

## Fourteenth Annual Study Tour

THE Council's decision to go 'West' again for the Annual Study Tour proved popular, judging by the attendance, which was good. Limerick was headquarters for this tour of Clare, and South Galway, and as interest was keen, discussions lively, and the all-important weather on its best behaviour the outing was enjoyed by all present.

Tuesday, 4th June, 1957.

### *Cratloe State Forest.*

The party travelled by two special buses to Cratloe Forest, where the President, Mr. Mooney, welcomed the members of the Society and expressed his appreciation of the facilities granted to the Society by the Minister for Lands, and the spirit in which he co-operated.

Mr. Haas, District Inspector, on behalf of the Minister for Lands, welcomed the Society to the District. He introduced the Forester-in-charge, Mr. Kelly, and promised that the local staff would do what they could to make the visit pleasant. The property, he said, was acquired in three parcels in 1936, was 1,100 acres in extent, 200 to 400 feet above sea level and the soil was from red sandstone. It had been old oak woodland, but unfortunately no good oak had been left standing at the time of acquisition. The area had since been planted with Scots pine, beech, Sitka spruce, Norway spruce, Douglas fir, Jap. larch, and Silver fir.

A discussion on the soil and its suitability for the growing of oak developed. It was not considered a good oak soil, as its fertility was low. One member stated that on somewhat similar sites in County Tipperary, only good *red* soil at the foot of the hills can grow good quality oak. The wisdom of re-planting most of the area with pure conifers was questioned, and arguments for and against this were put forward.

In compartment 9 a stand of Jap larch, planted in 1937, average height 43 feet, carrying 530 stems per acre with a volume of 2,019 Hoppus feet O.B. was considered too lightly thinned and a much heavier thinning to bring the material quickly to sawlog size was considered desirable.

A Norway spruce stand in compartment 7, planted in 1937, average height 38 feet, carried 950 stems per acre, with a volume 2,325 Hoppus feet. O.B. Some members were of the opinion that a mixture of deep-rooting hardwoods with Norway spruce would make better use of the available soil and keep up its fertility. Others thought that we could not afford to grow hardwoods like oak, and favoured the application of lime, and artificial manures to keep up fertility.

A discussion on the desirability of high pruning final crop trees arose in compartment 4 where Sitka spruce was planted in 1938, the crop now being 45 feet in height and carrying 560 stems per acre giving a volume of 2,268 Hoppus feet O.B. Members favoured high pruning as early as possible where the crop was to be left to mature, and likely to produce constructional timber. Although the crop looked healthy some considered the site rather dry for Sitka spruce, and feared that the rotation would be short.

### *Property of Major Stafford O'Brien.*

By kind permission of Major Stafford O'Brien the party visited a 180 year old oak plantation near the forest. Before entering this plantation the Convenor, Mr. McNamara, gave an interesting history of the local clans including the O'Briens and the McNamaras who claimed to be direct descendants of Brian Boru.

Mr. McEvoy ably described some of the rarer plants to be found in the

district. Major Stafford O'Brien's plantation was considered poor quality oak, timber height being about 16 feet and B.H.Q.G. only 13 inches. There were approximately 100 trees per acre, and the crop had not been treated for many years. Turkey Oak scattered throughout the area were at least 15 feet taller than the sessile oak.

### *Tulla State Forest.*

Having lunched at Shannon Airport the party visited Tulla Forest, where at Maghera Property the damage caused to a 25 years old crop of Sitka spruce by the wind storm of February 4th of the same year was seen. This property is between 600 and 900 feet above sea level and the crop between 30 and 40 feet in height. Thinning had been carried out recently, and drainage was good. Of the 330 acre block about 22 acres were severely damaged, many stems being broken off six feet above the ground.

It was amazing to see how trees had been blown in different directions, and the crop completely levelled in pockets in comparatively sheltered areas. Other more exposed areas were intact.

Measuring, valuing, and marketing problems were discussed and the necessity for a local industry to use such material now available in quantity was readily appreciated.

### Wednesday, 5th June, 1957.

The second day of our study tour was favoured with exceptionally good weather and our two buses left Limerick, via the Treaty Stone, passing the E.S.B. Generating Station at Ardnacrusha and round by Killaloe, where we glimpsed one of the launches which C.I.E. are using for touring the Shannon Lakes. Lough Derg looked particularly beautiful in the morning sunlight, but it was noticeable that there did not appear to be a sail or indeed a craft of any kind visible on the blue waters. Perhaps tourism has not yet become fully alive to the attractions of this area.

### *Tuamgraney State Forest.*

On arrival at Tuamgraney Forest (350 acres), the party was welcomed by Mr. White, the Forester-in-Charge. Our first stop was in Compartment 1, Raheen Property. This was an area of approximately 14 acres of Sitka spruce, originally planted at 5 ft.  $\times$  5 ft. in 1926 and thinned in 1947, 1951 and 1954. The area was described as having been a grass-rush field at the time of planting. Some of the figures given were:

|                                |     |     |     |              |
|--------------------------------|-----|-----|-----|--------------|
| Number of trees per acre       | ... | ... | ... | 320          |
| Number of high pruned stems    | ... | ... | ... | 150          |
| Average quarter girth B.H.     | ... | ... | ... | 8½ ins.      |
| Height to tip of average tree  | ... | ... | ... | 74 ft.       |
| Height to 3" diameter          | ... | ... | ... | 58 ft.       |
| Mid. quarter girth (at 29 ft.) | ... | ... | ... | 7 ins.       |
| Volume of average tree         | ... | ... | ... | 19.73 H. ft. |
| Volume per acre                | ... | ... | ... | 6,313 H. ft. |

In addition, at the time of our visit some 160 trees per acre were marked for thinning. The average tree among these was 5½" quarter girth B.H.:

|                                      |     |     |     |              |
|--------------------------------------|-----|-----|-----|--------------|
| Height to tip                        | ... | ... | ... | 68 ft.       |
| Height to 3" diameter                | ... | ... | ... | 46 ft.       |
| Mean quarter girth (at 23 ft.)       | ... | ... | ... | 4½ ins.      |
| Volume of average tree to be removed | ... | ... | ... | 6.47 H. ft.  |
| Volume to be thinned per acre        | ... | ... | ... | 1,035 H. ft. |

The figure of 74 ft. for thirty-one years' growth would bring this stand almost into quality Class 1 and it would appear to have produced about 8,000 H. ft. per acre to date. Thinning had been delayed, due to shortage of labour around

the 1947 period, the staff then consisting of three men. The high pruning cost about 7d. per tree. On examining the soil, it was observed that there was no profile like that seen, for example, at Cratloe. It was a rich alluvial soil in which the roots had penetrated deeply to give a wind-firm crop. Mr. Clear gave it as his opinion that it was probably the best stand for its age in the country. The rainfall was about 48 ins. Mr. White had felled a sample tree, showing that there was a taper of  $1\frac{1}{4}$  ins. in 29 ft., the Form Factor of .56 being rather higher than normal for this species. Mr. Mooney and Mr. Clear both agreed with Mr. White's observations—that it would be dangerous to compute the total volume of a stand from a sample which might possibly not be typical.

Compartment 8 consisted of  $15\frac{1}{2}$  acres of Sitka, planted on peat in 1928 and which had survived very well, in spite of the fact that the River Shannon is liable to back up along the drainage system during times of flood. This stand had to be repeatedly beaten up, due to recurrent frost damage in the early years. The present volume ran at about 10.5 Hoppus feet per tree and there was about 5,686 Hoppus feet per acre. The stand was first thinned at twenty-two years of age and was immune from severe wind-throw during the recent storms. Thinnings realised 1/- per Hoppus foot and some of the timber was good enough for sending to the State Sawmill at Dundrum.

Another Sitka stand showed the effects of the back-flooding of the Shannon and the roots had a tendency to be over the general soil level, while a further stand was on peat (Mr. Mooney thought probably a fen peat) which varied from 3 ft. to 20 ft. deep. On a  $1\frac{1}{2}$  acre plot, planted with 50% Thuia, the average stem was  $12\frac{1}{2}$  ins., the height 79 ft. up to 3 ins. (94 ft. total height), the mid quarter girth being  $8\frac{3}{4}$  ins. The estimated volume was 7,112 H. ft. per acre.

A promising discussion on the relative merits of "Hoppus" versus "True Volume" had to be abbreviated, due to the intervention of the "Man with the Watch," Mr. McNamara, but we had time to get some figures from Mr. Mooney regarding the analysis of the soil, from which it appeared that the extreme ranges of p.H. were 3.8 to 6.5. The site was very low in nitrogen, ammoniacal nitrogen, phosphate and potash and was medium high in calcium and manganese.

We were treated to a very thorough demonstration by Mr. Swan of the system of stem analysis, the subject being a felled Spruce tree, originally planted in 1914 and now set out for us on the ground in 10 ft. and 5 ft. sections. Great trouble had been taken, with the aid of the diagrams and graphs, to set out the life history of the tree in question and its potentialities as a timber producer. It would appear that the Current Annual Increment of the tree was greater than the Mean Annual Increment, so that the argument is that we should allow such a stand to continue growing as it is putting increment on the growing stock at about 5% per annum.

#### *Property of Dr. McLysaght.*

Our party was joined by Dr. McLysaght, the original owner of the property, who very kindly invited us to see his nursery on the adjoining ground and we were considerably impressed by his huge movable glasshouse, which was capable of being hauled on rails from one end of a large field to the other, when changing of the soil became necessary.

Following this, another interesting feature was the sight of an Oak tree which Dr. McLysaght said was reputed to be a thousand years old (inevitably referred to locally as "Brian Boru's Tree") and under the shade of whose spreading branches we were treated to a discourse on the history of the McLysaght clan.

Our break for an *al fresco* lunch in the woods was a tribute to the excellent arrangements of Mr. White and his able assistants. With smooth efficiency (no panic whatever, despite the length of time the party had been on its feet), we were all seated, cups of tea gravitated into hands as if by magic and sandwiches were circulating as though wafted on the winds of the forest.

*Mount Shannon State Forest.*

Tearing ourselves away from this delectable spot, we resumed our journey via the shores of Lough Derg to Mount Shannon Forest, where we were welcomed by Mr. Byrnes, the Forester-in-Charge. Our first stop here was in Compartment 9, Bohatch Property, where at an elevation of 700 ft., we saw a case of fairly severe wind-throw from a south-westerly storm. It appears that the wind reached a peak in a period of about one hour or so. This twenty-eight years old Sitka spruce plantation was carrying about 630 stems per acre, the average quarter girth B.H. being  $6\frac{1}{4}$  ins. the total height 59 ft. and the timber height 44 ft. Mid quarter girth (at 22 ft.) was  $5\frac{1}{4}$  ins. The volume of a sample tree taken was 8.03 H. ft. and the estimated volume per acre was 5,058 H. ft. Something around 1,400 H. ft. was due to come out in thinning, so that the volume per acre will shortly be 3,600 H. ft., approximately. The marketing of the produce was difficult, rendering thinning unattractive. Mr. Clear then initiated an interesting discussion as to the merits of a system of "thinning in reverse," by which the forester would thin the larger stems, likely to find a market in the sawmill and leave the smaller stems to put on increment, when a market is not available for the lighter thinnings. This could be described as a selection thinning.

Mr. Byrnes then brought us to a case of Group Die Back in a twenty-nine year old Sitka spruce stand. The disease was first noticed in 1955, when there were sixteen dead trees; there are now thirty-nine. Mr. Swan gave us the history of the Die Back, as known to date. This "group dying" was known in England since 1936, but the majority of cases have been reported since 1946. Trees tend to die in groups, but in all observed cases, the spread stops after some time. The roots are the parts affected and crown symptoms of thinning needles and shortened increments are consequent on the dying root system. At first no responsible organism could generally be associated with the disease, until in 1953, McKay & Clear, following up a report by Mr. Shorten, noted an association of *Rhizina inflata* with Die Back groups. *Rhizina inflata* so far has been noted only in association with dead roots or groups. In 1954, the British Forestry Commission began to associate Die Back groups with the sites of mealtime fires. Mr. Swan pointed out that they had found such a fire site in the case of the present attack and members of the party viewed with interest the pieces of charcoal concerned.

Our final stop was at a twenty-eight year old Sitka spruce stand in Compartment 13 of the Bohatch Property. A sample plot of one-tenth of an acre had been measured to give the following figures:

|                                         |     |     |                     |
|-----------------------------------------|-----|-----|---------------------|
| Number of stems approximately           | ... | ... | 680 per acre        |
| Quarter G.B.H. of average stem          | ... | ... | $4\frac{1}{4}$ ins. |
| Height to tip of average stem           | ... | ... | 33 ft.              |
| Height to 3 ins. diameter               | ... | ... | 22 ft.              |
| Quarter girth of average stem at 11 ft. | ... | ... | $3\frac{1}{2}$ ins. |
| Volume of average stem                  | ... | ... | 1.87 H. ft.         |
| Approximate volume per acre             | ... | ... | 2,542 H. ft.        |

Thursday, 6th June, 1957.

On Thursday, 6th June, the excursion party visited Coole Property of Gort Forest. The weather was fine, and members were afforded an ample opportunity of visiting all the places of interest in the vicinity of Coole.

Coole, once the home of Lady Gregory, noted playwright, and founder member of Dublin's Abbey Theatre, was, during the latter part of the last century, and early twentieth century, a rendezvous for the well known literary personalities of the day. Indeed ample proof of this fact was afforded us, in the course of our walk around Coole, when we were shown the Autograph tree in Lady Gregory's garden. Side by side, were to be found etched in the bark of a

stately old beech, the names of G. B. Shaw, Sean O'Casey, W. B. Yeats, K. Tynan, E. M. Martin, Wm. Rd. Gregory and others. To prevent lesser known "literary lights" of the modern era from defacing those autographs, a fence 10 ft. high now stands around this old beech.

Coole Property, was also to give us food for thought in another sphere: in the course of discussions, Mr. Maher pointed out, that it was a limestone area, and subterranean caves and channels abounded. It is not unusual to find large streams disappearing underground, only to re-appear again. Though seven miles as the crow flies from the sea, high tides affect the water supply in the locality. This is due to caves and channels, which connect with the sea.

Mr. T. Cox, Head Forester-in-Charge at Gort Forest, took the party on a tour of the woods. Main item of interest, was the natural regeneration of beech and ash. Our first stop was in a plot of naturally regenerated ash, beech and silver fir growing in mixture. A number of parent trees mainly beech were still standing. Suggestions from members, as to the future treatment of the area, were invited. Mr. Johnston suggested, as a first step, heavy side pruning of parent beech, to minimise damage during removal. Mr. Maher pointed out that in the past few years this crop had made very good progress. Mr. Mooney commented on the fact, that the ash saplings were well formed and would produce hurley material at an early age. The party then moved on towards the site of Coole House, now demolished, and viewed a crop of ash, beech and silver fir planted in 1943. The site, the lawn in front of Coole House, was low-lying, and in the early years we were told silver fir was affected by frost. The crop is now making excellent progress.

Next we visited the Autograph tree in Lady Gregory's garden, reference to which was made earlier.

Next a crop of naturally regenerated ash in mixture with European larch, which required a thinning, was visited. The question arose, what species should be retained. Mr. Maher pointed out that on limestone European larch is liable to suffer from butt rot. Mr. McEvoy considered that ash here had possibly reached its maximum height growth, and in the circumstances the crowns were rather small to permit of a drastic opening. As the party moved through the property, members had an opportunity of viewing the many rare species growing along the avenues. The "Mother Tree," a *Thuja plicata* with 13 lesser members coming from the same root, excited much attention.

A stand of beech, ash, and silver fir, which had received its first weeding, drew favourable comment from the party. The retention of silver fir as the final crop was favoured by Mr. McGlynn. Mr. Mooney considered the crop was open enough for its present stage. Material being taken out is being sold locally as firewood, where a ready market exists for accessible material.

A crop of Japanese larch and ash planted in 1937, which had received a low pruning and weeding, and which it was now proposed to treat was next visited. Members were invited to suggest a suitable treatment for the crop. As there were a number of deformed stems in each species it was suggested that a heavy thinning, leaving the elite stems, would be the most suitable. The introduction of silver fir could then be considered.

### *The Burren Country.*

In the afternoon the party went on a scenic drive via the Burren Country, Lisdoonvarna, Cliffs of Moher and Lahinch back to Limerick. A halt was made at Corkscrew Hill where Mr. McEvoy described the geological features of Co. Clare, and especially of the Burren area—a typical "karst" country of bare carboniferous limestone which had probably never had much soil covering.

Mrs. King then gave a short account of the flora of the area, which is famous far outside Ireland. Its great interest lies in the large number of otherwise rare plants found growing together here though their usual habitats may be poles apart. So you see such late glacial species as *Dryas octopetala* (Mountain

avens), *Arctostaphylos* (Bearberry), *Gentiana verna* (Spring Gentian), and several Saxifrages, all of which are normally inhabitants of mountains or sub-arctic regions, growing in Clare down almost to sea-level. In contrast to them there are the Mediterranean plants—*Neotinea intacta* (Close-flowered Orchis) and the Maiden-hair Fern, quite at home in the fissures of the limestone, and all around are masses of plants otherwise rare or uncommon in Ireland. The explanation of this varied abundance in such apparently unpromising conditions lies in several factors. The mountain plants have the same open situation and freedom from competition of larger plants which they would enjoy in the hills and so have been enabled to persist since post-glacial times. The southern group are probably relicts of a warm inter-glacial period which found complete shelter in the deep fissures of the limestone pavement where also enough moisture percolates to serve their needs. Both types enjoy the good drainage.

Besides the flora of the karst area you find patches of scrub occurring wherever enough soil covering exists to give them a rooting medium. In places the ground flora is even suggestive of woodland having at some time existed there. However, in Ireland woodland plants often grow with no more shade than that afforded by furze and bracken.

In conclusion there is one more problem deserving of attention. Plants that are calcicole or calcifuge in England or the Continent do not always show the same preferences in Ireland. This is just one more headache for the botanist.

After a very welcome tea in Lisdoonvarna the party viewed the Cliffs of Moher, and then proceeded to Limerick.

This concluded our Study Tour for 1957.

# CORRECTION TO VOL. XIV, No. 1.

Summer, 1957.

Page 43, Lines 15 and 16.

for

|                       |    |                                  |                 |    |    |     |      |
|-----------------------|----|----------------------------------|-----------------|----|----|-----|------|
| “(b) Scots<br>pine    | 20 | 2-4 $\frac{3}{4}$                | 3 $\frac{1}{4}$ | 14 | 26 | 925 | 760  |
| (a) European<br>larch | 20 | 2 $\frac{1}{4}$ -4 $\frac{1}{4}$ | 2 $\frac{3}{4}$ | 17 | 29 | 925 | 160” |

read

|                       |    |                                  |                 |    |    |     |      |
|-----------------------|----|----------------------------------|-----------------|----|----|-----|------|
| “(b) Scots<br>pine    | 20 | 2-4 $\frac{3}{4}$                | 3 $\frac{1}{4}$ | 14 | 26 | 925 | 760  |
| (b) European<br>larch | 20 | 2 $\frac{1}{4}$ -4 $\frac{1}{4}$ | 2 $\frac{3}{4}$ | 17 | 29 |     | 160” |