

Statistical Systems

History of development of statistics in various countries

By ERNEST H. GODFREY, F.S.S.

On February 13 and 14, 1914, the American Statistical Association of Boston celebrated its seventy-fifth anniversary under the presidency of Mr. John Koren. The occasion was marked by the reading of a remarkable series of special papers by eminent authorities, including one on "Seventy-five Years of Progress in Statistics," by Dr. S. N. D. North, by a banquet at which were present as guests of the association representatives of the French and Canadian Governments and of the Statistical Societies of London and Paris, and by conferring the Honorary Membership of the Association upon a number of leading statisticians in different parts of the world.

A UNIQUE MEMORIAL VOLUME.

But with a view to provide a memorial that should be at once permanent and useful, Mr. Koren conceived the happy idea of undertaking the publication in one volume of a series of Memoirs, describing the history and development of official statistics throughout the world. The outbreak of the great war in July of that year naturally placed great obstacles in the way of a speedy performance of the allotted task; but fortunately the idea was not abandoned, and the Memorial Volume as contemplated has recently issued from the press. It consists of 773 8vo. pages, and is published for the American Statistical Association by the Macmillan Company of New York. The object of this article is not only to draw attention to an important work of unique character, but also to indicate some of the more interesting features of statistical development in the principal countries of the world, as described by the contributors to the volume.

In his introduction, Mr. Koren describes the object of the work and the difficulties of its production and from it may be quoted the following paragraph:—

"Probably no other international work has been prepared under greater difficulties, and none of more permanent value. It has come into being during a world conflict; it is without a counterpart in any language; it could not now be duplicated; and it marks a distinct era in official statistics which the war brought to a close. From this world-wide disturbance a new order of things will emerge that is certain profoundly to affect the future development of statistical work. Thus the volume in a special sense becomes an invaluable historic document telling the ways and means whereby civilized countries so far have taken measure of their material and social conditions—a monument to a bygone age."

The countries represented by memoirs in the volume are Australia, Austria, Belgium, Canada, Denmark, France, Germany, Great Britain and Ireland, Hungary, India, the Netherlands, Norway, Russia, Sweden and the United States.

In inviting the contributors to describe the statistical organization of their respective countries, Mr. Koren issued a programme dividing the subject into (1) Historical; (2) Present Statistical Organization, and (3) Future Development. In the main, the writers have adhered consistently to this plan, with the result that the volume exhibits a unity of design and treatment that could hardly otherwise have been attained.

THE BRITISH EMPIRE.

The countries of the British Empire included in the volume are Great Britain and Ireland, India, Australia, and Canada. The articles for the two first-named are contributed by Sir Athelstane Baines, C.S.I., a distinguished member of the Indian Civil Service now retired, and a past president of the Royal Statistical Society. Sir Athelstane states that the Domesday Book may be called the first landmark in British statistics, and for many generations it remained the only record of the resources and population of the part of England to which it related. The dread of the plague, he writes, was probably the origin of the registration of deaths in 1532, which was followed by that of baptisms by the parish clergy. In 1661-2 these records began to be of statistical use, and the "Observations" of Captain John Grant on the London Bills of Mortality were the first of a long series of works on British vital statistics. He was the first to bring to light the regularity of social phenomena, the excess of male births over female births, and the subsequent tendency to numerical equality of the sexes. Coming down to the eighteenth century, when statistics were beginning to be recognized as a science, we

have the interesting statement of the first use of the words "statistics" and "statistical" by British writers. Sir John Sinclair used the term in his famous "Statistical Account of Scotland," and he frankly stated that he adopted it because he thought that the word, being new, would attract readers to the book. Professor Hull, of Cornell, is authority for the statement that the word statistics was invented by Achenwall in the eighteenth century, and that it is derived from the Italian word "statista," a statesman. Malthus' works on population were perhaps the most famous statistical studies of this period. The author concludes his review by reference to the "marked departmentalism" of British statistics and the desirability of securing statistical interdependence by the controlling influence of an authoritative central office—a reform long earnestly advocated by leading statisticians and still to be realized.

The same writer's brief but lucid description of statistics in British India comes with authority from the former Census commissioner for India. He quotes the remark of an Indian official of high caste that the Hindus for over 3,000 years had looked upon figures and statistics with what they regarded as justifiable contempt, because they were a spiritual race, regarding everything of this world as a mere illusion, and that therefore facts and figures connected with the life-history of nations were matters of no concern to them. Two important facts bear upon Indian statistics. First, that of the 245 millions of British India (excluding the 71 millions in native states) less than 9 p.c. of those over 20 years old can read and write and secondly that the component parts of India differ so widely in climate, habits and social divisions that aggregate figures for the Empire are, as a rule, devoid of statistical value. Furthermore, 90 per cent of the people are rural and agricultural, and are domiciled in villages which are territorial units of the nature of a parish or small township, and of these there are over 537,000. A list of the statistical publications of India is appended to the article—and we close this review of it by mentioning that the first general census of India was taken in 1881, and that the agricultural statistics of India date also from that year.

The article on Australia is by Mr. G. H. Knibbs, C.M.G., F.S.S., the Commonwealth statistician. He begins with the date of August 23, 1770, when Captain Cook took possession of the whole eastern coast in right of H.M. George III. The first of the State Statistical Bureaus to have independent existence was that of New South Wales, established in 1886. Confederation in 1901 brought legislative problems very similar to those with which Canada had to deal after 1867, and it is rather a coincidence that both countries passed a "Census and Statistics Act" in the same year, 1905, providing for the taking of a census in 1911, and every tenth year thereafter, and for the collection of statistics on specified subjects. Mr. Knibbs points out that in re-organizing the Australian statistical system after Confederation, two methods of procedure were open for adoption: (1) Complete unification by which all statistical work would have been controlled by the Federal Bureau, the State Bureaus forming branch offices under the direction of the Central Bureau and (2) preservation of the internal independence of the States Bureaus, the Federal Bureau being furnished with data upon a system agreed upon. The second of these alternatives was chosen and definite arrangements for effective co-operation between the six State Bureaus and the Commonwealth Bureau were established after a Statistical Conference which took place in November and December, 1906. As a result, the official statistics of Australia were placed upon a fairly satisfactory footing, though, as Mr. Knibbs points out, there is upon it now. During the last three years, however, still room for improvement in the training of statistical officers and in the removal of administrative defects. The Commonwealth Bureau of Statistics is at present actively engaged in putting forth statistical data concerning all departments of the national life, and the Commonwealth Official Year Book, issued by the Bureau, is a monument of intelligent and painstaking labour.

The article in the volume of the history and development of statistics in Canada was entrusted to the present writer, who having already dealt with the subject in previous articles in the Journal (see issues

of December 21 and 23, 1915) need not dwell further considerable progress has been made towards placing the official statistics of Canada upon an improved basis. The creation of the Dominion Bureau of Statistics by the Statistics Act, 1913, represents a constructive reform upon lines advocated by the Departmental Commission of Statistics in 1912. In the Memorial Volume it was pointed out that reform in two classes of Canadian statistics was urgently called for, viz., vital statistics and statistics of agricultural production. Reforms in both of these directions are now being rapidly effected. On June 19 and 20 last, a thoroughly representative conference of vital statisticians and others interested in the subject was held at the new Bureau in Ottawa, when resolutions were adopted which are likely to have a far-reaching effect and to eventuate in the creation of Dominion-wide vital statistics of trustworthy character, whilst for agricultural statistics the present year will witness for the first time the estimation of crop areas and numbers of live stock by improved methods in co-operation with the Provincial Governments. A complete census of production for 1917 is another important enterprise of the Bureau, the results of which are now being compiled. Unlike Australia, the provinces of Canada have no general statistical bureaus, excepting Quebec, where a Provincial Bureau of Statistics was established in 1913. This Bureau not only publishes an excellent Provincial Year Book, but also exercises effective control over nearly all the official statistics of the province. The Act under which the Bureau was established provides for co-operation with the Dominion Bureau of Statistics, and it is probable that future statistical progress in Canada will eventually follow the same general lines.

EUROPEAN STATISTICAL SYSTEMS.

Common to many of the countries, including Austria, Hungary, Belgium, Denmark, Germany, Holland, Norway, Sweden and Russia, is the principle of a Central Statistical Commission by which the official statistics of the country are to a large extent controlled, thus securing the adoption of approved scientific methods, the prevention of over-lapping and duplication and the prosecution of special statistical inquiries as called for by national needs. Statistical reforms in most of the leading countries of Europe have only been attained after years of persistent endeavor. Periods of stagnation during which those in control have willingly or unwillingly submitted to mere routine have been relieved by the patient work of men of genius and initiative. During the last 100 years, valuable progress has been effected by international statistical congresses that have sought to render the statistics of different countries, as far as possible internationally comparable, and to induce the statisticians of different countries to adopt uniform and approved methods.

Thus, in Austria, Inama Sternegg, who became president of the Central Statistical Commission in 1884, and was subsequently president of the International Statistical Institute, was gifted with supreme energy and ability. His appointment marked the beginning era in the history of Austrian Government statistics. Amongst the greatest of European statisticians was the famous astronomer Quetelet of Belgium. He was the first to apply the so-called "law of large numbers" to subjects of statistical inquiry, and he opened up a field for the application of mathematical processes to social phenomena which has been and is being actively explored with fruitful results. He was also the great promoter of the International Statistical Congresses which took place from 1853 to 1876, and which were subsequently continued in the biennial sessions of the International Statistical Institute formed in 1885.

The article on statistics in France, from the pen of Prof. Fernand Faure, is one of the most complete in the book. He deals under Part I (History) with statistics in France from the 8th to the 18th century, describing the demographical and land statistics of the middle ages. The second division carries the story forward to the end of the 16th century; the third describes French statistics in the 17th and 18th centuries, and finally those of the 19th century. Part II, is devoted to the present organization of French statistics and Part III, to possible progress. This is stated to be desirable in two directions: (1) Better centralization and specialization, and (2) improvement of personnel.

The article on Holland is written by Dr. C. A. Verrijn Stuart, who refers to the well-known passion for statistics of the great Napoleon. When Holland was annexed to the French Empire in 1810, Napoleon gave orders for the compilation of detailed statistics of the country, its inhabitants and means of subsistence. A bulky report was the result, and its contents were

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