CROP INSURANCE.

(R.B. McMillan).

Introductory.

Crop insurance is said to be one of the oldest forms of insurance known, it having been practised in various European countries for close on 200 years. The principal form which it has taken has been insurance of cereal crops against damage by hail. However, some schemes covered fruit and other crops, while hail insurance was often linked also with fire insurance. Generally speaking, the initiative came not from private firms, but from the farmers themselves, the schemes being launched in the form of groups or societies of farmers joining together for their own benefit. These groups were generally on too small a scale to be able to withstand the losses in exceptionally bad seasons, and at an early stage they had to be assisted by the State. This early intervention by the State has meant that it is now customary for the State to exercise supervision, if not in the fixing of rates and conditions, at least in conducting some form of central bureau for the compilation of statistical data on climate and crop yields. In some countries, of course, the State has taken a more active part still, and conducts its own insurance scheme. However, the most notable feature of these early European hail insurance schemes was their non-profit-making nature.

Crop Insurance in Australia.

In spite of its long history abroad, crop insurance is relatively young in this country. The present position in New South Wales, for instance, is that it is still difficult to obtain any form of crop insurance except against hail damage to cereals, and even this form of insurance is still at an early stage of development. Actual underwriting of hail insurance began about 1912, and since that date a number of private insurance companies operating in this State have been accepting this business, but they appear to do so chiefly for the reason that it tends to attract with it the more profitable business of workers' compensation and fire risk insurance. For the purpose of assessing hail losses there was formed a body called the Hailstone Loss Assessors' Association which acts on behalf of all the companies undertaking hail insurance business. The Association has established six regions, each with one loss assessor acting on behalf of all the companies concerned. For the purpose of fixing premiums, the State has been divided into two zones only, the premium rate for the northern part of the State being 90/- per cent., and for the southern part 60/- per cent. There has been virtually no intervention by the Government in this field; however, more recently farmers' organisations have been pressing for the Government to intervent, presumably in the hope that improved facilities for farmers would result.

Hail insurance on fruit crops in this State is at present carefully avoided by the insurance companies. A number of companies had dealt with this business in the past, but their losses were so severe, presumably because the risks had not been correctly anticipated, that they now tend to avoid this type of business. On this point, it is interesting to note the comments of a Royal Commission of Inquiry into the Fruit Industry of New South Wales in 1939, which gave considerable attention to the question of hail insurance for fruit. The Royal Commission reached the conclusion that a properly organised system of hail insurance for fruit would be of substantial benefit to growers, that such a scheme should be workable if organised under Government supervision, but that it would need some period of subsidy before a proper actuarial basis for premiums could be reached on the basis of experience.

The success of hail insurance schemes in Queensland, and the repeated representations that this State should follow Queensland's experience, make it of interest to outline briefly the position in that State. Queensland has hail insurance schemes for wheat, barley and for fruit in the Stanthorpe district. Each of these schemes is administered by a board set up under the Primary Producers' Organisation and Marketing Acts. The scheme covering wheat was introduced about 1926. Premiums are collected by a levy on all wheat delivered, and are limited to 7½ per cent. of the value of deliveries. This fund may be supplemented from reserves, and on a number of occasions this has actually been done. Crops are covered from the middle of August to the end of January, and compensation is paid only for full destruction of the crop, or if any remaining part of the crop is delivered to the State Wheat Board. No claim is met unless losses are greater than 5 per cent. of the crop, while no loss will be assessed at more than 24 bushels to the acre. The average cost of this insurance to the grower has worked out at slightly over ½d a bushel. The scheme appears to have worked well and with the whole-hearted support of wheat-growers. The barley scheme is roughly similar. The fruit scheme has operated in the Stanthorpe area since 1933, and has been the subject of some experiment. In the early stages it was voluntary but it was later found desirable to put it on a compulsory basis.

All-Risk Insurance in the U.S.A.

Perhaps the most interesting development in the field of crop insurance recently has been the introduction of an all-risk insurance scheme in the United States. Based on the report of a committee of Government and farmer representatives formed in 1936, all-risk insurance was introduced by Act of Congress in 1938 to cover the 1939 wheat harvest. Administered by the Federal Crop Insurance Corporation, as part of the United States Department of Agriculture, the scheme aims at giving stability to farm incomes by protecting farmers against all risks except neglect and malfeasance on their part, or failure to reseed. Both premiums and losses were calculated in terms of bushels of wheat, and were payable either in wheat or its cash equivalent. Reserves were also

carried in terms of wheat, a fact which tended to give stability to the market. The basis of calculation of premiums was that a certain yield was guaranteed to the farmer, either 50 or 75 per cent. of his average crop yield, whichever he chose; calculations were on an individual farm basis, so as to balance each farmer's prospective compensation payments with premiums paid over the long period. Administrative costs were met by the Government and wherever possible existing agencies were used, thus making it possible to dovetail the scheme with other activities of the Department of Agriculture aimed at encouraging the adoption of better farm management methods.

A similar scheme was introduced for cotton in 1942 and investigation has also gone a fair way towards enabling the early application of all-risk insurance to corn, citrus, tobacco and rice. Yet in spite of the careful planning which had gone into the wheat and cotton schemes, they were liquidated by order of the U.S. Congress as from the 1st January, 1944. The reason for this action was the failure to establish a sound actuarial basis for the scheme and the inability to eliminate the "moral hazard", it being possible for farmers to choose the years in which they would participate so as to collect compensation in bad seasons and to avoid premiums in good seasons. As a result, the Corporation regularly made an adverse selection of risks, and losses averaged from 4 to 5 million dollars a year, or about a half of the amount of premiums collected. Furthermore, these losses occurred during a period when crops were generally above average. The Corporation was liquidated against the advice of the three main growers' organisations, against opposition inside Congress, and with the unwilling consent of the President. Subsequently, it appears to have been made a plank in each candidate's policy in the recent Presidential election and now all-risk insurance is reported to have been re-introduced as from the beginning of 1945. Fuller details are not yet available, but presumably this means that all-risk insurance will now be a permanent feature of American agriculture.

Problems of Crop Insurance.

Perhaps it is fortunate for New South Wales that hail insurance has made considerably more progress elsewhere, for it makes it possible to draw on other countries' experience and build more firmly on it. The main lessons learned appear to be these:

(i) Losses must be easy to assess. This implies the existence of ample field staff experienced in loss assessment, and the existence of reasonable standards of product for the commodity concerned against which losses can be gauged. If affected crops cannot be fairly quickly inspected; if it becomes difficult to judge whether losses have been caused by hail or other uncontrollable factors, or by preventible factors such as some diseases or neglect; or if it is hard to state what stage the crop would reach had loss not

occurred then there is a serious danger that misrepresentation and exaggeration of losses will prejudice the success of any insurance scheme.

(ii) Schemes must be broadly based. Small groups are not in a position to accumulate the reserves necessary to meet the losses which might occur in a run of bad seasons, or even perhaps in one bad season. If a scheme embraces a large number of contributors and a wide area with reasonable variety of climatic experience, and if as a result losses in any one season tend to be restricted to only a fraction of the total participants, then stability is more easily assured.

(iii) The actuarial basis must be sound. If premiums are not accurately related to the actual physical risks then farmers for whom premiums are inordinately high will not participate, while those for whom premiums underestimate the risk will tend to participate, thus making it inevitable for the scheme to incur losses over the long period. Consequently, insurance must be based on accurate knowledge of climatic data and of average crop yield experience.

(iv) There must be some form of Government supervision. Experience seems to show that crop insurance makes no progress unless the State takes the initiative in fixing premium rates, guaranteeing schemes, or even subsidising them. It seems that only a State-supervised scheme can gain the wide spread of risk necessary and can afford to establish premium rates close to the levels suggested by accurate actuarial calculations. Farmers, with their traditional lack of interest in insurance, appear most unwilling to pay premium rates high enough to suggest that excessive reserves are being built up at their expense.

Perhaps the ideal form of crop insurance would be a compulsory, State-supervised, all-risk scheme, with premium rates based on each farm's individual experience. However, at least in New South Wales, the statistical information, both for crops and growers, relating to each individual farm is simply not available. Therefore, it is at once impossible to make an accurate assessment of each farmer's individual risk. Compulsion, without which a sufficiently broad cover could probably not be obtained, is unpalatable at any time, and would be even more so if it could be demonstrated that the scheme was not based on data sufficiently accurate to avoid injustice and anomalies as between particular farms.

Some crops, too, are more amenable to insurance than others. For instance, wheat is a uniform commodity, and it is not difficult to judge a farmer's probable loss given the market value of the remainder of the season's crop. For fruit, assessment of loss is more difficult, since often it is impossible to say how much damage has been caused to the fruit by hail and how much by other causes affecting quality. For commodities like vegetables, which are far from uniform, loss and damage can be due to a wide variety of causes, not the least important of which is negligence on the part of the grower. With vegetables, too, the absence of any uniform standards of quality make it difficult to judge the extent of losses, and also make it easier for misrepresentation on the part of growers to cause a drain on insurance funds. Then, again, some commodities, such as rice and tobacco in this State are grown only in fairly restricted regions, where the incidence of climatic factors causing loss would tend to be uniform; this would make it difficult to spread the incidence of losses evenly from one season to another.

The above arguments are not intended to show that satisfactory crop insurance schemes cannot be worked out for every commodity. They are merely intended to show that there are real practical difficulties, which are not the same for every commodity, and that wide administrative experience and sound statistical data are necessary before a scheme can be introduced. Indeed, the important contribution which successful crop insurance can make to stability of farm incomes is such that every effort must be made which will assist in its satisfactory development.