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## Potentialities of Home-Grown Timber \*

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I should like to express my thanks to you for the honour you have given me of addressing you on this subject. That it should be my first visit to Ireland gives me added pleasure, particularly as I was originally trained in Forestry, but alas that knowledge has been particularly neglected since my work, Advisory Department, is largely concerned with the resultant produce.

Naturally—or should I say unfortunately—my remarks must be coloured by conditions as I see them in England.

It is obvious that the problems affecting English home-grown timber are the same as those for Ireland, and I believe that the major problem is the disposal of the thinnings.

A quick examination of your State Forests Report for 1957/8 shows that 20,000 acres were planted, 23,268 acres of productive land was acquired, 7,492 acres were thinned giving a yield of 2,077,250 cubic feet—but this should have been higher had it not been for the gales of February, 1957 when approximately 3m. cu. ft. was blown down in 144 forests. It is extremely interesting to see that you are undertaking a Census of Woodland for all crops 10 years and upwards. This is the right method of approach but I feel it is unwise to base too much reliance on resultant figures. Nature has a nasty habit of upsetting calculations and Robbie Burns had the right words for this "The best laid schemes of mice and men gang aft agley"! Your own experience of the 1957 gales shows how such plans can be upset.

As in the case of England the possibilities of using thinnings for the production of chip-board mills or pulp is, I see, being investigated by your Forest Department. The difficulty with both these ideas is whether the planners have the necessary vision to foresee requirements. It is common knowledge that mass production is always cheaper than the small unit, and this field does require vision because a mill set up to meet present day or even five year production would be too small to cope with the volume of 20-25 years ahead and such a unit would run at a loss until the raw material could meet the capacity of the plant.

On your present programme of 1,000,000 acres this would yield

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approximately 84,000,000 H. ft. per year. One-third of this to your sawmillers will give approximately 28,000,000 H. ft. and two-thirds to the board and pulp mills would give 56,000,000 H. ft. Sawmillers of modern mills require half a million cu. ft. per year, the boardmillers want 3,000,000 cu. ft. per annum and pulp millers require 15,000,000 cu. ft. Then there are transmission poles, mining timbers, sleepers, and other needs. It has been estimated that a forest acreage of 400,000 acres within easy reach of such mills could give 32,000,000 cu. ft. per annum. These figures have been derived from the summary of a symposium held by the Society of Foresters at Lyndhurst in November, 1959, and I would suggest that it would be well worth reading—5/- per copy from the Society of Foresters, 7, Albyn Place, Edinburgh, 2.

To return to the original subject of this talk—the potentialities of home-grown timber. Economists and other wizards of finance have shown that it is doubtful whether either country could be completely self-supporting in its timber requirements—certainly not Great Britain. By November, 1959 you had imported 29,160 standards or 4,811,400 cu. ft. In 1958 your imports amounted to 3,868,425 cu. ft. or 23,445 standards and you produced from two Departmental Mills 83,276 cu. ft. or 54 standards approximately. This is not meant to be disparaging but to show the gap between what our countries can produce as opposed to need, Great Britain is in a very similar position comparatively.

You will no doubt have read in the various forestry journals that the question as to whether to produce quantity or quality has exercised much ink and thought. There has been a certain amount of wild and woolly talk on the question of quality and as yet we do not know what our forests can produce chiefly because, with the exception of the Scots pine, they are all exotics. You are concentrating on Sitka spruce 43.2%, *Pinus contorta* 30.2%, Norway spruce 9%, Scots pine 4.5%, larches 4.3% and other conifers 2.6%—with oak and beech leading in the hardwoods—again mostly exotics, and no doubt you have found that these species have proved the best for the climatic conditions existing over here. Your oaks were of course famous as history has shown. The big \$5,000 question is what is the quality like? I cannot speak on this not having seen any plantations or sawn material but if it compares to the 20-25 year old material grown in Kielder Forest then there is little to worry about. English foresters are aiming at 6 rings to the inch and up and clean lengths. This entails high pruning but it is felt that the resultant price would justify such action if the final crop can be estimated, and in this respect I feel that such work would be justified. It should be possible to ascertain your best trees in a forest—high prune these, and merely brush up what would be the thinnings to enable the marker to get through a plantation. I realise that this could be costly due to labour charges, but it is worth giving it some thought, particularly the smaller planted areas.

Extraction and delivery costs were greater than the cost of growing

the timber therefore greater attention must be paid to this side of growing timber and I feel that when planting, alignment of roads and rides must be done with this view at the back of the mind.

Assuming all these criteria can be achieved how does the home-grown timber compare with imported. It is suffering in England from the war, when any piece, type or kind of wood could be sold and used. Once imports free of licence appeared, then home-grown was almost a rude word. The fault lay with the producer but this is now being remedied by the setting up of the Home-Grown Timber Marketing Corporation and the adoption of grading rules for both hard and soft woods. This is a must for any timber producer because the architect and designer must know what he gets if he specified a certain grade. It must be reasonably dry and there would appear to be no reason why timber produced in the British Isles should not be equal to any of the imported material, but it must be well manufactured. These remarks apply to both hardwoods and softwoods. In his Auditorial Address to the Dublin University Agricultural Society, Mr. J. Durand also emphasised these points, and he also stressed the point that if the forester has the encouragement of a steady market, then publicity and public relations must play their part in encouraging consumers to use the material available.

I would draw your attention to an article by Professor M. L. Anderson of Edinburgh University in the Quarterly Journal of Forestry, October, 1958 entitled "Effect of Site and Silvicultural Treatment upon Timber Quality" and in his summary he states "the most effective means whereby the quality of the resultant timber may be improved are by selection of species initial spacing, stand structure and thinning" but again I feel I am preaching to the converted, but from my own observations there is still room for improvement on these factors.

What are the possibilities of using your home-grown timber? Given the above requirements there is no reason why the material should not prove suitable for all uses to which you put the imported timber, but I must repeat, it has to be properly graded, seasoned and manufactured. One difficulty at the present moment is due to lengths but this I feel will be overcome as the trees mature. Much can be done by architects restricting their lengths in designs to up to 16 ft. and widths over 7 ins. as much as possible, and by publicity and example they should be encouraged to specify the material.

My Association has carried out bending tests on Scottish grown Larch with results that show that it can be upgraded into Group I timbers (C.P. 112) 1,000 lbs. F, and that further work should be done to give working stresses for shear and compression. The F.P.R.L. and our own Commission have been doing a lot of work on the strength properties of our softwoods and I feel that similar tests or organisation could well be set up over here. I would go so far as to say that it is in your own interests to do so—once it can be shown by testing that your material is satisfactory then designers will use it.

We designed a 3-bedroomed  $1\frac{1}{2}$ -storey timber house for the Forestry Commission utilising a 3 ft. and 4 ft. grid system of prefabricated panels using Sitka Spruce, Japanese Larch and Scots Pine for wall cladding,  $3'' \times 1''$ ,  $5'' \times 1''$  and  $4'' \times 1''$  Scots Pine boards for flooring, and  $3'' \times 2''$  and  $6'' \times 2''$  Scots Pine framing and carcasing. Certain difficulties arose but since it was a prototype the feeling was that these could be overcome.

In this connection when one examines the size of tree from which the Scandinavians cut S.E. timber I am amazed at the attitude of our people. It would appear that they cannot think farther than pit-props. However this attitude is changing but it does require special equipment and methods for dealing with the small sizes of thinnings. Gordon R. Jacob of Chester has developed a circular saw or rather twin saws which can be varied to accommodate any width of material. This material is graded according to diameter for feeding to the two types of saws and by grading it permits a continual feed to the saws. This is one firm which has considered the problem seriously and I feel that if one firm can do it, or one country can, then so can we. It must be mentioned that a regular constant supply is necessary for economical running. A full report was issued in the magazine "Wood".

I feel that apart from the scrub hardwoods little trouble should be experienced in disposing of hardwoods. Good quality oak, ash, sycamore, beech, etc., will always be in demand for joinery, furniture, veneers, etc. I would mention that the Chilean Rank & Goigne, *Nothofagus spp.*, are being grown satisfactorily in England and if it has not already been tried over here, might well merit attention. Scrub hardwoods can be pulped, providing the resultant material has the requisite amount of softwood pulp added.

I could continue for much longer indicating outlets for home-grown timber, but this would take too long, and would become more boring than this has already been. However with modern timber connectors, modern glueing techniques and preservatives the so-called disadvantages can be overcome, and many new markets for home-grown timber will be opened up providing the necessary precautions already mentioned are carried out and I will repeat them—

1. It must be graded.
2. It must be well seasoned.
3. It must be well manufactured.
4. It must be in good supply.

Given these, I would end by saying that home grown timbers have immense potentialities.