panies were using 3½ per cent. interest for their new business, whereas three of these companies have since changed to 3 per cent. leaving only one of the eight companies now valuing its new business at 3½ per cent. Moreover, all of them have now a larger proportion of their total business on a lower valuation basis, whereby the loadings appear less, and the surplus interest correspondingly greater, while there has even been a tendency to change the interest to a lower rate on some of the older policies.

The gain from surrenders and lapses has taken the course we anticipated. There is a minimum below which this profit (if profit it can be called) will not fall so long as the companies carry full reserves for the first year. Since under present conditions 10 per cent. may be treated as a minimum lapse rate in the first year, the full reserve of this lapsed business will appear as "profit" in the Gain and Loss Exhibit, although it is no true profit, but may rather be viewed as a refund of initial expeditures.

PROFITS FROM MORTALITY.

Mr. Moir discussed in detail the profits from mortality, which he showed to have been normal in recent years. The latter portion of the paper was taken up with a technical discussion of the modes of distributing mortality profits, and by a comparison of the mortality of the American Experience Table with that of the new Medico-Actuarial Table at various ages he showed reason for criticising some of the methods commonly used. Mr. Moir's views were summed up in one of the concluding paragraphs as follows:

This note is intended to be suggestive rather than conclusive, since reasonable equity in surplus distribution is attained by different companies in widely varying ways and any dogmatic attitude on the subject is peculiarly out of place. Yet on giving careful consideration to the foregoing tables, to the premium loadings in general use which are relatively much more at older entry ages; to the reduced commissions and expenses after policies have been ten or more years in force; and to the varying mortality in different classes of policies, I am strongly inclined to the belief that we secure a more equitable distribution by merging the mortality surplus in the general earnings of the company and making the allotment in proportion to the loadings than by using the mortality as a factor of the cost of insurance under our present reserve bases. The mortality profit is here shown to be in general a decreasing factor with the increase in duration or in age at issue, whereas on the contrary the savings from loadings increase with duration since commissions cease and collections become automatic, while the savings from loadings also increase with the age at entry on account of the method of loading commonly used.

These forces, therefore, acting in opposite directions, can in the writer's opinion be best merged and offset one against the other as is done in distributing general earnings as a percentage of the loadings.

MORTALITY AFTER THE DEFERRED DIVIDEND PERIOD.

Mr. Arthur Hunter read a paper with the title "Mortality after the Deferred Dividend Period." Mr. Hunter dealt particularly with the effect on the mortality following the end of the distribution period of the right to several options including the right to surrender for a high cash value. It has been believed by actuaries that where a high cash value is given at the end of a dividend period, as in the policies here investigated, the lives which surrender will average much better than those who continue their policies, with the result that the mortality after the end of the period will be inordinately high. Mr. Hunter said regarding the investigation and its scope:

It has generally been assumed that the policyholders will exercise their option in a way which will have an effect on the mortality of the company for better or for worse, but no statistics have been published on this subject. We have recently made an investigation of the mortality under two of the options which may be exercised by the insured on ordinary life and limited payment life policies issued on standard lives in countries in which the domestic or Northern scale of premiums is charged, the great majority of the policies being on residents of the United States and Canada. The deferred dividend periods were ten, fifteen and twenty years. Under limited payment life policies the dividend periods were equal to or longer than the premium-paying periods. The investigation covers the policies reaching the end of their deferred dividend periods in the years 1894 to 1909, the data being carried to the policy anniversaries in 1911.

A CONSCIOUS SELECTION.

The option which would appeal most to those in bad health would be that of continuing the policies in force and drawing the dividend in cash, since this would give the largest amount of insurance obtainable by them. As expected, the mortality immediately after the end of the dividend period on policies where this option was taken was very high. For the first five years after the end of the deferred period it was found to be 136 per cent. of the expected by the American Experience Table on the basis of amounts insured. In the cases where the total cash value was converted into paid-up insurance, and where medical examination was required, the mortality on the same basis and for the same period was found to be only 68 per cent. of the American Experience Table. In other words, the mortality in one case was just twice that of the other on the basis of amounts insured. These results indicate that the insured make a telling conscious selection in determining the form of settlement best suited to their condition, and that the resulting mortality depends upon which form of settlement is most to the advantage of the insured or the beneficiary.

HIGH MORTALITY.

Mr. Hunter found more particularly in regard to the selection against the company of those who take their dividends in cash and continue their policies in force (this option being the one that was seen above would be most favorable to those who are in bad health) that the mortality on ordinary life and limited payment life combined was, on the basis of amounts, in the first year after the end of the period 184 per cent. of the expected; the second and third years 123 per cent. of the expected; for the fourth and fifth years 119 per cent.; for the sixth to the tenth years 106 per cent. and for the eleventh to the seventeenth, 107 per cent. These results show clearly that for the first few years after the end of the period, *i.e.*, after the date when the choice between the options is made, the mortality is extremely