to 7 years in penitentiary, fined \$500 or in default 6 months additional and moreover to be whipped once with 5 strokes of the paddle. He subsequently appealed this sentence and the Appeal Court dismissed his application. The individual stated he was not an addict.

Another case concerning a woman, who was a known addict as well as a distributor, and a Canadian-Chinese, involved almost 14 ounces of heroin.

These two were living together on a farm in British Columbia and came to the attention of the R.C.M. Police through the medium of informants who advised that they were actively engaged in trafficking. Arrangements were made whereby the house and its occupants were kept under observation and during the course of such observation the activities of the man going back and forth digging at certain spots in and about the farm buildings indicated there

were good reasons to believe that some unusual circumstances obtained. After dark, it was possible for the police to investigate the points where the man had been observed to go and a quantity of heroin was found. Both individuals were thereupon arrested and a complete search of the premises revealed a total of 6,077 grains of heroin concealed at various places.

They were convicted and the man received a sentence of 4 years in penitentiary (he was some 70 years of age) and \$200 or 2 months additional. The woman was sentenced to 12 months' imprisonment with hard labour and the same fine. On appeal by the Crown this sentence was subsequently increased to 2½ years.

Convictions are summarized in Table 13, page 119.

Retail Control

The policy of securing from retail druggists across Canada successive reports of sales of narcotics was perpetuated and enlarged during the year. Approximately 8,000 of these reports were received and checked, revealing in a few cases personal addiction on the part of professional people; many cases of known addicts obtaining narcotics from doctors on the basis of some medical condition, real or otherwise; and new cases of addiction being super-imposed on a medical condition. All such information is of course tabulated and maintained on permanent records by the staff of the Division.

As heretofore complete co-operation was extended the Division by registrars and senior executives of all Medical and Pharmaceutical Associations throughout Canada.

International Co-operation

Canada's international obligations in respect to the movement and internal control of narcotics were carefully observed. All required reports were submitted to the United Nations Narcotic Commission. Moreover, some 60 reports of seizures in the illicit traffic were forwarded for purposes of information and evaluation.

Quarantine, Immigration Medical and Sick Mariners Services

Health aspects of international travel and of immigration, the treatment of sick mariners and the diagnosis and treatment of leprosy, continued this year to be among major concerns of the Department and the Acts dealing with them were administered by the Quarantine, Immigration Medical and Sick Mariners Services.

Quarantine Service

The Quarantine Service functions to reduce the hazard of certain infectious diseases being brought to Canada from without by applying health measures to traffic arriving by water, air or at the inland boundary. Its statutory authority is the Quarantine Act, with the Quarantine Regulations. There are six major quarantinable diseases: smallpox, plague, typhus, cholera, yellow fever and relapsing fever. Measures designed to prevent the entry of smallpox rely on vaccination.

By international agreement, co-ordinated by the World Health Organization, Canada participates in the effective operation of measures designed to

keep foreign going vessels from carrying plague. Plague is transmitted, chiefly, by a species of rat flea and a reservoir of infection may be maintained in rats. Measures against plague are directed chiefly to maintaining all foreign-trade vessels as free from rats as possible. Craft are inspected every six months and, in addition, on each arrival from plague infected ports. Vessels found infested with rats are fumigated. The construction of rat-proof vessels is encouraged and has done much to reduce port to port travel by rodents.

Chlorination of water supplies and water available for ships and aircraft has done much to reduce outbreaks of cholera on international conveyances.

Effective lice-killing agents, such as D.D.T., have proved a powerful weapon in preventing the transmission of typhus and relapsing fever.

For Canadians journeying to the yellow fever-infected areas of South America and Central Africa the Quarantine Service has established 14 centres strategically located from coast to coast where immunization against yellow fever may be obtained and an International Certificate of Inoculation and Vaccination issued free of charge.

Concern was felt during the year as a result of an outbreak of smallpox in Great Britain, north of Manchester, and in the closing months of the year with a new outbreak involving Lancashire and Yorkshire. Incomplete figures at the year's end indicated the existence of at least 27 cases, six of whom had died.

On February 13, 1952, a ship which had landed a suspected case of smallpox at Gibraltar arrived at Saint John, N.B. All persons on board were screened and all necessary measures were taken. A crew member who developed a suspicious illness was temporarily isolated but subsequently released. Specimens from this patient were examined at the Department's Laboratory of Hygiene, which co-operates with the Quarantine Service in supplying laboratory diagnostic facilities.

Fully organized quarantine stations are operated at Halifax, N.S., Saint John, N.B., Quebec, P.Q., and William Head, B.C. The Quebec quarantine station has five substations, located at Rimouski, Port Alfred, Sorel, Three Rivers and Montreal. The William Head quarantine station has three substations, at Vancouver, Victoria and Esquimalt, B.C. Quarantine inspections of aircraft are carried out at Gander, Nfld.; Sydney, N.S.; Moncton, N.B.; Dorval, P.Q.; Malton, Ont.; and Sea Island airports.

During the year, 3,288 vessels, having on board 453,313 persons, of which 214,799 were crew members, 238,394 passengers and 120 distressed seamen and others, were inspected

Local Customs Officers, in their capacity as Quarantine Officers at unorganized ports, reported the entry of an additional 602 vessels.

A total of 899 vessels were inspected for vermin and rodents. Of these, 604 had come from plague infected ports. Of those inspected, 52 required fumigation, 352 were granted exemption certificates and 353 had their existing certificates endorsed. A total of 79 rats and 91 mice were recovered. 142 vessels were inspected and had their certificates extended one month or were remanded to some other port for future action.

A total of 12,748 aircraft, having on board 500,846 persons were inspected during the year.

A total of 1,151 inoculations against yellow fever were made during the year. Approximately 70,000 International Certificates of Inoculation and Vaccination were issued.

Statistical data on Quarantine activities are presented in Tables 14 and 15, pages 120 and 121.

Leprosy

Canada operates two Leprosaria. Patients from Eastern Canada are hospitalized at Tracadie, N.B., while those from Western Canada are hospitalized at Bentinck Island, B.C.

Six patients were treated at the Tracadie Leprosarium during the year, in a new and modern wing of the Hotel-Dieu de St. Joseph Hospital so designed that the most modern treatment could be provided with patients having the maximum amount of comfort and recreation. A total of twelve beds are available, six for males and six for females. Recreational facilities include a woodworking shop and bathing beach on the Gulf of St. Lawrence.

Three patients were treated at Bentinck Island during the year. All were of Chinese origin. This institution is built on the cottage system and patients have the freedom of the Island. Those who are able to work are employed at routine chores. Some have gardens and raise chickens, others enjoy the excellent fishing in the vicinity of the Island.

The staff of the Island consists of a graduate nurse assisted by a caretaker. Medical care is under the direction of the Quarantine Medical Officer in charge at the nearby William Head quarantine station.

Leprosy in Canada. Leprosy is no longer an important public health problem in Canada, although in the 19th century there were over 100 cases in a certain localized area. In recent years no person has contracted the disease in Canada, although in 1951-52 three new cases were discovered and in 1952-53 a further case was found. It is believed that all these individuals were in contact with the disease outside Canada.

Children are much more susceptible to leprosy than adults. After contracting the infection there is an incubation period varying from six months to twenty years before the onset of symptoms. Modern drugs have done a great deal to brighten the prognosis although they have proven to be ineffective in certain difficult cases. A number of former leper patients in whom an apparent cure has been effected have been discharged from hospital and are carrying on relatively normal lives in their home communities. Their condition is checked from time to time by the local Medical Officer of Health. From time to time local health authorities are requested to examine young people who have been in contact with cases of the disease.

LEPROSARIA ANNUAL CENSUS

1952-53

	Tracadie	Bentinck Island
Remaining from last year	5	3
Admitted during the year	1	0
Died during the year	0	1
Discharged during the year	0	0
Remaining in hospital	6	2

Immigration Medical Service

The Immigration Medical Service is responsible for the examination of immigrants, for giving medical advice to the Department of Citizenship and Immigration and for the treatment of migrants and visitors at Canadian ports of entry.

Examinations are conducted throughout Europe and the British Isles by Canadian Medical Officers at offices located at London, Liverpool, Glasgow,

Belfast, Paris, Brussels, The Hague, Copenhagen, Stockholm, Helsinki, Karlsruhe, Hanover, Bremen, Linz, Rome and Athens. In certain other centres examinations are done by local doctors representing Canada or by teams of one or more Medical Officers sent out from the various offices.

Immigrants from countries other than Europe are pre-screened by medical representatives of the Immigration Medical Service located at Hong Kong, New Delhi and Karachi. At the year's end arrangements were being completed for the appointment of medical representatives at Bombay, Madras and Calcutta. Migrants to Canada from all other countries are pre-screened by reputable physicians.

No immigrant receives final medical clearance until arrival in Canada. The granting of final medical clearance and the treatment of migrants and visitors who become ill en route to Canada is the responsibility of the Immigration Medical Service at the major ports of entry. Facilities exist at the following seaports and airports: St. John's, Nfld., Gander Airport, Stephenville, Nfld., Sydney, N.S., Reserve Airport, N.S., Halifax, N.S., Moncton Airport, N.B., Saint John, N.B., Quebec, P.Q., Montreal, Dorval Airport, Ottawa, Toronto, Malton Airport, Edmonton Airport, Vancouver, Sea Island Airport and Victoria, B.C.

Immigration Hospitals are operated at Halifax, N.S., Saint John, N.B., and Quebec, P.Q. They serve not only for providing treatment but also for the observation of persons presenting medical diagnostic problems. These hospitals are fully equipped and provide up-to-date facilities for the diagnosis, treatment and comfort of the patients.

The majority of immigrants undergo a complete medical examination overseas. This examination includes an X-ray of the chest and any additional radiological or laboratory investigation that may be required. All immigrants arriving in Canada are again inspected and a complete medical examination, including chest X-ray, is carried out where indicated.

All examinations by Canadian Medical Officers overseas and in Canada are free of charge. Persons reporting for examination to offices at London, Liverpool, Glasgow, Belfast, Dublin and Paris receive their chest X-ray free. As a result of the careful medical screening migrants receive the incidence of tuberculosis among recent immigrants to Canada was found in several surveys to be lower than the morbidity rate existing in Canada.

At the year's end there were 41 full-time Canadian Medical Officers and one temporarily employed non-Canadian working in Europe.

A total of 160,374 migrant examinations were carried out abroad and 134,748 on arrival in Canada, 59,582 of these people coming from the British Isles, 97,016 from Europe and 3,776 from the Orient.

The movement of migrants to Canada from overseas continued in an increasing flow until early winter when it was restricted temporarily until the approach of spring and then permitted to gather momentum again.

In September, 1952, the Department commenced to provide free treatment for indigent immigrants who become ill en route from ports of arrival to their final destination in Canada or who, following arrival at their destination, become ill while awaiting placement by officials of the Department of Citizenship and Immigration.

During the year Immigration Medical Officers carried out examinations and immunizations and prepared reports for various divisions of the Department of National Health and Welfare and for other government departments.

Statistical data on the immigration medical activities of the Department are contained in Tables 16 and 17, pages 122 to 124.

Sick Mariners Service

The Sick Mariners Service provides free medical care and hospitalization to crew members of vessels paying Sick Mariners dues, at ports in the provinces of Newfoundland, Nova Scotia, Prince Edward Island, New Brunswick, Quebec, British Columbia and those parts of Ontario and Manitoba which border on Hudson and James Bays. The Service operates under the authority of Part V of the Canada Shipping Act and has existed since Confederation, being one of the oldest prepaid medical schemes in existence.

Sick Mariners dues are collected on a compulsory basis from all vessels arriving from foreign ports and from all vessels operating in the interprovincial coastal trade; on a voluntary basis from vessels of Canadian registry employed exclusively in fishing and vessels operated by the Dominion of Canada. Fishing vessels are only permitted to pay Sick Mariners dues if the first payment is made prior to the first fishing voyage in a calendar year. Sick Mariners Dues are levied by Collectors of Customs on vessels arriving at any port in the provinces mentioned above. The amount of dues collected is fixed by statute at two cents per net registered ton and is payable each time a vessel arrives, but not more than three times in a calendar year. The minimum payment is fixed at \$2.00.

Medical care is provided for all conditions except permanent insanity. No sick mariner is entitled to free treatment for a period longer than one year. The conditions under which free treatment is authorized are kept as simple as possible. The sick seaman applies to his captain, who completes a concise form indicating particulars about the crew member and the vessel. The seaman then takes the application to the local Collector of Customs who verifies the facts and endorses the application, referring the patient to the port physician. In case of accident or emergency the seaman may be sent directly to the doctor or hospital for sick mariners.

During the year Sick Mariners Clinics were operated at Sydney, Halifax, Saint John, N.B., Quebec, Montreal and Vancouver. Plans were laid for a new Clinic at Victoria, B.C. Treatment was provided by port physicians employed on a part-time salary basis at Victoria, Port Alberni and Powell River in British Columbia; Port Alfred and Gaspé in Quebec; Lunenburg, Windsor, Liverpool, Pictou, Digby, Lockeport and Yarmouth in Nova Scotia, and at Shippegan and Tracadie in New Brunswick. In all other ports, in the smaller outports and many fishing hamlets, there were port physicians attending sick mariners on a fee-for-service basis.

Marine hospitals were operated at Sydney and Lunenburg, N.S. The hospital at Lunenburg was closed at the end of the fiscal year and henceforth sick mariners at Lunenburg will be treated in the new Fishermen's Memorial Hospital. Besides sick mariners, the Marine Hospital at Sydney treats Indians and Eskimos, who are the responsibility of the Indian Health Services of the Department, and also admits Mounted Police and certain patients who are the responsibility of other government departments.

Details of Sick Mariners treatment in relation to vessels' dues and expenditures are to be found in Table 18, page 125.

RESEARCH DEVELOPMENT

Child and Maternal Health

Among the major functions of the Division of Child and Maternal Health are co-operation and consultation with provincial health authorities in the promotion of optimal health for mothers and children by: definition of desirable standards for maternal and child health services; evaluation of existing facilities and services in relation to the nature and extent of local problems; review and assessment of projects under the health grants program in relation to provincial requirements and programs; provision of lay and professional educational media; stimulation of and participation in research on maternal and child health problems. These functions have been fulfilled in the past year in the following ways:—

Definition of Standards

A step in this direction has been taken by the preparation of "A Nursing Manual on Premature Care" which outlines suggested standards of hospital care for this special group of infants. Prematurity accounts for 25 per cent of the deaths in the first month of life.

Evaluation of Existing Facilities and Services

A pediatric consultant spent several months in one province evaluating hospital facilities for the care of newborn infants and pediatric patients. A report was prepared for the provincial health authorities on each hospital, recommending improvements in facilities and procedures. The nursing consultant visited hospitals in two provinces to advise their nursery and maternity supervisors regarding nursing practices for the care of the newborn, with special emphasis on the premature infant.

Assessment of Health Grant Projects

The Division has acted in a technical advisory capacity in the review of projects under the Health Grants Program, particularly those utilizing the Crippled Children's Grant, but also projects of the General Public Health, Professional Training and Research Grants, concerned with the health of mothers and children. Several provinces have purchased additional incubators for the care of premature infants, and one province has purchased hospital equipment for the terminal sterilization of infant formulas. A considerable proportion of the Crippled Children's Grant has been spent on training facilities for cerebral palsy victims in Quebec, Ontario, Saskatchewan, Alberta and British Columbia, but funds have also been utilized to develop crippled children's registers and to provide diagnostic and treatment services for children disabled in other ways.

Educational Media

One of the most important functions of this Division has always been the provision of health information regarding mothers and children for both lay and professional people. Major activity in this field has been the complete revision of the popular publication, "The Canadian Mother and Child". The other major publication on child care, "Up the Years From One to Six" has continued to be well received. "The Nursing Manual on Premature Care" promises to fill a real need for printed instruction in this field.

Research

The major research project carried on in the past year has been the completion of the study in Winnipeg of Staphylococcal Infection of Newborn Infants and Mothers. One of the most promising projects in this field initiated recently under the Health Grants is a study of the causes of spontaneous abortion, undertaken at Dalhousie University.

Standard Indices of Progress

Maternal and infant mortality rates are valuable indications of the status of maternal and child health.

Maternal Mortality

Figures for 1951 indicate that the maternal mortality rate has remained at its low level of 1.1 per 1,000 live births. There was considerable variation in rates from one province to another, the highest provincial rate being 2.1, and the lowest 0.4 per 1,000 live births. There were 405 maternal deaths in 1951. The principal causes of maternal deaths are as follows:

Toxaemia of pregnancy	27%
Complication during delivery	35%
(haemorrhage is the most common)	
• Puerperal sepsis, and deaths associated with infection	12%

A high proportion of those maternal deaths are preventable. Adequate prenatal care, with facilities for laboratory tests, would discover cases of toxaemia of pregnancy in the early stages. Better hospital facilities with transfusion services would contribute greatly to a reduction in deaths from complications at delivery. The saving of mothers' lives is only one objective of maternity care. Few figures are available concerning the amount of ill-health suffered by women as a result of pregnancy, but it is believed to be considerable.

Infant Mortality

In 1951 there were 380,101 live births in Canada and 14,584 infant deaths, of which 8,579 infant deaths occurred within the first month. The infant mortality rate of 38 per 1,000 live births is the lowest ever achieved. There was considerable variation among the provinces, the highest rate being 55 and the lowest 30. In addition, 7,010 babies were stillborn.

These neonatal deaths and stillbirths, many of which are due to immaturity, birth injury and asphyxia, can be reduced most effectively by an improvement in the care given the mother during her prenatal period and at delivery. The leading causes of infant deaths are as follows:

Respiratory diseases	17%
Immaturity	14%
Congenital malformations	14%
Injury at birth	10%
Asphyxia and atelectasis	8%
Gastro-enteritis	7%

The deaths from infection, respiratory diseases and gastro-enteritis are perhaps the most readily preventable through parental education and the provision of good medical facilities for treatment of cases. Deaths from birth injury and asphyxia should be eliminated by good obstetrical practices, and deaths from immaturity reduced.

Dental Health Division

In dental health work, attention is concentrated on broadening the field of preventive dentistry by reducing the incidence of dental caries, irregular teeth and periodontal disease, with a view to improvement of general health. The Department makes financial aid available to provincial dental health programs through the National Health Program, provides consultant and advisory services to the Provincial Health Departments and to the Canadian Dental Association, and carries on research and educational work in the field of dental health. Close liaison is maintained between the Department and the Canadian dental profession.

Grants

Considerable aid has been given to provincial dental services through the General Public Health Grant. During the past four years six of the eight existing provincial dental health divisions have been established with assistance from the grant and all provinces have utilized it to develop and extend preventive dental services with special emphasis on services for children. Mobile Dental Clinics, some employing Dental Hygienists have been established, and the number of stationary establishments have been increased; dental services have been improved in many sanatoria and mental hospitals; dentists, dental assistants and nurses have been employed and many dental personnel have been enabled to undertake training in public health.

Research and Surveys

The Brantford Water Fluoridation Caries Study being carried out by this Division was continued in co-operation with provincial and municipal health departments, with statistical assistance from the Research Division. In this study, the teeth and gums of 1,800 children in Brantford, where the public water supply is being artificially fluoridated, are being compared with those of 1,800 children in Sarnia, who serve as a fluoride-free control group, and with 1,800 children in Stratford where the water has an optimum natural fluoride content. Examinations conducted during the year include those of the 1,800 children in Brantford and 1,800 in Sarnia.

In conjunction with the Nutrition Division, the Division participated in a Canada-wide nutrition study of Indian children which served to obtain data on the dental health of children in various parts of Canada.

A Clinical study of the effectiveness of the topical application of a stannous fluoride solution to the teeth of children for the prevention of tooth decay was set up with the help of the Research Division, and the Food and Drug Divisions. Over 1,000 Ottawa school children are involved in the study.

Education and Information Services

To further the cause of prevention, dental health education material was prepared in the form of booklets, folders, posters, for use in schools, health units, industrial plants, and private dental offices. Informational material was designed to advise the public, particularly children, concerning the most effective methods of preventing and controlling tooth decay, periodontal disease and malocclusion. Taking into consideration the difficulty of estimating accurately the number of people suffering from infected teeth, alveolar abscesses, pyorrhea, lack of masticating powers and personal disfigurement, the Department has endeavored to make Canadians realize that only through regular early dental care of the child can dental disease among adults be brought within controllable limits, and diseases related to dental infection and deficiency be avoided.

Other Activities

Other dental health activities carried on by the Department included inspection and enforcement services in connection with the formulae of dental drugs and dentifrices and with the marketing of dental remedies, under the provisions of the Patent or Proprietary Medicines Act; control of the use of narcotics in the private practice of dentistry; and the provision of dental health services for Indians.

Epidemiology

The increasing importance of epidemiological methods in the study and detection of disease problems as well as in evaluating clinical and public health procedures is becoming more apparent each year. This trend has developed particularly since 1948, when the National Health Grants Program was introduced in Canada.

The Epidemiology Division, therefore, has met increasing demands for technical and consultative services chiefly within the Department and from Provincial Health Departments. These requests have largely been in connection with the investigation of epidemics and the planning and direction of research studies of communicable and chronic disease problems amongst large and small populations. Some of these have included studies such as Canada's Sickness Survey, 1950-51, and the Detroit-Windsor Air Pollution Health Study which is now in progress.

Federal Health Grants

In 1952-53, as in the past, a considerable number of Research and Public Health Grants, using epidemiological methods or procedures, were approved. These grants included a wide variety of projects, some of which were largely administrative in scope, whereas others were more specialized in the use of statistical, laboratory or sociological methods or a combination of one or more. These projects vary considerably and deal with different aspects of the cause, prevention and control of communicable and chronic diseases, including accidents.

Some studies, such as the prevalence of Sylvatic Plague and Rocky Mountain Spotted Fever in arthropods, have received Federal support for a number of years. Others on the epidemiology and isolation of Coxsackie and Polio-myelitis viruses in Canada were continued from the previous year. Prevalent studies on Multiple Sclerosis in various cities in Canada, such as Winnipeg and Vancouver, were also continued. In the field of immunology, grants provided for the production and evaluation of influenza vaccine in Quebec and B.C.G. vaccine in Ontario and Quebec. Amongst other projects receiving support, grants provided funds for the investigation of the cause and transmission of staphylococcus aureus hemolyticus infection in Winnipeg hospitals, and also for the study of the effect of air pollution on health at Windsor and Detroit. The importance of smog as a cause of death and disability had been demonstrated repeatedly by such disasters as occurred in Donora, Pennsylvania, in 1948 when 20 people died, and more recently, in London, England, in December, 1952, when approximately 4,000 people succumbed as the result of smog exposure. Because of such disasters the increasing importance of air pollution as a health hazard has been realized by health and industrial authorities in recent years.

Consultations

The Division has given consultative services to a number of projects, some of which have been associated with Federal Health Grants, and others, which originated in the federal or provincial health departments.

At the request of the Provincial Health Department of Nova Scotia, an epidemiological study of a severe poliomyelitis epidemic at Tatamagouche, Nova Scotia, was carried out the first week of April, 1952. Aside from the unusual seasonal incidence of this infection, twelve paralytic poliomyelitis cases occurred in a village of 628 inhabitants. The paralytic attack rate was 1.9 per cent, and one death occurred. An epidemic of mild "polio-like" illness occurred concurrently with the onset of the paralytic cases. Forty-seven per cent of the population developed mild gastro intestinal, respiratory or febrile symptoms. A Brunhilde type of poliomyelitis was isolated by Dr. Andrew Rhodes of the Connaught Medical Research Laboratories.

The Indian Health Services also asked the Division for assistance to help combat an epidemic of measles which occurred in the Arctic in March and April, 1952. This epidemic swept through the Indian and Eskimo populations bordering Ungava Bay in northern Quebec, and also invaded the south shore of Baffin Island at Frobisher Bay and spread west to Cape Dorset. An overall mortality rate of ten per cent occurred amongst the Eskimos and Indians of Ungava Bay. The attack rate was approximately one hundred per cent of those exposed, even in the older age groups, indicating that the population had not previously been exposed to this infection. Gamma globulin and medical supplies were dropped by parachute to some of the more isolated communities, and along with antibiotics played a major part in reducing the death toll from this disease.

Assistance was also given the province of Alberta in combating the rabies epidemic amongst the wild animal population in that province. The disease first appeared about June, 1952, in the northern part of the province and by the end of March, 1953, had spread over the entire length and breadth of Alberta, and into Saskatchewan. Although the control of this disease has largely been a veterinary problem, a number of humans have been bitten by wild or domestic animals. Health authorities have looked with considerable concern on the possibility of human infections.

Surveys

Aside from the projects which have received financial support through the Federal Health Grants and which have received consultant services by the Epidemiology Division, a large scale study was planned and carried out across Canada last year to determine the protective value of influenza vaccine. Approximately 4,600 doses of quadrivalent influenza vaccine were made available by the Defence Research Board and were distributed by the Epidemiology Division to Provincial Health Departments across Canada for trial purposes. A further 4,300 doses of "control" material were also distributed. Provincial Health Officers co-operated in this project and requested industrial, hospital, and other groups to participate in the administration of vaccine and controls to their employees. They were also asked to keep a record of respiratory illnesses which occurred amongst these groups during the winter months of 1952-53. Although a general epidemic of influenza "A" did not occur in Canada last winter, outbreaks were reported in local areas. It is therefore hoped that influenza vaccine was given in areas where the diseases occurred and that the protective value of the vaccine can be demonstrated.

The Division has also co-operated with the Health Department of the City of Ottawa and other local groups in determining the incidence of puerperal mastitis, as well as assessing some of the basic epidemiological factors related to the onset of multiple sclerosis and poliomyelitis.

Items of Special Interest

Because of increasing demand for and the application of epidemiologic methods in defining and analysing Public Health problems, the Division established three sections to deal with technical information, disease prevention and control, and Public Health methods. These have now been staffed and have taken over that portion of the divisional program which was in their special field of activity. A draughting service is also provided in the Division for the production of graphs, maps and diagrams for the Epidemiology and other Divisions in the Department.

In November, 1952, the fifth Federal-Provincial Conference of Venereal Disease Control Directors was held in Ottawa for the purpose of assessing venereal disease treatment and control programs and procedures in Canada. A number of resolutions and recommendations were made for presentation to the Dominion Council of Health. These resolutions emphasized the need for a continued and sustained effort in order to further reduce the V.D. rate in Canada. Although the incidence of syphilis has continued to decline since the introduction of penicillin, gonorrhoea rates have not decreased to the same extent in recent years, and in some localities have even increased. Non-specific urethritis infections have also caused much concern in some areas. The Conference also stressed the need for the evaluation of present diagnostic and control procedures with a view to improving and simplifying some techniques and methods now in use.

Following a recommendation of the Dominion Council of Health in 1952, the Division's Disease Prevention and Control Section has made considerable progress during the past year in drafting a standardized communicable disease reporting and control system for Canada. The objective of this work of course is to have a more uniform reporting and control system for communicable diseases in all provinces of Canada. In this standardization program, emphasis has been placed on the simplification and elimination of reporting by the physician whenever possible; and to suggest control measures which are consistent with scientific knowledge of disease communicability and transmission.

T.B. control activities are largely related to the provision of grants under the National Health Grants Program. This has been discussed elsewhere. However whether or not a direct relationship exists between the provision of hospital beds, drug facilities, and the availability of trained physicians, the T.B. death rate has fallen to an all-time low of 17.1 per 100,000 in 1952.

The Division continues to co-operate in the production of Canada's Sickness Survey report. Bulletin No. 1, on Family Expenditures has been published and a series of 10 to 12 Bulletins is expected to be produced in the near future.

Laboratory of Hygiene

Probably the most important item during the past year has been the beginning of construction of the new Virus Building. It is anticipated that the building will be completed within the next fiscal year and will provide badly needed and thoroughly modern accommodation designed to protect the workers and facilitate the work.

The branch laboratory located in the Ottawa Civic Hospital has continued to develop and towards the end of the fiscal year, the Ottawa Civic Hospital agreed to provide an additional laboratory for special investigations to be carried out by a medically qualified bacteriologist. The co-operation provided by the staff of the Ottawa Civic Hospital has been invaluable.

During the year, the Laboratory secured the services of a former member of the staff, Dr. J. F. Morgan, an expert in the study of Tissue Culture techniques. Another member was added to the staff of the Virus Section in the person of Dr. S. F. Kitchen.

During the year, three more provincial surveys of public health and hospital laboratory services were made in Newfoundland, Prince Edward Island and Nova Scotia. Official reports recommended the orderly expansion and development of public health and hospital laboratory services. This completes detailed surveys in five provinces. As a result of these studies, it is believed that there are great avenues for development looking to the provision of adequate laboratory diagnostic services in rural and some urban hospitals to assist the practising medical profession.

One additional small study, carried out at the request of the Director General of Medical Services, Department of National Defence, involved a visit to the training centre at Camp Borden where intensive courses of instruction are provided for hospital laboratory technicians. A review of the manual of instruction was carried out by technical officers of the Laboratory of Hygiene. Other training programs which continue to interest the Laboratory of Hygiene include courses at certain universities and educational institutions designed for the training of hospital laboratory technicians. In addition, the Laboratory of Hygiene offers certain refresher courses to public health laboratory workers as time and facilities permit. Advice and assistance were given to the Civil Defence group in connection with the development of emergency kits for public health laboratories. This work was undertaken in co-operation with a sub-committee of the Technical Advisory Committee on Public Health Laboratory Services.

Various members of the staff were represented on national and international committees and one member attended, as an expert consultant, an international meeting held at Dubrovnik, Yugoslavia, under the auspices of W.H.O.

Tissue Culture

A new section of Tissue Culture was established on October 1, 1952. The purpose of this Section is to utilize the methods of growing tissue cells outside the body and to apply these methods to problems existing in other Sections of the Laboratory of Hygiene.

The recent development of a chemically-defined medium that will support the survival of tissue cells outside the body has made it possible to apply tissue culture techniques to many problems. Studies are now in progress to improve and simplify this medium and to investigate the metabolism of normal and malignant cells. To date, this has involved the preparation of 40 modifications of the synthetic tissue culture medium. The effect of antibiotics at the cell level is being studied and work on the nutrition of certain fastidious microorganisms has been initiated.

One of the most urgent Public Health projects at the present time is the development of suitable vaccines for poliomyelitis and other viruses, employing tissue culture and synthetic media. Studies on the propagation of poliomyelitis and influenza viruses in tissue culture are now being conducted as a joint project between the Tissue Culture and Virus Sections. The aim of these studies is to determine the nutritional substances required for virus propagation in cells and to look for chemical means of preventing virus growth.

Between October 1, 1952, and January 1, 1953, specialized equipment and training staff were acquired and many of the standard tissue culture methods were simplified and rapid procedures for handling large numbers of cultures developed. Since that time, a total of approximately 1,200 tissue cultures, made from 8 different tissues, has been prepared. Of these, 360 cultures, representing 7 different types of tissue and 3 different methods of cultivation, have been made for virus studies. In collaboration with Dr. O. A. Trowell, of the British Atomic Energy Research Establishment, special tissue culture media have been devised for studies on the radio-sensitivity of tissue cells. Appreciable quantities of synthetic tissue culture media have also been supplied to the Science Film Division of the National Film Board.

Biologics Control

The duties of the Biologics Control Section are divided into two main roles—control and research. The control work is that carried out under the authority of the Food and Drugs Act, for which the Laboratory of Hygiene acts in a technical and advisory capacity to the Chief Dominion Analyst. The research pertains almost entirely to immunological problems and, as well, mode of action of antibiotics.

(a) *Sub-section—Biologics Control*—Tests for sterility, safety, identity and potency of biological drugs, such as vaccines, toxoids, antisera, etc., were carried out as usual. Twenty-six commercial diphtheria toxoids and 59 commercial tetanus toxoids were assayed, and all were found satisfactory. A bacteriological survey of smallpox vaccines on the Canadian market was undertaken. One lot of vaccine was found unsatisfactory because of its high bacterial count and its sale was prohibited. Pyrogen testing of market parenteral fluids and of blood transfusion materials for the Canadian Red Cross Blood Donor Service was carried out to capacity. Six hundred and eighty-eight samples were tested and all but 31 (4.5%) were found to be free from pyrogens.

Inspections of Canadian, United States and European manufacturing establishments, holding a Canadian biologic licence, were continued. Five manufacturers were refused a licence because of unsatisfactory conditions in their sterile filling rooms, and three manufacturers had their licences temporarily suspended until unsatisfactory conditions were rectified and their plants improved so as to meet the Canadian requirements.

A survey of diphtheria and tetanus toxoids from different countries was started late in the year. Toxoids from ten different countries have already been obtained and are now under test. Preliminary results indicate that European diphtheria toxoids are somewhat more potent than Canadian, but this country's tetanus toxoid is more effective than the European.

The Laboratory of Hygiene, in collaboration with five other institutions in Canada and the United States, participated in an inter-institutional study on the precision of the potency assay of alum precipitated toxoid. The results of the study were published in the *Journal of Immunology*, February 1953.

(b) *Sub-section—Immunology*—The large scale oral immunization studies with humans, which started two years ago in collaboration with the Provinces of British Columbia and Manitoba, are soon to be completed. Approximately 1,500 adults and children will have participated in the study. The final results are not available as yet but the preliminary results indicate that oral immunization may be a useful method for giving booster doses against diphtheria and tetanus (lock-jaw).

Smaller scale studies, to determine the pattern of oral immunization, are continuing in collaboration with the Ontario Veterinary College.

A new study on the value of annual booster (oral and parenteral) doses for tetanus toxoid was started in collaboration with the Ontario Veterinary College. This new study will cover a period of four to five years.

A new study on the immunization of infants against diphtheria, whooping cough and tetanus to determine optimal dosage and value of booster doses was started. The latter is in collaboration with City Health authorities of Montreal.

Studies on the development of a suitable assay for *H. pertussis* (whooping cough) vaccine were continued and a tentative assay technique established. Vaccines presently in use in human field trials in the United Kingdom were obtained and are being tested. The value of the method will be shown when the results of the human field trials are available.

Studies on *Cl. botulinum* toxins and toxoids were started again after a lapse of a year, due to shortage of staff. A stable toxin has been prepared and immunization studies on experimental animals (mice, guinea pigs and rabbits) are in progress.

This past year, a start was made towards the establishment of a "library of cultures" for anaerobic bacteria. Present stock cultures are being re-examined and studied, and new cultures are being obtained.

The Laboratory of Hygiene was represented at the World Health Conference on "Diphtheria and Whooping Cough", sponsored by W.H.O. and held in Yugoslavia in October 1952. Proposals to this group regarding the establishment of an International Standard for *H. pertussis* (whooping cough) agglutinating serum was accepted and the W.H.O.'s Biological Expert Committee have actively taken this matter up. Such standardization is important since it allows for the comparison of whooping cough studies by the different workers who are using this test as the index of immunity. At the present time, due to wide differences in techniques, such comparison is not possible. The Laboratory of Hygiene is participating in this study and, as well, will make available the results of its studies in this field.

The Laboratory of Hygiene prepared a standard agglutinating *H. pertussis* serum and a standard *H. pertussis* agglutinable suspension was provided by Eli Lilly and Company, Indianapolis, U.S.A. These were distributed to sixteen different laboratories in various countries throughout the world. The results from most of these have been returned and show that the agglutination test for whooping cough can be standardized.

(c) *Sub-section—Chemistry and Pharmacology*—Further studies on the mode of action of Penicillin were undertaken. The problem of the effects of Penicillin on *Staph. aureus* was studied, using paper chromatography, Warburg techniques, and by observations of changes in the chemical activities of Penicillin treated cultures. Preliminary results suggest there is a difference in arginase activity between treated and non-treated cultures and this feature is being studied closely.

Studies on antibiotic inhibitors were continued. Attempts to obtain an inhibitor for Streptomycin have so far yielded negative results.

Research into chemical methods for the assay for antibiotics, both when alone and when in combination with other antibiotics, has been undertaken and should prove of value in control work.

(d) *Sub-section—Antibiotics*—Routine testing of antibiotics for potency (351 samples), sterility (200 samples), Toxicity (140 samples) and pyrogens (107 samples) were carried out. One sample was not allowed to be distributed in Canada because of low potency, and four samples were rejected due to failure to meet the toxicity test requirement. More than 3,000 samples of antibiotics were submitted during the fiscal year and this represented 150 types of antibiotic material which are now on the Canadian market.

The Laboratory continued its service of providing low potency standards of antibiotics to Provincial Health Laboratories and to D.V.A. hospital laboratories and research establishments. Two hundred vials of standards were distributed in this period.

The Laboratory of Hygiene, at the invitation of the World Health Organization and in collaboration with other world laboratories, carried out extensive studies on proposed new International Standards for Terramycin, Aureomycin, Dihydrostreptomycin and Bacitracin. In addition, upon invitation of the U.S. Food and Drugs Division, many tests were carried out on the U.S.'s new standard for Neomycin.

An intensive study on the non-specific bactericidal activity of normal human serum is now in progress. An attempt is being made to identify the individual serum components responsible for this effect against certain bacterial pathogens. To do this, it has been necessary to develop an entirely new set of techniques.

Other activities carried out by this subsection were concerned with reviewing new drug submissions on antibiotics and aid in the revision of Food and Drug Regulations governing antibiotics. Considerable time has been spent on re-drafting the Laboratory of Hygiene's test methods for antibiotics and these should be available shortly.

Bacteriology

In the field of medical bacteriology, the prime purpose of this laboratory is to aid the Provincial Departments of Health in the identification of bacteria isolated from materials submitted to their laboratories, by the provision of special diagnostic reagents, by the carrying out of special tests and by the giving of refresher training courses to technical personnel from these laboratories. This Section is also concerned with the sanitary control of shellfish and shellfish-producing waters and with restaurants and food dispensing establishments. How these functions were performed during the year 1952-53 will be described under the various headings:

(1) Medical Bacteriology

(a) *Enteric Bacteriology*: The principal functions of the laboratory in enteric bacteriology are the maintenance of the "National Salmonella Typing and Reference Centre" and the "National Shigella Typing and Reference Centre".

(i) *The National Salmonella Typing and Reference Centre*—A total of 671 cultures were received at the Enteric Centre for identification, 199 more than during the previous year. Of these, 530 were 'typed' as Salmonella. Reports of Salmonella isolations from the provincial laboratories were received and a detailed report submitted to the Eighth Annual Meeting of the Technical Advisory Committee on Public Health Laboratory Services. Three types—*S. californica*, *S. heidelberg* and *S. panama*—identified at the Laboratory of Hygiene and *S. poona* reported by the Ontario Department of Health Laboratories were reported for the first time in Canada. Of the Salmonella cultures received at this Centre, 25 types were identified of which the commonest were *S. typhi-murium* (34 per cent), *S. typhi* (14.5 per cent) and *S. paratyphi B* (10.5 per cent). A paper on "Salmonella Types in Canada", reporting the observations of the National Salmonella Typing Centre from 1948 to October 1952 was presented at the annual meeting of the Canadian Society of Microbiologists.

(ii) *The National Shigella Typing and Reference Centre*—This Centre at the Laboratory of Hygiene, approved as the National Centre by the

Technical Advisory Committee on Public Health Laboratory Services at its annual meeting in 1951, received international recognition as the National Centre for Canada during the past year. A total of 72 *Shigella-Alkalescens-Dispar* cultures were received during the year. *Shigella sonnei* and *Shigella flexneri* 2a were the predominant strains.

(iii) Of the cultures of other groups received, most (40%) were "Paracolon" organisms.

(iv) *Esch. coli* typing—The laboratory has now prepared diagnostic sera for the first 26 O groups, which makes possible the serological identification of the more common types of *E. coli*. In addition, O and OB sera have been prepared for coli groups 055 and 0111, which with 026 are considered the types to be of etiologic significance in infantile diarrhea. An investigation was made of a small local outbreak of infantile gastroenteritis, in which 15 cases were examined. Stool cultures from these revealed coli 0111 present in 2 cases. No recognized enteric pathogens were cultured from any of the others.

(v) *Standard Antigens and Diagnostic Antisera*—The demand for standard *Salmonella* antigens prepared by the Laboratory of Hygiene increased for the fourth consecutive year. This year requests for 297,650 ml. of these antigens were filled, almost 21 litres more than in 1951-52. Similarly with the diagnostic antisera prepared and distributed by this Laboratory. A total of 1,060 ml. of these sera were distributed during the year, compared with 724 ml. distributed during 1951-52. This Laboratory is now supplying the full requirements of the standard antigens of 9 of the 10 Provincial Public Health Laboratories (Ontario excepted) and the D.V.A. hospitals and is meeting all requests for diagnostic antisera from these sources. Distribution of these reagents has been strictly limited to the Provincial Public Health Laboratories and the Department of Veterans Affairs.

Antigens distributed:—*S. typhi*—H, O and Vi; *S. paratyphi* A—H and O; *S. paratyphi* B—H and O; *S. paratyphi* C—H and O; and *Salmonella*—H non-specific.

Diagnostic Antisera distributed: 4 *Salmonella* polyvalent O sera; 7 *Salmonella* O group sera; 8 *Salmonella* H sera; 5 *Shigella* group sera; 2 *Alkalescens-Dispar* group sera; and *E. coli* 055—O and OB sera and *E. coli* 0111—O and OB sera.

(vi) *Special projects*—The study of the survival of enteric pathogens in dried fecal material on filter paper was completed and a paper "The Filter Paper Method for Collecting and Transporting Stools to the Laboratory for Enteric Bacteriological Examination" was presented to the C.P.H.A. laboratory section, December 1952. The results of this study indicated that for *Salmonella* stools, the 'paper' method was at least as satisfactory as the usual glycerol-saline method. Projects under investigation are: the development of serological methods for the separation of mixed cultures of *Salmonella*, improvements in the preparation of standard antigens, and the antigenic mutation of *Salmonella* types.

(vii) *Training Course*—A three and one-half weeks' course of lectures and laboratory work in *Enteric Bacteriology* was given by members of the Bacteriology Section May 12-June 4, 1952. Thirteen attended the course, from the Provincial Public Health Laboratories, the R.C.N. and the R.C.A.M.C.

(b) *Haemolytic Streptococcus* and *C. diphtheriae*: The Laboratory continued to offer to the Provincial Laboratories its services in the typing of haemolytic streptococci and diphtheria bacilli. An epidemic of acute nephritis

occurring in Nova Scotia was investigated by Dr. R. W. Reed of the Nova Scotia Public Health Department who submitted a number of cultures of haemolytic streptococci for identification. It is particularly interesting to find that 53 of the 58 Group A streptococcus cultures investigated were 'Type 12' strains, in view of recent reports from the U.S.A. and Australia of outbreaks of streptococcal infection associated with a very high incidence of acute nephritis in which this same type of streptococcus was incriminated. Twenty (20) cultures of *C. diphtheriae* were received for typing. The 'Streptococcus Unit' distributed 545 cc. of Lancefield grouping sera to other laboratories during the year. There was an increase in the number of Antistreptolysin O serum titrations carried out during the year from 325 in 1951-52 to 409. Three hundred and sixty-seven (367) of these were for the Sick Children's Hospital, Toronto, as part of a long term study by them of rheumatic heart disease. Three lots of commercial Streptolysin O reagent were tested and reports and suggestions submitted to the manufacturer.

(c) *Staphylococcal Infections*: Staphylococcal infections appear to be on the increase in hospitals and their control poses a most difficult problem. An investigation of these infections in a local hospital was started during the year and is continuing. Antibiotic-resistance and phage-typing of the strains is being studied. It was necessary for this study to develop phase-typing techniques. Phages and propagating strains have been secured from the Quebec Provincial Laboratories and the Staphylococcal Reference Centre at Colindale, London, and phages have been prepared for all the more generally recognized types. There is need for standardization of staphylococcal phase-typing on both the national and international levels, as exists for the phage-typing of the typhoid bacilli. Results to date indicate a high proportion of the strains antibiotic-resistant. Of the cultures examined, 89% were resistant to Penicillin and 58% resistant to Aureomycin and Terramycin, while only 4.6% were resistant to Chloramphenicol and no strains were found resistant to Erythromycin or Neomycin by 'in vitro' tests. In an outbreak of infantile gastro-enteritis in another hospital, bacteriological examination of stools indicated the probability of so-called 'staphylococcal diarrhea'.

(2) *Sanitary Bacteriology*

In this field, the Laboratory continued to provide services to the Food and Drugs Divisions and to the Division of Public Health Engineering, with particular emphasis on the shellfish-producing areas in the Maritime Provinces.

(a) *Sanitary Control of Shellfish-producing Areas*: The Laboratory of Hygiene collaborates with the Department's Division of Public Health Engineering and with the Federal Department of Fisheries in the control of all areas used for the fishing of shellfish in the Maritime Provinces. This system of control has been in effect for many years and has proved most satisfactory to all concerned. The mobile laboratory of the Laboratory of Hygiene carried out bacteriological surveys of 5 areas in Prince Edward Island and New Brunswick during the year and reports were submitted to the Inter-departmental Shellfish Committee for action.

(b) *Shellfish Toxicity Control*: The routine control of 'mussel-poison' in clams and mussels in the Eastern Maritimes was carried out according to scheme drawn up in March 1952 by the Inter-departmental Shellfish Committee. A total of 266 samples were received from New Brunswick, Nova Scotia and Newfoundland. Toxicity levels were, again as in 1951, very low. Forty-two (42) packs of canned clams, from packing plants in New Brunswick, were examined and none were found to be toxic.

(c) *The Self-purification of Clams*: There are considerable stocks of polluted clams in the Maritime Provinces and it would be doubly advantageous

if these could be cleansed and marketed without risk to the public health for (1) the income to the clam industry would be increased and (2) the removal of dense stocks now growing in contaminated areas would to a great extent eliminate the health hazard that clams bootlegged from these sources now represent. Preliminary investigations by the Department of Fisheries indicated that under certain conditions heavily sewage-polluted clams cleanse themselves. Our Laboratory carried out a series of experiments at St. Andrews, N.B., during May and June designed to locate a suitable area for cleansing, and to determine some of the conditions essential for a satisfactory commercial cleansing process. The work carried out during 1952 indicated that clam-cleansing by relaying in special floats was both practical and safe and as a result a small scale semi-commercial experiment is planned during the summer of 1953. The results of the investigations by this Laboratory and of those of the others co-operating in this project were reported in MS. No. 503 of the Fisheries Research Board.

(d) *The Evaluation of Bacteriological Reports in Assessing the Sanitary Quality of Shellfish-Producing Waters:* An extensive research project was carried out in Prince Edward Island during July, August, September and October in an effort to determine the effects of rainfall and land-wash on pollution levels in tidal estuaries. This project, when completed, should add valuable information to the interpretation of results obtained in routine bacteriological surveys. A total of 800 water samples and 33 samples of shellstock oysters were examined in the routine manner. In addition, 82 water samples were checked for salinity, 297 samples were analysed by the new molecular filter technique, 297 waters and 33 oyster samples were analysed for the presence of fecal streptococci, and 36 soil and 13 feces samples were examined for coliform bacteria and enterococci. This project is being continued in 1953. A preliminary report was presented to the Inter-departmental Shellfish Committee at its 1953 annual meeting.

(e) *Bacteriological Control of Shucked Oysters Imported from the U.S.:* In Co-operation with the Food and Drug Divisions, a check was maintained on the bacteriological quality of shucked oysters imported from the U.S. Forty (40) specimens from the Montreal market were tested during the year. Some improvement in the quality of these oysters has been noted as a result of these examinations and the close liaison maintained between the Department and the U.S. authorities.

(f) *Other Analyses:* One hundred and thirty-seven (137) samples of gelatin and 4 samples of agar-agar were bacteriologically tested for the Food and Drug Divisions and 400 samples of water for the Public Health Engineering Division.

(g) *Identification of Meats:* A continued check has been maintained for the illegal sale of horsemeat, with samples being routinely submitted by the Ottawa City Health Department and the Food and Drug Divisions. One hundred and eighty-nine samples were tested, of which 2 were misbranded. Production of antisera necessary for these tests has been maintained.

(h) *Restaurant Surveys:* At the request of the Department's Canteen Committee, 6 cafeterias located in various government buildings in Ottawa were inspected by our bacteriologist and suitable samples bacteriologically examined. One hundred and four (104) samples were taken for bacteriological examination, and the results reported to the Canteen Committee.

(i) *Milk:* At the request of the R.C.A.F., a survey of milk dispensing facilities at the Rockcliffe Air Station was carried out by this Laboratory. A total of 99 milk samples, 14 can rinse and 3 miscellaneous specimens were tested. Considerable variation in milk quality was noted between different suppliers. A report with suggestions for dealing with the particular problem was submitted to R.C.A.F.

(j) *Water Purifier*: A water purifier for field use was submitted by the Department of National Defence (Army) for evaluation of its effectiveness in the purification of water for drinking. Numerous tests were carried out using various naturally and artificially contaminated waters. A detailed report was submitted to the Department of National Defence.

(k) *Freeze-drying*: Lyophilization of bacterial cultures, sera and antigens on the Edwards Freeze-Drier was continued throughout the year. A total of 12,273 ampoules were processed through the apparatus during the year. In addition, the apparatus was used to concentrate 850 ml. of special enzyme preparations.

Parasitology

Through the kindness of Dr. T. W. M. Cameron, Director of the Institute of Parasitology, Macdonald College, P.Q., an arrangement was made whereby the Sub-section of Parasitology was transferred during the Fall of 1952 from the Laboratory of Hygiene to the Institute. The major reason for the transfer was the acute shortage of space in the Laboratory of Hygiene building in Ottawa. It did appear most desirable, however, to arrange that our studies in the field of parasitology be co-ordinated with those at the Institute of Parasitology. These arrangements are subject to review when the matter of accommodation in Ottawa shows improvement.

During the year, a total of 165 specimens for diagnosis were received from various Provincial Departments of Health and the Department of Veterans Affairs.

A proficiency evaluation survey was undertaken in which all of the ten Provincial Laboratories and four of the Armed Service laboratories participated. To date, 22 unknown specimens have been distributed.

The University of Saskatchewan (Regina College) requested assistance in the form of teaching material to be used in their training course for technicians. A master set of prepared slides, together with bulk specimens for students were provided to this institution.

Two papers have been published: "A Survey of the Incidence of Trichinosis in Rats in British Columbia" and "On the Incidence of Human Trichinosis in Canada".

A collaborative study of Hydatid Disease in northwestern Canada was undertaken in May, June and July. Collaborating agencies were the Institute of Parasitology, Laboratory of Hygiene, and the Indian Health Services, Department of National Health and Welfare.

Results indicate that human hydatidosis is widespread in Indians from these areas. Information has been collected on 98 proved or suspected cases with hydatid cysts in the liver and lungs. Examination of 114 dogs killed in Indian villages showed that 32, or 28 per cent, harboured the tapeworm, *Echinococcus granulosus*, and that eggs of this parasite passed in the faeces of the dogs served as the source of infection to human beings. Further, it was found that dogs are infected by being fed infected lungs of wild herbivora. Hydatid cysts are common in moose and caribou and occur in elk, coastal deer, and white-tailed deer. The cysts have not been found in the buffalo of Wood Buffalo Park. The wild herbivores acquired their infection by ingesting eggs of *E. granulosus* passed in the droppings of wild carnivora harbouring this tapeworm. The wolf is the important wild carnivore host and coyotes and foxes also play a role. The first record of infection in coyotes was made during this survey. The wolves, coyotes and foxes acquire the infection by preying or scavenging on the wild herbivora.

Skin tests were made on over 800 natives, with an Australian antigen. Positive reactions were seen in 2.4 per cent of the general population, and in four of eleven known positive patients. It is believed that the antigen is quite specific but that false negatives occur in over 50 per cent of the cases.

Virus

The major activities of the Virus Section during this fiscal year were related to diagnostic services rendered to the Provincial Laboratories of Health, the Departments of National Defence and Veterans Affairs, the Indian Health and Immigration Medical Services of this Department and to various hospitals and institutions. Several field and laboratory investigations on current virus epidemics were accomplished in collaboration with Provincial Departments of Health and the Indian Health Services of this Department. Studies on immunological response to polyvalent influenza vaccines in old age groups were concluded and a survey on the efficacy of several commercial influenza vaccines was undertaken. The Virus Section, as the Canadian W.H.O. influenza centre, has been frequently exchanging information and materials with the world influenza centres in London and Geneva during the past year and results of analytical work on current epidemic strains of influenza virus were forwarded to these centres. Research work was carried out successfully on further developments of stable non-infective reagents for the diagnosis of virus diseases and efforts have been initiated in developing tissue culture techniques for the laboratory diagnosis of virus diseases, particularly for poliomyelitis. This work has been greatly facilitated through the addition of a Tissue Culture Section to the Laboratory of Hygiene.

Investigations of Virus Epidemics

In March, 1952, a severe localized outbreak of poliomyelitis occurred in Tatamagouche, Nova Scotia. At the request of the Provincial Department of Health, a field and laboratory study was undertaken in collaboration with the Division of Epidemiology of this Department and the Connaught Medical Research Laboratories, Toronto. The interesting features of this epidemic included the unusual seasonal incidence and the appearance of a mild respiratory and gastro-intestinal illness at the same time as the paralytic poliomyelitis. The laboratory study at the Connaught Laboratories of stool specimens from paralytic cases showed the presence of a Brunhilde type of poliomyelitis virus. Attempts by the Laboratory of Hygiene at isolation of Coxsackie viruses from the same specimens and from stools of non-paralytic and contact cases yielded negative results.

In April, 1952, an epidemic of measles of unusual severity occurred in the native population of the Ungava Bay region, Northern Quebec. At the request of the Indian Health Services of this Department, field studies of this epidemic were undertaken together with the Division of Epidemiology. These studies revealed the presence of an epidemic of clinical influenza in that population at the same time as the measles epidemic. These findings were confirmed by laboratory tests with the patients' sera, which indicated that influenza virus Type B had been the causative agent.

In June, 1952, an epidemic of influenza made its appearance in Cape Breton, N.S., with some scattered cases in adjoining counties. At the request of the Provincial Department of Health of Nova Scotia, a laboratory study with patients' serum specimens was undertaken and established virus influenza Type B as the cause of the epidemic.

An outbreak of aseptic meningitis occurred in July, 1952, at Prince Edward Island. The clinical features of this epidemic were very similar to

those of an epidemic which had caused some concern on the Island in 1949. This Virus Section undertook a field and laboratory study and isolated several strains of Coxsackie Type B from fecal specimens of patients recovering from the disease.

In February, 1953, an influenza epidemic again went through the Canadian provinces. Clinical specimens for virus isolation and serological tests were received from most provinces. Virus isolation attempts on throat washings were successful in 21 per cent of a total of 53 samples tested. All virus strains, but one, were identified as A-prime subtypes, similar to Scandinavian, European and American strains recently isolated and identified by the W.H.O. influenza centre, London, England. One strain was found to be influenza virus, Type B. Laboratory tests with acute and convalescent phase sera of patients confirmed the results obtained with the isolation work. Results of strain analysis revealed a marked deviation from the antigenic pattern of A-prime strains isolated in 1951 and 1949. However, examination of sera of persons recently immunized with polyvalent influenza vaccines indicated that antibody formation had taken place not only to the previously isolated A-prime strains but also to the subtype A-prime strains isolated in the current epidemic.

The Virus Section, in collaboration with the Division of Epidemiology investigated the serological response of human volunteers to several commercially produced polyvalent influenza vaccines. It was found that a significant antibody rise had developed in the persons' sera to all antigenic components contained in these vaccines and that the height of response was similar with all vaccines tested.

Similarly, in conjunction with the Division of Epidemiology, an investigation into the immunological response to influenza vaccines in old age groups was concluded. It was noted that the development of antibodies to the antigenic components of the vaccine in a group of individuals averaging 76 years of age compared very favourably with that experienced by a control group of younger persons with an average age of about 25 years. These results indicate that influenza vaccines may give protection to old age groups in a similar degree to that found in younger people.

Diagnostic Services for Virus Diseases

The sero-diagnostic service was established in 1950 in collaboration with the Provincial Departments of Health, the Departments of National Defence and Veterans Affairs and the Indian Health and Immigration Medical Services of this Department. This service has been expanded further each year and recently another serological test (Weil-Felix) has been added to the list of diagnostic procedures on viral and rickettsial diseases available at the Laboratory of Hygiene. The addition of dried guinea pig kidney reagent for the diagnosis of infectious mononucleosis to the list of diagnostic reagents available at this laboratory has received a very favourable response from the Provincial Laboratories of Health. Diagnostic kits for the collection and shipment to this laboratory of specimens from cases of suspected smallpox have been prepared for the Immigration Medical Services and have been distributed to the various Quarantine Stations at Canadian ports.

A total of 1,210 sera were received from the Departments mentioned above.

The Laboratory of Hygiene carried out 3,341 complement fixation tests and 5,615 haemagglutination tests.

A total of 331 specimens, including throat washings, stools, spinal fluids, bloods, vesicle fluids, swabs and smears from skin lesions and autopsy material were received for virus isolation and identification work.

3,034 serological tests were carried out with antigens derived from these specimens. Virus isolation and identification was successful in 19 cases.

During the fiscal year, about 4,000 vials of freeze-dried noninfective antigens and antisera were prepared by the Virus Section for the laboratory diagnosis of influenza, mumps and infectious mononucleosis. These reagents were periodically tested for specificity and stability before being distributed as standardized controls to the Provincial Laboratories of Health.

Research Projects

Investigations were conducted to improve the methods of preparing stable non-infective antigens and a process involving the use of ethylene oxide was developed for the soluble antigens of influenza and mumps viruses. A new method for the colorimetric assay of nitrogen in biological materials has been developed to assist in purification procedures on diagnostic antigens and vaccines. A method of propagation of influenza virus in tissue cultures is being explored with the object of using it in the production of diagnostic antigens and vaccines. Efforts have been initiated towards developing tissue culture diagnostic facilities in the case of poliomyelitis. A study involving the infection of immature mice with the Lansing poliomyelitis virus has been carried out this year.

Serology and Clinical Chemistry—Serology

Various measures to maintain uniformity in the blood tests for syphilis throughout the Dominion have been continued. A refresher course in syphilis serology was conducted during the past year and a survey to determine the efficiency of performance of serological tests for syphilis by Provincial Public Health Laboratories has just been completed. Collaborative studies with the Banting Institute are in progress in an effort to develop a synthetic antigen for the serodiagnosis of syphilis.

Preparation and Distribution of Reagents

All ten Provincial Public Health Laboratories are using standardized antigens and complement prepared by the Laboratory of Hygiene. During the year about 65 litres of Kahn antigens, as well as smaller quantities of Kolmer, Mazzini and V.D.R.L. antigens, were distributed. In addition, 38 litres of guinea pig serum (complement), prepared and dehydrated at the Laboratory, were used in Provincial Laboratories. Considerable interest has been shown by the Provincial Laboratory Directors in the use of cardiolipin antigens for routine testing and antigens standardized at the Laboratory have been distributed for comparative studies.

Refresher Course

A refresher course was presented to senior personnel of Provincial Public Health Laboratories in September. Representatives from eight provinces attended the course.

Serological Survey

During the year another valuation study was conducted to determine the efficiency of performance of serodiagnostic tests for syphilis by Provincial Laboratories. Eighty-seven specimens from syphilitic donors and 101 specimens from nonsyphilitic individuals were sent to each of the participants. The results of the survey are being compiled.

Investigations

(a) *Synthetic Antigens:* Studies on the substitution of synthetic compounds for the naturally occupying cardiolipin and lecithin presently used in cardiolipin antigens have been continued in collaboration with Dr. Eric Baer of the

Banting Institute. Several synthetic saturated lecithins as well as stearyl glycollecithin have been used in place of the egg yolk lecithin. A limited degree of antigenic reactivity has been observed on substituting a synthetic phosphatidic acid for cardiolipin. A preliminary report will appear in 'Science' shortly.

(b) *Positive Control Serum*: With the decreased incidence of syphilis, certain laboratories are having difficulty in obtaining sufficient serum to use as positive control serum in routine serological tests. By immunizing rabbits with a suitable suspension of antigen-reagin floccules, it has been possible to prepare a "positive" control serum, which seems to serve equally well.

Clinical Chemistry

The evaluation of analytical procedures in clinical chemistry was continued. Studies in conjunction with the biochemical laboratory of the Ottawa Civic Hospital have made it possible to determine the problems encountered in a routine clinical chemistry laboratory, and to work out the solution to some of them. Surveys have been conducted in two provinces to determine the accuracy of blood glucose determinations as performed in hospital laboratories.

Evaluation of Procedures

During the year, methods for the determination of cholesterol and cholesterol esters, uric acid, bilirubin (direct and indirect), phosphorus, calcium, sulfonamides, amylase, urea, carbon dioxide combining power, and ketone bodies in blood, and 17-ketosteroids and ketone bodies in urine have been investigated. Methods for the determination of the hydrogen ion concentration of the blood have been examined. Further work has been carried out on methods for estimating glucose, nonprotein nitrogen, creatinine, sodium, potassium and chlorides. As a result of the above investigations, methods have been selected on the basis of accuracy and simplicity with due consideration being given to the stability and reproducibility of reagents and standards.

Studies of various tests for the detection of glucose, protein, ketone bodies, bile and blood in the urine have been continued and a section on urinalysis is being prepared for a handbook.

Surveys

With the help of two Provincial Laboratory Directors, the accuracy of blood glucose estimations has been evaluated in two groups of hospital laboratories. In one province, the Laboratory of Hygiene distributed forty different glucose solutions, ten protein-free filtrates, and then whole blood samples to the participating laboratories. As yet, only unknown glucose solutions (30) have been distributed in the other province.

Investigations

(a) *Laboratory Studies of Diabetic Coma*: A study was started to determine the correlation between blood ketone bodies and acetone in the breath in normal individuals and in cases of diabetic acidosis and coma. The values obtained are being compared with blood glucose, carbon dioxide combining power and pH levels in blood, and acetone and sugar in urine, to determine which procedure is more useful in following the results of emergency treatment in cases of diabetic coma.

(b) *Determination of Blood Glucose*: A modification of the Folin-Wu method for the determination of blood glucose was published in the November issue of the American Journal of Clinical Pathology.

Report of the Laboratory of Hygiene, Western Branch, Kamloops, B.C.

This report covers the fourteenth year in the operation of this laboratory. The biological and bacteriological investigations relating to tick and insect-borne diseases that were undertaken on the inception of the laboratory in 1939 have been pursued annually until now something over 422,000 field specimens (ticks, fleas and rodent tissues) have been examined. The securing and examining of this number of specimens has entailed a tremendous amount of routine, but from it a wealth of information, pertaining to the geographical distribution and ecology of the causative agents of Rocky Mountain spotted fever, plague, tularemia and other diseases, has been acquired, which could not have been obtained in any other way. During the course of the investigations, certain other diseases, met with fortuitously, were studied and reports on them published. This year a paper, "Studies on *Leptospira* Infection in Rodents and Dogs in British Columbia," was prepared and has been accepted for publication in the Canadian Journal of Comparative Medicine.

Some 15,000 specimens were examined during the present year.

Plague infection (*Pasteurella pestis*) was again uncovered in wild rodents (Richardson ground squirrels) in Alberta, but no evidence of this disease was found in Saskatchewan, or in British Columbia where it appeared in June, 1950. Rocky Mountain spotted fever infection was detected in a small collection of ticks obtained near Banff, Alta., and evidence of tularemia was found in each of the three Western Provinces. This year, for the first time in the course of these surveys, *Pasteurella tularensis* was isolated from ground squirrel fleas.

The policy, initiated a few years ago, of supplying standardized diagnostic antigens to D.V.A. hospitals and Provincial Health Laboratories has been continued. The various antigens (*Brucella*, *Proteus* and *Pasteurella tularensis*) are, for convenience in shipping, supplied in concentrated form with the dilution factors indicated. During the year, sufficient of these products was prepared to make some 90,000 cc. of standard test antigen.

In addition, 98 special diagnostic tests were carried out for other laboratories. These included biological tests for tuberculosis—tests done as an aid to Indian Health Services Hospitals—and serological tests for tularemia, Rocky Mountain spotted fever, and brucellosis.

Canadian Tumour Registry

In the period between the 1st of April, 1952, and 31st of March, 1953, 303 tumours were registered. These were contributed by 31 pathologists from 26 cities.

During the past year, 101 tumours have been reported on by our consultants whose invaluable services are gratefully acknowledged. The composition of this Committee remains unchanged and is as follows:

- Dr. H. K. Fidler, Vancouver General Hospital, Vancouver
- Dr. J. M. Lederman, University of Manitoba, Winnipeg
- Dr. J. W. Macgregor, University of Alberta, Edmonton
- Dr. P. Masson, University of Montreal, Montreal
- Dr. N. G. B. McLetchie, Dalhousie University, Halifax
- Dr. D. F. Moore, St. Paul's Hospital, Saskatoon
- Dr. W. L. Robinson, Banting Institute, Toronto
- Dr. T. R. Waugh, McGill University, Montreal.

Consultations in special cases have been provided by Dr. W. L. Donohue, Hospital for Sick Children, Toronto, Dr. E. A. Linell, Department of Neuro-pathology, University of Toronto, and Dr. F. W. Wigglesworth, Children's Memorial Hospital, Montreal.

Requests for "follow-up" information on 302 cases have been sent out and 198 replies have been received.

A study set of female genital tract tumours was completed a year ago as announced in the Annual Report for 1952. A study set has been sent to the Professors of Pathology and of Obstetrics and Gynecology at each of the Canadian universities on indefinite loan. Fifteen requests for study sets have been received and sets have been sent out on loan for two to three month periods.

Other study sets of tumours are being assembled. The services of an assistant technician were made available in September 1952, which has resulted in considerable acceleration of this work. A set of dermatological tumours is nearing completion. So far, 68 cases are included in the set representing 39 types of dermatological tumours.

Technical Advisory Committee on Public Health Laboratory Services

The eighth annual meeting of this Committee was held in Ottawa on December 11, 12 and 13, 1952. This federal-provincial conference, sponsored by the Department of National Health and Welfare, was attended by representatives from all of the provinces and from the Departments of Veterans Affairs and of National Defence. Dr. C. A. Perry, Director of Laboratories for the Maryland State Department of Health, was a special guest and addressed the conference on the "Control of Diagnostic Laboratory Procedures". Programs for the evaluation of laboratory performance were described and emphasized.

A special report on 'hydatid disease' in Northern Canada was presented. Because of the incidence of this parasitic infection revealed by this report and because of the increasing importance of Canada's vast north land to the defence and economy of Canada, a resolution was passed advocating further and more extensive studies of the parasites of Northern Canada.

A sub-committee appointed at the 1951 meeting to study laboratory costs presented a report which showed the approximate costs per unit of work in the different provincial public health laboratories in Canada. The figures presented were very revealing and indicated great variations in cost between different types of laboratory work and between different laboratories. This study is being continued for another year.

At the request of the V.D. Control Directors, a uniform system of reporting serodiagnostic tests for syphilis is being considered by the Committee.

Because of the general dissatisfaction with the presumptive Kahn test for syphilis serodiagnosis, the provincial representatives agreed to substitute the V.D.R.L. test as the 'screen' test in their routine syphilis serological test procedures. It was further agreed that cardiolipin antigen for the Kolmer test, to be supplied by the Laboratory of Hygiene, would be given a trial by the provincial laboratories.

Specifications for an emergency public health laboratory 'unit' for Civil Defence were drawn up and submitted to the Civil Defence Health Planning Group of the Department of National Health and Welfare.

The Ontario Department of Health Division of Laboratories offered to give a three weeks' refresher training course in Medical Mycology to personnel from the provincial laboratories.

Special reports on the year's activities by the National Salmonella and Shigella Reference Centre at the Laboratory of Hygiene and of the Tumour Registry were presented and discussed.

A special seminar was held on virus diseases, at which poliomyelitis vaccines and gamma-globulin, influenza vaccines and the Coxsackie viruses were the principal topics discussed. Several members of the Department took part in this seminar.

Mental Health Division

The Mental Health Grant continues to have a very marked influence on mental health services in Canada. As a result of the training programs which were instituted with grant funds more mental health workers are now becoming available, services are being expanded and new services organized.

During the year 32 new and 175 continuing projects amounting to \$5,335,328 were received from the provinces. This was allocated as follows: Mental Health Divisions, \$155,093; Mental Hospitals, \$2,926,880; Psychiatric Services in General Hospitals, \$500,453; Mental Health Clinics, \$600,060; Training Programs, \$368,200; Bursaries, \$322,879; Research, \$461,759.

Research

The research program in the mental health field has acquired more trained and experienced workers and there are indications that benefits from the various researches will be forthcoming in future years. This year 43 research projects were supported under Mental Health Grant funds amounting in all to \$461,759.

Statistics

The Subcommittee on Statistics of the National Advisory Committee on Mental Health continued to be active during the year, a two-day meeting was held and the subcommittee presented its revised system for reporting mental health statistics to the Advisory Committee. This revision was approved and subsequently put into use by the provinces. As a result it is anticipated that mental health statistics will become more meaningful.

Public Education

In conjunction with the Information Services Division this Division continued an active program in public education. Many requests for materials in this field were received from provincial health educators, home and school organizations and other interested groups. Large quantities of the Child Training Pamphlets were distributed in English and French as well as considerable numbers of the booklet, "The Backward Child". The child training and mental mechanisms films continued to be widely used.

Two new pamphlets in the child training series were produced this year—"Preparing Your Child for Hospital" and "Discipline". A filmstrip based on the latter pamphlet and bearing the same title was released during the year.

A new film "Shyness" was completed in the Spring of the year. This illustrates the problem of shy children and ways in which it can be treated.

Consultant Services

The Division continued to provide consultant services to provincial departments of health and to other divisions of this Department, particularly Narcotic Control, Hospital Design, Indian Health and Immigration Medical Services.

Because of the continued public interest in the problem of narcotic addiction—particularly in British Columbia—the Chief of the Division in conjunction with the Chief of Narcotic Control and the senior Legal Adviser held extensive discussions in Vancouver, Montreal, Toronto and Hamilton with various officials concerned with this problem. All pertinent data from other countries was reviewed with a view to making recommendations and an article was prepared for publication, entitled "Drug Addiction".

Advisory Committee on Mental Health

The Advisory Committee on Mental Health met in June 1952 at which meeting two new subcommittees were appointed—the first on Public Education for the purpose of establishing liaison with existing committees of other agencies. A subcommittee on Training was appointed to prepare a proposed minimum curriculum for psychiatric nursing personnel of mental hospitals other than registered nurses.

Nutrition Division

In its work of seeking to improve the nutritional status of the Canadian people, the Nutrition Division continued to provide special technical services directed towards ascertaining the kind and extent of the nation's nutritional problems and co-operated with other federal and provincial authorities in measures designed to overcome them.

Plans were completed for a National Weight-Height Survey, and the field work, which will continue into 1953-54, was begun.

The Division carried on its study of nutrition as a possible causative factor in Leber's optic atrophy, new families in the susceptible groups being found and new cases investigated. Preliminary therapeutic studies in this field have given encouraging results.

A long-term nutrition study in six Indian Residential Schools was carried into its fourth year with different methods of improving health through better diet being studied and compared and more than 1,000 children were given physical and biochemical examinations during the year.

With the aim of obtaining further evidence as to the possible effects of socio-economic conditions on nutritional status and to ascertain possibilities for a follow-up program, the Division extended its 1952 nutritional and socio-economic study in Manitoba.

Another important project concerned collaboration with the Indian Health Services in working out a rehabilitation ration for Indians discharged from tuberculosis sanatoria and the Division also advised on ration lists for road and boat crews, firefighters, hydro linemen and employed Eskimos.

The subject of emergency feeding under disaster conditions received increased emphasis this year. In co-operation with Civil Defence officials, the Division prepared a technical manual on this subject and also on the related question of improvised cooking plans. The Division helped plan, and participated in, a conference for chiefs of emergency feeding services and several conferences on welfare services. A course for civil defence workers on this phase of preparedness planning was drawn up and the Division advised on the purchase of equipment required for such instruction at a civil defence training school.

For the second consecutive year the Division carried on storage tests on food which might be used in emergency feeding and results of this study were published in the *Canadian Home Economics Journal*.

Advice was given to other branches of government on kitchen planning for hospitals, institutions and cafeterias. Inspection of food services was carried out as part of the Departmental Canteen Committee's functions.

The Division's Test Kitchen prepared bread for the Food and Drug Divisions for pharmacological studies of various constituents and for nutrient analyses related to the content of whole wheat flour.

Studies were continued on nutritionally-improved foods, nutritional improvement being obtained through the addition of skim milk powder. A pamphlet containing recipes was prepared and sent out to a selected group for trial and comments, and results of this project are already coming in.

Among other technical services, the Division performed analyses for provincial clinics, mainly for Vitamin A tolerance tests, and continued its weekly clinics for referrals from the department's Civil Service Health Units, giving complete blood and urine analyses, as well as physical examination and dietary interviews.

Educational services continued to account for much of the Division's activities. Nutritional material which had proven its worth was revised, reprinted and provided in quantity to provincial health departments for use by health personnel, teachers, food service managers and housewives. The Division's pamphlet, *Canadian Nutrition Notes*, was issued monthly as well as various lists of reference reading, pamphlets and films.

Production was begun on a new nutrition film, *Food for Freddie*, and, to stimulate public interest in healthful eating, the Division sponsored a Nutrition Photograph Contest which was so successful that it is hoped to make it an annual event.

Meetings were held in Ottawa of the Canadian Council on Nutrition and of the Dominion-Provincial Nutrition Committee, that of the Council including further study of the Canadian Dietary Standards and of a statement of nutritional status in Canada.

Visits and interviews were arranged for professional workers and students from other parts of Canada and from other countries and advice and consultation was given to many interested in the Division's field, through personal contact and through correspondence, as well as in the reviewing of manuscripts for agencies producing publications dealing with nutrition.

OTHER RESEARCH ACTIVITIES IN THE HEALTH FIELD

The Research Division, while not in the Health Branch, acts as the research arm to the Branch in the conduct of a variety of socio-economic studies in the health field. This includes investigations relating to medical and hospital care, studies in health insurance, surveys concerning the incidence and implication of sickness and disability, analysis of health resources including hospital and other health facilities, health personnel and health services, and the maintenance of an information centre on health legislation in Canada. The Division also makes available technical and consultative services, particularly in respect to planning and methodology, to the various Divisions and Directorates in the Health Branch. A summary of the activities of the Research Division is provided on pages 104 to 106 in this Report under the section dealing with the Administration Branch of the Department.

WELFARE BRANCH

I. Introduction

Administration

The Welfare Branch can now report on a full year's operation of the new Old Age Security Act, the Old Age Assistance Act, and the Blind Persons' Act, all of which became effective on January 1, 1952.

The administration of the Old Age Security Act, providing pensions for those seventy years of age and over, was assumed by the Family Allowances Division and its regional offices because of the similarity of procedures in the two programs. The integration of the two acts progressed during the year to such a point that their activities can now be included in one report. Experience has justified the belief that the use of the Family Allowances' machinery would enable the new pensions to be undertaken with a very modest increase in staff.

Agreements under the new Old Age Assistance Act and the Blind Persons' Act have been signed by all the provinces, the Yukon Territory, and the Northwest Territories. The first full year of operation of old age assistance has demonstrated that the cost of the means test pension for the sixty-five to sixty-nine year group is less than was anticipated when the Act was passed. The number of recipients of blind persons' allowances has increased slightly in the fiscal year.

There have been no legislative changes in the Physical Fitness program and activities under the Act have continued as in former years except for the fact that the Province of Prince Edward Island did not renew its agreement, leaving seven provinces operating under agreements with the federal government. All of these provinces utilized to the full during 1952-53 the federal funds available to them under the Act.

Because of the federal grants to Canadian universities which were introduced in 1951-52, the Departmental grant to the eight Canadian schools of social work was discontinued. An interim grant for one year of \$3,000 was made to the Maritime School of Social Work. This school is not attached to any one university, but serves those in the Maritime Provinces. The interim grant was approved in order to give the school time to make appropriate arrangements for support from other sources in the area.

Applications of welfare organizations for incorporation under the federal Companies Act were examined by the Welfare Branch at the request of the Secretary of State.

An amendment to the Excise Tax Act, passed in 1950, provides for the exemption from sales tax of public institutions devoted to the care of children, the infirm and the aged, if they are certified by the Minister of National Health and Welfare to meet the requirements of the Act. This is in line with the certification of hospitals for exemption, which is carried out by the Health Branch. Twenty-seven institutions were certified during the fiscal year. This brings the total of institutions certified to 330. Eighteen applications were rejected during the fiscal year because the institutions were unable to meet the requirements of the Act. This brings the total of rejected applications to 155. One application was suspended during the year. Institutions have been asked to file periodic returns, indicating whether they are still eligible for certification under the Act.

Research continued in the field of social legislation with particular reference to community, family and child welfare, health services for indigents, and social security. Preliminary estimates on the findings of the Survey of Welfare Positions were presented to a Workshop of the Canadian Conference on Social Work which met in Quebec City in June, 1952. The technical work on the survey was completed during the year and a progress report prepared for the Personnel Committee of the Canadian Welfare Council. The final report will be published in a series of bulletins. Canadian material on a number of subjects in the social welfare field was also prepared at the request of the United Nations Department of Social Affairs.

Representation was provided to certain interdepartmental committees. These included the Civil Defence Co-ordinating Committee, the Advisory Committee on Citizenship, the Interdepartmental Advisory Committee on Immigration and its Sub-committee on Migration Policy, the Interdepartmental Committee on Social Security, and the Interdepartmental Group on Technical Assistance, which deals with requests for experts and scholarship and fellowship programs from the Colombo Plan, United Nations Technical Assistance and certain United Nations specialized agencies.

The Welfare Branch continued to arrange programs for social welfare fellowships and scholarships awarded by the United Nations for study in Canada. Fellowship holders were received from the following countries: Belgium, Chile, Egypt, France, Sweden, Switzerland and China (Formosa) (2). Scholarship holders came from the following countries: Antigua, Colombia and the Virgin Islands (2).

The Welfare Branch provided Canadian representation to certain United Nations meetings: the Deputy Minister of Welfare, Dr. George F. Davidson, was alternate delegate to the Economic and Social Council in New York in June and July, 1952; the Director of Family Allowances and Old Age Security, Mr. R. B. Curry, was the Canadian delegate to the 8th session of the Social Commission, held in New York in May, 1952; the Executive Assistant to the Deputy Minister, Mrs. D. B. Sinclair, was the Canadian representative to the United Nations International Children's Emergency Fund (UNICEF); she attended meetings of the Program Committee and the Executive Board held in New York in April and October, 1952, and in March, 1953; she served as chairman of the Executive Board in 1952.

The main Welfare Branch expenditures were as follows:

	Administration	Net Benefits
Welfare Branch	\$ 31,845.81	
Family Allowances	2,297,535.68	\$334,302,320.00
Old Age Security		323,068,540.00
Old Age Assistance	108,597.48	19,128,837.37
Blind Persons' Allowances		2,985,217.00
Physical Fitness	72,692.77	155,532.03
Schools of Social Work		3,000.00
Totals	<u>\$2,510,671.74</u>	<u>\$679,643,446.40</u>

Family Allowances and Old Age Security

At the close of the fiscal year 1951-52, developments in the two fields, Family Allowances and Old Age Security, were reported separately, as though by two different divisions of the department. In fact, however, the administration of Old Age Security, from its inception, was handled by the existing Family Allowances organization with a comparatively small increase in personnel. There were two reasons for separate reports. One was that in the case of Old Age Security, payments of the pension had been made for only three months, although some months of preparation and receipt of applications had gone before. The second reason was that, at that time, the two functions of the division were quite separate and distinct. In order that the large bulk of initial applications for Old Age Security pensions might be processed in the shortest possible time, it was found expedient to keep the two areas of endeavour apart. It was anticipated that when Old Age Security operations reached a current basis, and when experience had been gained in the problems which would arise in the implementation of the new legislation, permitting policy and procedure to become more clearly defined, it would be possible to devote time and thought to the integration, from an administrative standpoint, of the two programs.

During the past fiscal year, these anticipations were realized, and a gradual unification has taken place, so that it is now possible to cover activities related to both Family Allowances and Old Age Security in one report.

Coordination of Two Programs

In the light of the experience which has been gained to date in the administration of Old Age Security, it is generally agreed that the only functions which can be properly considered common to both Family Allowances and Old Age Security from the point of view of efficient and economical use of staff, space and equipment, are those performed by sections in Regional Offices known as "Administrative Services", "Central Registry" and "Welfare Services". Regional Offices have progressed in the coordination of these functions to greater or lesser degrees depending on individual circumstances. Throughout all offices, however, considerable headway has been made in this direction. At the present time, plans are being formulated to achieve a uniform pattern of organization for all Regional Offices. When this pattern has finally been determined, and the necessary, and in some cases minor, adjustments have been made in the present organization of these offices, the two programs will have been coordinated satisfactorily.

Administrative Services and Central Registry

The sections called "Administrative Services" are responsible for such functions pertaining to both Family Allowances and Old Age Security as general correspondence, recording and collection of overpayments, field investigations which are not of a Welfare nature, disposition of returned cheques, maintenance of personnel records, mimeographing and photostating and stenographic services. "Central Registry" sections handle such items as reception and dispatch of mail, control and allocation of account numbers, maintenance of card indexes, destruction of dead files, and so forth. The main function of the latter sections is the maintenance of file registries including the control of file movements and the keeping of a system of B.F.'s. With a total of 691,386 active Old Age Security accounts maintained across Canada as at March 31, 1953, in addition to 2,056,354 active Family Allowances accounts, the work-load carried by these sections has increased greatly.

Welfare Services

The role of the Welfare Section in each Regional Office, in connection with the administration of Family Allowances, has become increasingly well defined. The emphasis during the year under review has been on continuing and improved liaison with agencies and institutions which work with children. The conviction has become stronger than ever that there is no substitute for personal and frequent contact between Welfare personnel of this division and those of the agencies and institutions concerned.

In the course of the year, the staff of the Welfare Sections have been brought into Old Age Security, and the role they are to play in this program is now quite definite. As in the case of Family Allowances, one important responsibility which falls to Welfare personnel is liaison with agencies and institutions. Here it is with those bodies concerned with aged people. A great deal has already been accomplished in establishing contact with these agencies and institutions, and in interpreting Old Age Security matters to them.

Probably the most important responsibility taken on by the Welfare Sections is that in the area of trusteeships in Old Age Security. The legislation provides for the appointment of a trustee to handle Old Age Security pensions if the pensioner is incapable of handling his own affairs. It is considered that qualified Social Workers are in the best position to evaluate information and reports received in this connection. Personnel of the Welfare Sections have also been called upon to assist with difficult cases of proof of age and sometimes of residence. This assistance takes the form of personal interviews with applicants, and guidance and help to them in regard to these subjects. In addition, where necessary, arrangements are made for the setting up of tribunals in the applicant's community for the purpose of determining the age of the applicant when satisfactory evidence thereof is not available.

FAMILY ALLOWANCES

Legislation—New Regulations

Order-in-Council P.C. 1953-321 dated March 5, 1953, and published in the *Canada Gazette* March 25, 1953, revoked the Family Allowances Regulations previously in effect and replaced them by new Regulations. The revised Regulations do not differ radically from the former ones, but do contain some changes worthy of note. Among these are the following: (1) Formerly, in the case of a child who was attending school or receiving equivalent training and, in addition, was employed or engaged in work for which he received \$35 or more monthly, Family Allowances were discontinued; under the new Regulations no limit is placed on such a child's earnings. (2) Under the previous Regulations there was no option but to pay Family Allowances for Eskimo children to the Department of Resources and Development to be disbursed by that Department. All of these allowances are, by arrangement with that Department, paid to Eskimo parents in "kind." The revised Regulations permit payment direct to Eskimo parents. Such action would, of course, be taken in individual cases only on the recommendation of the appropriate officials of the Department of Resources and Development. The subject will require careful consideration before such action is taken.

General

The numbers of families and children receiving allowances, and consequently the expenditures, for the month of March, 1953, were considerably larger than for the month of March, 1952, as was the case with each preceding year. The following table shows comparative figures:

	No. of Families	No. of Children	Expenditures
March, 1952	1,966,721	4,530,186	\$27,174,658
March, 1953	2,041,341	4,729,172	28,456,441

Total net payments for the fiscal year 1952-53 were \$334,197,684, an increase of \$13,740,011 over the previous fiscal year. Tables 19 and 20, pages 126 and 127, show additional details regarding payments of allowances.

School Attendance and Employment

As in other years, the information on school attendance in all provinces which have been obtained strengthens the belief that Family Allowances play a vital part in assuring a high percentage of attendance. This belief is further bolstered by observations made by provincial educational authorities. For instance, in speaking of the rise in the average school attendance in his province over recent years, the Supervisor of Attendance of the Department of Education of one province stated in part "The provision of additional school facilities at the elementary and secondary levels cannot of course be ignored, but the assistance of Family Allowances without any doubt was the most outstanding element for improvement." The same official stated further "... in a large majority of the cases the teaching profession of the Province looks upon the relationship between the school attendance and Family Allowance payments as an inestimable aid in the provision of adequate educational opportunities for children."

In another province, a school inspector declared to Family Allowances officials: "You are the most effective attendance officers the province has ever had." A school authority in the latter province, in writing to the Regional Director of Family Allowances, said "The attendance of school children has been much better since the Family Allowance payments have been paid, thanks to your office and their attention to the regulations having a bearing upon School Attendance—Family Allowance requirements."

There are of course various factors which affect enrollment and attendance, and these factors differ from province to province. It is therefore difficult to assess exactly to what extent the fact that inexcusable absences from school result in a loss of Family Allowances has influenced both enrollment and attendance. The significant rise in percentages over the years since the beginning of the Family Allowances program cannot, however, be ignored. While the possible loss of Family Allowances for unsatisfactory school attendance acts as an incentive to parents to ensure that their children attend regularly, their ability to feed and clothe their children better because of the receipt of allowances is also an important aid to those who otherwise might not find it possible to send their children to school on as regular a basis as they would wish to do.

At the close of the fiscal year 1951-52, it was noted that the total number of children whose allowances had been suspended because of non-attendance at school and employment for wages showed an increase over the number for the previous year. It was felt that this was due, at least in part, to increased school enrollment and better reporting both voluntary and other. Bearing

this in mind, it is interesting to note that the figure for the year 1952-53 has decreased considerably. Reporting will have, if it has changed at all, improved, and enrollment appears to have increased. It perhaps might be concluded, therefore, that there were fewer instances, at least of non-attendance at school. The number of suspensions because of employment for wages remained almost the same, while those for unsatisfactory school attendance decreased from 14,830 to 11,817, accounting for the decrease in the total figure mentioned.

In view of the revision in the Family Allowances Regulations which permits employment without loss of allowances so long as the child is in satisfactory attendance at school, the overall number of suspensions should further decrease in the fiscal year 1953-54. Since the school-leaving age varies from province to province, being 14 in some and 15 in certain of the others, there will no doubt always be cases of suspension of allowances because of employment where the question of school-attendance is not involved.

Overpayments

Again, in the past year there has been a highly satisfactory decrease in the total amount of overpayments outstanding for the entire period since the beginning of the payment of Family Allowances. During the year, overpayments amounting to \$242,881.00 were discovered and added to the \$371,708.00 outstanding at March 31, 1952, making a total of \$614,589.00. The amount recovered during the year, however, was \$279,737.00. Thus, with the amount recovered in the year 1952-53 being larger than the amount set up, the total amount of overpayments outstanding at March 31, 1953, was \$334,852.00, less than that at the end of the previous fiscal year by \$36,856.00. Table 21, page 128, gives a break-down of these overpayments as of March 31, 1953. Recalling that in February 1948, the total amount of overpayments stood at \$506,734.00, it is encouraging to note that this figure is steadily decreasing, despite the hundreds of millions of dollars paid in Family Allowances since that date.

OLD AGE SECURITY

General

In March 1952, 643,013 pensioners received payments totalling, for that month, \$25,831,240. Payments of Old Age Security to 686,127 pensioners in March, 1953, amounted to \$27,428,325, while total payments for the fiscal year 1952-53 were \$323,141,655. During the last months of the fiscal year under review, approximately 7,600 new applications were processed in Regional Offices each month. In the same months, an average of about 4,500 deaths of pensioners was reported, leaving a net monthly increase in accounts in the neighbourhood of 3,100. Table 22, page 129, gives more detailed statistics on payments of Old Age Security pensions.

As has been indicated, the fiscal year 1952-53 saw the processing of Old Age Security applications reach a current basis, and the number of new applications assume more normal proportions. During this period too, policy and procedure were refined, in the light of growing experience.

Proof of Age

The problem of obtaining satisfactory evidence of age remained important. As the large bulk of cases involving persons well over seventy years of age was cleared, new applications received became, with some exceptions, confined to those where applicants were just reaching the age of seventy. In the case of the latter persons, it was of course necessary to obtain evidence substantiating the exact month, as well as the year, of birth, in order to determine the effective month of payment. While some difficulties were encountered in this connec-

tion, it may be stated, on the whole, that the wide variety of types of evidence which can be considered, as well as improved procedures adopted during the year, have permitted the rapid and satisfactory disposition of most applications.

In the few cases where all efforts on the part of the applicant and of the Old Age Security administration fail to produce acceptable verification of the claimed age, Regional Directors have recourse to tribunals to consider the age of the applicant. Provision for such tribunals is contained in the Old Age Security Regulations so that persons who are seventy years of age or more will not be deprived of a pension simply because their age cannot be verified by the usual documentary evidence. In turn, of course, it is not intended that pensions be paid to persons who are not yet seventy years old. Tribunals are composed of three members, one appointed by the applicant, one by the Regional Director concerned, and a chairman, who is nominated by the other two members. The members of a tribunal review whatever evidence of age may be available, generally interview the applicant and possibly other witnesses, and after consideration, provide the Regional Director with their opinion as to the birth date of the person concerned. This opinion is accepted by the Regional Director for Old Age Security purposes, subject to receipt of rebutting evidence, and the application is dealt with accordingly.

During the year 1952-53, 311 tribunals were convened across Canada. In 245 cases (79 per cent) the decision of the tribunal was favourable to the applicant in that the tribunal found the applicant to be of the age claimed or, if the age was found to be younger, this did not affect payment of Old Age Security pension. In 66 cases (21 per cent) the decision was unfavourable, in that the applicant was found younger than claimed and this decision affected payment of Old Age Security, or the tribunal was unable to reach any decision on the age of the applicant. All reports indicate that the procedure has been very well received by prospective pensioners and by the public.

Administration of Pensions

Strict application has been given to the policy of not diverting an Old Age Security pension from the pensioner to a trustee unless there is satisfactory evidence that the pensioner is incapable of managing his own affairs. In addition, interpretation of the term "incapable of managing his own affairs" has been limited and does not include illness or indigency alone. During the past year, in addition to consideration given to new requests for trusteeship, a review was made of each case which had been transferred from Old Age Pension rolls and where the Old Age Pension had been paid to an administrator. The purpose of the review was to determine whether evidence of incapability satisfactory under Old Age Security policy had been, or could be, provided. As a result of this review, it was found possible to reduce from 22,820 in March, 1952, to 15,377 in March, 1953, the number of Old Age Security pensions paid to other persons on behalf of the pensioners. (See Table 22).

Absences of Pensioners from Canada

In order to acquaint pensioners with the provisions of the Old Age Security legislation regarding absences from Canada, and to enlist their co-operation in notifying Regional Directors prior to leaving Canada, and on return, a special circular on the subject was enclosed with Old Age Security cheques for the month of November, 1952. This circular explained that payment of pension ceases when the pensioner leaves Canada, but may be resumed on his return to Canada after a temporary absence. Pensioners were also advised in the circular that if a temporary absence does not exceed six months, pension may be paid, on return to Canada, for up to three months of absence in any calendar

year. Examples were cited to ensure clarity. It is believed that the enclosure was quite helpful to those pensioners contemplating absences from the country, particularly to those who make yearly journeys.

Staff—Family Allowances and Old Age Security

The following table will show the comparatively small increase in staff required to administer the provisions of the two Acts, Family Allowances and Old Age Security, over the number required when the division was responsible for Family Allowances alone. March, 1951, was the end of the last full fiscal year in which the division administered only the one program. March, 1953, was the end of the first full fiscal year in which both Family Allowances and Old Age Security were in operation:

	Authorized Establishment	Persons Actually Employed Permanent and	
		temporary employees	Casual employees
March, 1953	841	820	45
March, 1951	740	694	6
Increase	101	126	39

Costs of Administration—Family Allowances and Old Age Security

A comparison in administrative costs for the fiscal years 1950-51 and 1952-53, indicating the slight rise in the costs of administration because of the addition of Old Age Security to the division's responsibilities, follows:

	Dept. of National Health and Welfare	Dept. of Finance (Treasury)	Dept. of Public Works	Total
1950-51 ..	\$1,811,854	\$2,322,883	\$191,287	\$4,316,024
1952-53 ..	2,297,535	3,121,747	245,750	5,665,032

It is felt that this division has concluded a year in which considerable progress has been made in the administration of both Family Allowances and Old Age Security, and in particular in the growing integration of functions related to both fields. This progress is due to the efforts put forth by all those connected with this administration, particularly in the eleven Regional Offices, and on the staff of the Chief Treasury Officer.

Old Age Assistance and Allowances for Blind Persons

Old Age Assistance

The Old Age Assistance Act, effective January 1, 1952, was passed by Parliament in June, 1951, following a recommendation by a parliamentary committee on old age security which pointed out the desirability of providing assistance, subject to an eligibility test, for persons 65 years of age and over not eligible to receive the universal benefit payable at the age of 70 years. The administrative plan provided for in the Act was similar to the one origin-

ally adopted for the payment of pensions under the Old Age Pensions Act, the provinces being responsible for the administration and the federal government paying 50 per cent of the cost of old age assistance.

The completion by the federal government of agreements with the provinces, the Yukon Territory and the Northwest Territories was required in order to bring the plan into operation in each part of Canada. All provinces, except Newfoundland, provided in their agreements for the payment of old age assistance from January 1, 1952. The agreement with the Northwest Territories also stipulated that date. For the Province of Newfoundland and the Yukon Territory the effective date was April 1, 1952. All agreements, except the one with Newfoundland, provided for a maximum assistance payment of \$40 a month. The maximum assistance in the Newfoundland agreement was \$30 a month. The maximum amounts of income, including assistance, set forth in The Old Age Assistance Act were adopted in all twelve agreements. The amounts are \$720 a year in the case of an unmarried person and \$1,200 a year in the case of a married person. Where the spouse is blind, the maximum income allowed is \$1,320 a year.

At the time the parliamentary committee made its recommendation, it was assumed that the percentage of persons 65 to 69 years of age eligible to receive assistance would be substantially lower than the percentage over the age of 70 years receiving pensions under the Old Age Pensions Act. In its report the Committee estimated the total yearly cost to the federal and provincial governments at \$64,000,000. As the cost was to be shared equally by the federal government and the provinces, each would be required to contribute \$32,000,000 a year.

Figures available as early as March 31, 1952, indicated that the committee's estimate of cost was likely to be too high. In the estimates presented to Parliament for the fiscal year 1952-53 the estimate of the federal share was therefore reduced to \$20,000,000. Federal expenditure for the fiscal year actually amounted to \$19,128,837.37. The provinces would, of course, pay an equal amount as their share.

It may be of interest to compare the federal government's and the provinces' expenditure of \$19,128,000 each under The Old Age Assistance Act for the fiscal year 1952-53 with the expenditure under the Old Age Pensions Act from January 1, 1951 to December 31, 1951, the last twelve months the Act was in full operation. The federal share of pensions under the Old Age Pensions Act, including pensions in respect of blindness, amounted to \$102,706,000. The provinces' share would be approximately one-third of the federal share, or \$34,235,000. All pensioners under the Old Age Pensions Act, except the blind under the age of 70 years were, of course, transferred to the administration of The Old Age Security Act as of January 1, 1952.

Allowances for Blind Persons

Allowances under The Blind Persons Act were paid throughout the fiscal year 1952-53 in the ten provinces, the Northwest Territories and the Yukon Territory. As at March 31, 1953, the number of recipients was 8,332 and the federal expenditure for the fiscal year 1952-53 was \$2,985,217.

It can be assumed that as many blind persons, and probably more, apply under The Blind Persons Act than applied under the Old Age Pensions Act. However, the majority of the blind are in the higher age groups and the prompt transfer to old age security of each recipient at the time he reaches the age of 70 years obviously keeps down the number of persons receiving allowances.

During the fiscal year 1952-53, there were 447 persons receiving blind allowances transferred to the administration of The Old Age Security Act. The actual increase in the number of recipients during 1952-53 was 253, the number at March 31, 1952, being 8,079.

There were no changes during the fiscal year 1952-53 in The Blind Persons Act nor in the regulations made under it. The requirements which applicants must fulfil in order to qualify for allowances refer to age, residence and income. The age requirement is 21 years and the residence requirement, not less than 10 years in Canada. The maximum amounts of income allowed, including the allowance, are \$840 a year in the case of a single person and \$1,320 in the case of a married person. Where both spouses are blind the maximum income allowed is \$1,440 a year.

Blind allowances are administered by the same provincial authorities who administer old age assistance. There are separate agreements completed by the federal government with the provinces, the Yukon Territory and the Northwest Territories. The agreement with the Yukon Territory is effective from April 1, 1952, and all others from January 1, 1952. Each agreement provides for the payment of a maximum allowance of \$40 a month. The amounts of income specified in the agreements are the amounts set forth in The Blind Persons Act. The federal government pays 75 per cent of the cost of allowances and the provinces and territories pay the remaining 25 per cent.

* * *

Table 23, page 130, shows the amounts paid for the old age assistance by the Government of Canada for the fiscal year 1952-53 and relevant statistical information.

Table 24, page 130, shows the amounts paid for blindness allowances under The Blind Persons Act for the fiscal year 1952-53 and relevant statistical information.

Physical Fitness

The Physical Fitness Division continued to act as the agency for administering the fitness and recreation services made available under the terms of the National Physical Fitness Act. The position of National Director remained vacant during the current fiscal year.

During the fiscal year 1952-53, in accordance with agreements entered into by the provincial departments concerned, the Provinces of Alberta, British Columbia, Manitoba, New Brunswick, Nova Scotia, Ontario, Saskatchewan and the Northwest Territories co-operated with the federal government under the terms of the National Physical Fitness Act. Prince Edward Island did not renew its agreement for the year 1952-53.

Administration

The Division continued to provide a variety of professional consultative and informational services for the assistance of provincial government departments and national organizations. It acted as a clearing house for the dissemination of information on recreation, fitness, physical education, community centres, drama, sports, the organization and administration of community and specialized programs, and related matters. The actual organization and direction of recreation and fitness projects continued to be a provincial and local responsibility and consequently the Division did not operate an activity program. Liaison has been developed and maintained with provincial governments, national associations, other countries, and with the Commonwealth in particular, thus facilitating an exchange of publications and information on the latest developments at home and abroad.

The National Physical Fitness Act (1943) made the sum of \$225,000 available annually, on a matching per capita basis, to the provinces for the promotion of fitness and recreation. In 1949, on the entry of Newfoundland into Confederation, an additional sum of \$7,000 was made available for grant purposes.

During the fiscal year 1952-53, a total of \$155,532.03 was paid in respect of financial assistance to the provinces. Of this sum, \$87,722.53 consisted of late payments for 1951-52. Late claims have yet to be paid to Ontario, Manitoba and the Northwest Territories in respect to the fiscal year 1952-53.

The total sum available for the administration during the current fiscal year was \$99,204.76, which included an appropriation of \$65,540 for the Division and a balance in the National Physical Fitness Fund, carried forward from the previous fiscal year, of \$33,664.76. This balance was fully committed prior to April 1, 1952.

The total provincial expenditures on fitness and recreation programs amounted to \$1,027,331.57, which sum includes the amount of financial assistance provided under the terms of the Act. This overall expenditure shows an increase of \$201,829.35 over the total expenditure for 1951-52. The net provincial expenditure was \$869,996.07, which in all instances exceeded the amount necessary to match the available federal grant. In four of the eight participating administrations, net provincial expenditures have increased since the previous fiscal year.

Scholarships

Annual Scholarships for advanced training in physical education and recreation were set up in 1948, as a means of overcoming the shortage of adequately-trained key personnel in these fields. Since then, twenty-three persons have been assisted in obtaining post-graduate training.

Four post-graduate scholarships were awarded this year for study in Physical Education and/or Recreation: Miss Helen M. Eckert (Alberta); Mr. W. A. R. Orban (Quebec); Mr. J. O. E. Pearson (Ontario); and Mr. R. Rathie (Saskatchewan).

Informational Materials

Information relevant to fitness, recreation, physical education, cultural activities, community centres, reports on new projects and research in Canada and other countries, new procedures and developments, has been issued in bulletin form to provincial fitness and recreation offices and on request. During the year 44 items in the English language and nine items in the French language were prepared. The total number of items distributed was 93,078.

Some of the more important publications and reports produced by the Division during the year were: Play for Preschoolers; Weaving (a manual outlining the procedures on Weaving); Weaving (a leaflet describing the informational aids available on Weaving); Fitness and Recreation Services available at the Provincial and National Level; Recreation, Physical Education and School Health Education in Canada; the Proceedings of the Second National Conference on Undergraduate Professional Preparation; N.C.P.F. Sports Opinion Survey.

The new government policy of placing some informational materials on a "for sale" basis was introduced during the latter part of the fiscal year. While it is too soon to evaluate the effect of this change in policy, there appears to be less interest at the provincial level in utilizing such items on this basis.

Study Kits have been prepared for the use of adult groups scheduling discussion periods on child development. Seven national organizations have indicated that a large proportion of their local branches have included this item on their program for 1953-54.

Production of Audio Visual Aids

A coordinated package of visual aids on weaving, consisting of a brief introductory film entitled "Warp and Weft" and three related instructional film strips, was produced. These will be released early in 1953-54.

Preview Film Library Service

This service has been seriously curtailed during the entire fiscal year due to inability to fill the position of reference assistant. The routine circulation of visual aids to the provinces was limited to four blocks (approximately 70% reduction) and included 10 films, and eight film strips. On completion of the provincial screening circuit these visual aids are deposited with the Canadian Film Institute on extended loan and are available to organizations on a "preview-with-a-view-to-purchase" basis at a minimum service charge.

National Council on Physical Fitness

The National Council on Physical Fitness, established by Act of Parliament, Chapter 29 of the Statutes of Canada, 1943, was charged with the responsibility of promoting the fitness of the people of Canada. The Council met in Ottawa, April 21-23, 1952, and December 8-10, 1952.

Diploma Course for Public Recreation Personnel

This course, limited to 30 students, was organized at the Council's request by the University of British Columbia because of the need for trained recreation leaders in the smaller towns and rural communities of Canada. The Council's

grant of \$5,000 to the University was designed to provide assistance in organizing and conducting the course. In addition to this grant, the Council provided funds for the tuition fees of 29 students selected on a quota basis from all provinces and territories, and transportation costs for those living outside British Columbia. Nine provinces and the Northwest Territories were represented.

Employee Recreation

The National Council on Physical Fitness established a continuing committee in accordance with the request received from the First National Conference on Employee Recreation. This committee has met three times and has been working co-operatively with sub-committees established in the provinces under the chairmanship of the provincial directors. It is expected that the continuing committee's report on "Desirable Practices for Employee Recreation" will be completed during 1953-54.

Second National Conference on Undergraduate Professional Preparation

In response to a unanimous request received from the representatives of the Professional Schools in Canada granting degrees in Physical Education and/or Recreation, the National Council on Physical Fitness convened a second conference in Ottawa in June 1952. Committees set up at the September 1951 conference presented their progress reports. Part II of the published proceedings contains the recommendations based on these reports.

N.C.P.F. Sports Opinion Survey

In view of the general dissatisfaction and the many divergent opinions expressed with regard to the performance of Canada's 1952 Olympic Teams, an opinion survey appeared to be both timely and appropriate. The purpose of the survey was to obtain information in respect to athletic sports and games, with particular emphasis on international competition. The published report contains a summary of the information received. The Council made no recommendations concerning it since this is a direct responsibility of the Sports Governing Bodies concerned.

The report revealed a variety of conflicts in interpretation and misunderstandings on a number of points. Perhaps the most outstanding single factor was the attitude of the persons interviewed. Their keen interest in sport and their eagerness to contribute to its development were evident in their generous co-operation and assistance.

Canadian Advisory Committee on Aquatics

At its Eighteenth Meeting in April 1952, the Council decided to establish a Canadian Advisory Committee on Aquatics and approved its terms of reference. The nine-member committee was given a wide scope for study. Its recommendations and reports must obtain Council approval prior to release and/or implementation. The Council did not accept any financial obligation regarding the committee's expenses.

Statistics relating to Physical Fitness will be found in Tables 25, 26 and 27, pages 131, 132 and 133.

CIVIL DEFENCE

FEDERAL RESPONSIBILITIES

Agreements with the Provinces

Extending its efforts to build up, all across Canada, services capable of minimizing the effect of disaster in both peace and war, the federal government in April 1952, authorized a Civil Defence Grant program, in the amount of \$1,400,000, to assist the provinces to develop and strengthen their civil defence plans.

Federal assistance under the Grants is directed primarily towards the improvement and extension of existing services and the provision of new services, but can also be made available to assist in financing the costs of existing Civil Defence programs established at provincial and/or municipal expense subsequent to April 1, 1952 but prior to the time when the Grants became available.

The proportion of the total sum which is available to any province has been calculated on a formula based on the relative distribution of population in target and non-target areas, and provincial governments may qualify for their portion of the Civil Defence Grants for specific projects, mutually agreed to, by making an equivalent expenditure.

During the year 1952-53, the Provinces of British Columbia, Alberta, Saskatchewan, Manitoba, and Newfoundland took advantage of this program and a total of approximately \$250,000 of federal funds was contributed on a matching basis.

During the past fiscal year, the Province of British Columbia indicated its intention to carry out a hose-coupling standardization program to increase interchangeability of fire fighting equipment. This was the third province to take advantage of the offer of the federal government to pay one-third of the cost of such a program, the other two being Ontario and Alberta.

Authority was also obtained for the federal government to enter into agreements with the provinces whereby compensation for injury or death during civil defence training in peacetime would be shared on a 50-50 basis by the provincial and federal governments. During the year 1952-53, such an agreement was entered into with the Province of Ontario and other provinces are expected to take advantage of this offer in the near future.

Training

The Department continued to make civil defence courses available to the civil defence authorities in the provinces. These courses are held either at the Federal Civil Defence Staff College or at other instructional centres in Canada, the United Kingdom or the United States. Each province is allocated a certain number of vacancies and the provincial civil defence authorities determine the division between provincial and municipal candidates. During the year under review a total of 1,516 civil defence officials, instructors, nurses, doctors and technicians attended civil defence courses sponsored by the Department.

During the months of October and November, 1952, series of Civil Defence Tactical Fire Study Forums were held at the Ontario Fire College in Toronto. Senior fire officers including Provincial Fire Marshals and the Fire Chiefs of all the major cities attended, at federal expense.

Civil Service Civil Defence (Ottawa)

Civil Service Civil Defence now has 3,000 trained civil defence personnel enrolled and organized into operational teams throughout 137 buildings. This figure includes 700 first aiders, qualified under arrangement with St. John Ambulance. Fire evacuation drills and emergency fire fighting became the responsibility of Civil Service Civil Defence in February 1953 and the majority of federal government buildings now have a quota of civil defence fire fighters, as well as police, whose training and practice is carried out under Civil Service Civil Defence instructions. The organization is becoming self-contained and has as its ultimate aim the preparation in self-help of all federal civil servants.

Supplies and Equipment

The following is the financial breakdown, by provinces, of the training equipment which the federal government has supplied on a free basis during the fiscal year 1952-53.

British Columbia	\$ 45,274.21
Alberta	43,331.04
Saskatchewan	14,129.59
Manitoba	12,329.65
Ontario	68,290.83
Quebec	37,870.90
New Brunswick	9,091.00
Nova Scotia	22,953.19
Prince Edward Island	1,349.01
Newfoundland	9,410.94
	TOTAL \$264,030.36

Items supplied include First Aid Training Aids, Blankets, Rubber Boots, Coveralls, Steel Helmets, Stretchers, Anti-Gas Suits, Respirators, Radiation Detection Instruments, and Wireless Sets. The sums referred to are in addition to those supplies and equipment to the total value of \$250,347.88 provided to the provincial civil defence organizations in earlier years.

Contracts were let for the supply of 50 fully-equipped fire-fighting vehicles at a cost of approximately \$650,000 but supply could not be effected prior to the 31st March, 1953.

200 additional Air Raid Sirens were purchased for supply to the provinces, to be allocated to specially designated target areas, and 15 Rescue Vehicles, complete with equipment, were provided to assist the provinces with their training of rescue teams.

Health Planning

The Civil Defence Health Planning Group continued, during the year, to initiate and co-ordinate health services planning at federal level, to act as health advisers to the Federal Civil Defence Co-ordinator and to develop a general pattern for civil defence health services for Canada to serve as a guide for planning at all levels.

In carrying out this work, the group continued to make use of the working party system under which committees of volunteer experts in the various fields concerned are convened from time to time to consider and recommend in respect of the problems involved. New working parties organized during the year included those on (a) Emergency Blood Program for civil defence, (b) Biological Warfare defence services, (c) Emergency Hospital Supplies.

Working parties previously organized were recalled during the year to consider other casualty services problems such as mobilization of first aid services, the surgical aspects of first aid and emergency hospital treatment.

In the field of A.B.C. warfare, Canadian physicians selected by provincial civil defence health services authorities attended courses at Camp Borden and a special course in this field was conducted in the French language in Montreal, as a result of which between 60 and 70 French-speaking physicians received instruction. In addition, with the assistance of the Civil Defence Nursing Advisory Committee, some 1,340 nurse instructors in Canada had, by the end of the year under review, received training in the nursing aspects of A.B.C. Warfare. In turn, through the services of these nurse instructors, more than 20,000 graduate nurses received special civil defence nursing training. Steps were taken, also, towards the training for civil defence of student nurses, nursing assistants and home nursing volunteers.

The development of the overall civil defence health program was further facilitated by the holding of two series of civil defence health services regional conferences, the first in May, 1952 and the second in late January and early February, 1953. At each of these series of conferences the Western provinces, the Ontario-Quebec region and the Atlantic provinces, respectively, were given opportunities to send representatives to round table discussions of development problems.

Preliminary arrangements were concluded for the establishment in each province of civil defence Blood Services program facilities, including the establishment, in collaboration with existing peacetime transfusion services, of such emergency bleeding centres as were deemed requisite.

In addition to other health services literature compiled, published and distributed during the year, civil defence sponsored the production, under the auspices of the Canadian Medical Association, of a special civil defence issue of the *Canadian Medical Association Journal*. This issue contained authoritative information for professional use, written by recognized authorities in Canada in the fields of civil defence casualty services. The issue was published in both French and English and was distributed not only to all physicians in Canada, but also to all nurse instructors and to all nurses, dentists and pharmacists actually engaged in the civil defence health services program.

Programmed activity was continued towards the procurement, for stock-piling, of essential medical supplies for civil defence with a view to keeping pace with civil defence health services organization and training throughout Canada. Orders were placed to the value of \$1,749,000 of which deliveries could be obtained on only \$74,000 worth by the end of the fiscal year.

Welfare Planning

During the past year the Civil Defence Welfare Planning Group was most active and did much to encourage and assist local organization and planning.

Seven general civil defence welfare courses were conducted for personnel responsible for the organization and operation of this side of civil defence. In all, a total of 197 candidates attended these intensive one-week courses in Ottawa.

Several important conferences took place during the year, including a five-day conference for the directors of municipal civil defence welfare services and two conferences on Emergency Feeding. Mainly as a result of these conferences most of the larger cities of Canada have now appointed trained personnel to act as chiefs of Emergency Feeding. A series of conferences was also held to study the subject of Emergency Clothing and on the basis of these discussions a technical manual covering Emergency Clothing in Civil Defence will be prepared.

Numerous other meetings were held of committees dealing with specific aspects of welfare services.

Special assistance was given to local training courses in British Columbia, Manitoba, Ontario and Quebec, and throughout the year all provinces from Nova Scotia to British Columbia were visited and given encouragement and guidance in the establishment of provincial and local organization of Civil Defence Welfare Services.

Continuous liaison was maintained through the year with both United States and United Kingdom officials responsible for civil defence welfare services in their respective countries. Highlights of the liaison program were visits made to this country by Miss Edith Walker, Chief of Emergency Feeding for the British Ministry of Food, by Mr. Barent Landstreet of the Federal Civil Defense Administration, Washington, and by Mr. Alden Bevier, Director of Civil Defense Welfare Services for New York State.

Practical disaster experience was gained in the Missouri flood area by the welfare administrative officer through the joint co-operation of the American Federal Civil Defense Administration and the American Red Cross.

A number of pamphlets, brochures, leaflets, charts and advisory bulletins were prepared and sent to the provinces for distribution to those concerned in all municipalities. A technical manual on Emergency Feeding and a pamphlet on Registration and Information in Civil Defence Welfare Services were two important guide manuals produced.

Warning and Communications

Warning System—A Civil Defence Warning System was established to enable dissemination of warnings from Air Defence Control Centres to civil defence key points in target areas, including certain links between the United States and Canadian civil defence key points for co-ordination of warnings. Operating procedures were prepared and the system is under regular and constant test. Drills and practices are continuously being performed to keep key point operators familiar with the system and its operation. Investigation of means to back up the above warning system by alternative channels of communication was undertaken. Arrangements were made to use some existing communication media for onward dissemination of warnings from main key points if civil defence services should fail. Liaison with Canadian and U.S. civil defence, military and air defence groups was undertaken on a continuing basis.

Sirens—Investigations and studies were made with respect to the installation of 200 sirens furnished to 24 cities, and sound coverage data was procured with respect to locations where sirens have been installed. Methods of siren control were investigated. Various sirens were subjected to tests in collaboration with the National Research Council and Defence Production Board. Additional specifications and requisitions were prepared as a result of further studies and indicated expansion requirements.

Communications—Investigations were conducted with respect to modification of surplus radio sets to determine their usefulness in civil defence. Studies were made of civil defence communication requirements as they concerned the various services. In collaboration with the Department of Transport a "Guide for Establishment of a Civil Defence Radio Service" and "Procedures—Civil Defence Communications Service" dealing with the operation of wire and wireless services likely to be engaged in civil defence, were prepared. A further manual "Civil Defence Communications" has been drafted and is nearing its final stage of preparation. Specifications were developed

leading to the procurement of a number of hand-portable telephone sets to be used for training purposes. Likewise, a number of sound-powered field telephones were selected for procurement.

Broadcasting—Extensive work and study has been undertaken with regard to a possible use of radio broadcasting services in civil defence. The study is continuing under a plan of collaboration with United States and Canadian military authorities, as well as with the U.S. Federal Civil Defense Administration and with authorities responsible for the control of such services, namely, Canada's Department of Transport and the U.S. Federal Communications Commission.

Transportation

During the first nine months of the 1952-53 fiscal year the Federal Civil Defence Advisory Transportation Committee held one meeting. They strongly recommended the appointment, at federal level, of a Transport Officer. This appointment was filled early in January.

Transportation committees in most provinces have now been formed under federal guidance and several target cities have followed the federal and provincial pattern as well.

A first draft of a "Transportation Guide," with sections headed: General; Motor transport; Water transport and small Craft Operation Plan was prepared, and distributed to all Provincial Transportation Committees. The Transport Officer has also visited the provinces and met each of these Committees.

The Federal Civil Defence Advisory Transportation Committee recommended working sub-committees on rail, sea, air, and motor transport, and these are in the process of being formed.

Information Services

New media were employed this year in an accelerated program aimed at informing Canadians of their roles in civil defence and of approved measures for dealing with disaster. Special displays, press features and radio programs, were devised by the department's Information Services Division and advantage was taken of every opportunity to give fullest publicity to all developments related to preparedness.

The press was kept informed of application of federal funds provided for new civil defence measures, the approval of provincial projects being the occasion for joint press releases by federal and provincial civil defence authorities.

Late in the year, the United States Federal Civil Defense Administration offered Canada extended loan, for informational purposes, of one of three sets of displays comprising a giant "Alert America" travelling exhibition. The offer was accepted gratefully and a convoy of tractor-trailers containing these valuable exhibits was routed to Eastern Canada under charge of the Valley Forge Foundation, co-sponsor of "Alert America", with United States army personnel driving the vehicles from New York City to Ottawa. Plans are in hand for making use of this material.

Further evidence of international co-operation was provided by interchanges of visits by senior civil defence officials of the United States, Canada, the United Kingdom, and Sweden, and full informational advantage was taken of such occasions.

Other federal activities included the continued production, for use by provincial authorities, of informational materials and training manuals. "Give-away" leaflets were produced in quantity and Information Services continued to issue monthly editions of the "Civil Defence Bulletin".

The press associations, special writers and individual newspapers gave valuable support to civil defence by publicizing projects and plans as well as by covering extensively the exercises and demonstrations staged in widely-separated parts of Canada.

Co-operation was secured of both English and French language weekly newspaper associations in connection with publication in 1953 of a series of 10 special illustrated articles under the general heading "Canada Prepares to Deal with Disaster". It is expected that these will be widely used throughout the country and will be particularly valuable in explaining the role of rural people.

A novel journalistic venture was publication of a special "Disaster" issue of a four-page tabloid newspaper and its distribution by newsboys at "Operation Yourtown", held in connection with the annual meeting in Calgary of the Canadian Federation of Mayors and Municipalities.

Radio stations across Canada again gave generous airtime to civil defence news and covered special events. Several radio talks and round-table discussions were arranged. The Information Services' "Here's Health" radio series, used on 75 English and 29 French-language stations regularly, carried playlets on "Preparing for Atomic Attack", "Bombed Out", "Emergency Feeding in Disaster", "Panic", "Civil Defence in Schools", and "When Disaster Strikes".

An excellent training film entitled "Rescue Party" was made for Civil Defence by the National Film Board and is being used on all NFB circuits. Three newsclips have been made, to tie in with newsreels in commercial theatres, and a number of filmstrips have been completed.

A thirty-foot display on civil defence welfare was built for the Canadian Restaurant Convention in Toronto and for exhibition at Windsor, Ontario, and other points. In addition, two full-scale models of outdoor ovens were made for display and teaching purposes.

Approximately 40 panel displays have been provided to the provinces, all carrying basic civil defence messages. Large painted canvas floor-maps have been made for Ottawa, Calgary, Victoria, Vancouver, Montreal, Windsor, Halifax, St. John's, Regina, Quebec, and Toronto for training purposes in those cities.

Two three-panel displays were designed and wall and bulletin-board signs are being made for federal and other government buildings, covering fire as well as air raid instructions.

Other projects under way include: production of a "Speaker's Kit", containing background information for public speakers, instructors, etc.; Civil Defence Information folders, wallet cards, a series of lecture slides, lapel badges, armbands, car windshield stickers, certificates, and enrolment cards.

Co-operation with Other Countries

United States—As a result of the Canada-United States Civil Defence Agreement signed in 1951, co-operation between these two countries progressed appreciably during the past year. Planning for mutual aid and mobile support between adjacent states and provinces showed considerable progress and exercises were conducted at various border points to test preparations for dealing with disaster.

Working Groups of the Joint Committee on Civil Defence, established in 1951, held meetings in Ottawa, New York, and Washington and two meetings, held in Washington, of the Executive Secretariat reviewed the progress of the committee's Working Groups.

Washington State and British Columbia were among the first local groups to agree on a mutual operation plan, including a uniform warning system. They also developed and tested a civil defence network of amateur radio stations to be extended to Alberta, Oregon, Montana, and Idaho.

In June 1952, civil defence officials of Minnesota, North Dakota, and Manitoba met in International Falls, Minn., to make plans for mutual aid in case of attack.

A similar conference took place in Montreal to arrange for co-operation between New York, New Hampshire, Maine, Vermont, New Brunswick, Quebec, and Ontario. Another conference held in Boston for further discussion of these plans, was attended by representatives of these States and Provinces, Michigan, New Jersey, and other New England States.

Test exercises were held at Niagara Falls and Buffalo, involving United States and Canadian ambulances and fire-fighting equipment.

A notable example of United States-Canadian co-operation was the "Niagara Agreement", which went into effect in July 1952. It was the first international agreement among newspaper and radio station owners and civil defence authorities to pool information media between the two nations on a regional basis in case of attack.

United Kingdom—As with the United States, close relationships have been maintained with the Civil Defence authorities in the United Kingdom. The Federal Co-ordinator and senior members of his staff, as well as key provincial officials, have attended courses in Britain.

The Federal Co-ordinator visited and inspected civil defence installations in the United Kingdom, and Canada, in turn, played host to a number of U.K. Civil Defence officials, including the Director General of Civil Defence Training, who visited this country on two occasions; the Minister of Health in the British wartime cabinet, and the Director of Emergency Meals Services in the British Ministry of Food.

NATO—During the past year, the Federal Civil Defence Co-ordinator attended the initial NATO meeting in the field of Civil Defence. As a result, arrangements were made for the exchange of public information materials and reports on Civil Defence programs among the NATO members.

ADMINISTRATIVE SERVICES

As Administrative Divisions serve the entire Department both across Canada and overseas, the further development of departmental activities in many fields during the past year continued to make increasing demands upon them. These Divisions are—

Departmental Secretary's Division

The activities of the Departmental Secretary's Division continued to fall into two broad classes—those which the Departmental Secretary carried out personally and those which were carried out largely by the staff of the Division.

Included among the first group of activities were (a) acting as financial adviser to the Department in respect of many aspects of its work; (b) assisting the Minister and the Deputy Ministers in the long and complicated procedure related to the preparation and approval of the departmental estimates from the time they were first drafted until they were approved by Parliament; (c) acting as the Deputy Ministers' substitute with respect to the approval of accounts payable, travel claims, requests for encumbrances, requests for transfers between allotments, submissions to Council and to Treasury Board, and other financial documents; (d) preparing material for tabling in Parliament; and (e) carrying out many special projects which were assigned from time to time.

The second group of responsibilities were borne by the various Sections of the Division as follows:

The Registry Services carried out all phases of the work relating to the custody and circulation of the Department's official records. This involved the operation of a central registry and eight sub-registries in Ottawa, and the provision of advice, assistance and a certain degree of supervision in respect of records in many departmental establishments across Canada. Good progress was made during the year on the complete reorganization and standardization of the filing system and relating procedures for the entire Food and Drug Divisions across Canada. New or completely revised file series were also created for a number of other Divisions. Mail, messenger and truck services at Head Office continued to be provided by this Section.

The Accounts and Estimates Section continued to assist in providing financial advisory assistance to the Department and relieving Directors and Chiefs of the burden of maintaining accounting records and of routine administrative duties related to financial matters. This Section also carried out much of the detail involved in the preparation of departmental estimates and continued to act as liaison between the Department and the Treasury Office serving it.

The work of the Correspondence Section consisted largely of preparing replies to the many thousands of letters and enquiries which were received on a wide range of health and welfare subjects.

The most interesting development of the year in the Duplicating Section was the reproduction of increasing quantities of departmental booklets, leaflets, and forms. Over 15,000,000 duplicating impressions were produced, representing a 25 per cent increase over the previous year, and the many related operations increased accordingly. Approximately 30,000 names were added to the addressograph mailing lists maintained by this Section.

The Secretarial Services again provided a central source of stenographic and typing assistance to the entire Department in Ottawa. As well, all typing and mat work required in preparing material for reproduction in the Duplicating Section was done by the Secretarial Services. Varsity facilities were also available.

In addition, the Departmental Secretary's Office continued to act as an information centre for the entire Department and to carry out the wide range of duties which normally fall to the lot of the secretariat of a large organization.

Information Services Division

Health Education

It is a statutory responsibility of this Department to collect, publish and distribute information on health and welfare, and to work with the provincial authorities for the health and well-being of the Canadian people. To help discharge this responsibility, and to support the public relations and training programs of civil defence, the Information Services Division originates, or assists in the preparation of, most of the books, pamphlets, displays, posters, films, filmstrips, radio programs and other materials produced by the Department for this purpose.

The Division has a double duty: to report to the public on new and interesting developments in the Department's work, and to prepare educational materials to further Canada's health, welfare and civil defence programs.

The notable event of this fiscal year was the convening for three days in October, 1952, of the fourth Health Education Conference. This brought together with officers of the Division health educators from all the provincial health departments. Miss Nell McKeever, Assistant Chief, Division of Public Health Education, U.S. Federal Security Agency, attended and advised the Conference on health education practices in the United States. Problems connected with the planning, production and distribution of health education materials in Canada were thoroughly reviewed. Special study was made of economies that might be effected without detriment to the invaluable part that health education plays in raising public health levels. The Conference included a joint session with the Dominion Council of Health at which its discussions were reviewed and policy questions settled.

Press and Radio

Factual material on new developments under the National Health Program, civil defence, and other programs administered by the Department was furnished regularly to the daily, weekly and periodical press; to radio stations; and to interested groups or individuals. Basic information was supplied for a number of articles on the Department's work, and a dozen other articles were written in the Division on request.

National Health Radio Notes were supplied each week to Canadian radio stations using them; Canada's Health Column and health cartoons were distributed widely to weekly newspapers; and Press Fillers on health and welfare subjects were issued to daily and weekly newspapers requesting them.

The Division's weekly radio series, "Here's Health", consisting of professionally-produced programs with an important health, welfare or civil defence message in a 10-minute dramatic program, continued to be widely used as a public service by private radio stations. At the year's end, 75 English and 29 French language stations were broadcasting this series regularly.

To maintain close liaison with the weekly press, officers of the Division attended the annual meetings of both the English and French language weeklies. All materials prepared by the Division were written both in English and French.

Publications

As an economy measure the Division reduced to ten issues its periodical "Canada's Health and Welfare", which serves as an information clearing-house for health and welfare officers on the three levels of government, for members of voluntary agencies in these fields, and for others particularly interested. Two colored supplements were included during the year: "World Health Organization" and "Public Health Research in Canada".

Other monthly publications, produced in cooperation with the Divisions concerned, were: "The Occupational Health Bulletin", "Canadian Nutrition Notes" and "The Civil Defence Bulletin". Two issues of "The Occupational Health Review", a technical manual for professional personnel, were produced.

The Division sent out five issues of "For Your Information", a newsletter for health educators; and assisted in the preparation of "Food and Drug News", a quarterly for the guidance of staff members of these divisions; "Indian Health Newsletter", to be sent every few months to personnel in Indian Health Services; and "The Pesticide Bulletin", a new publication of the Occupational Health Division.

The revision of the well-known manual, "The Canadian Mother and Child", was completed during the year and the book readied for printing. To ensure that this would be in all respects as authoritative as its predecessors, of which four million copies have been circulated over one-third of a century, the book was reviewed and approved in draft form by the appropriate medical specialists in all parts of Canada.

A new booklet, "Eye Care", published during the year, combined the material of three older Blindness Control pamphlets. Three million bilingual cheque inserts were prepared to remind recipients of details of Family Allowances and Old Age Security regulations. Three new subjects: "Shyness", "Preparing Your Child for Hospital" and "Discipline" were added to the popular Child Training pamphlets series. Other new publications included: "Manual Artificial Respiration" and "Teenager's Toothtest". Two leaflets, "Safe to Take" and "The Truth About Labels" were printed for the Food and Drug Divisions. Pamphlets on "Clean Eating Places" and "Domestic Sewage Disposal", were prepared for the Public Health Engineering Division and sent for printing.

Among items revised and reprinted during the year were: the leaflet "Preparing Your Child for School"; "Dental Health Manual"; and "Emergency Feeding in Civil Defence". Also readied for printing were a manual on "Weaving"; a leaflet, "Dating the Dentist"; "Children's Health Chart"; and a revised edition of the booklet "What You Should Know About Nursing".

A new series of informative pamphlets was begun on specific health subjects. Written, evaluated by the provincial authorities and prepared for printing were "Immunization"; "Diabetes"; "Home, Safe Home"; and "Rest at Camp." An important handbook for nurses on "Prematurity" was prepared by the Child and Maternal Health Division and sent to the provinces for evaluation. A calendar for Indians was produced, illustrated by a painting by an Indian artist.

New civil defence manuals published included: "Registration and Information in Civil Defence Welfare Services"; "Welfare Services and Emergency

Lodging in Civil Defence," and "Hospital Master Plan for Civil Defence." "Glossary of Civil Defence Terms" was revised and re-issued; and three pamphlets were printed in quantity: "How to Build a Shelter"; "What About the A-Bomb"; and "What is Civil Defence?"

Through the co-operation of the Canadian Medical Association, its Journal published a special authoritative issue consisting of articles on the medical aspects of civil defence written by leading Canadian authorities. Among civil defence publications readied for printing were these training manuals: "Auxiliary Police Service"; "Damage Control"; "Communications"; and "Technical Manual on Emergency Feeding." Other subjects in production included: "Artificial Respiration—the Holger-Neilsen Method"; "Welfare Services in Civil Defence" and "Emergency First Aid" pamphlet and manual.

Civil Defence

The Division continued to give special attention to the development of its informational program for civil defence. Apart from the publications listed above and the program as set out in more detail in the chapter on Civil Defence, this included the production during the year of large-scale canvas floor maps for eleven cities; seven radio programs; one training film and three theatrical newsclips; four filmstrips; fifty eight-panel displays and a display on emergency welfare services. In addition, there were many minor projects, including news releases, picture stories, and the preparation of a lapel badge, kit for speakers, wallet cards, lecture slides, platform lecture charts, etc. An active display program was maintained in this field. A domestic air-raid shelter display was widely shown across Canada; "Operation Yourtown," a detailed exposition of the A-bombing of a city, was staged at Ottawa, Calgary and Quebec City. A casualty first aid playlet was shown in several cities by the Civil Defence Health Planning Group. Forty eight-panel displays were distributed to the provinces.

Press, radio, newsreel and photo coverage was arranged for a number of civil defence activities, in particular for the movement from Niagara Falls, N.Y., to Ottawa of the huge "Alert America" convoy and display which was sent on loan to Canada for coast-to-coast showing here. A series of ten articles was prepared, in co-operation with national associations for use in English and French language weeklies. During the year, an integrated publicity program, including basic designs and slogans for posters, signs, etc., was prepared for later use.

Exhibits

Besides the active display program for civil defence, the Division arranged exhibits, and usually sent representatives to man them, for annual meetings of the International Dental Congress in London; Canadian Dental Association; Canadian Public Health Association; American Public Health Association; National Conference on Social Work, Chicago; and Canadian Conference on Social Work, Quebec City. An exhibit was placed in the Central Canada Exhibition. Three inexpensive displays on child health care were produced and sample sets distributed to the provinces.

Posters

New posters included "Did You Wash Your Hands" and "The W.H.O. Preamble." "Canada's Food Rules" was the subject of a poster for the Nutrition Division.

Films and Filmstrips

Three new films were produced during the year: "Rescue Party," the first civil defence training film; "Food for Freddy," for the Nutrition Division; and "Shyness," for the Mental Health Division. The latter film won the Canadian Film Awards accolade as the best film of the year produced for a government department, adding another to the honours won by the Department's mental health films. The next film in this Division's "Ages and Stages" series, "Sixes to Nines," was almost completed. Film treatments were prepared for civil defence films on welfare services and on civil defence generally.

Four filmstrips were produced for Civil Defence: "Rescue" (2 parts); "Organization"; "Basic Fire-Fighting"; "The Debris Problem." A filmstrip on "Discipline" was made to accompany the Child Training folder. Seven UNESCO filmstrips made by Chinese artists and dealing with basic health problems were adapted for use by Indian Health Services. Other Indian Health filmstrips included "Safe Water" and "How to Feed Your Baby," both almost completed, and one on T.B. posters drawn by Indian children. A filmstrip was begun on Hydatid Disease.

A short film and three filmstrips on "Weaving" were produced for the Physical Fitness Division. A filmstrip, "Arthritis, The Story of Mrs. Young," was made to increase public understanding of this widespread health problem.

During the year, films were previewed and added to the Department's National Health, Medical and Biological, Welfare, and Physical Fitness film libraries. A number of the Department's films appeared on United States television.

Biological Photography

In serving the needs of the Department, the Biological Photographic Section did extensive work on civil defence training and publicity projects; it carried out a large-scale printing of photographic manuals on a survey of cheese factories, and produced a great variety of slides and photo series for lecture and publicity use.

Miscellaneous

Particular study was made during the year of possible economies in the production and distribution of this Division's health and welfare educational materials. Attempts were made to develop sales to the public of selected publications, but their limited success indicated that this distribution channel still fell far short of insuring the minimum distribution of federal health and welfare materials recommended by the provinces. At the year's end, three publications were being withheld from circulation while the best method of distributing them was being further explored.

Apart from the publications listed, this Division also assisted in the preparation for duplication of a number of items prepared by other Divisions. The officers of the Division answered many inquiries, arranged publicity for the visit to Canada of the first health mission from India and Pakistan and arranged conducted tours through the Department for a number of other visiting students, writers and health and welfare specialists interested in learning the nature and scope of the Department's work.

Legal Division

During the past year the Legal Division provided legal services such as are ordinarily performed by the legal officers to a large corporation. This involved the furnishing of opinions, the preparation of contracts and agreements and other legal documents, and advising on and assisting in prosecutions and other litigation in which the Department was concerned. Included in the last more particularly were prosecutions under the Food and Drugs Act, the Opium and Narcotic Drug Act and the Family Allowances Act.

The Division was also concerned with the revision and consolidation of regulations, the drafting and revision of legislation for submission to the Department of Justice, and the preparation of numerous submissions and recommendations to the Governor in Council and the Treasury Board.

The Division's legal officers represented the Department on various boards and on intradepartmental committees concerned with administrative and policy matters of all kinds affecting the Department.

Departmental Library

The Departmental Library continued with the selection, acquisition and organization of reference and technical books, serial publications, pamphlets and government documents pertaining to the work of the Department in Ottawa and in regional establishments.

Among the publications the Library processes are comparatively large stocks of publications intended for distribution, and special arrangements were devised during the year to effect reductions in price. Co-operation with the Penitentiaries Commission program of vocational rehabilitation resulted in a substantial reduction in the cost of bookbinding for all departmental establishments in Canada.

Catalogue card records by author, subject, title and series of all reference publications owned by the Department are centralized in the Main Library and copies are supplied to other establishments where applicable. Copies of author or title cards are also supplied to the National Library for their Union Catalogue of Libraries in Canada.

Annotated bibliographies of published materials on social welfare in Canada, for the periods July-December 1951 and January-June 1952, were prepared for the United Nations Social Welfare Information Series.

While most of the work of the Departmental Library is associated with the activities of departmental personnel, there are also numerous requests from other libraries. In addition, the Library staff answered inquiries from other centres and other countries on library organization and related bibliographical matters.

Personnel Division

This Division continued to conduct the personnel business of the Department with the Civil Service Commission, the Treasury Board staff, the Comptroller of the Treasury and other government agencies. It was responsible for

advising on changes of organization within the Department, for representing the Department in negotiations concerning staff appointments and for doing the work required within the Department in connection with promotions, transfers, pay, superannuation, leave, attendance and personnel records.

At the close of the year there were 3,428 employees in the Department of whom 1,077 were permanent and 2,351 temporary, an increase of 96 permanent and 111 temporary civil servants during the year. Greater and improved facilities in the Indian Health Services accounted for 137 of this number and added responsibilities in the Immigration Medical Service, the Food and Drug Divisions and the Old Age Security offices accounted for a large part of the remainder of the increase.

While the number of permanent civil servants increased by only 111, the Department had requests for the creation of approximately 325 additional permanent positions before either the Civil Service Commission or the Treasury Board on March 31, 1953.

The turnover of staff for the year amounted to 951 or approximately 28% which is the same as during the previous year. Of this total 485 were in the Indian Health Services and 466 in the remainder of the Department. This was a 38 per cent turnover in the Indian Health Services and a 21 per cent turnover elsewhere.

Only 832 of the staff of the Department were employed at Ottawa—441 in the Health Branch, 278 in the Administration Branch, 38 in the Welfare Branch and 75 in the Civil Defence Division. The remainder were located in other parts of Canada and overseas, as follows:

	Health Branch			
	Welfare	other than	Indian	
	Branch	Indian Health	Health	Total
	Branch	Services	Services	
Northwest Territories .....	...	...	22	22
British Columbia	65	61	411	537
Alberta	55	5	314	374
Saskatchewan	57	3	108	168
Manitoba	50	20	82	152
Ontario (including Ottawa)	226	29	276	531
Quebec	216	184	26	426
New Brunswick	47	20	5	72
Nova Scotia	52	77	12	141
Prince Edward Island	10	1	1	12
Newfoundland	33	9	...	42
Overseas .....	...	119	...	119

During the past year changes were made in the organization of the Health Services Directorate and minor changes were made in the Old Age Security establishments.

Considerable time was spent on efforts to secure competent professional and scientific personnel. Although the number available in Canada was greater, the remuneration being offered outside the Government service continued to make it very difficult to secure and retain qualified staff in these classes.

Purchasing and Supply Division

The Purchasing and Supply Division again met the supply problems of the Department. Its added responsibilities are reflected in the general expansion reported by other Divisions of the Department.

A new hospital was opened by the Indian Health Services at Norway House, Manitoba, and the Civil Defence Division also expanded its activities. Both of these necessitated the installation of equipment and establishment of supply facilities.

Approximately 12,000 requisitions were processed involving 18,000 orders to suppliers throughout the country and to other federal Departments.

Research Division

The Research Division is responsible for the analysis and evaluation of basic information dealing with socio-economic aspects of health, welfare and social security, special emphasis being placed on questions of methodology, underlying principles, costs, financing, administrative methods, procedures and reporting. Its analytical studies form the basis of departmental planning in many spheres. The Division is the research arm of the various Divisions and Directorates of the Department in the planning and conduct of a wide variety of research. In addition, the Division co-operates with other government agencies in carrying out surveys and studies.

One of the major projects undertaken by the Division in the past fiscal year involves the preparation of a report on health services and resources in Canada based to a large extent upon the provincial health survey reports. Over seventy volumes have been submitted by the provinces covering many phases of health activities during the base period of 1948; the Research Division has undertaken the preparation of summaries by topic bringing the material up-to-date wherever possible and incorporating information from the divisional data on health legislation, services and resources in Canada. It is anticipated that a national report covering one or two volumes will be completed. In the conduct of this study, close liaison is being maintained with the authorities concerned in government and voluntary organizations. The Division has also prepared summaries of the recommendation made by provincial health survey committees in their survey reports.

The Division participated with the Epidemiology Division, the Directorate of Health Insurance Studies, the Dominion Bureau of Statistics and the provinces in the conduct of the Canadian Sickness Survey. A code for existing prepaid health and sickness insurance plans was devised. Preliminary special compilations of survey data concerning national expenditures for health services, were assessed in the light of other health expenditure estimates.

The Division was also associated with the Epidemiology Division in the planning and organization of a health study for the International Joint Commission Air Pollution Investigation in the Detroit-Windsor area. The Supervisor of the Methods and Analysis Section collaborated with the Chief of the Epidemiology Division in preparing a paper, "Some Considerations in Planning a Comprehensive Study to Determine the Effects of Air Pollution on Health (A Review of Methodology)" which was presented to the American Association for the Advancement of Science at St. Louis, December, 1952.

Research services were provided to the Dental Health Division with respect to several important projects. A bulletin, "A Suggested Methodology for

Fluoridation Surveys in Canada," was published jointly by the Research and Dental Health Divisions. An analysis of data arising out of a study of the use of the P.M.A. Index, a new index of gingivitis, was carried out and a survey plan and procedures were drawn up for the Dental Health Division study of the relative efficacy of stannous fluoride and sodium fluoride in dental caries control by topical application.

Assistance was given to the Child and Maternal Health Division in connection with an investigation of staphylococcal infections among mothers and infants in Winnipeg hospitals. Consultative services were provided to the Civil Defence Health Planning Group, the Civil Aviation Medicine Division, and the Food and Drug Divisions respecting the establishment and maintenance of records and statistics related to their work. The Division continued its service of providing morbidity, mortality and related data in answer to specific enquiries received by the Department and in response to requests for material and analyses from other Divisions and officers within the Department.

A survey of psychiatric services in general hospitals, carried out in collaboration with the Mental Health Division, was completed and a report prepared for publication. The supply of hospital bed facilities in Canada was reviewed and a listing of various types of clinics prepared for departmental use and for the Directory of Hospitals published by the Bureau of Statistics. Assistance was rendered to the Directorate of Indian Health Services in the preparation of a new type of annual report and compilation of data respecting hospitalization of Indians and Eskimos.

Social security developments in Great Britain, the United States, Australia, New Zealand, Sweden, The Netherlands, Denmark and France and several other countries were kept under review. Information concerning the financial, administrative, and benefit provisions of particular programs in other countries and under various Canadian schemes was made available to senior officials of the Department. Bulletin No. 14 in the Division's Social Security Series, "Expenditures and Related Data for Government Health and Social Welfare Programs in Canada for Year ended March 31, 1951," and a further study on social security expenditures in five selected countries now in preparation are illustrations of some of the types of projects carried out in this field.

The Director of the Division acted as a technical government adviser at the 5th Inter-American Conference of States Members of the International Labour Organization and the 35th Session of the International Labour Conference. The Division was represented also on the Inter-Departmental Committee on Annuities, set up to review the government's annuities program.

Studies on the different aspects of prepaid medical and hospital care were carried on in co-operation with the Directorate of Health Insurance Studies. These included projects such as the development of national and per capita cost estimates for different types of health services, the preparation of memoranda on various public and private hospital care programs in Canada and abroad, and information concerning the pattern of purchase of health care services by families in Canada. Information derived from these sources was made available to assist in planning National Health Grants for radiological and laboratory services and child and maternal health, and to aid other Departments in planning programs and policies.

Another in a series of bulletins on health insurance programs in other countries, "Health Insurance in the United Kingdom, 1911-1948", was published. A study of the provisions under voluntary medical and hospital insurance schemes in Canada and a report covering special health care programs for public assistance recipients were under preparation. Assistance related to private health and pension plans was given to the Department of Labour for their annual Survey of Wages and Working Conditions.

The Division continued the study of the development of health and welfare services and legislation in Canada, with some attention to programs in other countries. Work, for example, was begun on a comprehensive review of community, family and child welfare in Canada with special reference to types of services including social aid, their legislative and financial bases, and jurisdictional areas and relationships. A revision of the bulletin, "Mothers' Allowances Legislation in Canada", first published in 1949, is being completed for publication and a compendium of child welfare legislation is in the course of preparation. Services for special groups, such as the care of the aged, are under continuing review. The Director of the Division served as a member of committees on problems of the aged set up by the Canadian Welfare Council, the American Public Welfare Association and the American Public Health Association.

The Division also continued its work of building up reference material on programs for the rehabilitation of the disabled in Canada and other countries with special reference to health and welfare services and participated in departmental planning in connection with the development of the Medical Rehabilitation Grant. A classification and code of permanent disabilities were drafted for use in a supplementary study on permanent disabilities. The Division also provided research services for the National Advisory Committee on Rehabilitation.

As a part of its responsibility for the maintenance of information and provision of analyses of the manpower situation with regard to health and welfare personnel, the Division provided research assistance to the Defence Medical and Dental Services Advisory Board, and the National Advisory Committee on Manpower. The register of physicians was continued and memoranda were issued on the general situation with regard to doctors, dentists, nurses and social workers. At the request of the Civil Defence Health Planning Group, the Division assumed major responsibility for planning an Inventory of Nursing Resources in Manitoba and at the request of the Canadian Nurses' Association, the Division carried out an activity analysis study of the head nurse in a large hospital.

At the request of the National Conference on Personnel in Social Work a Survey of Welfare Positions was conducted to determine the demand for social workers in Canada. The survey was planned as a guide to social agencies and schools of social work in assessing staff requirements and training and covered full-time paid employees in welfare positions as well as vacancies and new positions to be set up, and showing also the preferences for qualified social work staff. Progress reports were presented at the Canadian Conference on Social Work and to the Personnel Committee of the Canadian Welfare Council. The final report will be published in a series of bulletins commencing in the Fall of 1953.

Sections of the Canada Year Book and other official publications dealing with health, welfare and social security were prepared by the Division. A report on foreign developments in these fields was provided for each issue of the departmental publication "Canada's Health and Welfare". Reports and memoranda on Canadian health and welfare legislation and programs were prepared at the request of the United Nations Department of Social Affairs, the World Health Organization and the International Labour Office. Assistance was provided to private organizations and individuals concerning various research projects and publications related to the work of the Department. Aid was also given to health and welfare personnel from abroad who came to Canada to study social legislation.

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TABLE I
(Civil Service Health Division)
HEALTH UNIT STATISTICS—BY MONTHS
FISCAL YEAR 1952-1953

	Total	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March
Number of personnel under supervision.....		20,292	20,284	20,550	20,362	20,893	21,153	21,159	21,297	21,403	21,875	21,833	21,631
Number of Health Units in operation.....		17	17	17	17	17	17	17	17	17	17	17	17
Number of Visits—													
Total.....	177,413	14,423	16,501	13,893	13,518	11,983	15,639	15,838	13,648	15,495	15,826	14,263	16,386
First visit.....	131,888	10,652	12,230	10,192	10,103	8,840	11,920	11,920	10,072	11,628	11,713	10,466	12,152
Repeat visit.....	45,525	3,771	4,271	3,701	3,415	3,143	3,719	3,918	3,576	3,867	4,113	3,797	4,234
Visits by sex—													
Total.....	177,413	14,423	16,501	13,893	13,518	11,983	15,639	15,838	13,648	15,495	15,826	14,263	16,386
Males.....	80,948	6,471	7,249	6,232	6,107	5,344	7,141	7,433	6,206	7,138	7,352	6,570	7,645
Females.....	96,465	7,952	9,252	7,661	7,411	6,639	8,498	8,405	7,442	8,357	8,474	7,693	8,741
Nature of visits—													
Total.....	177,413	14,423	16,501	13,893	13,518	11,983	15,639	15,838	13,648	15,495	15,826	14,263	16,386
Illness.....	67,822	5,488	5,979	5,320	5,443	4,768	6,022	5,981	5,059	5,959	5,947	5,532	6,324
Accident.....	15,351	1,341	1,393	1,383	1,394	1,124	1,193	1,379	1,111	1,199	1,289	1,321	1,224
Consultations.....	19,317	1,671	2,020	1,720	1,489	1,250	1,528	1,659	1,466	1,412	1,741	1,630	1,731
Return-to-work visits.....	74,923	5,923	7,109	5,470	5,192	4,841	6,896	6,819	6,012	6,925	6,849	5,780	7,107
Classification of first visits—													
Total.....	131,888	10,652	12,230	10,192	10,103	8,840	11,920	11,920	10,072	11,628	11,713	10,466	12,152
Respiratory.....	37,288	3,046	2,914	1,657	980	1,341	3,699	3,996	2,659	4,195	4,235	3,596	4,970
Digestive.....	22,115	1,559	2,127	1,843	2,481	2,279	2,290	1,771	1,694	1,772	1,610	1,281	1,408
Skin and Cellular.....	8,359	656	667	942	1,085	702	703	651	611	606	541	592	603
Menstrual disorders.....	7,538	645	786	686	666	569	595	650	653	603	607	536	542
Emotional disorders.....	2,514	210	287	224	166	172	198	221	228	211	193	194	205
Contagious diseases.....	216	58	36	26	15	4	4	10	8	12	17	19	7
Accidents non-industrial.....	6,832	577	593	607	650	555	528	653	533	526	573	535	502
Accidents industrial.....	4,375	392	403	416	330	282	370	366	307	362	369	409	339
Ill-defined and all others.....	42,651	3,509	4,417	3,791	3,730	2,936	3,533	3,602	3,379	3,341	3,563	3,304	3,546
Disposal—													
Total.....	177,413	14,423	16,501	13,893	13,518	11,983	15,639	15,838	13,648	15,495	15,826	14,263	16,386
Sent home.....	4,191	322	352	287	277	259	369	315	380	383	365	418	564
Returned to work.....	173,222	14,101	16,149	13,606	13,241	11,724	15,270	15,523	13,368	15,112	15,461	13,845	15,822
Referrals—													
Total.....	9,678	821	863	777	743	606	662	879	800	820	985	838	884
Referred to Health Centre.....	2,460	200	225	212	217	141	151	206	202	183	263	221	239
Referred to family physician.....	7,218	621	638	565	526	465	511	673	598	637	722	617	645

Index of Participation—
Average monthly number of employee health unit visits per 100 personnel supervised... 68.

TABLE 2

(Civil Service Health Centre)

HEALTH CENTRE STATISTICS

FISCAL YEAR 1952-53

NUMBER OF VISITS

Total.....	6,481
First visit.....	2,794
Repeat visit.....	3,687

VISITS BY SEX

Total.....	6,481
Male.....	4,378
Female.....	2,103

PHYSICAL EXAMINATIONS

Total.....	3,128
Pre-employment, permanency, etc.....	1,233
Obligatory examination with immunization.....	507
Voluntary.....	817
Other.....	571

OTHER SERVICES

Total.....	3,352
Accident industrial.....	37
Accident non-industrial.....	313
Immunization.....	1,200
Consultation, interview, etc.....	1,802

DISPOSAL

Total.....	6,481
Returned to work.....	6,364
Sent home.....	117

REFERRED TO FAMILY PHYSICIAN..... 130

TOTAL LABORATORY PROCEDURES..... 4,252

X-RAY

Total.....	4,920
Chest.....	1,674
Chest (Photo-roentgen unit).....	2,657
Other.....	589

TABLE 3

(Civil Service Health Division)

RETIREMENTS FROM SERVICE—ACCORDING TO DISABILITY

FISCAL YEAR 1952-53

Male — 138

Female — 32

Total — 170

CAUSE OF DISABILITY	AGE GROUPS					Total
	Under 40	40-44	45-49	50-54	55-59	
Infective and Parasitic.....	1	0	0	2	0	3
Neoplasm.....	1	1	2	2	3	9
Allergic, endocrine system, metabolic and nutritional disease.....	1	1	1	1	7	11
Blood and blood-forming organs.....	0	0	0	0	1	1
Mental, psychoneurotic, and person- ality disorders.....	3	2	1	8	15	29
Nervous system and sense organs.....	1	1	0	3	12	17
Circulatory system.....	0	2	5	20	33	60
Respiratory system.....	0	0	0	2	2	4
Digestive system.....	0	0	0	2	7	9
Genito-urinary system.....	0	0	0	1	2	3
Pregnancy, childbirth and the puer- perium.....	0	0	0	0	0	0
Skin and cellular tissue.....	0	0	0	0	0	0
Bones and organs of movement.....	1	0	0	3	8	12
Congenital malformations.....	0	0	0	0	0	0
Symptoms, senility, and ill-defined conditions.....	0	0	1	3	3	7
Accidents, poisonings and violence....	0	1	0	0	4	5
Total all causes.....	8	8	10	47	97	170

TABLE 4

(Food and Drug Divisions)

EXAMINATION OF DOMESTIC FOODS

FROM: APRIL 1ST, 1952 TO MARCH 31ST, 1953

	LABORATORIES						Adul- terated	Mis- branded	Other Infra- ctions	Totals
	Hali- fax	Mont- real	Ot- tawa	Toron- to	Winni- peg	Van- couver				
Alimentary Pastes.....	2			1	5		2	6		8
Baking Powder, Leavening Agents or Chemicals.....	5		2	43	4	2	19	5		56
Bakery Products—Cakes, Pastry, etc.....	41		12	27	14	2	4	69		96
Beverage and Beverage Concentrates.....	99	350	41	194	96	153	41	164		933
Bread, Flour and Cereals.....	94	118	124	10	85	84	21	216		515
Breakfast Foods.....	1		5	6	11			9		23
Confectionery.....	22	11	28	147	10	21	13	70		239
Dairy Products.....	146	1,373	192	421	117	135	1,168	78		2,384
Dessert Powders and Mixes.....	13		834	30	2	7		15		886
Eggs and Egg Products.....			2			1		1		3
Fish and Fish Products.....	208		18	6	12	71	20	27		315
Food Colours and Flavours.....	111	1	14	10	15	10	27	101		161
Foods, Oriental.....										
Fruits, Fresh.....	3		1	2						6
Fruits, Canned.....	21		8	5	2	6	3	7		42
Fruits, Dried.....	46	1		6	10	9	8	11		72
Fruits, Glazed or Candied.....			1	1	6	1		4		9
Gelatin.....			4	1				1		5
Honey and Honey Products.....	21		2	5	4	1	1	9		33
Jams and Jellies.....	10		34	2	89	5	3	11		140
Juice and Syrups.....	149	1	3		28	9	2	3		190
Lard and Shortening.....	3	131	53		15	1	2	4		203
Liquors, Distilled and Fermented.....	49		26	1		2	4	18	2	78
Meat and Meat Products.....	192	749	94	104	360	286	347	46		1,785
Nuts.....	12		3	11	3		2	12		29
Oils.....	18	1	2	8	1	19	1	10		49
Pickles.....	7					16	4	2		23
Preservatives.....	1					19	4	8		20
Salad Dressings, Sandwich Spreads and Other Condiments.....	12		7	34	8	32	17	27		93
Soup and Soup Mixes.....	2		9	16	4		2	14		31
Spices.....	60	3	22	36	5	107	38	42		233
Sugar and Substitutes Sweeteners, Artificial.....	5	1	7				1	3		13
Syrups and Molasses.....	23	3	5	4	23	28	29	11		86
Vegetables, Canned.....	31	1	13	5	37	59	20	28		146
Vegetables, Dried.....	11	2	21	7	11	8	1	19		60
Vegetables, Fresh.....			6	1	3	3	1	5		13
Vinegar.....	22		10	3	2		3	9		37
Water.....	14		2	1	2	11		1		30
Miscellaneous.....	3		22	88	73	7	39	46	1	193
Grand Totals.....	1,457	2,746	1,627	1,236	1,057*	1,117	*1,847	*1,115	*3	9,240

* These totals are not included in the right hand column.

TABLE 5
(Food and Drug Divisions)
EXAMINATION OF IMPORTED FOODS
FROM: APRIL 1ST, 1952 TO MARCH 31ST, 1953

	LABORATORIES						Adul- terated	Mis- branded	Other Infra- ctions	Total
	Hali- fax	Mont- real	Ot- tawa	Toron- to	Winni- peg	Van- couver				
Alimentary Pastes.....	0	0	0	0	0	1		1		1
Baking Powder, Leavening Agents or Chemicals.....	7	0	0	0	1	0		5		8
Bakery Products—Cakes, Pastry.....	4	5	0	15	2	6		16		32
Beverage and Beverage Concentrates.....	32	16	0	13	8	19	1	40		88
Bread, Flour and Cereals.....	10	9	15	6	1	8	2	12		49
Breakfast Foods.....	0	0	0	1	0	0		1		1
Confectionery.....	197	124	0	68	111	212	51	196		712
Dairy Products.....	31	70	0	107	6	93	50	91		307
Dessert Powders and Mixes.....	16	1	0	2	6	1		19		26
Eggs and Egg Products.....	0	0	0	0	0	0				
Fish and Fish Products.....	3	6	0	8	710	201	11	26		928
Food Colours and Flavours.....	5	1	0	8	7	12	3	14		33
Foods, Oriental.....	18	0	0	0	95	1		90		114
Fruits, Fresh.....	1	0	0	2	0	0		3		3
Fruits, Canned.....	10	0	0	1	0	11		3		22
Fruits, Dried.....	226	304	1	64	740	574	27	15		1,909
Fruits, Glazed or Candied.....	6	0	0	0	1	9		3		16
Gelatin.....	0	0	10	0	0	0	8			10
Honey and Honey Products.....	0	0	0	0	0	2				2
Jams and Jellies.....	52	1	0	0	0	54	8	7		107
Juice and Syrups.....	31	8	0	4	3	21	8	30		67
Lard and Shortening.....	0	0	0	0	0	0				
Liquors, Distilled and Fermented.....	3	0	0	0	0	0		1		3
Meat and Meat Products.....	93	30	0	6	19	92	8	8		240
Nuts.....	348	724	28	405	959	484	109	33		2,948
Oils.....	12	41	0	2	0	1		8		56
Pickles.....	2	0	0	0	1	4		1		7
Preservatives.....	2	0	0	1	0	0	1	3		3
Salad Dressing, Sandwich Spread and Other Condiments.....	9	4	0	5	91	8		73		117
Soup and Soup Mixes.....	1	0	1	2	1	0	1	3		5
Spices.....	44	171	3	10	7	30	2	36		265
Sugar and Substitutes.....	2	4	0	0	1	0		2		7
Sweetners, Artificial.....	0	0	0	0	0	0				
Syrups and Molasses.....	256	157	0	3	1	4		7		421
Vegetables, Canned.....	2	1	0	3	0	14		2		20
Vegetables, Dried.....	1	0	0	2	0	0		2		3
Vegetables, Fresh.....	0	0	0	4	0	0	3			4
Vinegar.....	13	41	0	0	0	13	5	12		67
Water.....	0	0	0	0	0	0				
Miscellaneous.....	27	1	0	31	52	7	20	25	10	118
Grand Totals.....	1,464	1,719	58	773	2,823	1,882	*318	*788	*10	8,719

* These totals are not included in the right hand column.

TABLE 6
(Food and Drug Divisions)
DRUGS EXAMINED

FROM: APRIL 1ST, 1952 TO MARCH 31ST, 1953

Laboratory	Domestic	Imports	Total	Passed by Inspectors at Customs	Grand Total	Adulterated	Misbranded	Other Infractions
Halifax.....	385	997	1,382	3,755	5,137	39	845	70
Montreal.....	804	2,123	2,927	12,663	15,590	124	989	.....
Ottawa.....	826	25	851	142	993	197	359	11
Toronto.....	523	1,820	2,343	16,092	18,435	73	1,029	268
Winnipeg.....	249	1,155	1,404	6,392	7,796	111	663	268
Vancouver.....	1,294	940	2,234	3,349	5,583	60	304	779
Totals.....	4,081	7,060	11,141	42,393	53,534	604	4,189	1,396

TABLE 7

INDIAN HEALTH SERVICES

1952 Admission and Patient Day Rates per 1,000 Population. Average Stay of Separations, and Patient Days Per Capita For Departmental and Non-Departmental Facilities

	Total	Tuberculosis	Mental
New Admissions.....	2,691	2,602	89
Native Population (1949).....	145,945	145,945	145,945
New Admissions per 1,000.....	18.4	17.8	.6
Total Patient Days.....	1,167,180	1,065,090	102,090
Patient Days per 1,000 Population.....	7,997	7,298	699
Discharges.....	2,487	2,430	57
Transfers Out.....	604	596	8
Deaths.....	210	199	11
Total Separations.....	3,301	3,225	76
Average Stay of Separations.....	353.6	330.2	1,343.2
Patient Days Per Capita.....	8.0	7.3	.7

TABLE 8

INDIAN HEALTH SERVICES

Eskimo, 1952 Admission and Patient Day Rates per 1,000 Population. Average Stay of Separations, and Patient Days Per Capita For Departmental and Non-Departmental Facilities

	Totals	General cases	Tuberculosis cases	Mental cases
New Admissions.....	545	347	191	7
Eskimo Population (1949).....	9,302	9,302	9,302	9,302
New Admissions per 1,000 Population.....	59	37	21	1
Total Patient Days.....	124,972	13,283	107,833	3,856
Patient Days per 1,000 Population.....	13,434	1,428	11,592	414
Discharges.....	458	311	144	3
Transfers Out.....	66	17	49	.....
Deaths.....	44	22	22	.....
Total Separations.....	568	350	215	3
Average Stay of Separations.....	220.0	38.0	501.5	1,285.3

TABLE 9

INDIAN HEALTH SERVICES

Indians, 1952 Admission and Patient Day Rates per 1,000 Population
Average Stay of Separations, and Patient Days Per Capita For Departmental
and Non-Departmental Facilities Not Including Indians under B.C.H.I.S.

	General Cases
New Admissions.....	21,635
Indian Population (1949) Excluding B.C.....	108,707
New Admissions per 1,000 Population.....	199
Total Patient Days.....	289,248
Patient Days per 1,000 Population.....	2,661
Discharges.....	21,145
Transfers Out.....	547
Deaths.....	355
Total Separations.....	22,047
Average Stay of Separations.....	13.1
Patient Days Per Capita.....	2.7

TABLE 10

INDIAN HEALTH SERVICE

Indians, 1952 Admission and Patient Day Rates Per 1,000 Population. Average
Stay of Separations, and Patient Days Per Capita for Departmental
and Non-Departmental Facilities Not Including Indians under B.C.H.I.S.

	Total	Tuberculosis	
New Admissions.....	2,493	2,411	82
Indian Population (1949).....	136,643	136,643	136,643
New Admissions per 1,000 Population.....	18.2	17.6	.6
Total Patient Days.....	1,055,491	957,257	98,234
Patient Days Per 1,000 Population.....	7,724	7,006	719
Discharges.....	2,340	2,286	54
Transfers Out.....	555	547	8
Deaths.....	188	177	11
Total Separations.....	3,083	3,010	73
Average Stay of Separations.....	342.3	318.0	1,345.7
Patient Days Per Capita.....	7.7	7.0	7.2

TABLE 11
 (Narcotic Drug Control)
 ESTIMATED CONSUMPTION OF THE MAIN NARCOTICS
 FOR THE PERIOD 1943-52, INCLUSIVE

Unit of weight—Ounce, Pure Drug

Year	Raw Opium	Medical Opium and Prepara- tions	Morphine	Heroin	Cocaine	Ethyl- morphine	Dilaudide	Papaverine	Codeine	Demerol
1943.....	3,704	5,645	4,445	811	1,623	739	12	171	21,630	.....
1944.....	3,810	7,090	3,633	740	1,480	1,458	14	280	22,241	1,042
1945.....	3,175	6,314	3,351	670	1,305	691	12	381	22,809	1,102
1946.....	3,422	4,797	3,492	1,058	1,552	1,110	22	455	36,191	2,045
1947.....	3,932	4,734	3,090	881	1,390	1,107	15	715	36,484	5,894
1948.....	2,090	6,026	3,074	995	1,407	1,032	22	1,416	39,672	5,642
1949.....	2,010	3,606	2,718	898	1,197	949	16	1,359	44,443	6,852
1950.....	2,330	5,375	2,613	1,000	1,408	1,103	16	1,632	45,582	7,270
1951.....	2,020	5,063	2,525	928	1,270	1,561	15	1,362	56,384	8,916
1952.....	2,045	5,925	2,539	776	1,340	775	20	2,046	63,345	10,087

TABLE 12
 IMPORTS OF MAIN NARCOTICS
 (NARCOTIC DRUG CONTROL)
 FOR PERIOD 1943-52 INCLUSIVE

Unit of weight—Ounce, Pure Drug

Year	Raw Opium	Medicinal Opium and Preparations	Morphine	Heroin	Cocaine	Ethylmorphine	Dilaudide	Papaverine	Codeine	Demerol	Amidone
1943.....	1,344	9,390	4,350	964	2,338	844	14	46	9,777	.....	.....
1944.....	1,056	416	5,229	468	1,233	2,431	10	354	26,149	1,121	.....
1945.....	4,000	3,842	4,791	762	361	1,195	19	571	23,122	2,085	.....
1946.....	4,000	4,614	1,181	1,020	1,797	664	23	805	35,885	5,539	.....
1947.....	3,360	6,458	1,046	906	2,169	745	18	961	36,915	9,018	.....
1948.....	3,200	3,040	3,013	1,019	993	919	26	2,809	34,058	5,175	892
1949.....	1,720	3,202	3,168	906	666	1,433	11	943	37,751	4,106	1,068
1950.....	1,609	4,000	2,337	748	1,344	1,207	21	1,292	93,269	5,480	92
1951.....	1,928	4,423	3,076	1,014	1,053	1,098	17	1,672	37,274	9,189	73
1952.....	53	5,200	1,173	991	1,122	1,403	15	1,518	58,098	12,343	329

TABLE 13
 (NARCOTIC DRUG CONTROL)
 CONVICTIONS UNDER THE OPIUM AND NARCOTIC DRUG ACT
 FOR THE JUDICIAL YEAR ENDED SEPTEMBER 30, 1952

PROVINCE	NATURE OF OFFENCE						DRUG INVOLVED											
	Possession of Drugs	Selling, Offering, Giving Away and Delivery	Transporting	Growing Cann. Sativa	Professional Cases Under Sect. 6 of the Act	Totals	Opium	Poppy Heads	Dicodide	Cocaine	Heroin	Marhuana	Demerol	Alleged Drug	Morphine	Codeine	Totals	
Newfoundland.....																		
Prince Edward Island.....																		
Nova Scotia.....																		
New Brunswick.....																		
Quebec.....	31	2				33	1				24	1	2		5			33
Ontario.....	60	1				61		1		52	1	1			5	1		61
Manitoba.....	17					17				16					1			17
Saskatchewan.....	1					1							1					1
Alberta.....	16	1				17				7					1			17
British Columbia.....	225	17				242				237	1	1		1	1			242
Totals.....	350	21				371	1	6	1	5	336	3	4	1	13	1		371

TABLE 14

(Quarantine Service)

SHIPS BOARDED BY QUARANTINE OFFICERS, 1952-53

The following table indicates the number of ships boarded during the fiscal year 1952-53, also total personnel on board, divided into their respective groups

Station	Vessels Inspected	PERSONNEL INSPECTED						Cattlemen Stowaways, Distressed Seamen, etc.	Port Totals
		Passengers				Crews	Cattlemen Stowaways, Distressed Seamen, etc.		
		First Class	Cabin and Second Class	Tourist Third	Third Class and Steerage				
Halifax, N.S.....	661	9,885	9,332	114,939	4,126	74,663	7	212,952	
Saint John, N.B.....	375	775	796	3,936	11	17,718	23	23,259	
Quebec, P.Q.....	1,610	28,747	595	52,293	7,529	94,672	55	183,891	
William Head, B.C.....	642	1,520	2,527	105	1,278	27,746	35	33,211	
Totals.....	3,288	40,927	13,250	171,273	12,944	214,799	120	453,313	

TABLE 15
(Quarantine Service)
CONTROL OF RATS ON VESSELS
1952-53

Port	Vessels inspected, fumigated and deratization certificates issued	Vessels inspected and exemption certificates issued	Vessels inspected and remanded or time extended	Vessels inspected and certificates endorsed	Total Vessels Inspected	Rodents Recovered	
						Rats	Mice
Halifax, N.S.	8	44	88	.....	140	15	.....
Sydney, N.S.	.....	10	.....	.....	10	.....	.....
Saint John, N.B.	.....	18	10	1	29	.....	.....
Quebec, P.Q.	3	12	1	.....	16	.....	.....
Port Alfred, P.Q.	.....	32	.....	.....	32	.....	.....
Trois-Rivieres, P.Q.	.....	9	.....	.....	9	.....	.....
Sorel, P.Q.	.....	3	.....	.....	3	.....	.....
Montreal, P.Q.	4	94	8	19	125	18	89
Vancouver, B.C.	37	103	32	234	406	46	2
Victoria, B.C.	.....	25	3	89	117	.....	.....
Port Alberni, B.C.	.....	2	.....	10	12	.....	.....
Totals.....	52	352	142	353	899	79	91

TABLE 16
(Immigration Medical Service)
SUMMARY OF ACTIVITIES

FISCAL YEAR 1952-53

CANADA:

Immigrants medically inspected on arrival at ocean and air ports.....	134,748
Non-immigrants medically inspected on arrival at ocean and air ports.....	24,852
Certified as "prohibited" under Immigration Act, Section 3, (a), (b), (k) and (l)...	47
Certified as physically defective, Section 3 (c).....	319

OVERSEAS—(United Kingdom, Continent of Europe and Orient)

Prospective emigrants medically examined.....	163,757
Certified as "prohibited" under Immigration Act Section 3, (a), (b), (k) and (l)...	2,258
Certified as physically defective, Sec. 3 (c).....	14,277
Re-examinations.....	37,895

United Kingdom:

Prospective emigrants medically examined.....	61,438
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Continent of Europe:

Prospective emigrants medically examined.....	98,543
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Orient:

Prospective emigrants medically examined.....	3,776
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DETAILS OF EXAMINATIONS

EXAMINATIONS OVERSEAS:

	Examinations	Re-examinations
By Canadian Medical Officers in British Isles.....	52,083	9,650
By Roster Doctors in British Isles.....	9,355	1,094
By Canadian Medical Officers on the Continent.....	93,197	25,895
By Roster Doctors on the Continent.....	5,346	1,256
By Roster Doctors in the Orient.....	3,776	.....
Total, 1952-53.....	163,757	37,895
Total, 1951-52.....	303,467	27,832

(Table 16 continued on Page 123).

(Table 16 continued)

DETAILS OF EXAMINATIONS

EXAMINATIONS OVERSEAS:

	Examinations	Re-examinations
By Canadian Medical Officers in London.....	23,810	3,144
“ “ “ “ in Liverpool.....	12,710	2,579
“ “ “ “ in Glasgow.....	9,964	2,883
“ “ “ “ in Belfast.....	5,599	1,044
“ “ “ “ in Paris.....	6,351	1,221
“ “ “ “ in Brussels.....	2,322	1,469
“ “ “ “ in The Hague.....	23,709	5,323
“ “ “ “ in Copenhagen.....	2,048	445
“ “ “ “ in Stockholm.....	580	172
“ “ “ “ in Helsinki.....	527	236
“ “ “ “ in Karlsruhe.....	15,734	2,723
“ “ “ “ in Hannover.....	11,648	2,249
“ “ “ “ in Bremen.....	5,018	536
“ “ “ “ in Linz.....	6,287	1,187
“ “ “ “ in Rome.....	16,778	10,158
“ “ “ “ in Athens.....	2,195	176
By Roster Doctors, in British Isles.....	9,355	1,094
“ “ “ on Continent.....	5,346	1,256
“ “ “ in Pakistan.....	30	.....
“ “ “ in India.....	150	.....
“ “ “ in China.....	3,596	.....
Total.....	163,757	37,895

EXAMINATIONS IN CANADA:

	Immigrants	Non-Immigrants
Gander, Newfoundland.....	5,593	4,010
St. John's, Newfoundland.....	694	298
Goose Bay, Newfoundland.....	14	360
Halifax, N.S.....	54,863	1,525
Sydney, N.S.....	139	334
North Sydney, N.S.....	4	273
Saint John, N.B.....	3,798	235
Moncton, N.B.....	10	3
Quebec, P.Q.....	45,299	8,293
Port Alfred, P.Q.....	90	32
Dorval, P.Q.....	6,115	4,722
Montreal, P.Q.....	1,814	417
Malton, Ont.....	1,099	771
Vancouver, B.C.....	1,811	989
Victoria, B.C.....	110	241
Ports (not stated).....	13,186	2,318
Other Canadian Ports.....	109	31
Totals.....	134,748	24,852

Rejections — 509

TABLE 17
 (Immigration Medical Service)
 CERTIFICATIONS UNDER SECTION 3 OF THE IMMIGRATION ACT
 FISCAL YEAR 1952-53

	CANADA Ocean and Air Ports	BRITISH ISLES		CONTINENT OF EUROPE		TOTAL
		Examined by Can. M.O's	Examined by Roster Drs.	Examined by Can. M.O's	Examined by Roster Drs.	
Certified under:						
SS (a) Mental Diseases and Defects.....	14	80	12	259	6	371
SS (b) Loathsome and Contagious Diseases.....	23	457	86	1,265	54	1,885
SS (c) Physical Defects.....	319	4,069	902	8,909	397	14,596
SS (k) Constitutional Psychopathic Inferiority.....	9	22	1	13	.....	45
SS (l) Chronic Alcoholism.....	1	1	1	1	.....	4
Total.....	366	4,629	1,002	10,447	457	16,901

TABLE 18

(Sick Mariners Service)

REVENUE, EXPENDITURE AND DEFICIT CLASSIFIED ACCORDING
TO TYPE OF VESSEL

CALENDAR YEAR 1952

Classification of Vessel	Revenue		Expenditure		Deficit		Deficit Expressed as Percentage of Revenue
	\$	cts.	\$	cts.	\$	cts.	
Foreign-going.....	294,361	15	312,732	97	18,371	82	6
Coasting.....	3,612	20	16,904	65	13,292	45	368
Fishing.....	9,847	10	177,696	96	167,849	86	1705
Government.....	1,774	46	65,319	81	63,545	35	3581
Additional expenditure not classified as to type of vessel.....			274	17	274	17	
Totals.....	309,594	91	572,928	56	263,333	65	86

TABLE 19
(Family Allowances)
COMPARATIVE STATEMENT OF FAMILY ALLOWANCES PAYMENTS
BETWEEN MONTH OF MARCH 1952 AND MONTH OF MARCH 1953

PROVINCE	MONTH OF MARCH, 1952						MONTH OF MARCH, 1953					
	Families Receiving		Children Receiving		Amount Paid \$	Average Allow. per Child \$ cts.	Families Receiving		Children Receiving		Amount Paid \$	Average Allow. per Child \$ cts.
	Number	Average Allow. per Family \$ cts.	Number	Average Allow. per Child \$ cts.			Number	Average Allow. per Family \$ cts.	Number	Average Allow. per Child \$ cts.		
Newfoundland.....	52,552	17 11	150,995	5 96	899,359	17 43	53,800	157,280	5 96	937,888	6 02	
Prince Edward Island.....	13,248	15 73	34,698	6 01	208,421	15 99	13,207	35,060	6 02	211,259	6 04	
Nova Scotia.....	93,051	14 43	222,664	6 03	1,342,988	14 56	94,414	227,698	6 04	1,374,860	6 00	
New Brunswick.....	73,167	15 99	195,355	5 99	1,169,886	16 23	74,426	201,240	6 00	1,208,117	6 03	
Quebec.....	542,651	16 08	1,454,369	6 00	8,726,127	16 12	564,219	1,507,272	6 03	9,097,491	5 99	
Ontario.....	651,272	12 20	1,327,304	5 98	7,944,428	12 35	681,870	1,405,125	5 99	8,423,616	6 00	
Manitoba.....	110,466	12 78	235,347	6 00	1,411,512	12 93	113,329	244,376	6 00	1,465,954	6 07	
Saskatchewan.....	119,006	13 64	267,625	6 05	1,623,281	13 73	120,781	272,958	6 01	1,658,346	6 01	
Alberta.....	140,497	12 99	303,646	6 01	1,825,870	13 12	147,006	320,634	6 02	1,928,260	6 02	
British Columbia.....	166,734	11 81	329,130	5 98	1,968,705	12 02	173,963	347,610	6 02	2,001,923	6 10	
Yukon and Northwest Territories..	4,077	13 26	9,053	5 97	54,081	13 67	4,206	9,619	6 10	58,727		
National.....	1,966,721	13 82	4,530,186	6 00	27,174,658	13 94	2,041,341	4,729,172	6 02	28,456,441		

TABLE 20

(Family Allowances)

NET FAMILY ALLOWANCES PAYMENTS—COMPARISON BY FISCAL YEARS

Province	1945-46(9 mos.)		1946-47		1947-48		1948-49	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Newfoundland.....								
Prince Edward Island.....	1,618,784	00	2,192,044	00	2,256,477	00	2,295,286	00
Nova Scotia.....	9,519,446	00	13,358,417	07	14,207,957	82	14,515,131	00
New Brunswick.....	8,112,008	50	11,394,426	02	12,086,891	93	12,462,093	00
Quebec.....	57,962,066	56	82,389,966	72	87,157,243	46	89,304,108	45
Ontario.....	49,208,124	09	70,325,914	70	77,328,534	50	80,151,249	69
Manitoba.....	9,896,231	30	14,007,061	21	14,798,436	82	15,016,277	72
Saskatchewan.....	13,194,768	00	18,119,791	87	18,561,329	55	18,527,408	22
Alberta.....	12,262,073	00	17,159,488	00	18,181,662	50	18,695,325	00
British Columbia.....	10,693,139	00	15,722,045	50	18,012,188	75	19,347,836	58
Yukon and Northwest Territories.....	165,506	53	471,376	50	574,470	00	595,063	00
National.....	172,632,146	98	245,140,531	59	263,165,192	33	270,909,778	66

	1949-50		1950-51		1951-52		1952-53	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Newfoundland.....	9,747,030	00	10,224,103	00	10,613,908	00	11,038,874	49
Prince Edward Island.....	2,411,291	00	2,467,257	00	2,495,987	00	2,522,830	00
Nova Scotia.....	15,291,614	07	15,660,003	27	15,949,540	73	16,297,169	95
New Brunswick.....	13,375,434	33	13,708,198	00	13,892,907	00	14,287,535	05
Quebec.....	95,901,763	15	99,558,247	04	102,883,811	56	107,084,124	36
Ontario.....	84,940,808	63	89,034,870	53	93,207,144	30	98,303,868	20
Manitoba.....	15,668,695	50	16,235,519	56	16,703,466	69	17,283,659	61
Saskatchewan.....	18,953,599	79	19,237,070	80	19,424,561	76	19,723,352	42
Alberta.....	19,822,386	97	20,762,273	29	21,573,429	99	22,575,583	60
British Columbia.....	20,813,661	00	21,952,569	36	23,063,642	85	24,399,858	81
Yukon and Northwest Territories.....	587,749	50	625,348	67	649,273	15	680,828	30
National.....	297,514,033	94	309,465,460	52	320,457,673	03	334,197,684	79

TABLE 21
(Family Allowances)
OVERPAYMENTS OF FAMILY ALLOWANCES
MARCH, 1953

(The Overpayments may have occurred at any time between July 1, 1945 and March 31, 1953)

PROVINCE	Overpayments Recoverable by Deduction		Overpayments Recoverable by Collection		Overpayments Considered Uncollectable		Total Overpayments Outstanding	
	Number of Accounts	Amount \$ cts.	Number of Accounts	Amount \$ cts.	Number of Accounts	Amount \$ cts.	Number of Accounts	Amount \$ cts.
Newfoundland.....	44	884 00	38	614 50	12	283 36	94	1,781 86
Prince Edward Island.....	15	257 00	1	5 00	2	24 00	18	286 00
Nova Scotia.....	73	1,722 00	125	2,540 75	44	1,472 50	242	5,735 25
New Brunswick.....	46	1,265 00	141	5,418 00	163	6,880 50	350	13,503 50
Quebec.....	572	36,988 00	1,283	85,632 16	1,195	99,356 28	3,050	221,976 44
Ontario.....	156	5,013 00	849	21,824 85	470	20,627 90	1,475	47,465 75
Manitoba.....	23	679 00	83	1,505 00	66	3,335 00	172	5,519 00
Saskatchewan.....	28	2,078 00	107	3,168 30	55	3,401 00	190	8,647 30
Alberta.....	70	1,780 00	127	3,355 00	97	5,509 90	294	10,644 90
British Columbia.....	139	5,858 40	98	2,957 18	157	6,565 40	394	15,380 98
Yukon and Northwest Territories.....	16	1,018 00	40	1,717 50	19	1,175 86	75	3,911 36
National.....	1,182	57,482 40	2,892	128,738 24	2,280	148,631 70	6,354	334,852 34

TABLE 22

(Old Age Security)

STATISTICS ON OLD AGE SECURITY

PROVINCE	A	B	C	D	E	F
	No. of pensioners in pay March, 1952	No. of pensioners in pay March, 1953	Net Payment for March, 1953 only	Total Net Payment for fiscal year ending March 31, 1953	No. of accounts paid to an administrator or trustee as of March, 1953	No. of deaths reported in March 1953
Newfoundland.....	14,177	14,792	\$ 592,600	\$ 6,995,760	106	128
Prince Edward Island.....	6,338	6,553	262,960	3,155,700	113	49
Nova Scotia.....	34,832	36,150	1,451,340	17,259,287	447	299
New Brunswick.....	24,540	25,689	1,030,720	12,254,680	401	167
Quebec.....	139,954	147,833	5,899,735	69,570,047	2,956	1,144
Ontario.....	238,925	253,954	10,174,060	120,083,015	7,940	1,800
Manitoba.....	37,826	40,489	1,621,520	19,019,960	572	470
Saskatchewan.....	37,153	40,553	1,633,680	19,037,305	1,043	299
Alberta.....	36,637	40,203	1,622,390	18,745,290	760	273
British Columbia.....	72,225	79,464	3,121,320	36,802,800	1,033	460
Yukon and Northwest Territories.....	406	447	18,000	217,840	6	4
Total.....	643,013	686,127	27,428,325	323,141,655	15,377	5,093

TABLE 23

(Old Age Assistance Division)

NUMBER OF RECIPIENTS, AVERAGE MONTHLY ASSISTANCE AND TOTAL FEDERAL PAYMENTS, UNDER THE OLD AGE ASSISTANCE ACT, BY PROVINCES FOR THE FISCAL YEAR 1952-53

PROVINCE	Number of Recipients	Average Monthly Assistance		Federal Payments 1952-53	
		\$	cts.	\$	cts.
Alberta.....	4,688	36	96	967,948	46
British Columbia.....	7,685	37	56	1,701,854	47
Manitoba.....	4,400	38	03	1,036,021	86
New Brunswick.....	5,371	36	83	1,113,921	31
Newfoundland.....	5,037	29	14	833,898	50
Nova Scotia.....	4,789	33	49	893,059	70
Ontario.....	20,401	36	95	4,586,572	90
Prince Edward Island.....	551	24	07	66,313	41
Quebec.....	30,490	37	59	6,927,593	20
Saskatchewan.....	4,206	36	65	997,396	06
Northwest Territories.....	57	38	68	4,257	50
Yukon Territory.....					
Total.....	87,675			19,128,837	37

TABLE 24

(Old Age Assistance Division)

NUMBER OF RECIPIENTS, AVERAGE MONTHLY ALLOWANCE, AND TOTAL FEDERAL PAYMENTS, UNDER THE BLIND PERSONS ACT, BY PROVINCES FOR THE FISCAL YEAR 1952-53

PROVINCE	Number of Recipients	Average Monthly Allowance		Federal Payments 1952-53	
		\$	cts.	\$	cts.
Alberta.....	383	38	31	133,821	88
British Columbia.....	485	39	19	162,910	06
Manitoba.....	430	39	24	153,548	81
New Brunswick.....	750	39	55	273,940	64
Newfoundland.....	336	38	88	117,936	51
Nova Scotia.....	722	38	54	253,717	72
Ontario.....	1,751	38	87	632,328	83
Prince Edward Island.....	79	37	83	26,680	54
Quebec.....	3,041	39	23	1,104,179	94
Saskatchewan.....	342	39	22	123,692	07
Northwest Territories.....	11	40	00	1,740	00
Yukon Territory.....	2	40	00	720	00
Total.....	8,332			2,985,217	00

TABLE 25
(Physical Fitness)
ASSISTANCE TO PROVINCES AND PROVINCIAL EXPENDITURES UNDER
NATIONAL PHYSICAL FITNESS ACT, RELATING TO 1952-53

PROVINCE	Provincial Department Responsible for Administration	Date of Expiration of Current Agreement	TOTAL EXPENDITURES			PER CAPITA EXPENDITURES		
			Provincial	Federal	Total	Provincial	Federal	Total
			\$ cts.	\$ cts.	\$ cts.	\$	\$	\$
Nova Scotia.....	Dept. of Education, Halifax	31 March, 1954	13,957 19	10,641 25 ⁽¹⁾	24,598 44	.0217	.0165	.0382
New Brunswick.....	Dept. of Education, Fredericton	31 March, 1954	16,308 30	8,540 00	24,848 30	.0316	.0165	.0481
Ontario.....	Department of Education, Toronto	31 March, 1954	596,622 14	76,136 50 ⁽¹⁾	672,758 64	.1297	.0165	.1462
Manitoba.....	Dept. of Health and Public Welfare, Winnipeg	31 March, 1954	15,331 02	12,859 75 ⁽¹⁾	28,190 77	.0197	.0165	.0362
Saskatchewan.....	Dept. of Education, Regina	31 March, 1953	45,840 22	13,773 50	59,613 72	.0551	.0165	.0716
Alberta.....	Dept. of Education, Calgary	31 March, 1954	28,284 66	15,558 50	43,843 16	.0301	.0165	.0466
British Columbia.....	Dept. of Education, Vancouver	31 March, 1954	124,916 60	19,296 00	144,212 60	.1072	.0165	.1237
Northwest Territories.....	Dept. of Resources and Development, Ottawa, Canada	31 March, 1954	29,004 94	265 00 ⁽¹⁾	29,265 94	1.8121	.0165	1.8286

NOTE:
(1) Claims for total grant available for 1952-53 were received too late for payment.

TABLE 26

(Physical Fitness Division)

SUMMARY OF ALLOTMENTS AND EXPENDITURES PHYSICAL FITNESS DIVISION FOR THE FISCAL YEAR 1952-53

	PHYSICAL FITNESS DIV. APPROPRIATION	NAT. FITNESS FUND
ADMINISTRATION		
Balance from fiscal year 1951-52.....		\$ 33,664 76
Parliamentary Appropriations 1952-53.....	\$ 65,540 00	
		<u>33,664 76</u>
EXPENDITURES—1952-53		
Total Salaries.....	\$ 26,388 21	
Professional and Special Services.....	141 00	\$ 17,050 00
Travelling Expenses—Staff.....	2,463 50	
Freight, Express and Cartage.....	360 01	
Postage.....	70 90	
Telephones and Telegrams.....	1,242 18	
Printing of Educational, Informational and Other Publications.....	1,583 61	1,412 10
Educational and Informational Material Other than Publications.....	2,380 67	8,808 47
Office Stationery, Supplies and Equipment.....	1,682 94	372 75
Travelling Expenses—Council Members and Others.....	4,000 00	4,303 53
Sundries.....	232 43	200 47
	40,545 45	\$32,147 32
Balance at end of fiscal year 1952-53.....	24,994 55	1,517 44
ASSISTANCE TO PROVINCES		
Balance from fiscal year 1951-52.....		\$ 105,165 39
Parliamentary Appropriations 1952-53.....		146,100 00
		<u>251,265 39</u>
EXPENDITURES—1952-53		
Nova Scotia.....		10,940 57
New Brunswick.....		8,540 00
Ontario.....		74,063 25
Manitoba.....		13,125 96
Saskatchewan.....		13,773 50
Alberta.....		15,558 50
British Columbia.....		19,296 25
Northwest Territories.....		234 00
		<u>155,532 03</u>
Balance at end of fiscal year 1952-53.....	\$ 24,994 55	\$ 95,733 36

TABLE 27
(Physical Fitness)
SUMMARY OF FINANCIAL ASSISTANCE TO PROVINCES—NATIONAL PHYSICAL FITNESS ACT

	Amount of Matching Grant Annually based on 1951 census (b)	Amount Paid in Fiscal Year (a)									Total Payments	
		1944-45	1945-46	1946-47	1947-48	1948-49	1949-50	1950-51	1951-52	1952-53		
Prince Edward Island (d)	\$ cts. 1,630 00	\$ cts. 7,418 43	\$ cts. 6,747 50	\$ cts. 2,635 49 ⁽¹⁾	\$ cts. 8,685 40	\$ cts. 4,184 75 ⁽¹⁾	\$ cts. 11,426 92	\$ cts. 10,415 36	\$ cts. 1,858 50	\$ cts. 1,858 50	\$ cts. 10,641 25 299 32 ⁽¹⁾	\$ cts. 12,395 74
Nova Scotia	10,641 25	6,747 50	12,486 48	8,685 40	14,001 98	14,001 98	11,426 92	10,415 36	1,858 50	1,858 50	10,641 25 299 32 ⁽¹⁾	91,383 30
New Brunswick	8,540 00			2,186 86	6,280 65	6,280 65	8,943 75	6,771 84	8,412 32		8,540 00	41,155 42
Quebec (d)	67,163 25											
Ontario	76,136 50											
Manitoba	12,859 75		2,092 44 ⁽¹⁾	7,484 92 ⁽¹⁾	7,363 66 ⁽¹⁾	5,907 84 ⁽¹⁾	7,237 83 ⁽¹⁾	8,250 97 ⁽¹⁾	9,573 45 ⁽¹⁾	74,063 25 ⁽¹⁾ (2)	74,063 25 ⁽¹⁾ (2)	222,189 75
Saskatchewan	13,773 50		17,044 65 ⁽¹⁾	17,545 75 ⁽¹⁾	35,091 50 ⁽¹⁾	17,520 75	17,520 75	17,520 75	17,520 75	17,520 75	13,125 96 ⁽¹⁾ (2)	62,297 17
Alberta	15,558 50		23,070 53 ⁽¹⁾	15,515 61	19,488 12	14,671 79	16,463 71	15,567 75	15,567 75	15,567 75	15,558 50	135,903 76
British Columbia	19,296 25			32,031 50 ⁽¹⁾	16,015 75	15,993 00	15,993 00	15,993 00	15,993 00	15,993 00	19,296 25	147,331 25
Northwest Territories	265 00				234 00	234 00	234 00	234 00			234 00 ⁽¹⁾ (2)	1,170 00
Yukon (d)	150 75											
Newfoundland (d)	5,985 25											
Totals	232,000 00 ^(b)	23,434 18	49,555 12	87,699 75	89,635 29	78,884 76	79,678 56	150,675 42	152,249 71	152,249 71	155,532 03	867,344 82

(a) The amount paid to the province in any one fiscal year does not necessarily coincide with the amount available to it in that year, as payments in respect of previous years may be included.
(b) Initially, the sum of \$225,000.00 was prorated for nine provinces. Later when the Northwest Territories entered into an agreement, the amounts were re-calculated on the basis of nine provinces and two territories. When Newfoundland entered confederation, an additional \$7,000.00 was made available for that province. In 1952, the re-calculations were based on the 1951 census and \$232,000.00.

(c) During 1947-50 as agreements were renewed, the periods of agreement were changed to coincide with the fiscal year. This necessitated making agreements for periods other than twelve months in some cases.

(d) These provinces do not participate at the present time.

(1) Payment for claim of previous fiscal year.

(2) Claim for 1952-53 not received prior to April 30, 1953.

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 Trafalgar Building, Queen Street

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 TORONTO, Ont. 122 Front Street West
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 TORONTO, Ont. 65 Victoria Street
 WINNIPEG, Man. Aragon Building
 VANCOUVER, B.C. Federal Building

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 CHARLOTTETOWN, P.E.I. 100 Fitzroy Street
 SAINT JOHN, N.B. 250 Prince William Street
 SYDNEY, N.S. Naval Administration Building
 ST. JOHN'S, Nfld. T.A. & B. Society Building
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 THREE RIVERS, Que. Post Office Building
 SHERBROOKE, Que. Whiting Block
 MONTREAL, Que. 379 Common Street
 TORONTO, Ont. 59-65 Victoria Street
 BELLEVILLE, Ont. 18 Bridge Street
 HAMILTON, Ont. Lister Building
 KITCHENER, Ont. Dominion Public Building
 LONDON, Ont. Dominion Public Building
 WINDSOR, Ont. Laing Building
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WINNIPEG, Man.	Aragon Building
BRANDON, Man.	Customs Building
SASKATOON, Sask.	215 Second Avenue South
REGINA, Sask.	McCallum Hill Building
CALGARY, Alta.	Customs Building
EDMONTON, Alta.	Post Office Building
KAMLOOPS, B.C.	345 Victoria Street
VANCOUVER, B.C.	Federal Building
VICTORIA, B.C.	816 Government Street

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SARDIS, B.C.	Coqualeetza Indian Hospital
†CARDSTON, Alta.	Blood Indian Hospital
EDMONTON, Alta.	Charles Camsell Indian Hospital
GLEICHEN, Alta.	Blackfoot Indian Hospital
HOBBEEMA, Alta.	Hobbema Indian Hospital
FORT QU'APPELLE, Sask.	Fort Qu'Appelle Indian Hospital
NORTH BATTLEFORD, Sask.	North Battleford Indian Hospital
HODGSON, Man.	Fisher River Indian Hospital
PINE FALLS, Man.	Fort Alexander Indian Hospital
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*SELKIRK, Man.	Dynevor Indian Hospital
*THE PAS, Man.	Clearwater Indian Hospital
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