PROSPECTS FOR SOCIAL STATISTICS IN THE NEXT CENSUS YEAR.

BY

EDWIN W. KOPF.

A complete classification of social facts in a discussion on prospects for social statistics in the next census year would probably not serve the practical interests of casualty statisticians and actuaries. The number and complexity of social phenomena, and the lack of precise means for measuring or gauging social forces, are two essential checks and limitations upon our inquiry. Our interest must be confined to those facts in the life of organized society which can be readily recognized as "insurable incidents," or as necessary aids to a proper understanding of these "insurable incidents." The comprehensive summaries of social statistics subject matter arranged by Schäffle* and by Spencer† would not be entirely suitable for our inquiry. We shall profit most from a consideration confined to static and dynamic demology with perhaps a supplementary reference to the elements of economic statistics.

The syllabus of our Society limits our attention to the social circumstances which systems of accident and health, liability, fidelity and surety, burglary, credit, and in somewhat subordinate degree, life insurance seek to indemnify. The statistical facts which provide a broad foundation for the later actuarial treatment of the strictly insurance aspects of these phenomena, might be conveniently arranged as follows:

Static Demology—

Structure, or composition, of population according to sex, age, marital condition, race, nativity, occupational, defective and dependent, religious profession, educational and other social classes.

Dynamic Demology—

Movement, or functioning, of population through births, marriages, divorces, sickness and accidents, deaths, crimes, offenses and delinquencies, and migration.

* Schäffle, Albert E. F., "Bau und Leben des sozialen Körpers."

† Spencer, Herbert, "Descriptive Sociology."

Selected Elements of Economic Statistics—

Wages, hours of labor, housing of the wage earning classes, employment and unemployment, superannuation, pensions, progress of workmen's insurance, poverty and pauperism, savings and investments of the wage earning classes, constructive philanthropy.

Social statistics for recent years bear little relation to a general plan of social study. The chief function of committees of American learned societies which are at present contemplating discussion of plans for statistics in the next census year, is to draw up a schedule of minimum requirements in a single programme. This programme should reasonably express the wishes of the societies acting jointly in such manner as to prevent overlapping, or emphasis upon trivial or non-essential matters.

The interests of the Casualty Actuarial and Statistical Society in static and dynamic demology are, perhaps, nearly identical with the general aims and purposes of the committee appointed over a year ago by the American Public Health Association to consider the vital statistics of the next census year.* Numerous special aspects of vital statistics, when defined as static and dynamic demology, are only of passing interest to the Public Health Association Committee, however. These special problems are, on the other hand, of the first importance to the casualty statistician and actuary. The Public Health Association Committee will consider life tables for the triennium 1919–1921, for instance; the uses of these tables for purposes of compiling, say, a morbidity table as a foundation for sickness insurance premium rates would probably not be anticipated by any one save by the casualty statistician and actuary. Statistics of marriage and remarriage at the several age classes, should be provided for; but the need for statistical material of this kind would not become apparent to a committee authorized to consider mainly the public health aspects of demology.

The American Public Health Association Committee on Relation of the 1920 Census to Vital Statistics (demology) has in circulation for criticism among its members, and in preparation for the first meeting of the committee, a list of topics and a reasonable amount of comment under each topic. With the permission of the chairman of that committee, I am giving an abstract from parts of this preliminary draft:

* Calendar Year, 1920.

(*a*) *Scope of Vital Statistics.*—The American Public Health Association Committee was asked to consider whether vital statistics should discuss only the *movement* of population or whether it should in addition comprehend a discussion of the *structure* of population. Individual topics not provided for in any public or private publication of the last census year, and suggested for discussion in connection with public and private statistical work in the forthcoming census year, are given below.

(*b*) *Marriage Statistics.*—The utility of statistics of remarriage at the several age classes of widows and widowers, in special relation to pension and workmen's compensation problems, was pointed out. The Casualty Actuarial and Statistical Society of America might consider this phase of marriage statistics more closely than will be possible in the deliberations of the American Public Health Association Committee.

(*c*) *Sickness Statistics.*—The recommendations under this head will be of prime interest to casualty statisticians and actuaries. The subject was divided into the following main classes:

1. Institutional sickness and mortality statistics.
   General hospitals,
   Special hospitals,
   Correctional and penal institutions,
   Institutions for the aged and infirm.
2. Community surveys of sickness and disability.
3. Areas of known disease prevalence. Reportable diseases.
   Working of the Model State Law for reporting of sickness. Standardization of sickness statistics tables.

The draft directs attention to the lack of qualified sickness statistics in census or other sources for the last census year. It recommends an inquiry into the practical working of the so-called "Model Bill" for the reporting of certain diseases, including occupational diseases, suggests a Federal Registration Area for general and special hospital statistics and outlines the possibilities for community surveys of sickness in representative areas. Practical means of overcoming the difficulties of nomenclature and classification of diseases and of transmitting the tabulated information for cooperating hospitals to a central agency are advanced. It was suggested that the United States Public Health Service undertake to collect these institutional sickness statistics. Community surveys of sickness were urged.

At the fourteenth annual meeting (1916) of the Conference of State and Territorial Health Officers a resolution was passed recommending the formation of an "Area of Known Disease Prevalence"; another resolution of the fifteenth conference, April 30–May 1, 1917, urged the adoption of standard tables for the recording of sickness statistics for this "Area." At the same conference a paper was read on "The Need for a Federal Voluntary Registration Area for Hospital Sickness Statistics." It is anticipated that active work will be initiated shortly on the formation of this registration area for hospital sickness statistics.*

(*d*) *Vital Statistics in the Service of Social Reform.*—The committee was reminded that conference with statistical, actuarial, labor legislation and sociological societies on this subject was imperative. Published vital statistics are used in too many instances to support programmes of remedial action which are not justified by the inherently limited data employed.

(*e*) *Vital Statistics of Insurance Societies.*—The coöperative statistical study of insurance mortality, sickness and accident experience in the census year was recommended. This work could be accomplished by the insurance societies. Workmen's compensation industrial accident statistics were included in this group of auxiliary sources of statistical information.

(*f*) *Vital Statistics of Industries.*—Analysis of statistical data on physical examination of workmen and of establishment pension and benefit funds was recommended.

(*g*) *Revision of Nomenclature and Classification of Diseases and Conditions, and of Accidents and Injuries.*—Establishment of a suitable nomenclature and classification of diseases and conditions, and especially of accidents and injuries, based upon the present International List of Causes of Sickness and Death, the forthcoming report of the United States Public Health Service Board of Nomenclature, the Report on "Statistics and Compensation Insurance Cost" of the International Association of Accident Boards and Commissions, and the Bellevue and Allied Hospitals nomenclature, was urged. The needs of the decade 1920–1929 were anticipated.

(*h*) *Revision of Nomenclature and Classification of Occupations*

* See forthcoming *Transactions* of the 15th Annual Conference of State and Territorial Health Officers, Washington, D. C., April 30 and May 1, 1917, United States Public Health Service, Wash. D. C., 1917. Also, *United States Public Health Service Reports*, June 15, 1917.

and Industries.—Dissatisfaction with the classification used in the published volume on occupation statistics of the thirteenth census was indicated and the revision of the classification in line with the principles of the International Statistical Institute List was urged.

(*i*) *Life Tables for the Triennium 1919–1921.*—Casualty statisticians and actuaries will be interested in the recommendation for United States Life Tables at the next Federal Census. (The utility of such tables in the computation of morbidity tables for a general population was demonstrated by the Swiss statistician Jester.*) Our Society should inquire into the application of United States Life Tables to the derivation of suitable morbidity tables in anticipation of a need for such material in the decade 1920–1929.

There were other detailed references, in this preliminary draft, to special subjects in demologic sociology for the attention of the American Public Health Association Committee. It will be impossible for that Committee to consider the insurance bearings of this material. The Casualty Actuarial and Statistical Society should take up the discussion from the viewpoint of the utility of demologic data in the actuarial work in prospect for the next census and ensuing years.

Selected Elements of Economic Statistics.

Social statistics may be conveniently considered to include, for our purposes, certain selected elements of economic statistics by the same token that sociology is sometimes assumed to comprise economics in its supporting categories. A few brief comments will suffice to show the importance of relating plans for general social and detailed economic statistics in the census and succeeding years.

(*a*) *Wage Statistics.*—Casualty statisticians and actuaries will probably not be interested in wage statistics beyond the immediate application of such data to the solution of rating and administrative problems in workmen's compensation or other forms of workmen's insurance. The discussion of plans for wage statistics in the study of the distributive processes in the economic life of man is properly a question for the American Economic Association. Our Society should determine upon the way in which it desires wage statistics to be published, perhaps, to show:

* Jester, E., "The Mathematical Basis of Sickness Insurance." *Journal of the Swiss Statistical Society*, 1913, p. 493.

1. Wages in principal occupations, with respect to sex, broad age classes, and geographic areas.

2. Relation of money wages to real wages and the correlation of real wages with other economic phenomena.

(*b*) *Hours of Labor.*—Statistics of hours of labor are necessary adjuncts to the reflective study of the wage factor in workmen's compensation and other insurance problems. Statistics of production and wages, related to hours of labor and the numbers of persons employed, would establish facts on the "intensity of labor." Such facts would go far to explain phenomena observed by Messrs. Mowbray, Black and Beyer (*Proceedings,* Vol. II, p. 418) and others in workmen's compensation experience.

(*c*) *Prices, and the Cost of Living.*—Casualty statisticians will be interested in the methods and results of price statistics as of use in determining the general effect of changes in the price-level upon the several classes in the community and on the economic well-being of the entire community. Cost of living statistics enter into the discussion of real wages, of course.

(*d*) *Employment and Unemployment.*—The unemployment problem of the winter of 1914–1915 directed the attention of most statisticians to the necessity for comprehensive and conclusive statistics of employment and unemployment. While unemployment insurance has so far received little notice from American statisticians and actuaries, the subject is likely to appear as a stated problem for them sooner or later.

The statistical situation should be thoroughly canvassed in anticipation of rating and administrative problems. The several methods of ascertaining the extent of unemployment (1) by inquiry through census enumerators as to how many days each individual of working age lost during the year ending with census day, (2) by determining how many persons are unemployed on the census day, (3) by canvassing employers and tabulating from their records the fluctuating number of employees during the year, (4) by collecting trades unions' unemployment figures and (5) by special inquiry of philanthropic and charitable societies during times of distress, should be examined. The insurance statistician and actuary will find that these methods serve different purposes; an attempt should be made to gauge the validity and establish the insurance uses of the several classes of unemployment data.

(*e*) *Wealth, Poverty and Pauperism.*—Discussions on the eco-

nomic foundations of workmen's insurance very nearly always contain references to more or less misleading statistics of wealth, incomes, poverty and pauperism. Our Society should participate in some plan for gathering qualified statistics on these subjects. Attention is directed to Professor Willford I. King's suggested scheme,* which would facilitate the approximate determination of net family assets and of the incomes of individuals, partnerships and corporations. The available statistics, and any suggested plans for the improvement of information on national wealth and incomes, should receive the consideration and criticism of the casualty statistician.

Statistics of poverty, such as presented by Booth† for the social classes of London and by Rowntree‡ for York, England, are not available for the United States. An application of the methods of these two investigators to American problems is suggested.

Statistics of pauperism, and on the proximate causes of this social phenomenon, are available in a number of State publications (for Massachusetts, New York, Connecticut and Indiana). The United States Bureau of the Census publications on paupers in almhouses (1904 and 1910) also give data of value in the study of this problem. The casualty statistician must, however, examine these data to see how far they serve his general purposes. A fruitful field of inquiry is offered in the statistics of charity organization and other philanthropic societies. The place of the "insurable incidents" of sickness, accident, death of the breadwinner, unemployment, and premature industrial superannuation in the primary causation of poverty and pauperism, can probably be determined from a survey of the activities of these societies. The pioneer work of Amos Griswold Warner§ and John Koren in the statistical study of charity organization case records provides the point of departure for further investigation.

(*f*) *Savings, Investments and Insurance of the Wage Earning Classes.*—The recent savings bank centenary suggests a statistical review of the savings bank movement, especially as it relates to the growth of thrift among the wage earning classes during the past century. The questions of wage earners' investments, the building

* "Statistical Data on Wealth and Income," *Quarterly Publications* of American Statistical Association, Vol. XV, No. 117, March, 1917.

† Booth, Charles, "Life and Labor of the People in London," Vol. II.

‡ Rowntree, B. Seebohm, "Poverty. A Study in Town Life."

§ Warner, Amos G., "American Charities."

and loan movement, cooperative purchasing societies and industrial life insurance should be adequately provided for in a programme of study of voluntary savings and thrift agencies. The supply of facts is at present almost entirely lost from view in the official reports of the banking and insurance departments of our American Commonwealths. Thrift studies should be related, too, with wage data.

From this brief summary of the main topics in social statistics it will be evident that further and more critical consideration must be given to the subject from the viewpoint of the casualty statistician and actuary. As Arthur Richmond Marsh has pointed out. . . . "In the brief space since the last census year, both the scientific importance and the practical uses of social statistics have become vastly better known in this country, and the number concerned with such statistics has enormously increased. On the one hand, the partial introduction into the United States of the so-called social insurances, and the pressure for the adoption of a complete round of these insurances have brought home as never before . . . the indispensableness of important varieties of social statistics. . . ." The members of our Society who have given thought to the fundamentals of casualty and social insurance subjects must be impressed with the lack of coordination of such social statistics as are available, and with the utter absence of material practically indispensable for an elementary statistical understanding of the social facts which casualty and social insurance is supposed to indemnify.

I would therefore recommend that our Society actively participate in consideration of plans for public and private statistics for the next census year in cooperation with the Committees appointed by the other American scientific societies,—the American Public Health Association, American Statistical Association, American Economic Association and the American Association for Labor Legislation. The Casualty Actuarial and Statistical Society would do well to confine its field of investigation to social statistics and to consult frequently with representatives of the other Societies in order not to duplicate effort or confuse the preparation of a joint report.

Oral Discussion.

Mr. Leonard W. Hatch: Mr. President, I would be more interested in hearing a discussion than in speaking. However, I will say just a word.

My impression, as a result of use I have made of census figures not only in connection with the matter of accidents but also as related to occupational diseases and in relation to industrial and labor statistics generally, is as follows. Up to the present time the census figures have largely proceeded along certain lines established some time ago and continued with a view to keeping up comparable figures, and getting figures that would be comparable over quite a period of years. It is always true when much weight is given to that consideration, that statistics tend to be unprogressive owing to constant reference to the beginning of the series, when the statisticians who started the work could not foresee future developments. Now the figures of the Federal census are about the only source from which we are going to get national statistics along a good many lines. These Federal census figures are not going to be improved until we can bring to bear upon the census officials and the census work the pressure of opinion from organizations such as this Society. There is already under way in a number of other organizations a movement to bring to bear a good deal more pressure of that kind for the 1920 census than has ever before been exerted. The American Economic Association and the American Statistical Association, I think the American Association for Labor Legislation also, and the Public Health Association, all have committees at work now outlining what they regard as fundamental that the Federal census should cover in 1920.

I have had some connection with the joint committee of the Economic Association and the Statistical Association on Federal statistics. I am pretty sure that the 1920 census will follow pretty closely the old lines unless societies such as this, and all societies that have any interest in what comes out of our Federal censuses, get busy as soon as possible and make a study of what the Federal enumeration might produce that would be of real practical value in our various lines of work, and get this before the Federal government and persuade the officials in charge that they ought to try to cover those things. Even if the 1920 census made some efforts along certain lines that are new but important and partly failed, it would really mean progress, because, as I say, if you look at the Federal censuses along back you will be impressed—at least, that is my very strong impression over and over again when I go there to get something—that we have up until now been getting very much what we got twenty or thirty years ago. We know a lot more about what we ought to have to-day than we did twenty or thirty years ago, and as a statistician I am impressed more and more with the fact that our real problems are problems of getting the original material rather than methods of handling afterwards. We know a great deal more about technical statistical methods than we did. We are much further along on that side of the matter than we are in the collection of adequate, accurate material. And as I said a moment ago, if we are going to have the material on a national

basis the most important agency for getting that is the Federal census.

I would like to see this organization some way or other get in line with these other organizations, and let us all put all the pressure we can on the Federal census officials to strike out on some new lines, try to get some things that we need, things we ought to have and that we need very badly. I am sure that unless we all do it, unless everybody who is interested, who has to go to the census reports for material to use practically, unless we all bring all the pressure we can to bear we are likely to get a repetition of the earlier censuses with very little change.

To mention two particular subjects in which I am particularly interested, I would like to see the statistics for manufacturing, or for industries, classified a little differently from the old classifications that have been followed for some time. I am not at all sure that it would not be possible, for example, for this Society to get such a classification of manufacturing industries used as would be comparable with the grouping of the manual classifications which have been set up in conference to use in connection with compensation work. Then I would like to see the census occupation figures better done. The 1910 census did something along that line which had not been done before. It did a good deal more and did it a good deal better in 1910 than was ever done before. The great trouble with the work then done was that the results were published so late that the figures were pretty nearly out of date by the time we got them. Figures as to the occupations of the population of the United States are of tremendous importance in all sorts of relations, and yet we have not got any very good occupation figures to-day. The matter of sickness insurance, the whole matter of occupational diseases, morbidity statistics and vital statistics, all require statistics of occupation for a great many studies. More and more the relation of a man's occupation to his health condition as well as social condition is being recognized. Now if we did not do any more, if all these societies together accomplished no more, than to improve occupation statistics over those that were gotten in 1910 and get them published reasonably promptly after the 1920 census is taken, we should have accomplished something well worth while. It would be worth a whole lot of effort to get that done. Those are two items, the matter of classification of industries and the occupation figures, that occur to me as matters that this organization would be interested in. There are a great many others, as Mr. Kopf has suggested.

I am sure—I have seen some of the efforts that have been made in connection with previous censuses—that it needs all the pressure of the opinion of experts in various lines, and particularly organizations composed of experts, it needs all the pressure possible to improve our census figures, and as I have said twice, unless we get them through the Federal census a great many things we are not going to get at all.

MR. GEORGE D. MOORE: Mr. Hatch has just stated that he would like to hear a discussion of the various problems that actuaries and statisticians meet in connection with their work under workmen's compensation. In answer, I would like to point out a few of the difficulties encountered. At the present time it is extremely difficult to obtain adequate and accurate scales of wages by states giving the number of workmen according to the size of wage received. This information is essential in the valuation of new compensation acts for rate-making purposes, or in the valuation of amendments to old acts. The state industrial accident boards and commissions do not appear to realize the importance of this information and the data obtained from reports, with the possible exception of Massachusetts and California, is inadequate and unreliable.

With regard to the reliability of the data in these reports, some time since, after carefully reading a report furnished by the industrial board of a middle western state, I concluded that a certain table of the distribution of accidents according to the period of disability was not complete, in fact it did not contain the most serious cases. I thereupon wrote a letter to the statistician of the board and received the astonishing reply that the table in question had not contained the pending cases because of the lack of appropriation made by the legislature for the use of that department. The publication of statistical tables in this manner should not be countenanced, as erroneous conclusions are frequently drawn from the information supplied and it oftentimes results in endless confusion.

The system in use at the present time of compiling wage statistics by the Census Bureau does not enable the statistician or the actuary to use the data for the purposes of valuing workmen's compensation benefits. What we need particularly is a distribution according to industries, as appearing in the Workmen's Compensation Manual Classification Code, or at least by a broader distribution according to the schedules appearing therein.

This need for compensation statistics should be strongly impressed upon the Census Department through the committee of this Society that has been appointed.

MR. E. H. DOWNEY: Mr. Chairman, there is one line of investigation which I think is extremely important, which hitherto has received very little attention in this country—I recognize it is a very difficult problem—namely, the age of superannuation in industry. An investigation by occupations with the present occupational classification of the census would probably not be very valuable, because of the small numbers in the ultimate groups. Probably the broader industry groups, even the industry classification that the census has hitherto used, would be better than an occupational division. The importance of the subject is primarily with reference to old-age relief, for the need of old-age relief, and the cost of old-age relief, will both depend upon the age at which wage workers cease

to be employed. Now, we know very little about this age of superannuation at the present time. We know very little about the expectancy of working life as contrasted with the expectancy of natural life. We all know in a general way that there are comparatively few men able to support themselves as wage earners beyond the age of 60. We know that the number diminishes from 50 onwards. But we know very little about the average age at which gainful employment ceases. We know very little about the working life expectancy. We know very little about the number of wage workers at ages from 50 to 65. We know very little about their earnings as compared with the earnings of wage workers at earlier groups. That is the information which is the foundation of any attempt to provide old-age relief in a systematic or in a scientific way. It is the fundamental information required for computing the cost of any old-age relief. And since that is a problem which I believe is coming rapidly to the front, will soon be a practical problem to be solved in this country, it seems to me that if the census can be made to throw light upon that problem, as I believe it can, it is a problem which should receive serious consideration.

I recognize that it is not sufficient simply to ask the census people to give us that sort of information. It is one of those problems in which the technical manner of compiling the information is the vital feature of the whole thing. It would be necessary to suggest to the pension authorities not only the need of investigating the problem, but the method by which it could be investigated. This matter has recently been brought to my attention in an entirely different connection, in connection with an attempt to establish disability ratings, the weights to be assigned to deaths and permanent disabilities with a measurement of severity of injury. Obviously a man who is permanently disabled has lost a working life expectancy. The severity of that accident is to be measured in terms of working life expectancy, which at present is X.