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Dominion Bureau of Statistics, Canada

ADMINISTRATION BRANCH.

MEMORANDUM

ON

THE ORGANIZATION AND WORK OF THE DOMINION BUREAU OF STATISTICS

WITH SPECIAL REFERENCE TO FUTURE DEVELOPMENT

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BY

THE DOMINION STATISTICIAN

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OTTAWA

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MEMORANDUM ON THE DOMINION BUREAU OF STATISTICS.

Stage now Reached in the Development of Statistical Policy in Canada - The Line of Future Development.

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The Dominion Bureau of Statistics was set up by statute in 1918 as a central statistical department for Canada. (8-9 Geo. V., c.43.- "An Act respecting the Dominion Bureau of Statistics",- short title, "The Statistics Act".). The Act was a consolidation of all previous statistical legislation (the Census Act, the General Statistics Act, the Railway Statistics Act, etc.,) with necessary additions.

The Act was based on the report of a Commission on Statistics appointed in 1912, which criticized severely the omissions, inequalities, overlappings and lack of coherence and common purpose in Canadian official statistics* and recommended (a) a series of specific reforms and enlargements, and (b) a policy of statistical coordination for the Dominion under central direction.

In 1915, following this report, the office of Dominion Statistician was created, and the next eighteen months were devoted to the drafting in detail of the various plans involved. A memorandum entitled "A National System of Statistics for Canada" was printed for the Cabinet prior to the final adoption of these plans and the creation of the Bureau.

Creation of the Bureau.

The Bureau was constituted by the transfer or absorption of the of the following branches: (1) The Census and Statistics Office, Department of Agriculture, (previously responsible for the census, and for the statistics of agriculture, manufactures and criminal justice); (2) Fisheries Statistics, Department of the Naval Service; (3) Mining Statistics,

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* Footnote.- Other official bodies, such as the Ontario Commission on Unemployment, the Municipal Improvement League, and the Dominion Economic Commission, had drawn equally pointed attention to the deficiencies in Canadian statistics. These statistics had previously consisted of reports brought out independently by Dominion and Provincial Departments on subjects within their respective interests - to which were added the data of the decennial census. The B.N.A. Act had assigned "statistics" to the Dominion Government, implying that statistics are a national concern and that it is the duty of the Federal Government, while not precluding provincial statistics, to organize the field from a national standpoint. Previously to 1916 that duty had not been undertaken. For a brief account of Dominion and Provincial statistical activities from the earliest times up to 1912, see "First Annual Report of the Dominion Statistician, 1919", pp. 9-14, which sums up as follows: "A considerable but desultory body of statistics had grown into existence; in certain sections good work was being done - in others not good; there was much duplication and at the same time numerous gaps at crucial points; finally there was a total lack of general plan. The embarrassment which this caused with the growth of the country and the increasing complexity of its problems will be appreciated."

Department of Mines; (4) Forestry Statistics, Department of the Interior; (5) Dairying and Fruit Statistics, Department of Agriculture; (6) Water and Electric Power Statistics, Conservation Commission; (7) The Railways and Canals Statistical Branch of the Department of Railways and Canals (railways, tramways, express, telegraphs, telephones, etc.); (8) The Trade Statistical Branch (exports and imports) of the Department of Trade and Commerce; (9) Grain Trade Statistical Branch, Department of Trade and Commerce; and (10) Prices Statistics (in part), Department of Labour. In addition four new branches were erected, dealing respectively with Finance, Internal Trade, Vital Statistics and Education.*

Working Constitution of the Bureau.

Besides the above-mentioned branches, there are certain statistics which originate as by-products of the administration of particular Departments, compiled as a matter of departmental accounting. These must first serve the Departments which produce them; at the same time, they should conform to the needs of the national statistical system. The Statistics Act accordingly not only made the Bureau directly responsible for the statistics "relative to the commercial, industrial, social, economic and general activities and conditions of the people", but added the task of "collaborating with all other departments of the Government in the compilation and publication of statistical records of administration." Further, executive departments sometimes have field staffs or other organizations well adapted for incidental use in statistics. To provide specific means for such collaboration, an Order in Council was passed October 12, 1918, which, after citing the Act as above, provided:

> "(1) That all purely statistical investigations relative to the commercial, industrial, social, economic and general activities of the people shall be carried out in the Dominion Bureau of Statistics;
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> "(2) That with respect to such records of any Department or branch of the public service as are of a statistical character the Dominion Statistician shall confer with the Head of such Department or branch with a view to arranging that such records be collected and compiled in so far as possible in conformity with the methods and organization established in the Bureau, the object of such arrangement being the prevention of overlapping, the increase of comparability, and the utilization of Departmental organizations in the best manner for statistical ends;
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> "(3) That after such conference the Dominion Statistician shall, at as early a date as practicable, prepare a report on the statistical work of each Department or branch of the public service, with a view to carrying out the above requirements, such report to be submitted to Your Excellency in Council for approval, with a view to effecting a permanent arrangement for dealing with the statistics collected by the Government; and
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> "(4) That to further promote efficiency and economy, all statistical compilations for the Government be carried out, in so far as practicable, by mechanical appliances, and that for this purpose use be made of the machines installed in the Bureau of Statistics."

Control over provincial statistics is secured through a clause

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*Footnote.- Subsequently the statistical activities of the Fuel Controller and the Board of Commerce were absorbed.

permitting arrangements whereby Provincial officers may act under the Statistics Act. A further clause gives the Bureau right of access to all Provincial, municipal or corporation records.

Under the above, twelve Orders in Council have been passed to date, on report of the Dominion Statistician, providing for interdepartmental and interprovincial statistical organization in the following: Fisheries, Mines, Dairying, Central Power Stations, Railways, Grain, Live Stock, Internal Trade, Manufactures, Vital Statistics, Central Tabulation, Extension of Franking privileges to Provincial statistical agents. In addition, modifications of the Bankruptcy Act, the Public Health Act and the Post Office Act have been made.

Purpose of Statistical Centralization.

A word of further explanation as to the purpose of statistical centralization may be inserted here. It includes, of course, the numerous economies in overhead which concentration in any field promotes. For example, two pronounced characteristics of statistical work are (a) the large proportion of routine, and (b) the ebb and flow; a "floating" staff of experienced clerks is accordingly a feature of a central Bureau. The use of electrical tabulating machinery, again, enables much work to be done in a central office more cheaply than in offices which would not afford such. (The Bureau has an investment of $100,000 in machinery.) Central filing and library systems are further examples. Still another economy, from a slightly different angle, flows from the concentration of statistical experience; the officers of the different branches of the Bureau are of constant assistance to each other on their several problems. The conception of statistics as a scientific profession requiring training of a highly special kind is scarcely possible except to a central Bureau. But the fundamental purpose of centralization lies deeper, namely, in the fact that the State is not merely a series of heterogeneous activities but is itself an entity. Just as different bodily functions are not independent but must be studied by medical science as those of a single organism, so in the State such subjects as production, trade, finance, the birth-rate, are not separate and distinct, but are often closely inter-related. The statistics of the country therefore must be framed to illustrate these relationships. For example, if the statistics of mines, fisheries, manufactures and the other phases of production are carried out in a series of water-tight compartments, the phenomena which are common to all, such as labour, capital, power, plant, etc., will inevitably be handled differently, with non-comparable results. Again, if one system of classifying commodities is employed by the Trade Statistician, another by the Production Statistician, and another by the Prices Statistician, no general study of conditions surrounding a particular group of commodities can be made. Similarly, the classification of occupations should be uniform, whether in the Census analysis of population, the vital statistical record of deaths, in criminal statistics when analysing the incidence of crime, in labour statistics when recording employment conditions, and so on. Again, on points of technique like the construction of index numbers,- clearly such devices should yield results that are comparable from field to field. In brief, a true national statistic is not a mere aggregation of the statistics of different activities, but involves also a purview of the totality of phenomena with the object of revealing their interplay, and, if possible, the controlling forces from time to time. Not only must statistics be available on the main subjects of national interest, but they must be properly "articulated" with each other, so as to form a single conspectus.

Progress to Date under the Bureau.

With the above as foreword, a very brief account of the reorganization carried out under the Bureau, which has for objective a

unified nation-wide scheme covering every important phase of social and economic activity - population, social conditions, production, trade, finance, transportation, etc.- may be given. The Bureau has been set up in eleven main branches, and a note under each follows:

I. Demography or Population.

(1) This Branch takes the decennial and quinquennial censuses. Centralization has permitted a fundamental reform of the Canadian census. As in business two kinds of records are necessary, namely, day-to-day book-keeping, and a periodical stock-taking; so in statistics, information must be obtained by (a) the observation of phenomena whilst functioning (dynamic), and (b) by taking a cross-section of phenomena whilst at rest (static). The census is essentially the latter, but it was not previously organized on this conception, through lack of the necessary control of the contingent "book-keeping" statistics. The change is far-reaching in its effects, as will be noted incidentally later. The Census is now the great national stock-taking and that alone, related as such to each and every section of the statistical field. Its main task is to enumerate the people (which it carries out under 36 rubrics), but it also covers definitively the basic industry of agriculture (this last under 65 groups of questions). The Census has been called the "largest single act of administration carried out by Government". It employs a field staff of 12,000 and an inside staff of several hundreds.

(2) The day-to-day statistics of Population are represented by (a) Vital Statistics, and (b) Statistics of Migration,- the one recording the natural increase or decrease, the other the increase or decrease through movements into and out of the country. A new section of the Bureau has been devoted to vital statistics. These were primarily under Provincial jurisdiction. Previously to 1920 each Province had different vital statistical legislation, and employed widely different forms and methods in collecting data, inter-provincial comparisons and Dominion totals being impossible. The Census attempted a record of deaths, but this was abandoned as impossible to a stock-taking process. The Bureau has now organized a Dominion-wide system of vital statistics, on the following basis: The Provinces have agreed to uniform legislation based on a "model bill" prepared by the Bureau; they administer such legislation uniformly; they use standard forms supplied by the Bureau; and they supply the Bureau with copies of all returns at the cost of transcription. The Bureau then makes the compilations for the common use.

II. Agriculture.

This Branch collects the monthly and annual statistics of agriculture necessary to keep the census up to date. Previously to 1916 the work, which involves a very large organization, was done for the Dominion as a whole at Ottawa and simultaneously and independently by each of the several Provinces, with frequent contradictions and confusions in results and comparative ineffectiveness. In 1917, however, a cooperative scheme was established, by which the Bureau and the several Provinces now work together, each contributing the share which it is best fitted to perform. In June of each year a postal census of acreages under crop and of live stock on farms is taken on a uniform card which is printed by the Bureau, supplied to the Provincial Departments, by the latter distributed to farmers through the agency of the rural school teachers, and subsequently forwarded to the Bureau for compilation, the estimates based on the latter being drawn up by the Bureau and each Province in consultation. The data collected monthly on agricultural conditions, progress of the crops, average yields, etc., from about 5,000 correspondents are similarly pooled. The arrangement extends to branches like fruits and tobacco, which involve separate staffs. The Bureau prints a Monthly Bulletin of Agricultural Statistics for Canada and an Annual Report. The Provinces are consulted in the plans for the decennial

census of agriculture, which is very comprehensive and is correlated at every point with the annual survey just described. The statistics on all phases of agriculture are now complete, uniform and organized as a unit throughout Canada.

III. Industrial Census.

This Branch covers annually all industrial production outside of agriculture. The statistics of industry were previously limited to those of certain Dominion and Provincial Departments operating with widely different methods and numerous gaps at important points in specific sections of the field. The decennial census attempted a general survey, but industrial production has always proved too many-sided and complicated to be handled by the Population Census. The Bureau has now reorganized this entire field in cooperation with the several Departments concerned, whose staff and experience are of special availability for statistics. For example, dairy factories are covered by the Bureau in conjunction with the Dairy Commissioners of each Province, and the Dairy Commissioner of the Dominion Department of Agriculture, the Bureau supplying the forms (which include everything to be gathered from these concerns), the Provinces collecting them, and the Bureau making the compilations and publishing results. Similarly in the statistics of fisheries, forestry, furs, mines, central power plants, etc. Altogether the Bureau has reduced to uniformity and cooperation the statistical activities of some thirty-two Departments and eliminated overlapping in this single field. Related bodies like Provincial Workmen's Compensation Boards, Factory Inspectors and Labour Departments have been brought within the arrangement. The field remaining outside of Departmental activities (including general manufactures) is covered by the Bureau alone on a correlated plan. Features like capital and labour are treated uniformly throughout. The decennial census is now limited to the collection of the lists and addresses which form the basis of the inquiry, which is covered on some 150 distinct forms. The four main sections of the Branch are devoted respectively to (a) fisheries, furs and dairy factories, (b) forestry and allied industries, (c) mining, metallurgical and chemical industries, and (d) general manufactures. The publications include over sixty monthly or annual reports or bulletins.

IV. Foreign Trade.

The statistics of imports and exports used to be dealt with independently by three Government bodies - the Customs Department, the Trade and Commerce Department, and the Census and Statistics Office. This work has been amalgamated, duplication eliminated, and a thorough reorganization carried out. The data are collected by the Customs Department and transferred (under Section 23 of the Statistics Act) to the Bureau of Statistics for analysis and publication. The Bureau claims that its Monthly and Annual Trade Statistical Reports are the most comprehensively and scientifically analytical of those of any country.

V. Transportation and Communications.

Since this work (covering railways, tramways, express companies, telegraphs, telephones and canals) was taken over from the Railway Department, it has been brought into coordination with the other fields of statistics and more closely related to the activities of the Board of Railway Commissioners. Two new monthly bulletins, a traffic report and a railway revenues and operating expenses report, have been instituted. The Branch has also carried out a periodical census of boats of Canadian register and of steamships operating in Canada. Provincial Public Utilities Commissions have been brought into cooperation at points where contact exists.

VI. Internal Trade.

This Branch, which is new, was created to deal with the

many-sided problem of internal trade statistics. First, it has contrived a plan for throwing light on interprovincial trade movements through the analysis of transportation statistics. Secondly, it has worked out a scheme of marketing statistics for the more important commodities of Canadian production. Thus, the grain movement is exhaustively treated in cooperation with the Canada Grain Commission and Provincial Agricultural Departments; the movement of live stock and animal products in collaboration with Dominion and Provincial Agricultural Departments; the movement of fruit, fish and dairy products by a similar scheme; and coal movements in cooperation with the various Mines Departments. The more important marketing centres throughout Canada are thrown into relief. A weekly grain trade letter, and a monthly cold storage report, as well as several annual reports, are features. Within the Branch is a section on Prices, which deals comprehensively and in cooperation with all other Dominion and Provincial Departments concerned, with the general subject of prices under the following headings: producers', wholesalers', jobbers', farmers' markets, retail, import and export valuations, the prices of services (freight rates, gas and electricity, etc.), security prices, rates of interest and exchange.

VII. Finance.

This Branch analyzes and coordinates the Dominion and Provincial Public Accounts, and collects on a comparable plan the statistics of municipalities of 1,000 and over. Provincial and Municipal accountants follow forms and arrangements which vary considerably from each other. For example, certain provinces charge expenditures on agricultural colleges to "Agriculture", others to "Education", or in part to "Public Works". The Branch has brought these accounts into harmony by a minute examination and reclassification of the several items. The Branch, in addition to organizing a complete scheme of the statistics of public finance, deals also with certain aspects of private finance, to which reference will be made later on.

VIII. Justice.

This Branch publishes the annual report on Criminal Statistics, which has been correlated with the general scheme of the Bureau on such points as classification of occupations, district returns, etc.

IX. Education.

For many years there have been repeated demands for periodical statistics of educational activities on a Dominion-wide basis. Since education lies wholly within the jurisdiction of the Provinces, divergencies in recording methods have arisen, and it was felt that if a lead were given many of these could be reduced to harmony. Accordingly a conference of Provincial Deputy Ministers of Education and other prominent educationists was held in the Bureau in 1920, at which the Bureau presented a detailed scheme for Dominion-wide statistics of education. This plan, after thorough discussion, was adopted, though on the understanding that it would take certain of the Provinces some time to work out the necessary changes. The Bureau in this connection will compile the data for the Provinces, if collected on the forms mutually agreed upon. Two provinces have this year sent in their returns, and four others will follow next year. The initial report of the Bureau in this connection, a historical statistical survey of education in Canada, has met with exceptionally marked appreciation.

X. General Statistics.

A Branch of the Bureau is devoted to the preparation of abstracts and digests of the general body of statistics. This Branch issues

the Canada Year Book, and handles all inquiries of a general nature that reach the Bureau; for example, it prepares the sections on Canada which appear in publications like the Statesman's Year Book, Whitaker's Almanac, the Colonial Office List, the World Almanac, etc., etc. It also prepares a monthly analysis of the leading "barometric" statistics pertaining to Canada, which are kept up to date for the general purposes of the office in answering inquiries as to current economic trends.

XI. Administration.

An Administration Division handles correspondence with the public, maintains a central filing and records system, appoints and controls staff, issues requisitions, etc. Three additional functions are controlled from this Division: (a) a library of the statistical publications of all countries; (b) a central mechanical tabulating service, operated for other Departments under special Order in Council, on the model of commercial enterprises of this character (large jobs have been done for the Pensions Board, Militia Records Office, Income Tax, etc.); (c) a printing section for the issue of leaflets and pamphlets; and (d) a cost-accounting system for the appraising the cost of each job; altogether this system distinguishes some 67 units of organization.

A detailed list of the publications of the Bureau, which more fully illustrates the activities of the above Branches, is attached to this memorandum as Appendix A.

Further Re-Organization in Train.

The Bureau feels that the above is a record of solid achievement considering the time at its disposal and the complexity, technical character and nation-wide importance of the issues dealt with. In addition, certain further specific plans have been completed as part of the reorganization under way essential to a properly inclusive national statistic. It will be useful to mention these as matters which should be brought to a decision forthwith.

(1) Immigration.- The statistics of migration remain outside the scheme of population statistics, though they form an integral part thereof. The Census, vital statistics and the statistics of migration should be in the closest possible correlation. More specifically, the immigration forms should be reviewed, methods of compilation and presentation improved, and details like the classification of occupations, the nomenclature of ethnic stocks, etc., brought into harmony. There should also be instituted a record of emigration at the earliest possible moment. A memorandum and detailed plan of procedure, including the compilation of migration statistics by the tabulating machinery of the Bureau, has been laid before the Immigration Department, together with a draft Order in Council, which would carry the various recommendations into effect.

(2) Navigation.- The Navigation section of Transportation Statistics is incomplete and in places is out of alignment with other Transportation Statistics. Under the Statistics Act the Customs Department is required to forward certain data of navigation to the Bureau. A detailed memorandum and draft Order in Council have been laid before the Department. Briefly, it is recommended (a) that a monthly as well as annual record of navigation be prepared; (b) that the record include coast-wise traffic; (c) that statistics for the vessels engaged in Canadian transportation be compiled; (d) that mechanical tabulation be employed; and (e) that the format of reports be amended. With these the Bureau would have a rounded-out scheme of water transportation statistics.

(3) Public Finance.- There is urgent need for comprehensive reorganization of the statistics of public finance, especially in the field

of municipal statistics. At present each municipality determines its own method of accounting, and the various Provincial Departments of Municipal Affairs are out of touch with each other. The Bureau has investigated the situation thoroughly and some time ago submitted a memorandum, with draft schedules (endorsed by competent accountants and by the Union of Canadian Municipalities) to each Provincial Department. A conference of Provincial authorities with the Bureau's memo as basis is required, and the Bureau is being urged to call one by large bond houses, municipal research authorities and others. Several of the Provincial Departments have expressed a desire for such conference.

(4) Statistics of Trading Establishments.- The Industrial Census, above described, covers all phases of production proper, but there are no similar statistics of trading activities. The Bureau has been urged to supply this need, and as a preparatory step has collected a list of establishments through the Census of 1921. A form has been drawn up and approved by representative associations. An inquiry of this kind, at, say, quinquennial intervals, would fill a gap in our statistics that at present prevents a view of productive activity in the broad sense of the term.

(5) Income Tax.- A considerable body of data is being brought together by the Income Tax Branch of the Department of Finance. There are points of contact between these data and the statistics under the Bureau at which uniformity should prevail. No proposition has been advanced pending final determination of the administrative needs of the Branch.

(6) Labour Statistics.- The Department of Labour is the vehicle for the collection of statistics in certain fields, such as trade union statistics and the statistics of strikes and lock-outs. These statistics should be coordinated on such points as the classification of industries with those of the Bureau. Other subjects handled by the Labour Department are also dealt with in the Bureau, namely, the statistics of employment and unemployment, the statistics of wages and the statistics of prices. On the two latter an understanding has been arrived at which will go into effect within the next twelve months. On the subjects of employment, there is room for better delimitation of functions. A memorandum embodying a modus operandi of collecting and publishing data as between the Bureau and the Department has been drawn up.

(7) Civil Justice.- A subject on which no statistics have been collected in Canada, though many countries have them, is the administration of civil justice. A plan has been drawn up and can be put in motion at any time.

(8) Private Finance.- Whilst Canadian banking and insurance statistics are organized on a final basis, the statistics relating to loan and trust companies require re-modelling. These and other companies are licensed partly by the Dominion and partly by the Provinces. The returns of operations should be reduced to harmony and Dominion totals worked out.

The subject of finance is one on which work of a varied nature is possible. The Bureau, for example, should be in a position to furnish estimates of the wealth, debt, taxation and income of the country from time to time, on the model of the similar reports of Australia and the United States.

(9) The Canada Year Book.- The Canada Year Book has been continuously improved during the past five years, but it still falls short of the success achieved by the Year Book of Australia. As a compendium of general statistics, the Year Book has had to wait upon reforms in the various sections of the statistical field, but the Bureau is now in a position, at little extra cost, to place this publication (for which the public demand is rapidly growing) on a definitely higher level. It is suggested that the completion of the scheme of amendments be symbolized by bringing out the Year Book in an improved format with the issue of 1922 or 1923.

(10) Monthly Review of Canadian Statistics.- The General Statistics Branch of the Bureau (which issues the Year Book) is now in a position to put out a monthly review of Canadian statistics which it is

believed would be of marked and general service. The object would be to bring together each month the latest "barometric" statistics of the country in a way that would reveal the current economic trend. A review of this kind is issued in the United States (Monthly Bulletin of the Federal Reserve Board), France, Australia, South Africa, New Zealand and other countries. Defeated Germany is this year beginning a new monthly review of "Economics and Statistics" that is probably the most ambitious attempt of the kind yet planned. It is thought that with the more complete statistical organization existing in Canada, still more significant data could be assembled here. That the business community would support a review of this kind may be indicated by the extent to which they subscribe to the expensive services of Babson's, Brookmire's, etc. The review would cost little after the initial issue, and it is believed that a charge of $1.00 a year could be made to cover it once it was started. The problem of contents and method of presentation is a difficult one. A report on the subject prepared two years ago has recently been re-considered. To indicate exactly what is designed, a "dummy" first issue has been brought out in mimeographed form as for a typical month.

The General Machinery of the Bureau.

The preceding part of this memo has dealt with concrete progress and with concrete problems immediately in hand. The remainder may be devoted to considerations of a more general nature and application.

There are certain points at which specific improvements could be made, as in (a) the personnel in certain branches of the Bureau; (b) certain phases of office organization; and (c) the machinery for placing the Bureau's publications where they will be more effective. These will be worked out in time, though some special assistance would be helpful. The main features to be discussed here, however, have to do with the general effectiveness and status of the Bureau.

It is suggested, first, that some re-definition should be made of the Bureau in terms of progress to date. The status of the Bureau as a central statistical office on a national scale occupying the same relative position to all Departments, Dominion and Provincial, and with an omnibus mandate in statistics, requires to be emphasized. At Ottawa, the Bureau has suffered from being regarded as a movement by one Department to assume the functions of others, and in Provincial capitals as an encroachment by Federal authority upon Provincial activities. Statistical centralization is, of course, nothing of the sort, but represents the one and only effective method of attacking a problem otherwise insoluble. Resolutions urging this point of view have been passed during the last year by the Boards of Trade of Calgary, Winnipeg, Toronto and Halifax.

In this connection an idea worthy of being carefully canvassed is the addition to the Bureau of an advisory council representative of important public interests. Supervision of statistical policy by a representative committee is not new; France, Austria, Belgium, Holland and other countries have adopted it, and at the present moment a committee of the kind is being set up in Great Britain. In these countries, however, the committees consist of officials only. The model that seems best suited to the present purpose is of a different sort, that, namely, of South Africa, whose Act has the following clause:

> "There shall be a statistical council consisting of not less than four and not more than eight persons, who shall be appointed by the Governor General and shall hold office during pleasure; and it shall be the function of such Council to advise in matters connected with this Act."

The South African Statistical Council has on it, among others, a leading bank director, a leading economist, a leading lawyer and the

financial adviser to the South African railway system. It has proved a most valuable piece of machinery for securing the thorough-going support both of Government Departments and the public. The council feature is in fact becoming common in statistical organization; the United States, for example, has attached a council to the Census, and numerous other instances might be adduced. In Canada, representation might be suggested for such groups as the Manufacturers Association, the Farmers Associations, the Trades and Labour Congress, the Bankers' Association, the associated Boards of Trade, the railways, together with a leading economist.

The function of such a Council is purely advisory, limited in practice to points of organization and policy; where any particular interest, departmental or other, is closely concerned, it co-opts a representative. It would begin by completing and reducing to legal form the present scheme of organization under the Bureau. It might advise also at the outset on the more pressing points of detail, but thereafter it would report mainly on new work.

It is felt that such a council might strengthen the Bureau both with the public and with Governmental agencies. On the one hand it would democratize statistics, free them from the flavour of bureaucracy, meet objections that sometimes come in from public bodies through misunderstanding of the Bureau's aims, and increase the practicality of the Bureau's work. Good statistical work is peculiarly dependent upon public appreciation and support, yet the raison d'etre for many individual phases and for coordinated organization is peculiarly liable to misconception. On the other hand, it could increase the pressure for good organization brought to bear on outlying Governmental machinery, and thus mitigate any mere dead weight of indifference. As membership would be honorary, it would cost little.

It may be of interest to note that the new Republic of Czecho-Slovakia has recently set up a statistical organization based on an amplification of the above idea. Its Statistics Act, 1919, provides for (a) a consulting and deliberating council, and (b) an executive State Bureau of Statistics. The Council is a large popular body consisting of a representative of each university, each large agricultural corporation, each trade union having a membership of 50,000, ten autonomous representatives of the various political divisions of the Republic, and ten experts. The members are appointed for a period of six years, and meet annually.

Another suggestion, somewhat parallel to and perhaps a duplication in effect of the above, is that important points of statistical organization be referred to a Board of Ministers instead of to the whole Cabinet as at present - the Board consisting of, say, the Minister of Trade and Commerce, Chairman, the Minister of Finance (as the Minister chiefly interested in the cost of statistics and in the general economic conditions which they portray), and the Secretary of State (as the medium of intercourse with the Provinces). The desideratum, as already stated, is to speed up interdepartmental organization and impress the scheme upon the public. It is of interest to note that the first Act ever passed in Canada dealing with the census and statistics (1847) provided for a "Board of Registration and Statistics" consisting of three Ministers.

Finally, there should be more explicit definition of the function of the Dominion Statistician as that of Statistician in general to the Government with a view to the creation of a National statistic as described. In India, the Director-General of Statistics is instructed to publish all Government statistics in his own name and on his own responsibility, but in the statistics belonging to each department to meet the requirements of that department. In addition, the Dominion Statistician should be more explicitly responsible for administrative details under the Statistics Act, on which point duplication of administrative machinery, unnecessary expense, and a considerable element of cumbersomeness and confusion now obtain. The Bureau, as consisting of ten branches, each the equivalent of a major Departmental branch, with their focus in an administrative branch handling an exceptionally

complex and large staff organization, should have direct access to the C.S. Commission, the Auditor General and similar bodies, as in the United States, Australia, Holland, Denmark and other countries in whole or in part under statistical centralization. In Australia, in view of the use that is being made of official statistics in arbitrations, it has been under contemplation to give the Commonwealth Statistician quasi-judicial powers.

A Social and Economic Laboratory.

The final concept in the organization of the Bureau should be that of a national laboratory for social and economic research and the production of monographs on subjects and problems thrown from time to time into national prominence. Canada has similar organization for research in the natural sciences; and economic phenomena are no whit less important. Prominently in mind must be kept the point of view so strongly emphasized during the war, that statistics are not merely a record of what has been, but are for use in planning what shall be -- that it is the duty of a statistical bureau to assist directly in the day-to-day problems of administration, as well as to provide their theoretic background. The organization of the General Economic Department of the U.K. Board of Trade, and the action of several large universities in establishing similar research Departments are suggestive here. Mention may be made in particular of the endowment of the National Bureau of Economic Research of the United States. In Germany the Central Statistical Department has been for many years one of the most powerful engines of the Government, its organization permeating the country, embracing 17 subsidiary state bureaus and 45 municipal offices, and employing at minimum strength a staff of 1,500, of whom 140 are statisticians of the highest professional training. (There was said to exist in the German Empire, prior to the War, a complete national statistic available to the Government alone.) Indeed it is inconceivable that under modern conditions, no country can afford to be without definite provision for systematized statistics. One of the most significant developments in administration is the extent to which statistical organization has been increased as a guide to policy. It was a British High Commissioner to the United States who, in 1917, stated that statistics were winning the war for England. In the reconstruction now in progress, statistics are similarly occupying a foremost place. The United States, while reducing the national budget of this year by a billion dollars, increased the item on statistics. The progress already made in Canada has attracted wide and favorable comment. The Bureau has been visited by a representative of the United States Government, and its constitution has directly influenced the policy statistical policy of the League of Nations. Though still young and its usefulness only well begun, the Bureau may claim to have laid the foundations for a statistical and research service of the first rank, comparable under constructive development with that of any other country and in its basic organization superior to most.

R. H. COATS

Dominion Statistician.

Dominion Bureau of Statistics,

Ottawa.

PUBLICATIONS OF THE DOMINION BUREAU OF STATISTICS.

The Dominion Bureau of Statistics is organized in the following divisions, namely: I. Administration; II. Demography - Census and Vital Statistics; III. Agricultural Statistics; IV. Fisheries, Furs and Dairy Products; V. Mining, Metallurgical and Chemical; VI. Forestry and allied industries; VII. General Manufactures; VIII. External TRade (Imports and Exports); IX. Internal Trade; X. Transportation; XI. Financial Statistics; XII. Statistics of Administration of Justice; XIII. Education Statistics; XIV. General Statistics.

ADMINISTRATION:

Annual Report of Dominion Statistician.

DEMOGRAPHY:

Census.-

Report of the Fifth Census of Canada, 1911.-

Vol. I. Areas and Population by Provinces, Districts and Subdistricts, with Introduction, Tables I to XV, pp. i-viii, 1-623. (Out of print.)
Vol. II. Religions, Origins, Birthplace, Citizenship, Literacy and Infirmities by Provinces, Districts and Subdistricts, with Introduction. Tables I-XLVI; pp. i-iv, 1-634.
Vol.III. Manufactures for 1910 as enumerated in June, 1911, with Introduction, Tables I-XX, pp. i-xvi, 1-432.
Vol. IV. Agriculture, with Introduction. Tables i-90; I-XXXV, pp. i-xcv, 1-428. Diagrams 5 pp.
Vol. V. Forest, Fishery, Fur and Mineral Production, with Introduction. Tables 1-51; 1-XXVI; pp. i-l, 1-171.
Vol. VI. Occupations of the People, with Introduction Tables 1-25; I-VI, i-xxxi, 1-469.

Bulletins of the Fifth Census of Canada, 1911.-

Manufactures of Canada - Dairy Industries - Agriculture, Prince Edward Island - Agriculture, Nova Scotia - Agriculture, New BRUNSWICK - Agriculture, Quebec - Agriculture, Ontario - Agriculture, Manitoba - Agriculture, Saskatchewan - Agriculture, Alberta - Agriculture, British Columbia - Religions - Origins of the People - Birthplace of the People - Educational STatus - Mineral Production - Infirmities - Ages - School Attendance.

Special Report of the Foreign-born Population. (Abstracted from the Records of the Fifth Census of Canada, June, 1911, 23 tables, 62 pp. 1915.)

Report of the Census of Population and Agriculture of the Prairie Provinces, 1916. Tables 1-54; I-XXVI, pp. 1-lxiv; 1-356.

Bulletins of Census of Prairie Provinces, 1916:

Population and Agriculture, Manitoba - Population and Agriculture, Saskatchewan - Population and Agriculture, Alberta - Origins, Ages and Religions.

Bulletins of Sixth Census of Canada, 1921 (containing preliminary statistics of population for cities, towns, etc., and published as results become available.)

N.B. The reports of the 1921 census will include two volumes on population and one on agriculture. A bulletin on the agriculture of each province will also be issued.

Vital Statistics.-

Annual Report on Vital Statistics, Canada, by provinces and municipalities.
Monthly Report of Births, Marriages and Deaths, by provinces.
Report of Conference on Vital Statistics, held June 19-20, 1918. pp. 1-48.

PRODUCTION:

Agriculture:-
Annual Report on Agricultural Statistics, Canada.
Monthly Bulletin of Agricultural Statistics.
Advance summaries of agricultural statistics (monthly).

Dairy FActories:-
Annual Report on Diary Factories, Canada.
Summary statement of statistics of Dairy Factories.

Furs:-
Annual Report on Fur Farms, Canada.
Annual Report on the Production of Raw Furs.

Fisheries:-
Annual Report of Fisheries Statistics.
Summary Statement of Fish Caught, Marketed, and Prepared.

Forestry and Allied Industries:-
Logging Operations, Lumber, Lath & Shingles (annual).
Annual Report on Pulp and Paper Mills.
Planing Mills, Sash & Door Factories.

Mineral Production:-
Annual Reports on the Mineral Production of Canada (a) Preliminary, (b) Final.
Preliminary Report on the Mineral Production of Canada for the six months ending June.
Monthly Report on the Coal Statistics of Canada.
Annual Reports on the Coal Statistics of Canada, (a) Preliminary, (b) Final.
Monthly Report on the Production of Iron and Steel.
Annual Report on the Production of Iron and Steel.
Annual bulletins on the following industries:
The Copper-Gold-Silver Industry,
Auriferous Quartz Mining Industry,
Placer and Hydraulic Gold Mining Industry,
Nickel-Copper Industry,
Silver-Cobalt-Nickel Industry,
Silver-Lead-Zinc Industry,
Miscellaneous Non-Ferrous Metals, including, Antimony, Molybdenite and Tungsten,
Asbestos Industry,
Feldspar Industry,
Graphite Industry,
Mica and Phosphate Mining Industries,
The Salt Industry;
Miscellaneous Non-Metallic Minerals, including: Actinolite, Barytes, Chromite, Corundum, Fluorspar, Magnesite, Magnesium, Sulphate, Manganese, Mineral Pigments, Mineral Waters, Natro Alunite, Peat, Pyrites, Quartz, Sodium Sulphate and Talc.
Stone Quarrying Industry,
Sand and Gravel Industry,
Portland Cement Industry,
Lime Burning Industry,
Miscellaneous Clay Products, including: Clay Sewer Pipe, Brick and Tile, Stoneware and Pottery, Fire Brick and Fire Clay, Kaolin and Other Clays.

Manufactures:-

General Reports (annual) on the Manufactures of Canada, (a) Preliminary, (b) Final.
Annual Summary of Manufactures by Cities and Towns.
Annual Report on Repair Work.
Annual Reports on individual Industries and Groups of Industires (classified according to the component material of product) as follows:

(A) Vegetable Products:
Cocoa & chocolate; Coffee & spices; Fruit & vegetable canning; Evaporated fruits & vegetables; Jams & jellies; Vinegar, pickles & relishes; Flour & grist mills; Bread & other bakery products; Biscuits & Confectionery; Liquors, distilled; Liquors, malt; Liquors, vinous; Rubber footwear; Rubber goods (including manufacture of automobile & bicycle tires); Starch & Glucose; Sugar refining; Tobacco, chewing, smoking & snuff; Tobacco, cigars & cigarettes; Linseed oil & oil cake.

(B) Animal Products:
Fish curing & packing; Fur dressing; Fur goods; Leather tanneries; Harness & saddlery; Leather boots & shoes; Leather gloves & mitts; Leather goods (general); Slaughtering & meat packing; Tallow & animal oils.

(C) Textiles:
Wool carding & fulling; Flax & hemp industry; Cotton mills (thread, yarn & cloth); Woollen yarns; Woollen goods; Wool felt goods; Carpets & rugs; Knitting mills; Clothing, men's wear, factory & custom; Clothing, women's wear, factary & custom; Hats & caps; Cordage, rope & twine; Awnings, tents & sails.

(D) Wood and Paper:
Saw mills; Pulp & paper mills; composition roofing; Boxes & bags, paper; Printing, publishing & bookbinding ; Lithographing & engraving; Wood preserving; Containers (including baskets, crates, boxes, packing cases, cigar boxes, cooperage, wooden piping, box shooks & cooperage stock); Furniture; Woodwerking & turning (including bobbins & spools, pulleys, lasts, woodwoeking, & sash & door factories); Carriages, wagons & sleighs; Canoes, row boats & launches; Matches.

(E) Iron & Its Products:
Pig iron & ferro-alloys; Steel furnaces & rolling mills; Foundries & machine shops; Iron & steel bridge works; Structural iron & steel; Boilers; Engines & locomotives; Agricultural implements & machinery; Pumps & windmills; Industrial machinery; Automobiles; Automobile accessories & parts; Bicycles & motorcycles; Railway rolling stock; Stoves & furnaces ; Wire & wire goods; Sheet metal goods; Hardware; Cutlery & Edged tools; Tools & implements.

(F) Non ferrous metals and their products:
Non ferrous metals, smelting & refining;
Aluminum & its products; Brass & copper products;
Lead, tin & zinc products; Nickel & cobalt products;
Precious metals & their products;
Jewelry manufacturing; Clocks & watches;
Electrical & gas supply factories; Lamps & lanterns.

(G) Non metallic mineral products:
Asbestos; Brick & tile; Fire brick & fire clay; Stoneware & pottery; Coke; Peat; Glass manufacturing; Lubricating oils & Greases; Petroleum refining; Stone & stone products; Cement; Abrasives ; Mica; Mineral & aerated waters; Salt.

(H) Chemicals and allied products :
Coal tar & its products; Chemicals other than coal tar; Explosives & cellulose products; Chemical fertilizers; Medicinal & pharmaceutical preparations. Pigments, paints & varnishes; Soap, perfumery, cosmetics & other toilet preparation; Inks, dyes & colour compounds; Wood distillates & extracts; Miscellaneous chemical industries; Directory of Chemical Industries.

(I) Miscellaneous:
Amusement & sporting goods; Brooms & brushes; Mattresses & other household equipment; Musical instruments; Musical instrument materials; Trunks & valises; Umbrellas & parasols; Scientific equipment; Ice, artificial; Stamps & stencils.

Reports on Groups of Industries, classified according to the use or purpose of their principal product as follows:

(a) Food.
(b) Clothing.
(c) Drink and Tobacco.
(d) Personal and Household goods.
(e) Books.
(f) Equipments
(g) Materials for further manufacture.

TRADE (IMPORTS AND EXPORTS)

Annual Report of the Trade of Canada.
Monthly Report of the Trade of Canada.
Monthly Summary of Trade Statistics.

INTERNAL TRADE:

Grain:-

Annual Report on the Grain Trade of Canada.
Weekly Report on the Grain Trade.
Monthly Report on Mill Grind.

Live Stock, etc.:-

Annual Report on Live Stock, Animal Products and Cold Storage.
Monthly Report on Stocks in Cold Storage.
Quarterly Report on Visible Supply of Hides and Skins.

Prices Statistics (Pending):-

Producer's Prices.
Wholesale and Jobbers' Prices.
Retail Prices.
Municipal Market Prices.
Prices of Securities.
Prices of Services.

Other:-

Monthly Report of Visible Supplies of Raw and Refined Sugar.

TRANSPORTATION, COMMUNICATION AND PUBLIC UTILITIES:

Railways and Tramways:-

Annual Report on Railway Statistics.
Monthly Bulletin re Railway Revenues, Expenses, Incomes and Operating Statistics.
Monthly Statement re Traffic of Railways.

Express:-

Annual Report on Express Statistics.

Telegraphs:-

Annual Report on Telegraph Statistics.

Telephones:-

Annual Report on Telephone Statistics.

Water Transportation:

Report of Census of Canadian Registered Ships.
Annual Report on Canal Statistics.
Monthly Report on Canal Statistics.
Annual Report on Navigation.

FINANCE:

Annual Report on Provincial Finance.
Annual Municipal Statistics of Cities of 10,000 population and over.
Annual Municipal Statistics of Urban Municipalities of 3,000 to 10,000 population.

JUSTICE:

Annual Report on Criminal Statistics.

EDUCATION:

Report of Conference on Education Statistics, held October 21-22, 1920.
Historical Statistical Survey of Education in Canada.
Annual Report on Education Statistics, (pending).

GENERAL:

The Canada Year Book, 1920 with Map of Canada and Newfoundland, a Statistical Summary of the Progress of Canada, and maps and diagrams. pp. i-xviii, 1-768.
Contents: I. Reconstruction in Canada. By. S.A. Cudmore, B.A., (Tor.), M.A. (Oxon.), F.S.S., F.R. Econ. Soc., Editor Canada Year Book, Dominion Bureau of Statistics, Ottawa. II. Chronological History of Canada. III. Physical Characteristics of Canada including Geographical Features; Economic Geology, 1919, by Wyatt Malcolm, Department of Mines, Ottawa. IV. Area and Population. V. Education. VI. Climate and Meteorology. VII. Production. VIII. Trade and Commerce. IX. Transportation and Communications. X. Labour, Wages and Prices. XI. Finance. XII. Administration. XIII. Legislation and Principal Events of the Year 1920. XIV. Extracts from the Canada Gazette.

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