

Annual Dinner, Sligo, 1st June, 1960

President's Address.

MY first duty is to thank the Mayor of Sligo, Counsellor Tolan, for coming here to-night to lend the dignity of his office to our annual function. As Mayor he is a very busy man with heavy demands on his time and the Society are deeply appreciative of the fact that he has deemed our visit as an occasion worthy of his presence as the elected representative of Sligo and its first citizen. This is our second visit here and we have happy memories of the hospitality and kindness we received just 12 years ago. On this occasion as well as the same unflinching kindness and hospitality we will have the happy memory of the high honour bestowed on our Society by the Mayor and we are very grateful to him for it.

A special word of thanks is due to Mr. Pat O'Hare and his staff at the Agricultural Institute's Research Station at Glenamoy. A visit to an Agricultural Research Station may, at first, have seemed an unusual start to a Forestry Study Tour but judging from the discussion it provoked and which still seems to be going on there is no doubt whatever that it was an unqualified success. We found that they are faced with many problems very similar to our own and that there is much we can learn from them and the results they have achieved. We

hope our visit may have helped them a little but there is no doubt that in the exchange of information we were the gainers.

A Study Tour like ours extending over several days and involving a party of over sixty people requires a considerable amount of organisation and hard work. We are indebted to our Convenor, Mr. Tony Hanan, and his very capable committee—Miss Furlong—for the competent and comfortable arrangements made on our behalf. To Mr. Liam Condon has fallen the brunt of the planning within the forest and he has been ably assisted by Mr. Johnston and Mr. Curran. In the background because they are as usual shy men and very much inclined to hide their light under a bushel we find the Foresters without whose active help and co-operation our Study Tour could not be a success. To all these people the best thanks of the Society is due for a very instructive and most enjoyable tour.

The emphasis in our Study Tour and in fact in our activities in general has been on the growing of trees. The forester usually considers this as his main objective and seldom looks beyond it. He generally leaves the marketing and the ultimate uses of the crop he produces to others. In this, I believe, he is wrong. He should also concern himself with the marketing and the final use to which his timber is put.

Since timber is a very variable material, no two pieces are exactly the same, a prerequisite of successful marketing is some form of grading and I wish to-night to make a plea for stress-grading as the best answer.

Let us just see what usually happens when an engineer or structural designer wants to use timber. Because of the almost complete absence of any system of grading or of any data for his material he must himself make a few crude tests and from his scanty results compute averages for the various strengths he wants. Then noticing that no two pieces of his material are the same as to knots splits and shakes and so forth he divides his average by a safety factor to get his permissible stresses. The factor he uses is entirely subjective and is his own personal assessment of the variability of the timber and the degree of hazard to life and limb and of course to his reputation if the structure should collapse. The result is he usually winds up with a much more costly and bulky structure than he really needs and one which is very prodigal in its use of timber. In other words there is a lot of guess-work in our use of timber, guess-work which is both unnecessary and undesirable.

How can we help him to take the guesswork out of his calculations. The answer is to grade our material according to visible defects into categories capable of bearing predetermined stresses, in other words stress-grading. Stress-grading is a comparatively new science, at best not more than twenty years old, so we still have a long way to go. Briefly the procedure in the preparation of stress grading rules is to test sufficient material in structural sizes and containing defects carefully listed and tabulated, to determine accurately the influence of these

defects. A safety factor of 27/64ths is used to give allowable working stresses for the grade and the mathematical probability that one piece in 40 would fall below the working stress allowed is accepted. The result is a grading according to species and defects into categories capable of withstanding certain predetermined loads. If the material is of poor quality or unsuitable species the bulk required to withstand the load will be much greater than would be necessary for clean and suitable material so that this system of grading automatically allows a price differential for the better quality material or more suitable species. It also ensures the best and most economical use of the material available; and lastly it provides the engineer or designer with accurate and reliable figures on which to work.

To conclude I would like to say a few words on timber preservation. Anything we can do to prevent or retard insect or fungal attack lengthens the life of our timber and helps to conserve our limited supplies. When we think of preserving, however, we usually think of complicated pressure processes with high capital costs, high running costs and capable of handling only comparatively small loads at a time, so that the preserving of all our timber appears as an enormous and wellnigh impossible task.

Now there are two situations in which our timbers may find themselves. The first is in open or exposed positions subject to constant wetting, or in contact with the ground, or immersed in water. For these positions pressure treatment is a necessity. The second is in sheltered or protected positions and under this heading comes the bulk of our timbers particularly our structural timbers. For such positions the much simpler and more inexpensive method of diffusion impregnation has been developed. For this method no more elaborate equipment than a dipping tank is required or if desired, the preservative may be brushed or sprayed on with equal effect. The method is to surface coat the timber with a solution of the preservative and allow the moisture in the timber to carry the preservative right through the wood. The one essential is that the timber must be green when treated. When the required penetration has been achieved the process is stopped simply by drying or seasoning either by air or in the kiln.

This method then is simple and inexpensive and penetration is right through the wood and not as a protective skin so that it may be machined, cut or bored at will after treatment. It is applied to the green timber thus eliminating the need for second drying and it is effective against most insects and fungi likely to be met with in this country including woodworm and dry rot. I would like to see this or some similar form of preserving applied to all our native timbers as a matter of course.

This year the Forestry Division has achieved a planting target of 25,000 acres. When the Division comes to market the timber from planting on this scale Ireland will be in competition with countries with a long forestry tradition behind them, who have always had timber to

sell and who know just how to go about selling it. We know little about our timbers, their properties or defects and we have no experience of a highly competitive timber market. The time is short, it is well within the lifetime of most of us here and we cannot afford delay. Some form of grading must come and to my mind stress-grading is the obvious and most beneficial one, while a preserved timber will always have an enhanced value in keeping with its longer life expectations.
