

ABSTRACT OF THE DISCUSSION OF PAPERS READ AT
THE PREVIOUS MEETING

REMARRIAGE EXPERIENCE OF PENNSYLVANIA COMPENSATION
INSURANCE CARRIERS

POLICY YEARS 1916-1919—E. H. DOWNEY

VOL. VIII, PAGE 201.

WRITTEN DISCUSSION

MR. M. M. DAWSON:

Dr. Downey's paper sharpens our keen sorrow that he should have been taken from us so soon; for it seems, indeed, "but earnest of the things that he would do," to paraphrase Tennyson.

It is quite correct, as he says in the first paragraph, that "the Dutch table is based upon a very limited exposure and is of doubtful applicability to American conditions." This was obvious to me when I recommended it for use in valuing the probabilities of remarriage by the New York authorities when provision was made in the Workmen's Compensation Law for pensions to widows during widowhood; yet there were many evidences that it would probably be nearer to American experience than German or Austrian tables, and certainly it was safer than they for use in the United States.

Dr. Downey's investigation, which also, however, deals with a limited exposure, indicates that for general use the table accords fairly well with the Pennsylvania experience; *i. e.*, with an annual remarriage rate of 3.46 per cent. for all ages, durations and ordinary industries in which the deceased husbands were employed, as against 3.28 per cent. But wide discrepancies were shown as regards widows of different ages, durations of widowhood and industries, and, except in the most general way—which, however, probably answers fairly for valuation purposes—the Dutch Remarriage Table does not conform with the facts as regards remarriage among the various classes of widows.

That the Dutch Remarriage Table is proving safe, so far as the

Pennsylvania experience shows, appears from this comparison of the rates deduced by Dr. Downey with the rates of the Dutch experience:

| Age of Widow at Husband's Death | Dutch Experience | Pennsylvania Coal Mining | Experience Other Industries |
|---------------------------------------|---------------------|--------------------------------|-----------------------------------|
| All ages | 3.46 | 7.38 | 3.28 |
| Under 21 | 10.68 | 19.83 | 14.06 |
| 21-26 | 9.79 | 10.33 | 8.13 |
| 26-31 | 7.84 | 9.06 | 5.90 |
| 31-36 | 5.56 | 7.08 | 3.57 |
| 36-41 | 3.45 | 4.03 | 1.87 |
| 41-46 | 1.92 | 3.18 | 1.66 |
| 46-51 | .95 | | .93 |
| 51-56 | .42 | 1.63 | .56 |
| 56-61 | .15 | | .66 |

In the valuation of pensions to widows of coal miners, the Dutch rates overvalue the pension; in the valuation of pensions to widows of other employees, it undervalues them. Upon the average, and applying the table to each of them, it would obviously bring out an aggregate reserve, adequate for the purpose.

Dr. Downey was quite right in urging that the valuable data upon the subject to be found in the experience under the New York Workmen's Compensation Law should be compiled and investigated. It is to be hoped that the data of that experience will soon be available to supplement the material which Dr. Downey has brought to our attention, and either confirm the Dutch remarriage table as safe or replace it by a more suitable table derived from American experience.

Why should not the Industrial Commissioner cause the data of the experience under the New York law to be compiled and put in charge of the actuary of the State Fund for investigation by and with the advice of a committee of this Society? It is to be lamented that Dr. Downey has not survived to head that committee; but, though he can have no successor in a literal sense, he left others who are worthy to take up the work.

If the remarriage rates are to be determined by American experience, resort must necessarily be had to something more than data deduced from remarriages of widows in receipt of compensation under the Pennsylvania law for the payment of such compensation ceases at the end of six years. The only body of data covering beyond the sixth year is that of the New York experience; and is also the most considerable body of data covering the six years.

The contrast between the high remarriage rates among widows of coal miners and the lower rates among widows of other employees is striking; it is no doubt due to customs and social conditions of the countries from which the coal miners came, persisting as yet in this country. The other rate, although itself composite, is more important here.

That New York should not neglect investigation and use of its own experience is plainly indicated by the fact that its reserves for these claims are based upon the Dutch table. In Pennsylvania no account is taken of remarriage rates in computing reserves or commuting compensation, but instead only compound discount at the rate of 5 per cent. interest per annum.

MORTALITY FROM EXTERNAL CAUSES AMONG INDUSTRIAL
POLICYHOLDERS OF THE METROPOLITAN LIFE INSURANCE
COMPANY, 1911-1920

LOUIS I. DUBLIN AND EDWIN W. KOPF

VOL. VIII, PAGE 213.

WRITTEN DISCUSSION

MR. B. D. FLYNN:

In this paper, Messrs. Dublin and Kopf have completed their study of mortality from external causes for the ten year period 1911-1920, inclusive. The data are examined in broad divisions: (1) accidents, including unspecified violence, (2) suicides, (3) homicides, and (4) war deaths. Under each group further studies are made; as, for example, in accidents, including unspecified violence, the mortality rate by calendar year according to race and sex is shown and, also, the rate by age group, race and sex. Then follows an examination of accidents in this broad division, according to nature of accident, with various subdivisions to year of accident, age group, race and sex.

The authors have interpreted the statistics so thoroughly that there is practically no further comment which can be made. The most interesting form of discussion is undoubtedly to compare findings with indications of other mortality data based upon other insured lives. This, the writer has endeavored to do, by examining

the record of accidental deaths incurred in the experience of The Travelers Insurance Company in its commercial accident business during the same ten year period.

The mortality data in the paper consisted of some 98,000 deaths from accidental violence of all kinds among policyholders of the Metropolitan in the industrial class. It is difficult to estimate the average occupational hazard ratings which this class would carry. Undoubtedly, however, from our knowledge of the class of workers carrying industrial insurance, the average rating would be fairly hazardous. On the other hand, the great bulk of the policyholders of commercial accident insurance in the Travelers are in the preferred or non-hazardous class. The accidental death rates of the industrial group, therefore, should run much higher than that for the non-hazardous group; further, the experience of the Travelers shows practically nothing of value in the main divisions of death due to suicide, homicide and war, because of policy restrictions in many of the commercial accident contracts. Then again, there have been few exposures under the commercial accident contracts, except in the class of white males between the ages of 18 and 69.

Because of the above limitations of the Travelers' experience, nothing of value could be shown in a comparison of the total accidental death rates. The same general trend of the Metropolitan rates during the ten year period, however, is indicated by the Travelers' figures. The rapid decrease in the rates for the years 1919 and 1920 indicated the value of a rough examination to learn the probable rate for 1921. The number of accidental deaths in the Travelers' experience was compared with the premium volume for the years 1920 and 1921. The result was that the latter year showed approximately 25 per cent. increase in the total accidental death rate. The factors entering into this examination were, of course, not best suited to give an accurate rate, but the same data was used for both years and the marked increase in the rate in 1921 is clearly indicated. This information is given for what it may be worth, as indicative of the probable sharp upward trend in 1921 in the accidental death rate.

A comparison of rates according to nature of accident for white males in the Travelers' experience with the rates for the same subdivision in the Metropolitan industrial experience is interesting. In most of the divisions unusual results are shown, clearly due to the fact that the occupational ratings of the Metropolitan in-

dustrial policyholders differ from those among Travelers policyholders. This condition is clearly brought out in the following tabulation of mortality from traumatism by fall.

MORTALITY FROM TRAUMATISM BY FALL
DEATH RATES PER 100,000 PERSONS EXPOSED
1911-1920

| Year | Travelers Commercial Accident Department |
|-----------|--|
| 1911-1920 | 8.5 |
| 1916-1920 | 8.3 |
| 1920 | 6.3 |
| 1919 | 9.3 |
| 1918 | 8.5 |
| 1917 | 11.8 |
| 1916 | 5.8 |
| 1911-1915 | 8.7 |
| 1915 | 10.8 |
| 1914 | 8.5 |
| 1913 | 4.0 |
| 1912 | 10.1 |
| 1911 | 10.2 |

The Metropolitan rate for the ten year period is 15.9 per 100,000, being nearly double the Travelers rate of 8.5. Undoubtedly, the marked difference in this rate is due to the occupations of industrial policyholders. Carpenters, painters, and persons engaged in various kinds of construction work are, of course, more exposed to injury from falls than the commercial accident policyholders—such as clerks, businessmen and professional men—of the Travelers. It is interesting to note that the Metropolitan rate for the five year period, 1916-1920, is about 25 per cent. lower than the previous five year period, while the Travelers rate for the two five year periods is practically the same.

The following table, based on Travelers' experience covering mortality from traumatism by fall by age periods verifies the indications of the Metropolitan experience which showed a sharp increase in rate in the older ages.

MORTALITY FROM TRAUMATISM BY FALL
DEATH RATES PER 100,000 PERSONS EXPOSED
1914-1918

| Age Period | Travelers Commercial Accident Department |
|-----------------|--|
| 18-19 | 28.9 |
| 20-24 | |
| 25-34 | 4.5 |
| 35-44 | 8.8 |
| 45-54 | 8.0 |
| 55-64 | 16.3 |
| 65-69 | 61.9 |
| All Ages, 18-69 | 9.0 |

A comparison of the mortality from automobile accidents of the Travelers with the Metropolitan again brings out differences which are undoubtedly due to the difference in the exposure of the two groups. The experience of the Travelers has been divided into two groups: (1) accidents and injuries to occupants of automobiles, and (2) pedestrians injured by automobiles.

MORTALITY FROM AUTOMOBILE ACCIDENTS
DEATH RATES PER 100,000 PERSONS EXPOSED

| Year | Travelers Commercial Accident Department | | |
|-----------|--|-------------|-------|
| | Occupants | Pedestrians | Total |
| 1911-1920 | 16.6 | 2.1 | 18.7 |
| 1916-1920 | 19.4 | 2.0 | 21.4 |
| 1920 | 24.0 | 1.4 | 25.4 |
| 1919 | 18.5 | 2.6 | 21.1 |
| 1918 | 17.6 | 2.3 | 19.9 |
| 1917 | 16.9 | 2.8 | 19.7 |
| 1916 | 19.1 | 1.1 | 20.2 |
| 1911-1915 | 13.4 | 2.2 | 15.6 |
| 1915 | 15.3 | 3.4 | 18.7 |
| 1914 | 12.4 | 1.7 | 14.1 |
| 1913 | 11.5 | 2.3 | 13.8 |
| 1912 | 17.3 | 1.2 | 18.5 |
| 1911 | 9.5 | 2.5 | 12.0 |

The Travelers total automobile rate (18.7) for the ten year period is about 50 per cent. higher than the Metropolitan rate (12.6). The Metropolitan rate for 1920 (18.9) is over four times as large

as the rate for 1911 (4.0). The Travelers rate doubled in the ten year period, being 12.0 in 1911 and 25.4 in 1920. It will be noted, however, that the Travelers rate for automobile accidents to pedestrians remains stationary throughout the ten year period, while the rate for occupants of automobiles is almost trebled—being 9.5 in 1911 and 24.0 in 1920. It would be interesting to learn if the rapid increase in the Metropolitan automobile accidental death rate was due to the increase in the rate of accidents to pedestrians or to occupants. In this connection, it should be pointed out that the great increase in the accidental death rate of occupants of automobiles may be due to the larger percentage of the number of policyholders who are exposed to the hazard, as automobile drivers. Undoubtedly there has been an ever increasing percentage of policyholders operating cars. This is true of the experience upon the industrial policyholders of the Metropolitan as well as the commercial policyholders of the Travelers. If a division of the Metropolitan's experience could be made, it might throw light upon this factor as a cause for the rapid increase in the total automobile accidental death rate.

The tabulation of the mortality from automobile accidents, by age groups, for the five year period, 1914-1918, is as follows:

MORTALITY FROM AUTOMOBILE ACCIDENTS
DEATH RATES PER 100,000 PERSONS EXPOSED
1914-1918

| Age Period | Travelers Commercial Accident Department | | |
|-----------------|--|-------------|-------|
| | Occupants | Pedestrians | Total |
| 18-19 | 14.4 | 14.4 | 28.8 |
| 20-24 | 12.0 | ... | 12.0 |
| 25-34 | 12.9 | .4 | 13.3 |
| 35-44 | 17.2 | .4 | 17.6 |
| 45-54 | 17.8 | 3.3 | 21.1 |
| 55-64 | 19.9 | 6.3 | 26.2 |
| 65-69 | 18.6 | 18.6 | 37.2 |
| All Ages, 18-69 | 16.3 | 2.2 | 18.5 |

The total rate stays fairly level up to age 35 and then a steady increase begins rising to the maximum which is attained in the age group 65-69. The rate of mortality from automobile accidents to occupants is constant up to age 35 when there is an increase of about 50 per cent. The rate from age 35 to 69

remains practically level. Mortality of pedestrians from automobile accidents is clearly highest at the older ages. The rate for the group ages 18-19, 14.4 per 100,000, is due to one death claim and does not carry any particular significance.

Further comparison of the mortality from accidents could be continued throughout the various causes of accident, but because of the variation in the occupational hazard rate of the two groups, differences similar to those which have been brought to light in the comparison of mortality from traumatism by falls and mortality from automobile accidents would undoubtedly be encountered.

AGRICULTURAL INSURANCE—V. N. VALGREN

VOL. VIII, PAGE 186.

WRITTEN DISCUSSION

MR. E. R. HARDY:

In connection with this matter I have developed some material the principal part of which is an exceedingly interesting letter from a western correspondent who represents a company that has tried out, so to speak, agricultural insurance. I am proposing, therefore, as my contribution to the discussion, to quote the salient points in this letter, which are as follows:

"It was found that the demand for this class of insurance came very largely from the semi-arid sections, or from sections subject to the frost and freeze hazards, or from sections infested with insect pests, or where land was subject to overflow.

In the semi-arid sections, where crops are matured on an average of but two years in every five, an adequate rate could not be collected. In sections subject to the frost and freeze hazards, or sections infested with insect pests, also in sections where the land was subject to overflow, the companies likewise were not able to collect an adequate rate.

It was found that farmers desired to carry insurance for an amount representing the cost of production and garnering, plus interest on a sum representing the cash value of the land.

It has been said (and truthfully so) that the average farmer, if he were compelled to hire at current prices the labor for planting, cultivating and garnering his crops, and were to add thereto the

cost of seed and interest on an amount representing the cash value of his land, would find that his crops would not (in ordinary times) bring a return equal to the cost of their production.

One of the troublesome elements which developed in the attempt to write crop insurance was the fluctuation in the value of farm products.

For example: In one season at planting time, also after the new wheat had sprouted and stooled and had become an insurable risk, threshed wheat was selling for approximately \$2.00 per bushel. Naturally, the cost for producing the next year's crop was based on the returns which the farmer was then receiving for his wheat. The crop which was planted during the fall, when the wheat was sold at the high price, was harvested and threshed the next fall and sold at less than \$1.00 per bushel.

The form of coverage used had been written on the basis of cost to produce at the high selling price, and, therefore, notwithstanding the fact that the crop yield in bushels was better than a normal one, the companies faced a claim for loss under practically each and every policy issued. The returns to the farmer, on account of the low selling price, were considerably less than the cost of production at the high prices for labor and seed which prevailed the previous fall.

The companies from their experience found that they could not afford to insure crops upon the basis of cost as above set out, nor under the form of policy then in use, as they were in effect not granting indemnity, but rather were guaranteeing the price of wheat.

The companies were forced the following season to reduce to an arbitrary basis the amounts of insurance which they would write on a given acreage.

One company issued policies containing what might be termed an "upset" price for grain. The "upset" price fixed the limit of liability per bushel on grain for which the company would be liable. For example: The "upset" price might have been fixed at \$1.10 per bushel. At the time settlement was claimed under the policies the price of wheat on the market might have been \$1.50; nevertheless, the "upset" price named in the policies was the one used in determining the company's liability.

When the companies undertook to reduce the amount of protection which they would grant per acre to a low and arbitrary

amount, or attempted to sell policies containing an "upset" price per bushel on grain, it was found that there was no demand for crop insurance except in those sections where an adequate rate could not be collected no matter what amount of protection was granted, nor what form of policy was used.

We believe that in time some plan will be evolved under which stock fire insurance companies may meet the situation. We also believe that it will be necessary to educate the farmer to the idea that crop insurance must be for protection only and speculative features must be entirely eliminated. In other words, the farmer must be satisfied with an arbitrary amount of insurance per acre, which amount must be small. Later on, and as the companies gain in knowledge and also in experience, such changes can be made as are warranted by their experience and by the rate of premium charged.

In the semi-arid sections, overflow sections and pest-ridden sections we are of the opinion that crop insurance cannot be successfully written. The rate which it would be necessary to charge in such sections would be prohibitive."