Result of War affected by Soldier's Stature.

IN your issue of March 1 Major-General Warrand denies that the chance of being shot in war depends, *ceteris paribus*, merely upon the square of the soldier's stature.

He would therefore introduce another factor, the thickness of the body, which presents a target varying in size according to the direction from which the fire comes.

This, however, is unnecessary. The stature alone should be considered, because, for the sake of simplicity, we assume that oblique fire is experienced equally by both armies, and we also assume that all soldiers are of similar build. The assemblage of human targets in each army is therefore proportional in size to the square of the average stature.

JOHN HILL TWIGG.

The Hydro, Ben Rhydding.

WHAT IS WHISKEY?

DURING the last three months readers of the daily Press have from time to time been the recipients of informations concerning the nature of whiskey. Their education must have been somewhat heterogeneous in that what whiskey should or should not be seemed to change each week, in accordance with the witness whose evidence was being reported; perhaps now the so-called whiskey test case is over it will be convenient to place before our readers some of the most important facts brought to light by it.

The borough of Islington began its work in the matter of potable spirits with brandy, and succeeded in practically enforcing for this article of commerce a chemical standard. This standard, as in the case of the one which it has, at any rate for the time, succeeded in establishing for whiskey, is a minimal standard, *i.e.* brandy must contain at least a certain proportion of so-called compound ethers, and whiskey must, if the judgment in this case be maintained, at least contain a certain proportion of so-called impurities, viz. substances other than ethylic alcohol and water. Before dismissing from our notice the brandy standard, we would emphasise the fact that in the case of brandy a minimal amount of one class of by-product, the individual members of which almost certainly have the same therapeutic effect, is demanded. In the case of whiskey, the Islington magistrate fixed a chemical standard based upon an analytical, not chemical or even therapeutical, entity containing such different substances as compound ethers, higher alcohols, acids, and aldehydes. He further strictly enjoined the kind of apparatus in which whiskey must be produced, and the materials which shall in the two countries producing whiskey be solely used in the mash from which the spirit is to be distilled. The question of a chemical standard for brandy, and the protection which such a standard affords to the public, was thoroughly discussed in NATURE of November 3, 1904. The anomaly of having a fixed minimum and no fixed maximum for alcoholic impurities in potable spirits is too palpable to need amplification, and has been definitely recognised by the Belgian authorities, who refuse to allow the sale of a potable spirit possessing a coefficient of impurities of more than 300. This fact is of special interest at the present time, for if the Islington judgment is to stand, no potable spirit can be sold as whiskey which, *inter alia*, possesses a coefficient of impurities of less than 380.

To the average reader the judgment containing the definition of what for the future must be sold as Irish and Scotch whiskey would read, and it consists of some five thousand words, as if this question had never been considered before; and, indeed, a leading article upon this subject which appeared in a medical contemporary last week contained the extraordinary statement that "five years ago there was no suggestion even that potable spirits might be brought within the operation of the Sale of Food and Drugs Act, with a view to the detection of foreign or added spirit." It can scarcely be news to the readers of NATURE that a Select Committee under the chairmanship of Lord Playfair was appointed in 1891 to inquire into precisely the same question as was laid before the Islington magistrate, and had at its disposal practically the same material; it examined numerous witnesses, chemical, physiological, and commercial, and reported in 1891.

The best way of criticising Mr. Fordham's judgment is to summarise carefully the conclusions of this committee. At the onset it is a relief to find that upon one point at least they agree, viz. that according to both there is no evidence that any potable spirit sold in the United Kingdom as whiskey contains constituents other than ethylic alcohol which are injurious to health; in other respects we are afraid the Islington magistrate in his judgment is diametrically opposed to the report of this committee. Perhaps the shortest way of dealing with this report in the present article is to quote verbatim the Committee's view with regard to the definition of whiskey.

"Your committee do not attempt a legal definition of whiskey. Whiskey is certainly a spirit consisting of alcohol and water, with a small quantity of bye-products coming from malt or grain, which give to it a peculiar taste and aroma. It may be diluted with a certain quantity of water without ceasing to be whiskey, and it may be diluted with spirits containing little of the bye-products to suit the pocket and palate of customers, and it still goes by the popular name of whiskey. Your committee are unable to restrict the use of the name as long as the spirits added are pure and contain no noxious ingredients." Then again:—"There are varieties in the purity of patent or silent spirits. When they are made for blending it is the object of the distiller to retain a percentage of bye-products, though to a smaller extent than in pot-still whiskey."

We cannot think that the Islington magistrate was not aware of these conclusions, although it is exceedingly odd that in so lengthy a judgment no mention is made of the report of the select committee. However, the Islington dicta with regard to whiskey are certainly clear. Irish and Scotch whiskey must be produced by the distillation in a pot-still of the wort derived from a mash consisting in Ireland of 75 per cent. barley malt and 25 per cent. indigenous grain, in Scotland of barley malt alone. We are not told what kind of pot-still is to be used, although it is quite clear to anybody who has studied the subject that, with regard to the degree of rectification capable of being produced, pot-stills differ *inter se* as much as the patent-still differs from the pot. Whether or not the chemical standard of the Islington analyst is also to be maintained is not quite clear, but if so it appears that at least some of the pure malt pot distilleries will have to modify their technique. So far as concerns the actual term whiskey itself, it is not stated definitely that this term, provided it be not prefixed by the epithet Scotch or Irish, should be refused to blended whiskies, that is, to whiskies consisting in some part of patent-still or grain spirit, provided they consist of "a very considerable proportion" of pot-still whiskey. If these blended whiskies are to conform to the chemical standard laid down by the Islington analyst, practically all the blended whiskey on the market at the present day will have to undergo a considerable alteration. It is to be noted that, as distinct from the report of the Select Committee, no