

ON THE VALUATION OF PREMIUMS.

To the Editor of the Journal of the Institute of Actuaries.

SIR,—Mr. Searle, in his paper recently read before the Institute, says: “If the sum assured is payable at the instant of death, so are the bonuses; but how many actuaries besides Mr. Sprague have allowed for this in valuing the reversionary bonuses about to be declared?” I can assure Mr. Searle that a considerable number of actuaries have allowed for this—indeed, from enquiries I have made, it seems to be rather the exception for them not to allow for the reversionary bonuses about to be declared being made payable at the same time as the sum assured.

There is another point, however, which is much more important, and which has not, I think, received the attention it deserves—I refer to the average date on which the premiums valued are assumed to be received. Formerly, the premium income was assumed to be uniformly spread over the year, that is to say, the premiums were assumed to be received, on the average, six months from the date of valuation. Now, however, a number of actuaries make allowance for the larger business which is usually transacted towards the close of the financial year, and which, of course, disturbs the uniform distribution of the premium income. Various methods are adopted of doing this. In some cases the average time which will elapse until the premiums are received, is calculated from the premium income falling due in each month. In other cases the premiums are valued as if due immediately, and the proportion from date of valuation to date of next renewal calculated and deducted; or the annual premiums on those policies which were effected in the first half of a financial year are valued by an annuity-due, and those effected in the second half by an ordinary annuity. These methods, however, are based upon the dates on which the premiums *fall due*. Now, it is the almost universal practice of offices to allow 30 days of grace for payment of premiums. Besides, a large proportion of the premium income of offices—from three-fourths to nine-tenths in the majority of cases—is received through agents. The receipts for the premiums falling due in a particular month, are sent to the agents at the beginning of the month for collection; and as a few days generally elapse after the expiry of the 30 days of grace on the last premium falling due in the month before the agents remit, nearly two months will, on the average, elapse before the premiums are actually received by the office. The reserve, therefore, ought to be increased by, roughly speaking, two months' premium income. This is just as

important as the adjustment for earlier payment of claims which is now made by so many actuaries. If the premium income of an old-established office, doing an ordinary business, is £300,000, the reserve according to a net premium valuation by the Institute tables at 3 per-cent interest, would be about £3,000,000. Two months' net premium income would be rather more than £40,000, while the adjustment for payment of claims immediately upon proof of death and title would probably be somewhat less.

I am, Sir,

Your obedient servant,

Edinburgh,
7 July 1893.

JAMES CHATHAM.

CONSUMPTIVE FAMILY HISTORY.

To the Editor of the Journal of the Institute of Actuaries.

SIR,—I must apologize for trespassing further on your space in connection with the above subject, but as Mr. Manly has evidently misunderstood an expression in my letter which appeared in your January issue, I hope you will allow me the privilege of making myself clear. As Mr. Manly says, his paper shows clearly that the childbirth cases were kept in a separate class by themselves, and were not combined with the consumptive cases. This is self-evident, and I had not the slightest intention of implying anything else. I referred only to the general assertion that "Death in childbirth is now generally considered to arise from consumption where no other evidence is forthcoming", and pointed out that, as Dr. Lyon holds such strong views in regard to this class of "doubtful" cases, it is quite possible that he holds similar views with regard to other doubtful causes of death (such as "change of life", "exposure", "grief", "unknown", "fever", &c.), and that, if so, he may perhaps have included in the consumptive classes a number of lives which have not in reality a consumptive family history at all, although their record may be far from clear. The rule laid down for his guidance was: "Supposing that case were to come before you to-day, would you consider the cause of death there recorded to be primarily consumption?" This certainly allows a margin for personal judgment, and as cases of uncertain cause of death are more likely to occur among brothers and sisters than among parents, this factor would not work evenly on the two classes, and if any large number of such cases have been included, a comparison between the two groups would hardly be fair.

Yours truly,

T. B. MACAULAY.

Montreal,
9 March 1893.