

Mr. Hardy pointed out that the line between average and under-average lives was difficult to draw and must mainly depend on the judgment of the individual actuary as modified by the tradition of his company and the opinions of his co-actuaries. According to the congressional correspondent of *The Post Magazine*, Mr. Hardy gave as his opinion that the line should be drawn at such a point that, if the limits be widened, then the loss from increased mortality will be greater than the advantage to be obtained from the increased business. He admitted that, of necessity, this point cannot be reduced to a mathematical formula. It appeared to him, however, that the most important consideration from an actuarial point of view was this:—"What is the nature of the incidence of the increased mortality in under-average lives? Where, during the duration of the insurance, is the increased mortality going to be felt?"

Four questions, according to Mr. Hardy, arise in connection with the subject of extra risk, namely, the premiums to be charged, the reserves to be made, the profits and bonuses to be divided, and the surrender values of the policies. In the case of the premiums the importance of the incidence of the extra mortality depends mainly on the description of policy effected. For instance, in a whole life policy, all that has to be considered is the effect of the total extra mortality upon the annuity value at the outset. Having once settled that, it is a matter of indifference whether the extra mortality falls early or late. If, however, the actuary is dealing with a short term endowment assurance, he has to consider what part of the extra mortality will fall within the endowment period. If the extra risk were heavy at the outset, the shortening of the term would have very little effect in reducing the extra premium. Indeed, the surcharge might be as large as or even larger than would be the case if the policy were a whole-life assurance.

As to the valuation of reserves, Mr. Hardy held that the classification of the risks was unnecessary, owing to the small proportion of the business that would be involved. The great bulk of business being heterogeneous in character, and dealt with on a hard-and-fast basis, it was not worth while to discriminate between the different classes of extra risk—which formed, perhaps, only 10 or 15 per cent. of the remainder. When there is taken into account how many other elements enter into the calculation of the reserve, the difference of a small percentage error which was constant in its operation did not appear to him to be of any great consequence.

Neither did Mr. Hardy consider that any classi-

fication of extra risks was desirable for the purpose of distributing the profits. Unless they divided the cases into a number of small groups, which would give an insufficient basis for average, it was better and more equitable to treat the whole of them on one uniform basis. Possibly in the case of surrender values some consideration might be given to the question of classification, but even here he thought that the practical disadvantages would outweigh any substantial equality arrived at. Assuming that the classification he had suggested was possible, the practical suggestions he would make would be to treat those cases where the extra risk was a diminishing one on the basis of a temporary deduction from the sum assured. The effect of this was that the actual sum assured at risk was smallest at the time when the extra risk was greatest. The other classes, namely, the constant extra and the increasing extra, could be dealt with by the addition of a constant to the premium, and an addition of a certain number of years to the age. It should be understood, however, that these were rough-and-ready approximations. On the whole, judging from Mr. Hardy's remarks, he can scarcely be said to regard the problem of classifying extra risks as a hopeful one in the present state of knowledge and in the present conditions under which the business of life insurance is worked.

It will be remembered that at the previous Congress, held in Berlin, it was proposed to form an international sub-committee to promote an investigation regarding sub-standard classification. This was again mooted at the recent Congress, but again the proposal was not acted upon—it being considered, for one thing, that there is not yet a sufficient body of reliable experience to form the basis of necessary tables. Then, too, various risks—and especially in different countries—differ very widely both in the extent and nature of their abnormality.

As *The Insurance Record* put it some time since: "There exists something like a vicious circle. There is no available experience, owing to the lack of knowledge how to rate such risks, while the knowledge is unlikely to be gained until risks have been accepted sufficient to form at least a nucleus for investigation and research. For it is only on the experience of assured lives that the offices can safely work." As already hinted, this would seem to point to the desirability of proceeding on more or less arbitrary principles, amending empirically from time to time, and adopting such devices as are calculated to reduce to a minimum any possible loss.

In his careful paper on "The Classification of Life Insurance Risks" (published in the 1908-09