

## Annual Study Tour

NORTH DERRY/ANTRIM FROM JUNE 14th TO JUNE 16th.

FIRST DAY (Tuesday, June 14th).

Morning :

The Society chose north Derry and Antrim for this year's study tour which was once again favoured by the good weather which we have now come to accept as routine for study tours. On the opening day heavy showers fell all around us but not a drop on the tour party. The morning started with a visit to Springwell Forest.

Stop No. 1

Mr. Kilpatrick, President of the Society, introduced Northern Ireland personnel. Mr. Blackmore, Principal Officer of the Ministry of Agriculture, deputising for Mr. Elliott, Assistant Secretary (unavoidably absent) and Mr. Parkin, Chief Forest Officer of the Northern Ireland Forestry Division (who was in Madrid at the Sixth World Forestry Congress), welcomed the party to Northern Ireland and wished us an enjoyable tour. He then introduced Mr. McPherson, District Officer, Mr. Lamb, Mr. Fotheringham, Forester-in-Charge, his Assistant Forester, Mr. McGregor, and Mr. Bill Bryan, until recently Forester-in-Charge at Springwell and our leader for Stop No. 5. He then also introduced Mr. Simpson, Working Plans Officer.

Springwell is a forest of 2,279 ac. Of this 1,840 ac. are planted, 200 ac. unplantable with a plantable reserve of 239 ac. The underlying rock is basalt, covered with a deep layer of boulder clay. The soil is heavy with impeded drainage and many embedded boulders. Leaching of the top layer has been severe and most of the area has a thin cover of peat.

Mr. McPherson gave some details of the forest. The first land was acquired in 1929 and the main block had just been planted in the spring of '46 when a fire burned 360 ac. This was replanted in 1947-'50 and further planting was carried out in 1951-'52. Species distribution is as follows:—

- 61% pure Sitka spruce;
- 16% *Pinus contorta*/Sitka spruce mixture
- 14 %Norway spruce mixed with Thuja and Lawson cypress;
- 4% Japanese larch;
- 5% others.

Some storm damage has occurred and losses by windblow occurred as follows:—

- 1957—47 ac. blown;
- 1959—152 ac. blown;
- 1961—30 ac. blown.

At the time of the preparation of a Working Plan in 1961 (just before the '61 storm) it was estimated that 7½% pure Sitka spruce and 41% *Pinus contorta*/Sitka spruce mixtures were in check while 15% and 30% of these respectively, were coming out of check. Sitka spruce was Quality Class III and IV. The *Pinus contorta*/Sitka spruce mixture was calculated to produce Quality Class V Sitka spruce after removal of *Pinus contorta*. Norway spruce and Japanese larch were Quality Class III and II respectively.

The Working Plan, which came into operation on October 1st, 1961, divided the forest into two working circles:—

(a) Saw Timber; (b) Pulpwood.

It was intended that, owing to lack of stability, the latter should not be thinned at all but owing to market commitments the so called "Cam" thinning was carried out. This involved the removal of the largest trees. This type of thinning has now been suspended. The saw timber working circle on better ground was thinned eclectically to produce larger sized saw timber of about 10½-11 in. QGBH. The rotation was fixed at 50 years for both working circles.

The theme of our visit here was the management of a forest which, due to fire and windthrow, has an intimate mixture of age classes which is further complicated by very considerable variations in growth rates. To achieve maximum potential, Sitka spruce would grow to a top height of 80 ft. but a storm blew it down at 35 to 40 ft. so instead of a mean annual increment of 180 ft.<sup>3</sup>, one of 95 ft.<sup>3</sup> was returned. The most important factor on such sites is wind damage.

#### Stop No. 2.

Mr. Fotheringham showed us various stages of dominance of Sitka spruce and *Pinus contorta* in a P/33 mixture of *Pinus contorta*/Sitka spruce. It was originally planted 2 Sitka spruce to 1 *Pinus contorta* on pure *Calluna*. Where *Pinus contorta* was felled for road construction, it was noted that Sitka spruce started to recover, even though it was almost completely dominated by the *Pinus contorta*. In a general discussion it was felt that with modern techniques (ploughing, manuring, weedkillers, mixing species) a crop of Sitka spruce could be raised. Mr. Sharkey reminded the party that on pulpwood sites, volume rather than species was the most important consideration. Low current annual increment and high interest rates ruled out fancy treatments.

#### Stop No. 3.

A p/34 stand which was windthrown was replanted with Sitka spruce. A suspected cause of windthrow was inadequate drainage and additional drains had now been opened. Messrs. Fotheringham and Bryan tried to invite discussion on the adequacy or otherwise of present drainage but the response was poor. As a new county road ran through the forest at this point, it was felt that it was

due as much to clearance for road construction as to poor drainage that windblow occurred. The nice, new post and rail fence, which is the standard boundary fence for all plantations adjoining country roads, drew much more discussion than the drainage problem. The timber is Protomised, has a life expectancy of 20 years and costs £1 per running yard.

*Stop No. 4.*

Mr. Simpson was leader for this stop which consisted of a walk through Compartments 57, 58, 67 and 68 to illustrate the problems which arise from a mixture of age classes. A good general view was obtained near the start of burned and windthrown areas. The original P/35 stand was windthrown during the '59 storm when the patches were only 11 and 12 years old, yet some trees on exposed edges of the patches are being windthrown. Increment was reduced by exposure affecting the surviving small stands. It was suggested that the area should be clear felled and an even-aged structure created in one solid block. Mr. Condon thought that it presented a very pleasing landscape pattern as it stood and should be retained as a public amenity. (One chain wide on either side of the public road is devoted to amenity). Mr. McGlynn remarked on the importance of keeping sight of our main role—timber production. Landscaping, amenity, game, etc., could only be asides and incidental.

*Stop No. 5.*

At Stop 5 Mr. Bryan gave a dissertation on Scottish eclectic thinning in a P/48 stand of Sitka spruce. Mr. McDonald, late of the British Forestry Commission, was the chief exponent of this method and termed it a really simple system. His prescription ran:—

- (a) Carefully select and spot the very tallest and straightest trees ten yds. apart (i.e. about 60 per acre). Call these crop trees and high prune them.
- (b) Remove dominants competing with crop trees.
- (c) Select followers, i.e. smaller trees surrounding each "crop tree".
- (d) Relieve competition among followers by removal of interfering trees.

The merits of the system are purported to be basically:—

- (a) Cutting out uneconomic thinnings.
- (b) Isolating the Final Crop trees.
- (c) Producing sawlogs quickly.
- (d) Creating uneven canopy.
- (e) Slanting light helping to decompose humus.
- (f) Good increment on selected trees.
- (g) Pruning confined to final crop trees only and those from an early age.

Ideally, the system should start from about 16 years in good Sitka spruce.

T.G.

*Afternoon :*

On reaching Cam Forest, after a pleasant lunch at Springwell we were introduced to two of the assistant foresters, Messrs. Holmes and Wilson.

The President apologised for Dr. Jack's absence. Cam Forest consists of a total area of 3,133 acres and planting was carried out during the period 1930-1952.

Planted area : 2,801 acres.

Reserve : 172 acres.

U/P : 160 acres.

Staff : One Forester-in-charge and three assistants.

Soils : Mostly boulder clay over basalt. Soil is heavy with poor drainage. A total of 481 acres were wind blown in 1957, '59 and '61.

Species : The choice of species was very closely related to the changing soil conditions resulting in intimate mixing of pure blocks of different species.

| <i>Species</i> | <i>% of Area</i> | <i>Quality Class</i> |
|----------------|------------------|----------------------|
| SS             | 61               | IV                   |
| SS/PC          | 15               | —                    |
| PC             | 5                | V                    |
| NS             | 13               | II/III               |
| JL             | 4                | I/II                 |
| EL             | 2                | IV                   |

The themes of the afternoon were thinning at Stop No. 1 and Production operations at Stop No. 2.

*Stop No. 1*

Compt. 102—Leader Mr. Bryan F. i/c. Four plots were examined during this stop and members were asked to note any points of interest and raise them later at the general discussion. The four plots visited were as follows :

Plot No. 1 Eclectic thinning

„ No. 2 No thinning

„ No. 3 Low thinning

„ No. 4 Cam thinning

SS. P/43

All plots except No. 2 had a first thinning in February 1961 when top height was about 30 ft. A few trees were removed during draining in June 1963 and a second thinning was carried out in November 1963. Some windblow occurred in all plots except No. 2. Windblown poles were removed in March 1964. The total volumes to-date including thinning and windblown trees were :

Plot No. 1 Eclectic thinning 2,444 Cu. ft.

Plot No. 2 No „ 2,547 „

Plot No. 3 Low „ 2,252 „

Plot No. 4 Cam „ 1,505 „

Mr. Kilpatrick and Mr. Bryan explained the various thinning techniques involved with special reference to the eclectic thinning.

The "No thinning" is self explanatory. Natural selection is allowed to take place and the smaller poles are suppressed.

The "Low thinning" in No. 3 plot is the conventional thinning method.

The "Cam thinning" in No. 4 plot was a new concept for most of the party. It was explained that this thinning, which started in Cam Forest, consisted of a heavy crown thinning by removing the predominant stems. It was only intended as an expedient to supply material urgently required and was not recommended as a silvicultural practice.

The Eclectic thinning technique is as follows:

- (a) Approximately 60 elite trees per acre are selected and paint-marked. These trees are vigorous predominants. Tall, straight and free from blemish, they are high pruned and will form the final crop, and are referred to as "crop trees".
- (b) All dominants competing with these crop trees are marked for removal.
- (c) A few healthy straight poles called "followers" are selected from the smaller trees surrounding each crop tree, are given every chance to develop by removing competing poles, and are likely to come along well behind the crop trees.

After a lively discussion, the general impression was that the "No thinning" plot looked best—ground quite dry and firm and no sign of windthrow.

In answer to Mr. Condon's query "What do you hope to achieve from the Eclectic thinning?" the President replied "We aim to get a larger volume of high quality timber on a smaller number of stems". The eclectic thinning, apart from ensuring better stability also makes early thinnings economic, as some larger trees are removed. It was hoped to get the best of both worlds—early economic thinnings, crop stability and high quality timber (crop trees are pruned to 25 ft.). The system came under fire from all sides on the question of stability and mean annual increment. Some members felt that the "saw-tooth type" crown would lead to windthrow. Mr. Maher asked "why not select 100-120 final crop trees at the beginning and so make provision for losses from windthrow or other causes?" We were informed that some people in the Forestry Division favoured this idea.

Mr. McNamara favoured the idea of extending the eclectic system to *Pinus contorta* to provide timber suitable for panelling in our affluent society. Mr. Sharkey scotched the idea and maintained that panelling, although fashionable at the moment may not last,

but good quality timber will always be in demand for construction. Sitka spruce is nearest to the white imported timber. The main problem is not rings to the inch but rather one of knots. In answer to Mr. O'Grady, the President said that it was hoped to reduce the rotation period as timber is being put on a small number of trees which are given every opportunity to develop from the beginning. This information was welcomed by the party as the reduction of 5-7 years in the rotation would have a big bearing on the impact of compound interest.

Mr. Bryan was ably assisted in the discussion by the President and Messrs. MacPherson and Simpson.

### *Stop No. 2*

The President introduced Mr. Deveria, chief Mechanical Engineer and Mr. Devenney. A demonstration was laid on using a Garreh Tree Farmer for extracting poles. Mr. Deveria explained the workings of a Tree Farmer and its uses for extraction (Price £2,950 (1961 price), operation cost 10/- per hour (approx.); optimum radius about 400 yards; maximum haul 800 yards; optimum load 2 tons, approx. cost per cu. ft. on a 400 yd. haul is  $2\frac{1}{2}$ d.).

Mr. Devenney, who is stationed at Baronscourt, very kindly took along his "chain saw conversion unit" which he designed himself. He demonstrated the unit to us in cutting poles into 5'-4" pit wood lengths. Briefly the conversion unit consists of two sets of steel rollers which are set in metal frames resting on the ground. One set of rollers carries an upright steel post into which a chain saw (surrounded by a special frame) can be locked on a swivel device. The chain saw can be used for cutting by using the swivel action. The second set of rollers carries an adjustable stop. The poles are deposited by the Tree Farmer on the first set of rollers leading to the chain saw. One pole is pulled forward using a timber pick until the butt reaches the stop. The operator cuts the pole by swinging the saw in an arc and the cut length is pushed forward onto the second set of rollers where the second helper piles the pitwood using a pulp hook. It was noticed that all on extraction and conversion wore helmets and gloves.

The chain saw unit replaces the McConnell unit which was found to be uneconomic for pit wood conversion. The work has been made much easier, as no heavy lifting is involved, also the team has been reduced from six men to three. All members were loud in their praise of the unit as it gave precise measurement and quality and is perfectly safe in working. The cost of conversion and piling was given as  $2\frac{1}{2}$ d. per cu. ft.

The heavy butt ends are cut in situ on the rollers while attached to the Tree Farmer and are then pulled to one side.

Before leaving the forest we had a demonstration of extraction by horse using both a Border Sledge and a Swedish type sledge.

In the latter, special type harness and shafts are used which enable the horse to hold back loads on steep ground. Both sledges will allow loads of 10 to 12 cu. ft. and special steel runners prevent snagging on the tree stumps. It was noticed that very little damage was done during extraction, as the horseman either leads or drives the horse and does not allow it to choose its own route.

Before leaving the forest, Mr. Kilpatrick expressed sincere thanks to all officers who did so much to ensure a very successful tour.

And so we returned to Portballantrae by the scenic route via Bishop's road, Downhill and Portrush.

P.P. O'G.

## SECOND DAY (*Wednesday, June 15th*)

### *Morning :*

WEATHER conditions were good and the party moved off at 9 o'clock for Coleraine and along the Bann Valley to Portna Lock the mid control on the Bann Navigation Scheme. Here Mr. Kilpatrick introduced the Society members to Mr. Crawford, D.O. for South Antrim and Mr. Robson, Forester-in-Charge, Portglenone Forest, Mr. Deveria, Divl. Forest Engineer, whom we had already met the previous afternoon at Cam Forest, was also in attendance.

For a short time the care and study of trees and allied subjects were abandoned for something in lighter vein as Mr. Ellis, Manager of Toome Eel Fishery gave a very interesting discourse on the life cycle, habits and the methods employed to capture this fish. It was indeed interesting to note that the entire weir at Portna is constructed and maintained by thinnings taken from adjacent forests.

The party then proceeded up river by boat to Moyknock Wood. At this stage Mr. Kilpatrick gave a brief outline of the history of the woods on the Bann Dumps. In 1929 an Act was passed to lower the level of Lough Neagh, work commenced in 1930 and was completed in 1942. Thirty two miles of river from Lough Neagh to the sea were widened and deepened costing £1,000,000 and involving the removal of 5,000,000 cubic yds. of soft mud together with large quantities of rock. The dredged material was dumped at pre-selected sites along the banks thus creating unsightly vistas along this beautiful stretch of river. As it was considered that the dumps would never be fit for agricultural purposes they were handed over to the Forestry Branch. The Forestry Branch proceeded to plant them with a variety of species with an eye to amenity rather than economic forestry. They were planted whilst still in a raw state and the results to date reflect great credit on the wisdom of Mr. D. Steward and Mr. Matt Byrne, Inspector and Forester, in their choice of species. Both are now living in retirement. Accessible dumps have been well thinned, whereas operations tend to be postponed on those with poor access. Moyknock Wood is not readily accessible.

Mr. Robson then conducted the party through a number of interesting plots.

Stop No. 1—Alder/Sitka spruce plot P/39; alder suppressing spruce. It was agreed thinning should favour the spruce.

Stop No. 2—Alder/oak plot; alder removed in '65 and under-planted with Norway spruce. Oak is poor but Mr. Sharkey advocated retaining the better oak for amenity as a mixture with the Norway spruce.

Stop No. 3—Sitka spruce/poplar mixture; the poplar which is far ahead of the Sitka spruce is being removed as market warrants. Messrs. Mangan, Condon and Hunt advocated early removal of poplar to bring the Sitka spruce along.

Stop No. 4—Alder/ash mixture scheduled for clear felling if market available. This policy was questioned and many favoured removal of poor stems and under-planting with *Tsuga*, Norway spruce or *Abies*.

Stop No. 5 was made to show the remarkably well formed though slow growth of *Pinus contorta*, Japanese larch and Scots pine on pure gravel dump.

At this stage the party boarded the boats and proceeded up river. At Gortgole, Mr. Deveria discussed the extraction and transport problems encountered in the Bann Dump Woods and demonstrated the methods employed to unload a converted lifeboat barge using a Hiab hoist and double boom loader. The material being handled was for the chipboard mill at Coleraine and the capacity of the trailer loaded was 700 cu. ft. The difficulty of providing suitable forest roads capable of taking such large transport units was discussed.

Mr. Crawford then conducted the party on a walk through Gortgole Wood, a 72 ac. block with good public road frontage. The emphasis here was on future management techniques with special reference to well formed Japanese larch where further thinning and underplanting to control vegetation was advocated. Moving on to Norway spruce/*Pinus contorta* the question arose, what should be retained. The mixture is uncommon so it was felt the elite stems should be retained. Finally we came to an alder/Sitka spruce mixture where the removal of the alder has demonstrated the wonderful recovery powers of Sitka spruce. As we moved back to the quayside and lunch in the bright sunlight, we couldn't help but reflect on the successes achieved in this river basin. Drainage has benefitted 148,000 ac. of rich farmland, useless mud dumps are producing economic forest crops and adding to the amenity of the area—man has made a contribution here.



*Afternoon :*

FOLLOWING lunch the party proceeded to Garvagh Forest in the North Derry District. This area of 537 acres, formerly Lord Garvagh's Demesne, was acquired in 1945. Planting was completed in 1956. Spruces and Douglas fir were planted on the old agricultural land and hardwood/conifer mixtures on the scrub covered sites. The pattern was groups of five at twenty feet spacing.

There were 21 acres aside for a nursery at the time of acquisition and this together with the planted areas, has given an ideal integrated forest both as regards labour and supervision.

The first stop was at the nursery where we were welcomed by Mr. Coates the Ministry's Nursery Officer, Mr. MacPherson, District Forest Officer and Mr. F. Corrigan the Forester. This was the first mechanised nursery in the Division and it now produces  $1\frac{3}{4}$  million plants annually. There are normally 5 acres of seed-beds and 16 acres of transplant lines. Rainfall is 45 in. and the soil is heavy and stony. Fertility is maintained by a green crop rotation of Italian Ryegrass every 3 years and by adding 20 to 30 tons pig manure and 3 cwts. of balanced fertiliser at the time of sowing. Regular soil tests are made and pH. varies between 5.5 and 5.9.

Many members were surprised to hear that summer lining-out was being done with good results. This was first practiced in 1956 and about 50% of transplanting can be done from mid-July to late August, mainly with the spruces and pines. Working conditions are found to be much easier and the labour is better spread over the season. Manual bedding-out with short boards in raised beds created interest and it was explained that this was a very good method in heavy soil and in wet weather. It was also a protection against frost lift, and soil aeration was much better. Stocking was 208,000 to the acre and an average day's work per man was over 4,000. With the use of chemicals weeding costs were kept very low. Simazine was used in transplant lines and Paraquat as a pre-germination spray on the seed-beds.

A demonstration of machinery used in seed-bed preparation, seed-sowing and lining-out was given by the nursery staff. The good work done by a Garvagh lining-out plough with fertiliser spreader attached was appreciated by all members. With this equipment 5,000 seedlings were lined out per man per day, in favourable weather conditions.

Two types of lining-out boards were discussed. The first one, developed by Mr. D. Stewart, former Chief Inspector, had small springs, in which individual plants were held. As these frequently break it was considered expensive, and because they were fixed, the spacing of  $2\frac{1}{2}$ " could not be changed. One big advantage was that the filling of the board could be done without the erection of a shelter to act as a windbreak.

The other type of board was the Ben Reid, on which the spacing could be adjusted. A shelter was necessary and it was desirable that the plants should be the same size.

Leaving the nursery we stopped at a P/47 Norway spruce/oak mixture. The oak groups showed poor growth but the spruce was excellent. The opinion of some members was to write off the oak, but eventually after discussion it was agreed that there should be a "wait and see" policy, removing competing spruce where necessary. It was pointed out that there was an excellent market for town or village Christmas trees.

Continuing through the Forest we saw an ash/beech/oak mixture planted in 1947. Here the best trees of all species were spotted to give approximately 100 per acre. No one was very happy with this stand and it was generally agreed that, because of the low annual increment, poor use had been made of the ground.

Further on in an elm/beech mixture it was noticed that the elm were quite good, but we were told that the market for this species was very limited.

In a plantation like this, with both hardwood/conifer and pure hardwood mixtures, the problem that always comes up for discussion is the procedure to adopt in the future with the hardwoods. Some advocate that they should be ignored in management plans, and others suggest that even small areas of hardwoods should be encouraged.

On this note of sentiment versus hard facts the visit ended.

C.H.K.

### *THIRD DAY (Thursday, June 16th)*

#### *Morning :*

As our bus rounded the scenic north Antrim coast, our President kept the party well informed on local history and places of interest. Our first view of forestry on this bright morning, was of Ballycastle Forest. Viewing it from distance, we could see once again the result of storm damage—here the upper slopes were all cleared and replanted. We had a closer view of Ballypatrick Forest as our route took us through this, the first large area of blanket bog acquired in Northern Ireland. We were told that this area was to be managed on a "no thinning" basis, with the exception of areas adjacent to main roads. Stands were moderately successful though growth rates were somewhat slower than anticipated.

The approach to our first stop of the day took us through one of the Antrim glens—that of Glendun—and on arrival at Beaghs Forest the party was introduced to Dr. Black, the District Forest Officer, and Foresters, Messrs. Wilson and Orr. Dr. Black extended a welcome to the group, and gave us a description of the forest.

The total area is 4,602 acres where elevation varies from 500 to 1,676 ft. with only 150 acres below 800 ft. and two thirds of the entire area is above 1,000 ft. The area is covered with deep peat except near streams and on rocky outcrops on higher ground. First plantings were of P/59 origin and planting proceeded at a rate of 180 acres per annum, which was mainly Sitka spruce. The area was first ploughed and 2 oz. of basic slag were applied per plant. Roads at approximately 1 mile to 60 acres were laid out. These were built by laying down sand, on top of which a layer of stones and a final binding by means of quarry dust were imposed, costing about £65 per chain. Initial planting was at 5' x 5', but this is now increased to 7' x 7' due to the introduction of herbicides to suppress the vegetation and the proposed treatment on a "no thinning" basis. For fire protection two systems are used, first by rotovating and secondly by spraying with herbicides and then burning off the dead vegetation with a flame gun using a mixture of petrol and diesel oil. The latter method proved most satisfactory as the ground was left in good condition for working on. Of the entire forest area, 316 acres were set aside for experiments which to date have been devoted to problems of establishment.

#### *Stop No. 1*

Dr. Dickson, who is attached to the chemical research division of the Ministry of Agriculture, led us to our first stop where we were shown an experiment to determine the long term effect of phosphatic fertilisers on Sitka spruce, with and without nitrogen and potassium, laid down in 1962. The phosphate was broadcast prior to ploughing and the nitrogen and potassium applied as a band across the ribbon on either side of the trees and round the base of the trees respectively soon after planting. The differences in growth have been slight, but from a visual assessment both the trees and the ground vegetation indicate better conditions in the treated plots. We were also shown an experiment where ground limestone and basalt dust were applied at rates of 10 tons/acre, the object being to render the phosphate less liable to wash out in drainage. A further experiment to determine the best method of application was seen. It was found that by broadcasting before ploughing, better results were obtained than by applying the manure on top of or below the ribbon. The crop was P/62 and the leader growth for 1964 was 15-20% greater in the "broadcast" treatment. Mr. Condon and Mr. Hunt raised a discussion on root development as a result of "stepping" down the ribbon before planting and it was felt that the mulching effect of the off-cut rather than the depth of ploughing was responsible for any improved growth.

#### *Stop No. 2*

Dr. Jack led us to our second stop where, on a site at 920 ft., soil (peat) temperatures were recorded at depths of 5 cm., 20 cm.,

and 120 cm. Rainfall, water levels in the peat and exposure were also measured. Exposure was measured by using tatter flags. These were flags 15" x 10" placed at 5 ft. from ground level and allowed to rotate with any change of wind direction, exposure being measured by the amount of flag tatter per day. Mr. Condon asked if there was any noticeable change in wind speeds due to irregularities of the ground. It was said this was found to be so where ploughing, or the ground vegetation, made the surface irregular. On the question of flag tatter, Mr. Morris asked if there was any relation between size of flag and degree of flag tatter. Dr. Jack told us that the same amount of tatter was measured from half worn flags as from new ones. The flags were replaced every two months—weather conditions had no effect on tatter, with the possible exception of frost, sometimes a frozen flag would reveal a flaw in the material which would tend to tear at the flaw. A "contour" map of the forest showing the calculated wind run from October, 1964 to April, 1965 at 5 ft. above ground level was on view at the stop.

### *Stop No. 3*

The party walked around the edge of an experiment which was laid down to determine the effect of drain intensity on deep peat. Water levels were being observed through bore holes. It was indicated that drainage sufficient for establishment is adequate. Effectiveness in lowering the water level is only noticeable at the drain edge and under such conditions as existed at the site, this effect diminished some 12 ft. away from the drain edge. Any effect of deep drainage could be attributed to the mulching effect of the spoil from such drains and where the spoil was removed from the area no noticeable effect was to be found.

### *Stop No. 4*

Our next stop was at an experiment where soluble N.P.K. with and without herbicides was demonstrated. These treatments had the desired effect on Sitka spruce showing poor growth, and a combination of both gave best results. Spraying with herbicides gave best results when this was carried out in July as against October when heavier applications were necessary. A mist application gave best results, but with this method there was the problem of drift blowing on to and damaging the foliage and trees unprotected from the spray were defoliated.

At this stage we bade farewell to the Beaghs forest area and set out for Glenarm forest. Our journey brought us along the magnificent Antrim coast, Mr. Kilpatrick continuing the good work of giving us the historic background of the countryside as we journeyed along and a very pleasant trip was enjoyed by all.

W.L.

*Afternoon :*

DOWN the hills from Beagh, and along the coast to Glenarm, was a pleasant journey, and this, added to the exertions of the morning, heightened our appetites for lunch, of which we partook in the very picturesque surroundings of the entrance to Glenarm Forest.

There to greet us were Mr. Crawford and Mr. Deveria. The former we had met on Wednesday, and the latter was with us on Tuesday, and again on Wednesday. The Forester in charge, Mr. McLoughlin, was introduced to the party.

Before proceeding to the first stop, the President, Mr. Kilpatrick, reminded us that this was the second visit of the Society to the Forest, the first visit having been made some twelve years ago.

This glen forest, which consists of 440 acres of short steep slopes of easily drained brown loam, is leased for 150 years from the East of Antrim. It was acquired in 1928; first planting began in 1929, while existing woodlands were clear felled during the war, and planting was more or less completed in 1945. The first working plan for a forest in Northern Ireland was prepared for Glenarm in 1945.

Discussion opened in a P/33 stand of *Tsuga*, which had been planted under larch and sycamore, since removed. Mr. McLoughlin explained in each of two thinnings, up to 90% of the poles removed were affected by *Fomes annosus*—in some cases to as much as 7 ft. up the stem.

Messrs. Maher, Morris, Harbourne and Dr. Jack contributed to the discourse which followed. It was suggested that the incidence of Heart Rot evidenced in *Tsuga* thinnings generally, would seem to indicate that up to 70% of plantations of this species are affected by Heart Rot. As this was an alkaline site, it was not to be wondered at here, but it must also be remembered that thinnings were largely comprised of sub-dominants. A very wrong impression of the crop as a whole might be got by basing an opinion on the number of affected poles in thinnings, but anyhow, this crop did not appear to be growing well. While somebody roughly estimated the loss in thinnings at Avondale Forest, due to Heart Rot, at 12% to 16%, it was suggested that the disease must have wider effects than the direct loss of pumped timber. However, it was pointed out that Foresters on the Continent do not worry unduly about it.

Mr. Kilpatrick, having listened patiently to several suggestions as to what should be done with the stand—some of the suggestions being of a rather drastic nature—brought the discussion to a close by stating that this problem is one with which we must live, while taking all steps to minimize the spread of the disease, we can at least hope for a respectable volume from the crop.

At the second stop, where the Isachsen double drum winch was in operation, Mr. Deveria gave very adequate technical details of

the machine. Here, on slopes which were too steep for horse haulage, it was found to be very useful. For straight hauls of 150 yds. and cross hauls of about  $\frac{1}{2}$  a chain, up to 400 cu. ft. per day could be extracted. Costings of 2.8d. to 3.5d., with an average of 3.2d. per cu. ft., were quoted by Mr. McLoughlin.

After proceeding through the forest, the Convenor, Mr. McGlynn, thanked Mr. Crawford and his staff for a pleasant afternoon. He also thanked the members of the tour for the co-operation which he, as Convenor, had received throughout the tour. He paid a special tribute to his able helper, Miss Furlong, to which everyone responded with loud applause, this being followed by an extended round of applause for Mr. McGlynn himself.

T.H.

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REPORT ON DINNER AT STORMONT GIVEN BY GOVERNMENT OF NORTHERN IRELAND FOR MEMBERS OF SOCIETY OF IRISH FORESTERS ON THURSDAY, 16th JUNE, 1966.

Perhaps the outstanding highlight of the 1966 Study Tour to Northern Ireland was the dinner given to members of the Society at Government Buildings, Stormont. Mr. H. West, Minister for Agriculture in the Northern Ireland Government acted as host for the occasion.

Mr. West, in his after-dinner speech, intimated what a great pleasure it was for him to welcome, on behalf of the Northern Ireland Government, all the members of the Society both from the North and the South. Having paid a sincere tribute to the activities of the Society and having wished them well in all their undertakings he outlined the progress made by the N.I. Forestry Division since its foundation. He complimented all the Officers of the Division for their enthusiasm and devotion to duty. Coming to the present day, he referred to the tremendous potential which forests and forestry had in the promotion of tourism. The provision of amenities such as existed in Tollymore Park were indicative of a forest usage which was bound to become more important in years to come. As Minister for Agriculture, one of his greatest problems was the co-ordination of the activities of the Hill Farmer and the Forester. He foresaw very good prospects for future trade in timber products and therefore recognised the forester as one who can contribute significantly to the economic development of the country.

Two speakers replied to Mr. West on behalf of the Society *viz* Mr. C. S. Kilpatrick, President of the Society and Mr. D. McGlynn, Excursion Convenor.

Mr. Kilpatrick thanked the Minister for the very kind invitation of the Government. He intimated that the Society were deeply appreciative of the honour bestowed on them. He availed of the opportunity to refer to the pending retiral of Mr. Elliot, Secretary to the Ministry and paid tribute to his services to Forestry during his time in office. He expressed thanks to Mr. Blackmore and other members of the H.Q. Staff and indeed to all officers who had helped to make the 1966 Study Tour the success which it undoubtedly was. In referring to the activities of the Society, he said that recently the Society had, in fulfillment of one of its major objectives, published a book, "The Forests of Ireland". This was a major achievement and one which the Society could feel justly proud of. In conclusion, as a memento of the occasion and as a token of the esteem of the Society, he presented a copy of "The Forests of Ireland" to Mr. West.

Mr. McGlynn in his remarks intimated how honoured he was to speak at this gathering in Stormont. He was very glad that the Society had never recognised either social or political divisions and their presence there that night was indicative of their loyalty to these principles. The Society had many contacts with Northern Ireland. He referred to the first visit of the Society to Northern Ireland fourteen years ago. On that occasion, the members from the South felt that perhaps they were going "abroad". On this occasion, he could truthfully say that the feeling was that they were staying at home. The Society was particularly proud and gratified that this year and on this occasion our President was himself a North of Ireland man, Mr. McGlynn also referred to Professor Augustine Henry, also a North of Ireland man, and one with many outstanding achievements in the field of forestry and was indeed of world renown. The Society was proud of its association with this great forester.

Mr. McGlynn also re-iterated the President's thanks to the Minister and to the officers of the Ministry who had contributed so much to the success of the 1966 Study Tour. He noted how much they all had enjoyed the visits made to the various forests and complimented the field staffs on their co-operation and enthusiasm. In conclusion, he again thanked the Minister for his kind and wonderful hospitality and expressed the pride of the Society in the excellent and wholehearted way that its members had been treated during their visit.

L.C.