### 38th ANNUAL STUDY TOUR 1980

## MULLINGAR

### Tuesday, 10th June — Morning — Mullingar.

In dull overcast weather conditions members assembled at Bloomfield House Hotel Mullingar for the Society's 38th Annual Study Tour.

The first stop was at Knockaville property Lough Ennel Forest. The President of the Society Mr. John O'Driscoll formally opened the proceedings and introduced us to our tour leader Mr. Liam O'Flanagan. Mr. O'Flanagan welcomed the members to the Mullingar division and introduced the local staff, Mr. M. Downes, Divisional Engineer, Mr. P. McGuire, Work Study Inspector, Mr. T. O'Mahony, Utilisation Inspector, Mr. J. Quinlivan, District Inspector, Mullingar, Mr. P. O'Kelly, Assistant District Inspector and Mr. T. Quirke, Forester-in-Charge of Lough Ennel Forest.

Mr. Quirke welcomed the tour to Lough Ennel Forest and outlined the historical background of Knockaville property. The site type of the entire property was raised midland bog with full cover of *Calluna vulgaris*. The area was ploughed prior to planting at 2.0m spacing with an adequate network of drains. Planting was carried out in 1970 with pure lodgepole pine at spacing of 2.0 x 1.5 metres approximately. The estimated Yield Class at 9 years was 18.

Mr. O'Flanagan then outlined 3 silvicultural options for the area:

#### Option A

This would be normal silvicultural practice as set out in the lodgepole pine yield tables.

#### Option B

Respacement to 800 stems per ha at 9 years of age, with all stems pruned to 6 metres in 3 separate stages. The crop to be clear felled at 35 years.

### Option C

This is a no thinning regime with 3 possible rotations 30, 40 and 50 years.

Economic analysis of the 3 options showed B to be the most financially rewarding with C second best. It was also pointed out that with Option B there was 79% of the timber in the large sawlog category, it had the 2nd shortest rotation, and 6 metres of clean timber.

Mr. Downes then outlined the problems of roading for extraction of the crop. There were 2 problems:

- (i) Getting the produce to the road,
- (ii) Getting the produce from road to market.

With no existing internal road system and a sub-standard exit road it followed that whatever system of extraction was adopted it would be expensive to get the produce from stump to market, so it was important to have a marketable product.

In the discussion which followed the following points were raised:

(a) Problems arising from natural regeneration following respacing.

Mr. O'Flanagan pointed out that it was important to respace while the heather was still on the ground, and that the debris from the trees felled and from pruning also helped to prevent regeneration.

(b) Disease.

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There were no serious pathogenic problems except *Stereum sanguinolentum* in some lop and top and *Fomes annosus* in some stumps. It was felt that treatment with urea at time of felling would reduce the incidence of *Fomes*.

### (c) Windblow.

While no experience is yet available it was believed that a system of respacing at an early age would improve stability.

At a second stop in the same property Mr. O'Flanagan pointed out the evidence which showed that it was important to fell as near as possible to ground level. A number of trees had been felled at 12" to 18" above ground level leaving one whorl on the stumps, the branches from these whorls continued to grow leaving it difficult to move through the area.

Finally members were able to contrast the deep green of the re-spaced area with the yellow of the non-spaced area.

At our third stop both Mr. A. Buckley, Research Forester and Mr. J. O'Driscoll outlined a IUFRO lodgepole pine provenance experiment. The experiment contained 30 provenances and was laid down on raised midland bog, with vegetation of *Cullana, Sphagnum, Scirpus, Cladonia* and *Molinia* spp at at an elevation of 97m with moderate exposure.

If the provenances are grouped into 3 broad provenance groups of South Coastal, North Coastal and Inland, the South Coastal are seen to be the most vigouous and the Inland provanance the least vigorous. However on more exposed sites the South Coastal suffers from a high degree of basal sweep and poor stem form.

Our final stop before lunch was at Clonhugh property Lough Owel Forest. The Forester-in-Charge Mr. J. Naughton and Mr. J. Clancy, Forester, were introduced by Mr. O'Flanagan and Mr. Naughton welcomed the tour party to Lough Owel Forest.

At this stop we saw a fine stand of Norway spruce Yield Class 22 planted in 1939. Part of the stand is being reserved as an elite stand i.e. it will be allowed to grow to its biological rotation. The discussion centred on what species should replace the Norway spruce which was due to be clear felled. The consensus was that on such a mineral soil foresters should take every opportunity to plant hardwoods.

Finally with thunder rumbling in the distance and threatening rain we were asked to contrast some Abies grandis planted at the same time with the Norway spruce and to put our skill and experience to work in estimating the volume of one of the Abies. The reward for the most accurate estimate — a bottle of wine to be presented at the Society Dinner.

P. McArdle.

### Tuesday, 10th June — Afternoon.

We spent the afternoon at Derrygreenagh Bog, as the guests of Bord na Mona.

On arrival from Lough Owel, Mr. J. Quinlan introduced Mr. O'Rourke (acting manager) and Mr. Hickey (production manager) and the chairman for the afternoon Mr. Tony Mannion. Mr. O'Rourke then gave an introduction to Derrygreenagh bog.

The net area is 13,000 acres. The greatest distance N-S 15 miles and 13 miles E-W. the property is divided into 15 main blocks with some small bogs added recently or to be added.

The area is divided by the Grand Canal. The areas north and south of the canal drain into the rivers Boyne and Barrow respectively. Drainage is by gravity with the exception of some isolated spots. This bog produces milled peat.

The management's aim is the production of 1,000,000 tonnes of milled peat. 650,000 tonnes goes for fuel to the ESB Rhode power station. 340,000 tonnes goes to BNM peat briquette factory. In addition  $100,000m^3$  ( $6m^3 = 1$  tonne) is cut as sod moss (spaghnum peat). The operation provides 500 permanent jobs and an additional 200 summer jobs. 120-140 men (including 65 fitters) are employed in the workshop to keep about 420 machines going. Training supervisors are employed to train young mechanics.

The bog is serviced and linked to the briquette factory and ESB power station by 100 miles of rail tracks, over which 4,000 tonnes of peat can be moved in 24 hours.

Harvesting can only be done when conditions are right (i.e. dry) and work then goes on around the clock.

Following this introduction Mr. O'Rourke invited us to ask questions, from which the following points transpired: There is a 25 year reserve of peat left. Approximately 700 acres are completely cut out. Staff turnover has improved but is greater in the bog than in the workshop.

During the wet weather the men are kept busy on track maintenance, (bog) timber extraction and general maintenance.

The cutaway and cutover areas are used up to now by Bord na Mona on an experimental basis for agriculture and horticulture with the main emphasis on grass production. On the question of large semi-state versus individual private development no overall policy appears to have been worked out. Good staff relations are attributed to constant contact between management and workers and "nipping problems in the bud".

For drying the peat, bright weather with a light breeze is best. Too much wind creates a fire hazard and the danger of erosion. The Bord developed its own machinery and particularly the undercarriages. A relevant point to forestry is that it is difficult to obtain oak timber for swamp shoes for tracked machines and that alternative materials have to be used. Swamp shoes (tracks) are from 3' - 5' 6'' wide to give ground pressure of 21b./inch<sup>2</sup>.

At this point we had to move to the workshop on account of the time. We split into two groups. From the workshop we went into the yard where we looked in amazement at the size of the machines. Many questions were asked and answered on an individual basis.

We then moved to the railhead where two locomotives each with one coach, formerly of West Clare Railway, were waiting to bring us into the bog. When we stopped and disembarked we could see the various peat harvesting machines lined up for our benefit. Here Mr. Hickey explained to us and demonstrated the various machines which are used to get the peat harvested.

The ditcher is used to drain the bog and cover the vegetation. The miller takes off a slice of peat  $\frac{1}{2}$ "-1" deep and breaks it up. A tractor drawn harrow is then used to help dry the peat. Then the ridger moves in to 'window' the peat after which the

harvester moves in and deposits peat onto big stacks running the length of the bog (+1,000m) which are then covered by polythene (250 gauge) awaiting transport.

In the meantime the buses arrived. We moved on by bus to the agricultural station. On arrival, Mr. Desmond O'Brien was introduced to us. Horticulturalist by profession, Mr. O'Brien is agricultural adviser with Bord na Mona. He gave us an introduction to the agricultural enterprise of Bord na Mona. The Bord has reclaimed 1,500 acres of cutaway bog (where 0.5m on average of peat is left over mineral soil) over the country, 1,000 acres is down to grass, 500 acres to cereals. Derrygreenagh was stated in 1973 and 40-50 acres have been reclaimed annually and 300 acres are now under grass and cereals. Reclamation consists of filling in part of the drainage system laid down for peat harvesting and grading the surface to create surface drainage to remaining open drains. Basic fertilisers including copper sulphate and lime are incorporated in first cultivation after which grass is sown. The aim is to bring pH up to 5.5. Originally it can be as low as 3.5.

Poaching and bearing capacity are not considered a problem. The drying out and cracking up of the soil (peat) are considered to be a more serious problem. We were standing beside an area which was deep ploughed last year to mix peat with underlying mineral soil which it is hoped will overcome this problem and improve soil texture and fertility generally.

Cereals grown are spring barley and wheat and winter barley. Yields are average or below compared to normal mineral soils but it is expected that yields will improve as soil matures. The grassland supports a single suckler herd with calving in May-June. For first calving, Friesian bulls are used, for subsequent calves Charolais bulls are chosen. Calves are weaned in February, bull calves are fattened on the Board's beef unit. Housing takes place in November and the stock are fed on silage with concentrate for calves.

Mr. O'Brien then suggested that we ask questions. From the question why so much copper sulphate was applied, we learned that the copper deficiency under the particular circumstances is so severe that in order for the cattle to survive, four injections per year/per animal of a copper preparation are given and calves are injected at two months old. Mineral licks are not sufficient and dosage cannot be controlled.

Fertilisation of grassland consists of 4cwt/acre of 0:10:10 and 6cwt/acre of calcium ammonium nitrate over the growing season. No answer was forthcoming about the question of profit per acre. The cost of reclamation, mainly grading/drainage is reckoned to be between £400 and £500 per acre. To develop an area of say 200 acres as a farm including buildings and roading would cost approximately £1,500 per acre.

The only tree planting envisaged will be for shelter and amenity. It is expected that 5% of an area like this will be planted with that in mind. At present there are 9 acres planted at Derrygreenagh with Sitka spruce, lodgepole pine and Japanese larch.

When some polythene protruding from under the road was pointed out Mr. O'Rourke explained that used polythene sheeting was turned into loose ropes which were placed on the peat and on top of which hardcore for the road was placed thus greatly improving bearing capacity.

The president then thanked Mr. O'Rourke, Mr. Hickey, Mr. O'Brien and Mr. McAlister (station manager) who could not be with us, for receiving us so well. When we were just moving off in the somewhat empty buses a party of about 24 members led by the chairman for the afternoon appeared on the horizon. They had missed the train earlier through no fault of their own.

### Wednesday, 11th June - Morning.

On the morning of the second day of the tour the participants were introduced to the private sector in Irish forestry. No better place to do this than on the Digby Estate, unique in that it is the only estate in Ireland that is 100% forestry.

Situated south of Tullamore, Co. Offaly, it comprises 263ha (650 acres) of mixed woodlands. It is also unique in that it is a seed to sawdust enterprise with a small nursery to produce plants and a rack bench to convert the produce of the forest into lumber which has a ready local sale. A staff of ten men, working under a head forester are employed. They comprise two sawyers, three tractor drivers and five woodmen, for the most part interchangeable between nursery, forest and mill as required.

The woodlands are growing on fairly fertile soil as is indicated by the Yield Classes for the main conifers. They are as follows: N.S. 17, S.S. 17, D.F. 17, J.L. 13 and S.P. 9.

### Stop 1 Clonad Wood

On entering Clonad wood the party was addressed by the owner, Lord Digby, who introduced the Estate Agent Major W. B. Hutton-Bury and the Head Forester, Mr. Jack Dunne. Lord Digby then went on to outline the history of the estate.

Originally the estate came into the family in 1600. In 1903 the woods suffered considerably in the gales of that year. Between 1903 and the beginning of the 1914-18 War a major replanting programme was undertaken. Because the estate contained mostly young trees it was spared the devastation that beset many estates during both world wars. The modern history of the estate dates from 1952 when Jack Dunne took over as head forester. At that stage the estate contained many good but underthinned plantations. A decision was taken to fell and replant 10 acres per year. The sawmill was modernised on a modest scale and a local market for the produce developed.

Today the mill has an output of about 25,000 cubic feet of sawn timber per year and the annual planting programme has been increased to 20 acres per year.

At this stage of the proceedings attention switched to the plot in which everybody had gathered. A discussion on the silviculture of Douglas fir ensued while magnificent specimens of that species towered 42.5m (139 feet) into the air above the assembled foresters.

Planted in 1890 in a mixture with hardwoods the plot in 1980 yields the following statistics:

Y.C. 24, Vol. 531m<sup>3</sup>/ha., Top Ht. 42.5m Mean Tree Vol. 5.3m<sup>3</sup>.

The General consensus emerging from the discussion was that better quality Douglas fir could be grown when planted as a mixture rather than as a pure crop.

### Stop 2 Clonad Wood

After a very pleasant walk through Clonad Wood, the party reassembled in an exceptionally good 21 year old Norway spruce stand. Having been lined thinned in 1972 the stand suffered some windblow damage in 1974 and was subsequently cleaned up. Today no evidence of the effect of this windblow is discernible. The quality of this stand merits that the following figures be reproduced for comparative purposes.

	Plot		Management Tables at 20 years
P/Year	1959		
Yield Class	22+	(240+ )	22
Volume	147m <sup>3</sup> /ha	(1650 Hop. ft/ac)	93m <sup>3</sup>
Basal Area	22.6m <sup>2</sup> ha	(77sq. ft/ac)	$20.4m^2$
No. of Stems	1483/ha	(600/ac)	1866
Top Height	14.7m	(48ft.)	11.8m
Mean tree vol.	0.10m <sup>3</sup>	(2.7 Hop. ft.)	$0.05/m^3$
Mean D.B.H.	14cm	(4½" Q.G.)	11.8cm

Directly across the road from this stand some of the estate workers were busy brashing a pure Norway spruce stand which had been planted at very close spacing. The intention had been to remove 50% of these as Christmas trees at about year 5-7 but this had not been done. A discussion on the treatment of this stand followed and the consensus favoured thinning to waste but salvaging as many tops as possible for Christmas trees.

#### Stop 3 Sawmill

In delightful surroundings and sheltered by stately old oaks the party was treated to tea, coffee and cakes, courtesy of the estate. Mrs. Dunne and her family are to be congratulated on the excellence of their hospitality.

Fully revived by tea and coffee the party was led on a quick guide of the sawmill which was a hive of activity.

#### Stop 4 Derryad Wood

Traditionally the private estates in Ireland have been patrons of the hardwoods and the Digby estate is no exception. Derryad Wood is an example of oak about 120-140 years old and grown pure. The following figures are useful for comparative purposes:

	Plot		Management Tables
Yield Class	4 (40)		4
Volume	386m <sup>3</sup> /ha	(4330 H.ft/ac)	210m <sup>3</sup>
Basal Area	43.3 <sup>2</sup> /ha	(148sq.ft.)	21.9
No. of Stems	270	(109/ac)	149
Top Height	23.3m	(76ft)	21.0m
Mean Tree Vol.	1.38m <sup>3</sup>	(38 H.ft)	$1.41m^{3}$
Mean D.B.H.	40cm	(12¼ Q.G.)	43cm

Although containing many clean stems of fine form and carrying well developed crowns the wood in general showed evidence of underthinning. A wide ranging discussion took place chaired by Professor Clear. The general consensus was that a better crown development policy should have been practised. The problems of keeping oak clean and preventing the growth of epicormic shoots was discussed at length. To keep oak clean and understorey must always be maintained. The difference in value between poor quality oak and oak suitable for veneer is so great as to justify a lot of care by the grower to upgrade his produce.

Kevin J. Hutchinson.

# Wednesday, 11th June — Afternoon.

The tour party had the opportunity of visiting Baunreagh Property of Mountrath Forest — one of the oldest forests in the country. the main point of interest was the volume potential of Sitka spruce at 55 years. Mr. Arthur Buckley presented the research data.

The original plantation here was laid down in 1925-26 and remained untouched for 40 years. In 1966 Research Section laid down two plots in a sheltered valley on shale loams where there were particularly large trees and commenced a first thinning that year.

	Plot 1
Total	Crop 1966 Pre-Thinning
No. of Trees	s 2322 per ha
Basal Area	67.3m <sup>2</sup>
Volume	922m <sup>3</sup>
MAI	23m <sup>3</sup>
	1966 Thinning
No. of Trees	1778 per ha
Basal Area	28.7m <sup>3</sup>
Volume	351m <sup>3</sup>
	After Thinning
No. of Trees	543 per ha
Basal Area	38.5m <sup>2</sup>
Volume	570m <sup>3</sup>
Yield Class	24
	Plot 2
P	re-Thinning 1966
No. of Trees	2149 per ha
Basal Area	$103.6m^2$
Volume (Ove	er bark)1464m <sup>3</sup>
MAI	36.6m <sup>3</sup>
	Thinning
No. of Trees	1482 per ha
Basal Area	$41.7m^{2}$
Volume	529m <sup>3</sup>
	After Thinning
No. of Trees	667 per ha
Basal Area	$61.7m^2$
Volume	935m <sup>3</sup>
Yield Class	24 & 26

A stand like this raised the question of the commercial value of timber of this size in the event of sawmills not being geared to handle it. This question was subsequently put into perspective at a sawmill where trees of one cubic metre were given as the most attractive to the miller.

The question of no thinning for 40 years was raised — it would appear from the figures that the crop thinned itself naturally — 4000 stems planted down to 2223 in 1966.

The seed potential inspired further discussion and the party was informed that seed-collection presented no problem and there was no indication that seed quality deteriorated with age of parent tree.

Mention was made of oak on this site but such was the euphoria for Sitka spruce that the likely possibility of a crippled oak stand found no favour when compared with this phenomenal Sitka growth.

Its real value however, to the Forest and Wildlife Service was seen as a seedbearing one and everyone present was glad to hear that the plots and about 5ha were to be held as long as it stood.

### Stop 2

At this stop also in Mountrath Forest along the Kinnitty road a Sitka spruce area planted in '63-'64 had been aerially fertilised. The crop had been in check and showed little leader growth. This was deemed to be due to heather competition and lack of nitrogen. A chemical analysis showed very low nitrogen and potassium levels so the aerial fertilising was decided on.

Mr. Maguire (Work Study) gave a detailed description of the operation. The fertilising was done in May, 1978 with a Cessna monoplane hired from a Wicklow firm. The cost of the operation including fertilisers was £81.58 per hectare.

There was much discussion on this method of fertiliser application and the questions elicited much useful information.

The plane needed a reasonably level field for take-off and carrying an average load of 11cwt each flight took 6 mins plus 2 mins for loading. The fertiliser had to be granular for a free flowing delivery and as a result there was little suspension on the branches.

The crop was now two full seasons after fertilising and responding magnificently. Given this type of response some new thinking may result towards Sitka spruce on high elevated sites. There was no guarantee however, that the operation was a once-off job particularly with nitrogen.

The party was then given a demonstration of the tunnel plough and Mr. Jim Dillon who has done considerable work on ploughing methods was among the party and explained the details.

The single and double mould board ploughing results in considerable rupturing of the forest floor and encourages windthrow in some situations. The tunnel plough appears to go a long way in eliminating this. Sitka spruce growth after tunel plough was comparable to that on single and double mound board ploughing and 17 years later the tunnel was still there with the water table under the tunnel.

The tunnel plough is suitable for peat  $1\frac{1}{2}$  metres deep where there are no obstructions such as roots or stones and where the peat is of right consistency. The general opinion was that this plough would be ideal for the midland raised bog situation. The furrow would have disintegrated by harvesting time thus leading to unhindered movement on the forest floor.

The ripper plough was then shown — this plough is for wet mineral soil and sticky daubs, used in place of the tine plough. It emerged from the discussion that the ripper plough was very good on sloping O.R.S. sites down to one metre deep. The ripper has been used with a D.4 down south with twin tines to good effect.

### Thursday, 12th June — Morning.

On the morning of the last day of the tour we went literally from seedling to sawdust visiting Granard Nursery and then Glennon Bros. Sawmill.

First stop was Granard Nursery situated near the village of Ballinalee. Mr. J. Quinlan introduced the Forester in Charge Mr. L. Diffley and his assistants M. Lane and T. Lennane and the Chairman of the morning Mr. J. Phillips.

Mr. Diffley, in the course of an eloquent address of welcome to the visitors, gave a brief history of Ballinalee and paid a well deserved and much appreciated tribute to the late Mr. J. J. Deasy Inspector of Nurseries for his outstanding contribution to nursery development throughout the country.

The land where the nursery is now located was the property of the Wilson family at the start of the century. Later it passed on the General Sean McEoin and it was acquired by the Forest and Wildlife Service in the 1960's.

The total area of the nursery is 23.5ha comprising seedbeds, transplants, Christmas trees, meadowing, fallow, roads, buildings and amenity.

While the bulk of the production was Sitka spruce and lodgepole pine (coastal), the presence of a good variety of broadleaves was favourably commented on and their role and usefulness in general was discussed.

The bulk of the discussion centred around the problems encountered in running a large nursery and the various herbicides used in weed control varying from what might be described as the old reliables — Gramoxone and Simazine — to relatively new arrivals like Roundup and Kerb.

Keen interest was shown in how the forester dealt with the problems caused by an exceptionally dry April and May and the very good germination achieved despite the adverse conditions.

The visit concluded with a look at all the nursery machinery and the view was expressed that the land transplanted trees seen in the nursery were much superior to those produced by mechanical transplanters.

Our second stop was perhaps the highlight of highlights after seeing some beautiful Douglas fir at Lord Digby's estate and some fine Sitka spruce in Baunreagh it was very encouraging for foresters to see the fruits of their labours marketed under the Guaranteed Irish Symbol by Glennon Bros.

Mr. John Phillips introduced Mr. P. J. Glennon, Managing Director and he in turn introduced his managers Mr. Michael Glennon (Transport and Maintenance), Peter Wilson (Mill Manager) and Paul Harte (Sales Manager).

The business was originally founded in 1913 by William Glennon, father of the present managing director while the present company was formed in 1974 to continue the enterprise.

This sawmill has chalked up a number of firsts in the home grown mills sector.

First to kiln dry Irish timber.

First to chip waste for sale to chipboard mill.

First to machine and market kiln dried recessed panelling.

The present intake is 24,000m<sup>3</sup> of sawlog per annum and a staff of 50 are employed. The group then toured the mill and were very impressed with the obvious efficiency of the operation. Keen interest was shown in the lodgepole pine used for wall cladding and the door saddles made from the Douglas fir from Lord Digby's estate. The most suitable length for maximum production was found to be 8ft due to the basal sweep. The ideal size of tree preferred by the mill is approximately 1m<sup>3</sup>. Norway spruce machines much better than Sitka spruce. The waste from the mill is chipped for a chipboard factory and the sawdust is sent to spanboard.

We were treated to a magnificent meal at Fountain Blue Restaurant by Messrs Glennon after which Mr. John Phillips in his message of thanks said that the best tribute he could pay was to quote Tim Severin's thanks to Glennon Bros. for their help in his building of the "Brendan".

Mr. P. J. Glennon in reply said that as regards the sale of home grown timber under the Guaranteed Irish Symbol it was sold for what it was — not dressed up as something that it is not and they have had no problems.

C. Jeffers.

## Thursday, 12th June — Afternoon. First stop Mullaghmeen Property, Castlepollard Forest.

Mr. J. O'Driscoll, President acted as chairman and introduced the Forester-in Charge, Mr. P. J. Morrissey and Forester, Mr. J. Kelly.

Mullaghmeen Property consists of 400ha of broad-leaf plantations, predominantly beech which makes it the largest broad-leaf plantation in the country. Planting was done in 1936. The main mixtures were beech and larch, and beech and oak.

The main discussion centred around an area of beech-oak mixture.

The managements objectives for this area are to produce a pure beech plantation by judicial selection of potential final crop trees at approximately 6m spacing and to thin towards these final crop trees, endeavouring to keep excess light from the forest floor and providing sufficient scope for proper crown development of final crop trees. Professor Clear stated that this crop was equal volume-wise to any similar crop of the same age on the Continent and with the present very rapid accretion of girth, it should be thinned.

The general opinion was that this crop would be of a very high value in the future due to an increase in demand, and a decrease in supply. The fact that the value for fire-wood of the thinnings and lop and top would be very much greater than heretofore was stressed. The present premium prices being paid for high quality hardwood on the Continent was mentioned.

Another opinion in favour of maintaining existing hardwood crops and the increased planting of hardwood where site conditions were optimum was expressed. It was stated that the coming generations would thank us for maintaining this broadleaf plantation too.

### Second stop, Lough Park.

The President introduced Mr. E. Grennan, Wildlife Inspector, and Mr. J. Flynn, Wildlife Forester.

Traps for predator and vermin control were displayed and their uses outlined.

A discussion on how the diversity of plant life influences the variety of wildlife took place.

The problems caused by mink which are now fairly common in the wild parts of the country were discussed. Two caged mink were on view. Distribution maps for both red squirrel and grey squirrel were displayed. Squirrel damage and control methods were discussed. As the tour ended the President thanked all who had contributed to making it such a success.

Afterwards we were all invited to a very enjoyable afternoon tea at the home of Mr. and Mrs. L. O'Flanagan, which concluded an extremely interesting and informative tour. The President thanked Mr. and Mrs. O'Flanagan on behalf of everybody and then back to the buses and the annual dinner.

F. Drea.

### STUDY TOUR PARTICIPANTS 1980

Charles Boyle Nickey Kavanagh Pacelli Breathnach Tom Kavanagh Arthur Buckley Michael Keane John Kelly Professor Tom Clear John J. Kelly Euphemia Collen Joe Kilbride \*Lvall Collen \*Maureen Cosgrave Edgar Lee Myles Cosgrave Peter Crowe Jim Maguire Charlie Crowley Dermot Mangan Jerry Crowley **Tony Mannion** John Moore Mick Darcy Tom Murphy Larrie Diffley \*Edward Digby Pat McArdle Jim Dillon Pat McAuliffe Pat Doolan Ted McCarty Joe Doyle Mick Dovle Paddy O'Brien Frank Drea Michael O Canabhuidhe Andy Duffy Seamus O Domhnaill Jim Fallon Christie O'Donovan Frank Fee John O'Driscoll Joe Finley Brendan O'Neill Mel Friel Tim O'Regan Eugene Fitzpatrick \*Lily Furlong John Phillips Denis Gallagher Brendan Riney Dan Gleeson \*Margat Robinson Mossie Ryan George Harney John Healy **Bill Shine** Pat Helbert Freddie Shekleton John Hogan Kevin Hutchinson \*Harry van der Wel Erick Johnson \*Ignatz Graf Westerholt Christie Jeffers \*Elinor Westerholt

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