## "REAL TEMPERANCE" MORTALITY.

"I think there is a great field for some enterprising life insurance office that has the courage to open a real temperance section," said Dr. Ebenezer Duncan, F.F.P.S.G., in an address some time since, before the Insurance and Actuarial Society of Glasgow. To this section the doctor would admit, at lower than "general" rates, all those persons who do not exceed such moderate amounts of alcoholic beverages as fall within the "physiological limit." Very attractive at first sight to the average man! When the doctor adds that he must never exceed the "average man's physiological limit of a 2½ ounce glass of whiskey per day" enthusiasm may possibly cool. But whatever the practicability or impracticability of Dr. Duncan's scheme, his treatment of the subject of comparative mortality is instructive.

After a careful examination of the comparative death rates of abstainers and non-abstainers in the United Kingdom Temperance and General, and other life offices, Dr. Duncan agrees substantially with the conclusions of Mr. R. M. Moore (actuary of the company mentioned) as to the better mortality showing made by non-abstainers. Mr. Moore's statistics, published in 1903, showed that the percentage of actual deaths to expected deaths in the temperance section was, approximately, 71 per cent.; in the general, or non-abstaining, section the percentage was 94. These figures show a difference of no less than 23 per cent. in favour of abstainers. It is found that the greatest difference appears in middle life, between ages 35 and 55. When old age is attained the difference in mortality between abstainers and non-abstainers is relatively small; curiously enough, when age 75 is obtained there is shown to be a difference in favour of non-abstainers.

At the age of 30, when a man's constitution and habits of life may be considered as settled, the average number of years enjoyed thereafter by non-abstainers, is 35 1-10 years; whereas in the abstainers' section the average is 38 8-10 years—a difference in favour of the abstainers of 3 7-10 years.

At the age of 40, in the non-abstainers' section, the average number of years enjoyed thereafter is 27 4-10; whereas in the abstainers' section it is 30 3-10—a difference of almost three years.

Putting the matter another way, Mr. Moore found that out of 100,000 non-abstainers 44,000 reached 70 years of age, while out of the same number of total abstainers no less than 55,000 reached the threescore years and ten limit.

While not disputing in any way Mr. Moore's findings, Dr. Duncan points out that no such marked difference seems probable between the mortality of non-abstainers and of really moderate drinkers. He considers significant in this connection the fact that under whole-life policies the difference in the mortality of female abstainers and non-abstainers is not nearly so marked as among males, the natural reason advanced for this being that the average female non-abstainer of the assuring class is more temperate and careful in her habits.

Undoubtedly, as Dr. Duncan points out, a certain proportion of the men in the non-abstainers' section drink alcoholic beverages to excess, and often to the extent of at least partial intoxication. These bad lives must necessarily bring down the average length of life in that section. There is a second class of persons who are not reputed to drink to excess, but do so. They honestly think that they are temperate and moderate in their habits, but careful enquiry elicits the truth that they habitually exceed the physiological limit in respect of alcoholic beverages, often through ignorance and acquired habit of tolerance which comes from gradual increase in their potations. They are never intoxicated, in the vulgar sense of that word, but they take alcoholic beverages too often and in such amount that it is only partially consumed in the body. The tissues of such persons become soaked with it, and it is constantly being excreted unchanged with their breath and through the skin and kidneys. Although such persons are not drunkards, they do not fall under Dr. Duncan's definition of a moderate drinker. In his opinion, among British life policyholders generally, excessive drinkers and total abstainers constitute nearly an equal number—abstainers 20 per cent., excessive drinkers 23 per cent. So that the 57 per cent. between represents the moderate drinkers. The bulk of this class, he considers, is composed of men who only take two or three glasses of whiskey or beer in the week. He is satisfied that 75 to 80 per cent. of the General Section of a company which puts abstainers in its Temperance Section, consists of persons who may be described as moderate drinkers. As a corollary to this position, he is of the opinion that if life companies could eliminate all those persons who exceed the physiological limit in the use of alcohol, the results shown would be quite as good as the results shown by the abstainers' section in Mr. Moore's tables.

For the robust adult of middle life at an out-door occupation, the daily amount of alcohol which Dr. Duncan thinks can be consumed without any apparently deleterious effects averages 1½ ounces. For the average man of adult age at an indoor sedentary occupation 1 ounce of alcohol is stated as the physiological limit. Its equivalent in alcoholic beverages is 1 glass of whisky measuring 2½ ounces, 20 ounces of beer, or 8 ounces of claret.