

STATISTICAL AND SOCIAL INQUIRY SOCIETY OF IRELAND.

THE FORTHCOMING CENSUS OF POPULATION.

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(To be read on Thursday, 2nd April, 1936.)

A Census of the Population of Saorstát Éireann is to be taken on 26th April, 1936. As an item of propaganda in connection with the preparatory work for Censuses of Population it has been customary to read before this Society a Paper on Population Censuses. This Paper, accordingly, will explain in brief the history and purposes of Censuses in general, and the results and method of compilation of the last Census taken in the Saorstát. In this country there is not the same amount of assistance, by way of criticism, available from non-official quarters to the officials charged with the duty of Census taking, as is the case in other countries, and I would be glad if this Paper will help to stimulate an outside interest in Census-taking.

History

Sufficient has been written by way of preface in papers on the records of this Society on the history of Census-taking from the earliest times. Census-taking is a very old-established institution and dates almost from the dawn of civilisation. It is to-day one of the principal instruments of public administration in every civilised country. It may be said that these Inquiries have greatly helped towards the development of world civilisation. In the past, Census Inquiries had as their object the mustering of fighting men, the levying of taxes or the determination of political status. In that way, a Census had specific reference to the individual but now it may be said that the interest centres chiefly on the population as a whole, and absolute secrecy is observed by all those engaged on the collection of the information and the compilation of the Statistics. Both in the extent of the collection of the data, and in the magnitude of the operations involved in compiling, analysing and otherwise adapting these data to the manifold public and private uses for which they are designed, considered merely as an administrative task, the Census is one of the largest activities of Governments. Skipping over the period from 4000 years B.C. when the Babylonians had developed a system of returns in connection with revenue control, we read of the enumeration of the people in Egypt some 2,000 years later for the purpose of a systematic arrangement for the control of labour in the building of the Pyramids, and the famous Census taken by King David in 1017 B.C. This Census achieved an evil notoriety in history and was cited for many centuries in Christian Europe in warning against the spirit of inquiry. In 1753 a Bill to take a Census was introduced into the British Parliament and met with much opposition. One member stated that he did not believe that "there was any set of men, or indeed any individual of the human species so presumptuous or abandoned as to make the proposal." The bill was defeated and the Census referred to as an impious

act There was the Breviary of Chalemenge, A D 800 and the Domesday Book of William the Conqueror, A D 1086, which are rightly regarded as a type of Census.

The first Census on modern lines in which there is a record of persons in each household with their ages, occupations and conjugal conditions was that taken in 1666, mostly by his own hand, by Talon the great Intendant of New France (now Eastern Canada). The first Censuses in Europe, those of France and Sweden, date only from 1719 and 1748 respectively. In 1731 an Inquiry was instituted by the House of Lords, Ireland, for ascertaining the population through the medium of both the Magistracy and the established Clergy, but it was stated that it was by no means complete, because "large tracts of the country were not subject to the jurisdiction of the former of these classes or to the influence of the latter." In Ireland the first attempt at a Census was made in the years just after 1811, but it was not successful, as it was spread over two years and was taken only in respect of some parts of the country. In 1821 an enumeration of the people of Ireland was for the first time successfully and correctly made, but it was not until 1841 that the "Household" Schedule was used, on which the head of each household was required to fill in particulars relating to each member of the household resident on a particular night. The services of the police were made available for distributing and collecting these Schedules.

The "Household" Schedule is, even now, not universally used. In several countries Population Censuses are compiled by enumerators who visit each house and inquire *viva voce* for the necessary particulars which, having been recorded in notebooks, are subsequently transferred to larger tabulation sheets. Censuses were taken regularly at the decennial periods from 1841 to 1911. It has become a matter of history that there was no Census of Population taken in Ireland in 1921 on account of the disturbed political state of the country. A Census, however, was taken in 1926 and again after a period of 10 years, a Census is planned to be taken this year. Prior to the taking of regular Censuses, certain estimates of the population of Ireland were made, these are referred to in the Final Report in the Census of Population for 1926. There was the estimate compiled in connection with the famous Survey of William Petty, based on the numbers of chimneys and hearths as ascertained from the collection of Hearth Money Tax. Varying bases were used for estimates at later times by other people. Not much reliance can be placed on the figures except in so far as it can be said that some estimate is better than no information at all.

Changes in 1936 Census Form.

Compared with the Census Inquiry of 1926, the forthcoming Census will not show much change. The questions asked at a Census should be simple and easily answered. The following are the principal changes made in the Schedule to be used for the 1936 Census as compared with that of 1926. In the first place, a suggestion, made by the special Census sub-committee appointed by the Statistical Society, to alter the sequence of some of the headings has been adopted. The heading in the Age column contains a special note to the effect that "great care should be taken to give *exact* age in years and months." An attempt was made at the 1926 Census to distinguish, in the headings for the column relating to Irish Language, between those who were native Irish speakers, and those who, while at school or later, had acquired a knowledge of the language, but when the results of the Inquiry were compiled, there was ample internal evidence to show that the distinction was misunderstood

by large numbers of householders when filling their Census Returns, and accordingly in the Census volume on Language we were able to publish with confidence only the numbers of (1) those who could speak Irish only, (2) those who could speak Irish and English (3) those who could read, but could not speak Irish. Only these three sub-heads are included in the Language column for the 1936 Census.

In the section dealing with the occupation and employment of each person, the limit of age, which at the 1926 Census was 12 years and over, has been altered to 14 years of age, as this is now the legal school-leaving age. The sub-heading "Employment" is changed to "Employer and Employer's Business" as the principal object of this question is to ascertain the status and the industry in which people are engaged.

The section relating to Fertility, which appeared in the 1926 Schedule, has been dropped and in lieu thereof there is now a section relating to Spells of Unemployment. All employees and persons out of work at Census date are required to state the total number of weeks of unemployment during the 12 months preceding Census date, divided into the following causes.—(a) Unable to find work, though able and willing to work, (b) personal sickness or injury; (c) all other causes (strikes, lockouts, illness in the home, etc.). The information obtained under the new heading will show the total amount of unemployment in spells during a 12 months period, whereas the information relating to "Out of Work," given in the personal occupation column will refer only to those persons who, at Census date, were definitely out of work, and indicate the duration of the period of "present" spell of unemployment.

It may be opportune, while on the topic of unemployment, to refer to a Special Report (P 1852-1935) entitled "Trend of Employment and Unemployment in the Saorstát" prepared by the Department of Industry and Commerce and covering the period 1926 to 1935.

At the last Census, householders were asked to state the total area in statute acres of all agricultural holdings in the Saorstát, of which persons usually resident in the household were the rated occupiers, but excluding land held on the 11 months system or in conacre. The purpose of this question was to ascertain whether persons whose principal occupation was other than farming were also farm owners, and if so, the size of holdings. A recent change was made in our agricultural statistics whereby land-holders are classified in groups according to the valuation of their holdings whereas previously the classification was by size (in acres) of their holdings. In different parts of the country holdings of, say 100 acres could possibly have entirely different meanings. In one case it might refer to 100 acres of good pasture while in another the holding might consist of 100 acres of marsh, bog or rough mountain land, and it would not be correct to classify both of these in the same group of 100 acre farms. A much more satisfactory classification is according to valuation. Accordingly, in the 1936 Census a question as to the Poor Law Valuation of the agricultural holding has been added, the valuation, of course, to cover buildings as well as land.

When the drafting of the 1936 Schedule was being considered, Government Departments and Public Bodies likely to be directly concerned in the headings of the Schedule were consulted and the several suggestions put forward were duly taken into account before the Schedule was finally adopted. Inquiries into specific subjects can more satisfactorily be made, and with economy, by means of "special questionnaires," rather than as part of a general inquiry, such as the Census of Population. It may be of interest to set forth the list of subjects which were inquired into at the recent Censuses of some other countries:— See page 73

The 1926 Census.

The results of the 1926 Census were published in Subject Volumes—a complete break from the tradition of Area Volumes in which Tables with figures for all subjects for a single County or County Borough were included. For the 1936 Census it is proposed again to adopt Subject Volumes in which all particulars relating to a single subject for the whole country will be included.

The 1926 Census was the first Census of Ireland which was compiled with the aid of statistical machinery. Previously compilation was done by hand, that is, the clerks made straightforward counts of the particulars entered on the Census Schedules. It was not possible by that system to get anything like the degree of cross-classification which is possible when statistical sorting and counting machines are used. The publication of the results of the Census was made in 9 subject volumes. For previous Censuses, publication was made by geographical areas (Counties and County Boroughs).

I may be permitted to draw your attention briefly to some specific characteristics or elements in the population content of 1926 according to the Census.

The subject volumes of the Report were Population by Areas, Occupations, Religions and Birth-places, Housing, Ages and Conjugal Condition, Industry, Industrial Status, Irish Language, Dependency.

The First Volume contained the population by AREAS, down to the District Electoral Division and the Census town, classified by sex. This is essentially the population volume.

The total population of the Saorstát was 2,971,992, consisting of 1,506,889 males and 1,465,103 females, showing a reduction of 168,000 or 5.3 per cent., compared with 1911, 15 years previously, and contrary to what is regarded as normal—an excess of males over females. A remarkable feature about the distribution of the population of the Saorstát is that over 61 per cent. were living in isolated dwellings scattered throughout the country. The enumerators were told to regard as a Census town any aggregate of more than 20 houses clustered together, and we found that two-thirds of the whole population reside outside such clusters of houses or census towns. The density of our population per square mile, is comparatively low amounting to only 113 persons. In Northern Ireland there are 237 persons to the square mile; in England and Wales 693 persons; in Belgium 711 persons. Germany and Italy have each about 350 persons to the square mile. Another remarkable feature about the distribution of population is that almost two-thirds of the total population reside within 20 miles of the sea coast. If Limerick is regarded as a maritime town, Kilkenny is the only inland town with a population of over 10,000.

The Second Volume dealt with OCCUPATIONS. Everybody over 12 years of age was classified according to his or her occupation, and it was found that 1,223,000 were at work, 78,000 were described as "out of work," 41,000 were in hospitals, institutions, etc., leaving a balance of 842,000 which included 550,000 females engaged on household duties, who were without definite occupation. The 1926 Census was the first Irish Census in which complete and distinct occupation and industrial distribution of the population was made. The figures show that two-thirds of all those at work at Census date were engaged in production; 51 per cent in Agriculture and 15 per cent. in Industrial production. It is interesting to contrast these figures with the corres-

COUNTRY--SUBJECT	Census Year	Name and Sex	Relationship to Head of Household	Absent Member of Family	Actual Age	Year of Birth	Conjugal Condition	Orphanhood	Birthplace	Nationality	Language	Education	Religion	Occupation	Industrial Status	Industry	Secondary Occupation	Out of Work	Duration of Unemployment	Children Born	Titularity (Deaf, Dumb, etc.)	Usual Residence	Length of Residence	Place of Business
Irish Free State	1936	x			x		x		x		x					x		x						
	1926	x			x		x		x		x					x		x						
Northern Ireland	1936	x			x		x		x		x					x		x						
	1926	x			x		x		x		x					x		x						
England and Wales	1931	x			x		x		x		x					x		x						
	1921	x			x		x		x		x					x		x						
Scotland	1931	x			x		x		x		x					x		x						
	1921	x			x		x		x		x					x		x						
Canada	1931	x			x		x		x		x					x		x						
	1921	x			x		x		x		x					x		x						
Australia	1933	x			x		x		x		x					x		x						
	1926	x			x		x		x		x					x		x						
New Zealand	1926	x			x		x		x		x					x		x						
	1936	x			x		x		x		x					x		x						
Union of Sth Africa	1936	x			x		x		x		x					x		x						
	1931	x			x		x		x		x					x		x						
India	1931	x			x		x		x		x					x		x						
	1930	x			x		x		x		x					x		x						
Belgium	1930	x			x		x		x		x					x		x						
	1930	x			x		x		x		x					x		x						
France	1930	x			x		x		x		x					x		x						
	1930	x			x		x		x		x					x		x						
Germany	1933	x			x		x		x		x					x		x						
	1933	x			x		x		x		x					x		x						
Italy	1931	x			x		x		x		x					x		x						
	1931	x			x		x		x		x					x		x						
Luxembourg	1930	x			x		x		x		x					x		x						
	1930	x			x		x		x		x					x		x						
Spain	1930	x			x		x		x		x					x		x						
	1930	x			x		x		x		x					x		x						
Switzerland	1930	x			x		x		x		x					x		x						
	1930	x			x		x		x		x					x		x						
America (U S)	1930	x			x		x		x		x					x		x						
	1930	x			x		x		x		x					x		x						
Ceylon	1931	x			x		x		x		x					x		x						
	1935	x			x		x		x		x					x		x						
Japan	1931	x			x		x		x		x					x		x						
	1935	x			x		x		x		x					x		x						

ponding figures for England and Wales, where we had 51 per cent. engaged in Agriculture, they had only 7 per cent., and while we had 15 per cent. in Industrial production they had 48 per cent.

In Agriculture, which absorbs more than half the working population, we found there were only 50,000 employers, 217,000 persons working on their own account, 264,000 assisting relatives on the farm, *i.e.*, the sons and daughters of farmers, and 113,000 employees. Only one-fifth of all farmers were employers of paid labour. The farms up to 30 acres in extent were found to support half of those dependent on farming for their livelihood.

Amongst those engaged in non-agricultural production, the greatest number was found in the building and construction industry, 31,000. The industries with the next largest number of employees were tailoring and dressmaking, with roughly 9,000 each, and carpentry with 8,000,

The Third Volume dealt with RELIGIONS AND BIRTHPLACES. In this Volume the process of cross-classification is carried forward and we find the population classified by Areas down to District Electoral Divisions, by age groups, by occupations and in the case of farmers by the size of their farms. Catholics were found to represent almost 93 per cent. of the total population. Compared with the previous Census 15 years earlier, it was found that the number of Catholics had decreased by 61,000 while the total number of those adhering to other religions had decreased by 106,000.

For Birthplaces we find the numbers who were born in the different foreign countries and also those born in the towns and countries in the Saorstát in which they are residing. The birthplace figures are cross-classified by age-groups, and by occupations. The most important piece of information derived from the birthplaces question was the fact that 83 per cent. of the total population of the country were born in the county in which they resided; 14 per cent. were born in the Saorstát, but in some county other than that in which they resided; 1 per cent. was born outside Ireland. We also find that amongst all countries in the world, Ireland is unique in the number of her native-born, *i.e.*, actually born in Ireland, who now live in other countries. There are over a million Irish-born living in the United States of America. There are in England and Wales 365,000, in Scotland 159,000, in Australia 105,000, and in Canada 93,000.

The Fourth Volume dealt with the important subject of HOUSING. The essential population unit involved in a Housing Inquiry is not, as in other Census subjects, the individual, but the family or group of individuals who occupy in common a dwelling or part of a dwelling. It was revealed that there were 584,000 inhabited houses in the Saorstát, and that 47,000 families lived in 1-roomed dwellings, roughly half of this number were living in Dublin City. For the whole of the Saorstát 5,800 families, consisting of 6 persons or over, lived in 1-roomed tenements. Taking the population as a whole, it was found that most were living in 3-roomed dwellings. When we speak of rooms, we include only bedroom, dining room, kitchen and ordinary living rooms. Bath-rooms and sculleries, etc., are not taken account of as rooms. It is generally reckoned that families with more than 2 persons per room are over-crowded. According to this definition 75 per cent. of the persons living in 1-roomed dwellings; 59 per cent. of those in 2-roomed dwellings; 37 per cent. of those in 3-roomed, and even 17 per cent. of those in 4-roomed dwellings, were living in over-crowded conditions.

The next Volume (V) published dealt with AGES AND CONJUGAL CONDITIONS, and was issued in two parts. The first part showed the figures by areas and the second part—a volume running to over 300 pages,—cross-classified the Age and Conjugal Condition figures by Occupations and Industries. Perhaps the most important facts disclosed were the abnormally large proportions of boys and girls in this country under 18 years of age who had not secured gainful occupations, and the exceptionally small proportion of men and unmarried females over 65 years of age who had retired from gainful occupations. It was learned that juveniles in the Saorstát entered employment on an average 2 years older than juveniles in Great Britain, only 33 per cent of the boys beginning work between their 13th and 15th birthdays, as compared with 71 per cent. of that age of boys in England and Wales. Similarly, in the case of girls, the Saorstát figure was only 29 per cent and the corresponding figures for England and Wales was 58 per cent.

It was found that the average age of marriage in the Saorstát was 35 years in the case of husbands and 29 years of age in the case of wives, showing a difference of about 6 years. The corresponding figures for England and Wales were, husbands 29 and wives 26½ a difference of 2½ years. 50 per cent. of our males are unmarried at 40, and the corresponding figure for females is 32 per cent. In England and Wales the figures are 16 and 20 per cent. respectively.

In the Volume (VI) dealing with INDUSTRIAL STATUS the numbers of persons who were recorded as “out of work” are shown. The percentage of those out of work in the Saorstát was small—only 6 per cent. as compared with an exactly corresponding figure in Northern Ireland of 11.2 per cent. Of the females unemployed, over half were under 24 years of age as compared with only a quarter of the males at that age.

The Seventh Volume dealt with the INDUSTRIAL CLASSIFICATION. This classification is different from the occupational classification. The industrial classification depends on the nature of the business carried on by the employer; for instance, in the case of several men, while their occupation might be the same, *e.g.*, carpenter, the Industrial Classification might be different in each case. It would be building and contracting if he was working for a builder, brewing if he was a carpenter in a brewery, or the metal industry, if he happened to be a carpenter employed in a foundry. There is a very useful table in that Volume showing under each industry the numbers of persons in the different occupations, how many are engaged in production and maintenance, in transport and communication, in commerce and finance, in professional or personal services, clerical staff, warehousemen and other skilled workers appropriate to the industry.

Volume Eight dealt with the IRISH LANGUAGE. It was learned that the number who stated that they could speak Irish was 544,000 or 18.3 per cent. of the total population. It was remarkable to find that between 1911 and 1926 there had been a decrease of 67,000 in the number of Irish speakers in the Gaeltacht, but this was compensated for by an increase of 56,000 in the rest of the Saorstát.

Volume Nine dealt with DEPENDENCY. Much of the material in this Volume was used as a basis for preparing the legislation for the Widows' and Orphans' Pensions which became payable at the beginning of this year. The Census showed that there were 105,000 widows in the whole country, and that there were 51,000 children under 15 years of age with the father dead, 50,000 having the mother dead and 6,600

with both parents dead There was, unfortunately, a residue of about 8,000 children under 15 years of age for whom particulars as to orphanhood were not given on the Census returns.

These Subject Volumes were issued with all the statistics presented in tabular form, but an analysis of the figure contained therein accompanied each Volume. These analyses were revised and issued as a FINAL VOLUME of the Report in a series of summary chapters, dealing in turn with each aspect of the population covered in the Census.

The method of presenting the data, though dictated in part by the order and manner in which the various compilations were completed was intended to emphasise the fact that the population problem must be considered as a whole, rather than as a series of topics to be studied separately. The student of Statistics of Occupations for example, will find in the appropriate table of the final Volume (X) a summary of the leading facts and cross-analysis, relating thereto In Volume 2 he will find the crude figures of Occupations by small areas in the Saorstát. In Volume 3 he will find Occupations classified by Religions and Birth-places, while in Volume 4 the Housing Conditions of the population and the size of families according to their respective occupations are shown. In Volume 5 he will find the Ages of the population, and the Conjugal Conditions, cross-classified with Occupations, while in the other Volumes he will find Occupations inter-related with the other questions in the Census Schedule, namely, Industrial status, the industry in which employed, Irish Language and Dependency. Similarly, with regard to the other matters covered in the Census Inquiry.

The Saorstát Census is taken on the *de facto* system in contrast to the *de jure* system. Under the *de facto* system persons are recorded for Census purposes as resident in the particular area in which they passed Census night. Under the *de jure* system the home of any person means the usual fixed place of abode of that person—that is where the person usually sleeps or dwells. Probably the ideal system is the *de jure* system but it is not as water-tight as the *de facto* system, and there is always a possibility that people might be omitted or duplicated. For legislative and administrative purposes it would undoubtedly be more satisfactory to have available statistics of the total population usually resident in a particular area, rather than the population that happened to be actually there on Census night. The date of the Census in Ireland has invariably been the second Sunday after Easter, a date chosen in the time of the year when the *de facto* population is most likely to approach nearest to the *de jure* population.

In the 1926 Census there was no inquiry concerning infirmities such as deafness, blindness, mental trouble, etc, nor will any such inquiry be made in the forthcoming Census. The experience of the past both here and in Great Britain was that the information obtained from the Census on this subject has been very unreliable, and did not warrant the cost of collection and compilation. In the case of blindness it is not possible to define the degree of blindness which might be regarded as economic blindness Those responsible for filling in the household Schedules are reluctant to admit that their children or relatives are suffering from any type of physical or mental disability.

Townland figures were not published in the 1926 Census Report The smallest unit of area for which figures were given was a District

Electoral Division, but townland figures are available on special application to the Statistics Branch of the Department of Industry and Commerce. The resulting substantial economy in printing was justified as not many such applications were received. It was found convenient for statistical purposes to make use of the obsolete administrative areas known as Rural Districts, the stride from District Electoral Divisions to Counties was too big and, accordingly, the District Electoral Divisions were built up to Rural Districts and the latter into Counties. A choice had to be made as to the amount of detail even by District Electoral Divisions that would be published in the various tables of the Subject Volumes; for instance there would be no point in giving in detail for each District Electoral Division the numbers of males and females separately for each of the 266 occupations and each of the 158 industries into which the population of the country was divided. In this case totals were given for each of the principal towns and for Rural Districts outside towns.

Changes in Compilation.

A few changes in compilation will be made which, to some extent, may affect the comparability of the 1936 figures with those of previous Censuses. The principal changes will be in the language volume and in the volumes for occupations and for industries. In previous Censuses all persons, including infants, were taken account of in the language volume, it being assumed that wherever nothing was entered on the schedule in the language column opposite a name, that person was classified as knowing English only. It is now proposed to disregard altogether infants under 3 years of age, and to exclude them from the language enquiry. Reference to the 1926 Volume on the Irish language shows that because of this assumption large numbers of very young persons resident in the Gaeltacht area were included under the heading "English only," notwithstanding that the big majority of the grown-ups in these areas were classified as "Irish only." These discrepancies while very obvious in the detailed tables were not apparent in the totals.

The Age Question.

Special attention is being given this year to the age query in the hope of securing an improvement.

In most countries there would appear to be a tendency to round off at ages ending in "0" the ages of persons whose actual ages ended in the digits 8, 9, 1 or 2, and an examination of the totals of persons by single years of age as recorded at the 1926 Census shows that this tendency is much aggravated in the Saorstát. I have prepared some rough graphs showing the figures as compiled at the last Census. It is commonly believed that females are more inclined than males to misstate their ages at Census Inquiries, but the graph I have made out shows that the curves for both males and females almost coincide. Two charts have been prepared—one for rural areas and one for town areas. The years 30, 40 and 50, and, to a lesser extent, 35, 45 and 55 were highly popular and, in consequence, the numbers of persons one year below or one year above these ages were considerably depressed. The even numbers, especially the years ending in the numeral "8" show distinct bumps. When the population are classified into quinquennial age groups all these irregularities disappear and we get a much smoother line. For the construction of the Life Tables it was necessary to go as far as the decennial groupings of ages 25-34, 35-44, etc.

The Official Enumerators, when collecting the Census returns are

required to scrutinise them and to draw the attention of the householder or other responsible person to any discrepancy with a view to having the return made out correctly. This year they are being instructed to pay particular attention to the age column, and if the age is given in years ending in 0 or 5, they are to inquire if the age is the actual age or only an approximate age. If the latter, they are to ask for the year of birth and make the necessary corrections. In the Censuses of some other countries, instead of asking the age of the individuals, the year of birth is asked and the necessary deductions for age are made subsequently by the Census Office Staff. It is thought that individuals generally know their year of birth whereas they, especially in later years, do not pay attention to the actual years of age. It will be a big achievement in Saorstát Population statistics if these single age figures can be improved.

During the compilation stages of the last Census an experiment was carried out for three arbitrarily selected rural areas in comparing the ages given in respect of the same person at the 1911 and the 1926 Census. It was found possible to identify the returns for the same family in a large number of cases. It was assumed that heads of households would be aware of the exact ages of young people between the ages of 15 and 20 years, and these, recorded as such at the 1911 Census, should, if alive be 30 to 35 years of age in 1926. The result of the experiment was most gratifying and encouraging. There was a very close agreement. Instead of the true difference of 15 years between the two Census records, the average difference was 14.8 years in the case of females and 14.7 years in the case of males. A tendency to understate was revealed—more so in the case of males than females.

Machine Method of Compilation

A modern Census of Population is compiled by means of punched cards and automatic sorting and counting machines. The punched-card system was first applied in 1890 to the compilation of Census Statistics in the United States. Great Britain made use of statistical machines in 1911, and it was not until the 1926 Census that the punched-card system was used in Ireland. The recording of the original data on the Householders Census Returns consists of translating information from the original documents on to a card in which it can be handled mechanically. There is one card for each person. The card is a thin flexible card of standard size and quality in which the information is represented by holes punched in it, the position of the holes determining the information it is desired to record. These cards, of special material, are very accurately cut and have a thickness between $6\frac{1}{2}$ and 7-thousandths of an inch. The columns on the cards are divided into groups of one or more columns, each group representing a Census heading. The cards, having been punched, are then permanent unchangeable records which can be mechanically sorted and printed, and since the punched holes cannot vary their position, the cards must always reproduce accurately the figures and information they contain. The types of machines originally used have been greatly improved, and the latest improvement, which consists of a printing attachment to the sorter-counter, is a great advance. Time previously spent in taking down and checking the totals recorded from small sorts was considerable. Now these figures will be printed, and checking is not required.

The machines to be used are hand-key punches, by means of which the information already coded will be transferred to the Census cards—there will thus be roughly three million punched cards. On the

Census return certain information is given in figures, but a great deal of the information is given in words. Coding consists of the transformation of words into figures, each occupation, each area, each religion, etc., is given a specific number, and these numbers are punched on the respective cards for each man, woman and child whose name is given on the Census Return. When the totals for each code number have been compiled by adding on the sorting and counting machines, they are de-coded into the appropriate words and provide material for preparing the tables which are printed in the several Census volumes. The whole idea on which the system works is that each item shall be recorded once only by punching and thereafter the cards may be passed through the machines time after time to reproduce the identical information under every desired classification. At the 1926 Census the population was 2,971,992. It is calculated that, although the population of the Saorstát was approximately three million, the number of cards, multiplying the card by the number of sorting operations it was used for, that went through the machines was $48\frac{1}{2}$ million. Some cards went through more frequently than others. For instance, only cards for persons 12 years of age or over went through the machines when we were sorting and classifying population according to occupations and industries. The sorting and counting machines are worked by electricity and are capable of sorting cards at the rate of 24,000 an hour. For Census work this speed is not achieved, because after a particular run of cards, totals of the cards which have been put through must be obtained, necessitating delay, not only in feeding the machines with cards, but in printing the totals.

House and Building Return

Ancillary to the Census proper, returns relating to Houses and Buildings are prepared by the Enumerators, and furnished to the Census Office with the batches of Household Returns. In order to ensure that the Census will be geographically complete, a part of the House and Building Return is made out by the Enumerators prior to the distribution of the Household Schedules. On this Return the Enumerators must account for every building in the district which is placed in his charge by his Superintendent. Sometime after Census date when the Enumerator has collected the Household Census Returns, he completes this Housing Return by inserting opposite the name of the occupier of each dwelling the total number of persons residing therein, and the number of rooms contained in the dwelling. Housing has, of recent years, come to the front as a subject for Government and Municipal attention, and it is accordingly desirable that adequate statistical information should be at the disposal of those engaged in the study of the housing problem and those responsible for its development. Accordingly, the Housing Form to be used at the forthcoming Census has been expanded compared with previous Censuses. For the first time, information will be obtained in respect of uninhabited houses or dwellings, as to whether they are habitable or not habitable, and, in the case of vacant habitable houses, whether they are furnished or not furnished. In the case of houses let in tenements or flats, particulars are asked for the first time for the number of rooms occupied by each family and the number of rooms suitable for housing which are vacant. Information regarding the density of the housing accommodation in the different areas is compiled from the Household Return, but it is hoped that a considerable amount of extra information will be available from a special compilation of the

data provided on the House and Building Return. A change will be made in the method of compilation of housing density figures. In the past, each man, woman and child was counted as one person. It is proposed in future to count children 10 years of age and under as half an adult for purposes of housing density. It has been suggested that a compilation should be made showing Saorstát Housing according to a decency standard.

The standard for the number of rooms required by a family is defined as follows:—

Sleeping Rooms

For a family as a whole, there must be an "over-all" average of at least 1 room per $2\frac{1}{2}$ equivalent adults counting children under 10 years of age as half an adult each for this purpose. Subject to this "over-all" average, any room may be required to sleep 3 but not more than 3 equivalent adults.

Sex Separation

The number of rooms must be such that persons of opposite sex, aged 10 or over, may be separated, except in the case of persons living together as husband and wife, who were deemed to require a separate room shareable only with children. Children under 10 years of age may sleep in any room, with or without adults.

Separate Living Room

In addition to sleeping rooms, a separate living room is to be regarded as necessary and when the standard number of sleeping rooms is less than the total *persons* (not equivalent adults) in the family, not more than one separate living room to be allowed in any case.

The experience of a special investigation on this matter made by the Registrar General for England at the 1931 Census showed that the percentages of families occupying fewer rooms than those prescribed by the decency standard was almost identical with the percentages of families shown by the simple density classification as falling within the "more than the two persons per room" group. He stated that the results showed, and established beyond question, that these percentages corresponded exactly, uniformly and unexceptionally in all the areas tested. It will, accordingly, be a matter for consideration whether we would be justified in incurring the extra cost of making a compilation of Housing Statistics according to a decency standard.

Enumerators

The Gardaí are again acting as Enumerators and the fact that the services of a trained body of men with a high degree of intelligence can be availed of, helps considerably to smooth the work of the compilers.

DISCUSSION.

Professor Duncan said it gave him much pleasure to offer the thanks of the Society to Mr. Lyon for his interesting paper. He had indicated very clearly the difficulties of a statistical nature which had to be faced in the compilation of a Census. One group of difficulties, however, he had not referred to at all; namely, the administrative task of organising the enumerators and the large number of clerks employed on the work of classifying the information after its collection. No doubt the Statistics Branch would organise that work, but it was a task whose physical difficulties should not be minimised in any discussion of the subject.

He thought that one of the questions a Society like this should interest itself in was the object to which the taking of a Census was directed, and the utility of the information derived from a Census. There were three considerations of prime importance that must govern the selection of the questions asked in a Census. The first was that they must be capable of being answered simply by the persons to whom they were addressed. That was one of the reasons why many of the questions that amateur statisticians would like to see included could not be included. The information sought could not be reduced to a form of brief statement, nor could the answer be given in a simple way. The second consideration—and it had been observed by Census authorities in the past—was the preservation of continuity. One of the main functions of a Census was to provide information comparable over a number of years. These were reasons for retaining forms of question and of answer that might not always be the most absolutely suitable for procuring particular information: the preservation of continuity and of comparability. The third consideration was the purpose which must govern the kind of information sought through the questions asked on the Census form. Judging from the type of questions mentioned in the table given on page 73 of Mr. Lyon's paper, they fell into three groups which had a definite relevance to problems of political economy at the present day—particularly since the word "Planning" had become a word of power among Governments.

The first group might be classified as Vital Statistics: information with respect to numbers of population, ages, conjugal conditions, etc. A comparison of the Census statistics of the Irish Free State with those of other countries in this respect gave surprising results. The age boundaries of potential dependents were children of 14 years of age and under and people aged 65 and over. In 1926 the percentage of such dependents in the Irish Free State was 38.4. There were only five countries whose figures were given in the Statistical Abstract which had a percentage of dependency higher than that of the Free State, and in some of these cases the dependency was more a matter of

children than in the Free State. That meant that the Irish Free State had—and was likely to continue to have—a smaller working population than most other countries, and the burden falling on the working population was likely to be greater.

The second group of questions commonly asked were those concerned with Social Statistics—unemployment, housing, etc. In view of the present housing programmes, it was not necessary to advert to the importance of examining the existing housing conditions before any satisfactory scheme could be worked out. The economic fabric of the Free State had endured in the last five years its most severe shock since 1847, and this would be the first Census to take place since the shock. A relatively short period had elapsed since the blow had been administered, but it was probable that it had had some dislocating effects.

Considerable publicity was given to the estimates of population made by the Registrar-General. In recent years these estimates showed an upward tendency. They took into consideration two things—changes caused by births and deaths, and those caused by emigration to, or immigration from, countries outside Europe. There was, however, considerable emigration to, or immigration from, places in Europe, particularly Great Britain, and it was open to doubt whether the estimates made by the Registrar-General were not in excess of the actual population. As a result of some calculations he personally had made of the figures of the net passenger movements by sea from and to the Saorstát, he would not be surprised—though the Registrar's figures showed an increase of 60,000—if the Census showed a decrease in population since the Census of 1926.

Senator Johnson said that speaking not as an expert like Professor Duncan, but as the man in the street, he would like to express the interest he felt in studying the Census volumes. Mr. Lyon's paper gave a few striking examples of facts which had emerged from the last Census. He had himself extracted certain facts with regard to Dublin. Dublin was divided into two sections, North and South, with ten wards in each. It was an interesting fact that almost exactly the same number of families were living in overcrowded conditions in the North and in the South of the city. Taking families with more than two persons per room, there were 11,700 on the South side, and on the North side 11,576. If the standard of $2\frac{1}{2}$ persons per bedroom was taken, the figures were 14,418 for the South side and 14,441 for the North. It seemed almost a deliberate arrangement

It was specially valuable too that one could consider figures for the country as a whole. For instance, taking the married males engaged in the building trade, one found that 33 or 34 per cent of them were themselves living in houses of one or two rooms. This applied not merely to labourers, but to artisans, carpenters, bricklayers, etc. Twenty-seven per cent of the bricklayers were living in houses of one or two rooms. Normally it would be expected that people engaged in building houses, and having the ability to build, would themselves have houses larger than one or two rooms.

There was to be a change in the compilation of the figures with regard to the density of population per house. In the past each man, woman and child had been counted as one person, but in the forthcoming Census children of 10 years of age and under would be counted

as half an adult For purposes of comparison with other countries he thought it was necessary to have this alteration made, but if one wanted to compare the 1936 Census with that of 1926, and to see whether the housing programmes of recent years had resulted in any improvement in respect of housing density, one would be disappointed not to be able to make a comparison In the 1926 Census, when the standard was two persons per room, one of those persons might be one year old, or 70 years old. That might be useful for statistics, but was misleading to the public. The new classification would be better—except for purposes of comparison

Professor B. F. Shields said he would like to pay a personal tribute to the Director of Statistics for the excellent lecture he had delivered, and also to the readiness with which he and his staff were prepared to place statistical data at the disposal of those interested in statistical problems The time, trouble and expense involved in collecting the material in connection with the Census of population should be put to the best use, and he would suggest that there should be a series of systematic talks between the Statistics Branch and local administrators, associations of educationists, public officials, journalists, medical men and others as to the best utilisation of the statistical data that would be forthcoming from the Census.

He was gratified to learn that an attempt would be made to enumerate the number of unemployed for a year prior to the taking of the Census, classified according to the causes of unemployment. He would suggest that more attention should be given to the question of juvenile unemployment, the serious effects of which had been, to a large extent, neglected in this and other countries.

He would, finally, like to see the two Governments in Ireland keeping step with respect to the Census of Population, and taking their Censuses at the same time

The President said he wished to join heartily in expressing thanks to the reader of the paper for the very valuable and interesting material he had put before them. Most of them were concerned in dealing with economic problems of one kind or another, and were very appreciative of the value of the information collected not merely in the Census of Population, but in the various Censuses undertaken by the Statistics Branch. The importance of Censuses had grown with the extended activities of Governments in modern times and the increasing complexity of public services.

In devising new headings, and recording returns, results could apparently be unexpected. No one would have expected that the statistics recorded in the 1926 Census would have ended up in the "mendacity statistics" that Mr Lyon had put on the board for them Senator Johnson had suggested to him before the meeting that possibly the great divergences occurring at the quinquennial periods might be due to the fact that the ages were put down by the Guards, who made a rough shot, getting rough information from the persons concerned.

He thought there was room for improvement in the matter of the length of time that elapsed between the taking of the Census and the making available of the results This applied to figures collected in various connections.

Mr. Lyon, acknowledging the vote of thanks, said that with regard to the time that elapsed between the collecting of figures and their publication, the Irish Free State was actually very much in advance of some other countries in the matter of the expedition with which results were made available. It was hoped to have the figures of the Census of Publication, which would be taken in about three weeks' time, published in August.

With regard to the point made about the Guards filling in ages, it was quite evident—from the handwriting, etc.—on the many forms he had examined that it was only in very exceptional cases that the Guards filled in details on the Census forms

The trend of world opinion was in favour of censuses being taken at quinquennial, rather than decennial, intervals.

Professor Duncan had raised a point about the estimate of population in the middle of the year made by the Registrar-General. The net passenger movement to and from ports in the Saorstát should be taken into account. An attempt had been made since the beginning of the year to get at the cross-Border traffic, by asking the transport companies to state the number of single tickets used. It was not possible to get any account of the movement of people by road

CORRIGENDA

Page 74, line 25: *For* “ countries ” *read* “ counties ”.

Page 73: *The crosses (x) in the 13 columns at the right hand side of the page from the column headed “ Education ” to the column headed “ Place of Business ”, inclusive, should be raised one line space.*