

Annual Study Tour 1967.

Morning of Tuesday 13th June.

AT 9 a.m. on Tuesday the 13th June the members of the 24th Annual Study Tour assembled outside the hotel in Cahir and were taken by bus on the short trip to Cahir Park. There we were met by the District Officer Mr. Munnelly, who was accompanied by the Assistant District Officer Mr. Cremen. The Head Forester, Mr. Collins and the Forester Mr. Fenton. In the shadow of the well known 200 years old Swiss Cottage our President, Professor Clear, performed the opening ceremony. Mr. Munnelly then welcomed the party on behalf of the Minister for Lands and after a short description of the property, which was acquired in 1963 from the Charteris Estate, he led us to some fine old hardwood stands where here and there enchanting glimpses of the Suir could be seen as it meandered through the peaceful valley below.

Ballyheron Wood on a balmy morning in mid summer is not a good place for statistics (the wood carries 4.5 thousand h.ft. of Beech and 1 thousand h.ft. of conifers per acre) and speakers dwelt more on the amenity aspects of the stand, than on its value on a saw bench. When the President pointed out that here was not an elite stand, but a plus stand one felt that his intention was not to disparage, but to guard against the possibility of the crop becoming a timber merchants prize. Members were unanimous that management should continue to aim at the preservation of the scenic amenities of the woods even if such a policy caused a slight reduction in revenue.

Our second stop was at Cahir seed stand at Scartnagrane. This is a P.C. stand of a provenance which has proved to be most successful under our soil and climatic conditions. Mr. Hanan who apologized for the unavoidable absence of Mr. O'Driscoll (the officer directly concerned with the selection of seed stands) explained that seed stands were a temporary measure designed to produce seed of improved quality until such time as seed orchards came into production. Within a seed stand a seed tree is one which is free from all major defects, possesses a straight stem, fine branching habit and a moderately long crown. They should be fairly evenly scattered through the stand to allow for full crown development.

With the Scartnagrane seed stand are two plus trees. These are trees which possess all the provenance's best qualities of vigour and form. They will be used to provide scions for a seed orchard which when in production will supercede the seed stand and produce seed of a quality superior to that of the seed stand. In the seed orchard young trees of doubtful parentage will be decapitated and with the aid of the grafters knife the stems will be crowned with the scions from the elite trees. Steps will then be taken to ensure that only pollen of approved origin will fertilize the female flowers.

M. McN.

Afternoon of Tuesday, 13th June.

ON Tuesday afternoon we visited Glengarra Wood, a property of Glengarra State Forest and we were introduced to Mr. M. A. Crowley the Forester-in-charge.

Glengarra Wood lies on the Southern slopes of the Galty Mountains about 7 miles south-west of Caher. In 1934 Forestry division agreed to lease 1816 acres in the townlands of Hopkinsrea, Cullentragh and Toorbeg from the Ladies B. Pole-Carew and C. Butler. For acquisition purposes the offer was divided into 8 blocks. Blocks 1 and 2 containing 412 acres were taken over in 1934, and the remaining blocks were taken over at intervals of 1 year until 1940. The term of the lease was 150 years.

On the lower slopes we saw a fine plantation of S.P. and E.L. which was laid down by the previous owners and which is managed to favour the production of high quality transmission poles. Next we looked at a plot of *Abies pectinata* regenerated naturally from a sprinkling of parent trees acquired with the property. After a close examination of the young trees it was generally agreed that there was little hope of getting a tree crop from the regeneration because of the susceptibility of the species to *Adelges cooleyi* attack. Evidence of damage by the insect was to be seen in the young crop. Further up we saw a crop of *Pinus contorta* of Lulu Island origin which it was hoped by fertilizing to bring to a marketable pole crop. Next we inspected the damage caused to a P.C. crop by a recent fire and discussed the relative merits of ploughs and hydraulic excavators in the preparation of ground for the next crop in these circumstances. Here too we saw an ant hill of the ant species *Formica rufa* which in Ireland is now found only in the Glen of Aherlow area. It is believed that this species survived here through the Ice age and was associated with indigenous Scots Pine. It benefits the soil by aeration and by the breaking down of the raw humus of the pine needles.

The day concluded with a scenic walk along the rhododendron flanked mountain Lodge avenue. In this region we saw some Scots Pine plus trees which are reserved for scion collection for seed orchards.

M. McM. C.P.K.

Morning of Wednesday, 14th June.

The group left Cahir for the first stop of the day at Ardane property of Bansha forest. After introducing the forester in charge Mr. John Prior, the study tour leader, Mr. E. Munnelly went on to give a general outline of the whole Galtee region. The total forest area of 20,000 acres divided into six forests, four on the southern slopes and two to the North, consisting in the main of large blocks very vulnerable to fire and quite usual to have 10-20 fire outbreaks reported for each forest annually. In Ardane the predominant species, as elsewhere in the Galties, was again pine, with a little S.S.

On route to the first stop some vigorous natural regeneration of P.C. was observed and gave rise to a discussion on the profuse regeneration of pine which occurs where ever the soil surface is disturbed. In this instance regeneration had sprung up on the spoil from the road site. Professor Clear told the party of the achievements of the Forestry Commission in the pine areas of East Anglia, where by using heavy machinery to tear up the soil, dense natural regeneration of S.P. occurred such that a machine was then used to cut lanes through the young growth, to leave little groups of trees at the required spacing. This system was used with a view to producing a high class S.P. pole crop. As an alternative to machinery, it was felt that explosives might play an important role in soil disturbance. With modern techniques and skill it was found possible to get very precise clean cut drains, this type work being carried out in some Scandinavian countries and would appear to have a very bright future particularly in areas where it is difficult or sometimes impossible to use machinery. Some needle diffusion on P.C. was noticed here—a defect which causes the needles to remain short and not open in the usual way—Mr. N. O'Carroll said this appears to be related to a nutrient deficiency. Also observed here were some Diprion caterpillars feeding on the P.C. needles.

1st Stop :

First inspection was of very nice adjoining stands of S.P. & P.C., planted in 1935 at 4-500' above sea level, with a Northern aspect, on land which was formerly old woodland. The previous crop was a S.P. and larch mixture. Mr. McEvoy told the group that this area was traditionally woodland—Oak woods were recorded here in 1640 and the area was listed among the Six great woods of Munster in Elizabethan times.

The S.P. crop on view had some very fine clean stems—a striking feature was the clean forest floor with a sprinkling of Mountain Ash saplings. It was felt that the Northern slopes of the Galtees offered better conditions for the growing of trees than the southern gentle slopes—this in part was thought due to shelter and because of the steeper slope, there is better rejuvenation of the soil because of erosion and down-wash-with no pan formed. In contrast the less steep slopes offered conditions more favourable to podzolisation and pan formation. The economics of S.P. versus P.C. was the theme of discussion here. In this area stands of both species stood side by side—the S.P. at a lower elevation and perhaps on a better site—both were particularly good for the respective species but the P.C. had produced far greater volume. It was felt that it would be more profitable to grow P.C. and prune so as to produce tight knots—it was also stated that the question of knotiness being undesirable is now open to doubt, in view of the methods now developed where the knots are punched clear and a filler used at the sawing stage. It was also said that knotty P.C. is in good demand for decorative panelling. One shadow of doubt on the merits of this species was whether or not it would remain wind firm to saw—

log size. The value of good quality knot free S.P. is well appreciated in the timber trade, particularly for good class joinery work, but the cost of production is the main problem. This gave rise to the question of treatment of the species from thicket stage to final crop. In South Africa good results were obtained with species like *Pinus radiata* P. teada etc., where in the early thicket stage before competition had set in, selected crop trees were released so as to maintain vigour. These species however are known to respond well to cultivation and would die out if left to nature, on the other hand S.P. does well when left alone and it is not so definite that its response to opening up would be very great. On the contrary the Dutch have found that S.P. has stagnated because of too much light to the crowns. In the light of this information it was felt, that any drastic opening of the canopy should be avoided, the idea being to maintain good crowns on good trees from a knowledge of the climate and of the provenance—a narrow pyramidal compact crown can be more efficient in the process of photosynthesis than can a loose wide spreading one.

2nd Stop:

The route to the second stop brought us through an area planted in the diamond-bed formation similar to that at Forth mountain. The diamond beds were 13' across and 18' apart. Varying planting techniques were employed—pit and plant, mattock preparation and mounding also manuring with G.M.P., Slag and Semsol.

At this 2nd stop we were shown a stand of S.S. at 700' elevation, planted in 1937 on a flush molinia—the previous crop was S.P. The stand measurements from a prepared sample plot were as follows:—

Stocking 930 S.P.A.

Volume 2,780 cu. ft. (by 40% sample tree)

Top Height 41 ft.

The figure would compare with B.F.C. Yield tables quality class V on a top ht./age basis, but the volume is greater—the figure in the tables would be 1,900 cu. ft. with a total vol. production of 2,250. No figures were available for the plot thinnings which were removed 2 yrs. ago. The crop apparently suffered check from about 8-14 yrs. of age—it was felt this would have a depressing effect on Y.C., it was agreed that a reduction of 5 yrs in age would be appropriate in determining Y.C. By management table standards this would give a Y.C. of 180. Current height growth of a felled sample pole would bear this out having put on 20" height growth over the past 3 yrs. The question of the permissible expenditure to get an area out of check was raised and a figure of £1 per acre for every 1 cu. ft. increase in mean annual increment was regarded feasible.

This brought the activities of the forenoon to a conclusion and the party travelled on to Tipperary town for lunch.

W.L.

Afternoon of Wednesday, 14th June.

Stop 1:

HAVING lunched at the Royal Hotel, Tipperary, the tour travelled via scenic route to the Glen of Aherlow. A stop was made at a popular parking-place on the public-road, providing a "tourists'-eye view" of the Glen below, and proved an ideal setting for the discussion on amenity which followed.

This was commenced by Mr. Hanan with three main points. Firstly, there was the tourist aspect. The present trend was to get away from popular resorts to more remote areas. With £60 million per annum being spent on tourism, and this amount increasing greatly in coming years, forestry could provide this want, at little or no extra expense—people could just be allowed access to forests. Secondly, more sophisticated amenity could be planned, carefully, with forest parks containing good roads, seating, etc. Haphazard planting of exotic trees could be unsightly. Thirdly, landscaping of forests should be attempted to present a more natural appearance, as in natural forests in Europe, rather than the box-like pattern, much seen today.

The remainder of the discussion followed the trend set by this third point. Using the tableau of the forested lower slopes of the Galty Mountains across the Glen as an example, it was decided that the shape of the top line of a forest was important, and should, in most cases, be roughly parallel with the skyline formed by the peaks above. A squared lower edge to a plantation was acceptable, as it was not so conspicuous, and blended with neighbouring fields. A straight top line to a forest might be technically correct, but could be unpleasing to the eye, and whereas it might be said to be a waste of money pushing onto "unplantable land", as saving would follow, by keeping off spurs, to maintain the line. It was decided that fences along the tops of plantations might not be necessary, and that in acquisition, where it was the practise to take over small blocks at a time, that fencing might be postponed until a large block could be composed, and this might facilitate the outlining of the shape of a new property.

Again, it was suggested that where it was unavoidable to have jagged edges to a plantation, this aspect might be softened by the judicious use of colour, e.g. various shades of green. In some cases, corners could be filled with hardwoods. In either respect, felling could be carried out later to form a curve, if desired. The importance of the responsibility of Forestry, was stressed, in its long-term changing of the landscape. Its precise role was questioned, together with the economics of "amenity forestry", before the tour moved on to its next halt.

Stop 2:

Following a short drive through the forest, the tour stopped in an area of one of the biggest combinations of different provenances of *Pinus contorta* in the country. They were in three blocks,

each block being composed of one of either Inland, Coastal, or Lulu Island varieties. The main interest in the area was a manurial experiment, started two to three years ago. The original species had been Scots pine, planted in 1929, but the region was replanted in 1940 with *Pinus contorta* (Lulu Island provenance). Most stands there were ten years younger, and using these years, experimental data could be collected, and the results applied to the younger crop.

Mr. N. O'Carroll explained the various aspect of the research area. The fertilizers used were: Sulphate of ammonia, Ground mineral phosphate, Sulphate of potash, and Copper sulphate. There were sixteen combinations of N,P,K, and Cu, and these repeated, resulted in 32 one tenth of an acre plots. Application was broadcast. There was no result in the year of application; no decrease in flowering, no change in shoot die-back, and no darkening of foliage. With the application of Phosphate, there was found to be significant increase in height growth, but again, not in the year of application.

In the general discussion that followed, it was suggested that once the pine was above the height of the invading furze, Phosphate could be applied to both, and allow the legume to supply the Nitrogen. It was mentioned that manure and chemical weedkiller might be applied together, and this was said to be "on the programme." As to the question of quantity of manure, it was stated that a number of light applications were more effective than one heavy one, and the response on poorer sites more spectacular than on better ones. When estimating costings, planting cost would not be included, as the original crop would be considered a "failure".

Stop 3:

What was to have been only a brief pause on the last leg of the day's tour, turned into a vigorous discussion. The place was near the base of a steep, north-facing slope, running from the area of our previous stop, and about a mile distant. The problem was the defoliation of Sitka Spruce, planted in 1933, and 60-70 feet in height. With a volume of 5,000 H. feet, and Current Annual Increment of 240 H. ft., this was comparable to Quality Class II, B.F.C. Yield Tables, though somewhat overstocked. Various suggestions were made as to the cause of defoliation. Drought, caused by run-off on the steep slopes, and little penetration was not the reason, as trees with plenty of moisture were affected on the valley floor. Group-dying or *Rhizina inflata*, might affect several acres, but not a whole compartment. There had been no recent thinning, and *Fomes annosus* was no more common than in other woods. Repeated attack by aphids might have contributed to this.

One important question was: did Sitka spruce reach a critical stage at this age, and if so, what should be done? The question was not local, but could have national significance. There had been outbreaks similar to this in other forests. In Mountbellew forest, die-back had occurred. The trees, although dead, could be converted to boxwood,

but only if used immediately, as rot set in very quickly. At Ballygar forest, woods were healthy in 1958, and were affected in 1960. It was thought at the time to be caused by water excess. However, there had been two hurricane-force winds within four days of each other, and this could have caused "shock check." A similar condition was found in Europe due to the Dendroctonus Beetle, but this was not present in this country. It was recommended that the question be treated with urgency, and referred to Research Branch for a full investigation.

This concluded the tour for the day.

C.K.

Morning of Thursday, 15th June.

The fine weather continued, and the sun shone for the beginning of what was to prove the hottest of our three days of glorious weather.

The President opened the day's discussion by handing us over again into the capable hands of Mr. Munnelly, who introduced Mr. Blighe, Fortester-in-Charge, Clogheen Forest, to the party. Mr. Blighe told us that this forest of 4,400 acres included a 40 acre nursery, and that 80% of the total area was under pines.

Stop 1

Mr. Munnelly said that he felt that the seed stand in which we stood would redeem Scots Pine in this country, and asked Mr. O'Carroll to tell of the work done on it to date. From the latter we learned that the stand had been thinned and fertilized with a view to seed production. Some seed from the stand had been included by Research Section in a provenance trial. There were a number of "Plus Trees" in the stand, and scions from them had been used by the British Forestry Commission.

Professor Clear said that he felt that seed from stands such as this should be made available to private nurseries, but Mr. Blighe pointed out that we were ourselves still using considerable quantities of imported seed.

An interesting discussion then followed, during which the grade of thinning presently marked was discussed, together with the possible response of Scots Pine to manures, and the effect of this on the importance of the tree as a species here. Messrs. O'Carroll, Munnelly, Butler and Clear contributed. Before leaving the stand, Mr. O'Carroll showed us an example of *Peridermium pini*. Professor Clear referred to the disease as "Resin Tap" because of the accumulation of resin bursting out in blisters, and he emphasised the importance of sanitation in the control of the disease.

Stop 2

Mr. Munnelly then led us to the next stop, which was in a small stand of promising Corsican Pine, and in opening the discussion, he referred to the fact that this species was not acceptable to E.S.B. or Dept. of Post & Telegraphs. Mr. Mangan attributed this to the brittle nature of the timber which rendered the poles liable to snap clean across. The high ratio of sapwood and heartwood was cited as a further cause of this proneness to breakage. Professor Clear felt that the percentage of heartwood was not too important, but that the preservation possibilities were of more moment. A lively discussion along these lines followed, during which, time of felling as a factor in preservation was also discussed.

Mr. McNamara then queried pole prices in what he considered a limited market. Mr. Munnelly maintained that no sawmill price could compare with the 12/6d. per cu. ft. which the Dept. of Posts and Telegraphs and E.S.B. poles grossed, even allowing 2/- per cu. ft. for preparation and handling. Messrs. Clear and McEvoy, however, felt that there were considerable "hidden" costs involved in marketing these special poles, and referred to high road standards necessary as an example. Mr. Prior queried the high price paid for poles over and above sawmill timber, and Mr. Mangan replied that this level was fixed by the prices being paid for imported poles.

The discussion then extended to size of log for sawmilling, and Messrs. Brady, Clear and Munnelly were interesting contributors. Mr. Brady cited a test carried out at Dundrum in which large logs gave a 76% timber recovery as against 56% from small logs.

Stop 3

This stop was on an area which had been cleared of transmission poles, and the remaining trees sold standing, leaving a high cover of rhododendron to be dealt with. The ensuing discussion centred on the cost of rhododendron clearance.

Mr. Hanan declared that simple clearance without following control was a waste of money. Research Section had Ammonium Sulphamate on trial, and Mr. Hanan recommended complete cutting followed 24 hours afterwards with Ammonium Sulphamate brushed on to the stumps. He quoted the cost of this control as £20-£30 per acre for material and labour.

Mr. Prior and others queried the use of brushes because of the high cost factor. Mr. Hanan defended the "cause of the brush", and Mr. Mannion referred to the high mortality rate among plants where the chemical was sprayed on. This fact had been found to necessitate a delay of nine to 10 weeks after spraying before planting could be undertaken.

An interesting discussion followed on the possibility of using mechanical means to deal with the problem, and the trial of other

weedicides was suggested. Professor Clear made a case for declaring rhododendron a "noxious weed". He stressed the importance of protecting uninvaded areas by the ruthless eradication of small pockets of the plant as they appear. Mr. McEvoy raised the importance of the distance and means of seed spread in any control of the plant.

The discussion then concluded, and the party moved on to the famed Vee for the last stop before lunch.

Stop 4

Having taken time to absorb and enjoy the view, the party then entered into a discussion on the relative merits of the Vee and the Glen of Aherlow as scenic attractions. Many members contributed eloquently, and the growing importance of amenity became obvious, though some members thought it was becoming an over-used word. Miss Furlong felt we should keep out the invading hordes of foreign visitors who spoil the pleasant scenery and detract from the enjoyment of our own people. The party, however, generally acknowledged the importance of the tourist, and his permanent influence on the future of Irish Forestry in many areas seemed assured.

The President then thanked Mr. Blighe and his assistants for their help and interest, and all present responded suitably. The party then moved on to Cappoquin Forest for lunch.

M. P. G. H.

Afternoon of Thursday, 15th June.

THE party enjoyed a good pack lunch in the open air in Cappoquin Forest, in an area of 1,300 acres acquired from the Duke of Devonshire in 1960.

The land lay on an open plateau of old Red Sandstone "till" at about 600 ft. elevation. The soil profile was a mature podsol, with an iron pan at one to two feet depth.

Mr. N. O'Carroll described the difficulties met with in attempting to grow productive plantations on this type of site, large areas of which are to be formed in Waterford, Cork and Tipperary. The Dept. were carrying out a comprehensive investigation of forestry possibilities, and two series of trials plots had been laid down in this plantation in 1961.

In the first of these the land had been completely ploughed, with a Clark subsoiling plough, and three to four hundredweights of slag broadcast. A series of plots was laid out in which the effects of various fertilisers were tried, with and without broom (*Sarothamnus scoparius*), and tree lupin (*Lupinus arboreus*), on the growth of S.S. and P.C.

The lupins had grown well for three seasons and then gradually died off. Broom had been eaten back by hares until special fencing was provided, after which it had grown well.

At the present stage, (the seventh growing season), the experiment had come to an end and the principal trends to emerge had been :

1. Complete ploughing did not in itself give adequate amelioration of the unfavourable condition.
2. The site vegetation improved more or less in line with the completeness of the range of fertilisers added, and S.S. had been quite promising on the best treatments, but was going into check, and appeared unlikely to continue to grow for much longer.
3. Addition of lime benefitted the lupins.
4. The strain of P.C. used (seed from an inland region of Oregon), was not vigorous enough for the purposes of the experiment.

The second trial consisted of a number of plots of various conifer species planted in 1961 on a slightly less exposed slope which had also been ploughed with the Clark subsoiling unit and fertilised.

The species used were P.C. (Inland strain) *P. radiata* (from Scotland), Corsican pine, S.S., J.L., Lawson cypress D.F. (seed obtained from Denmark). *A. alba*, *A. procera*, *A. grandis*.

Under the conditions J.L. had done the best and all the others were either poor or very poor.

The party became scattered through the experimental area, as small groups discussed various aspects of the problems which attracted their attention and it was not possible to obtain any consensus of opinions, before it was time to leave.

The Society's gratitude for their guidance and help, and particularly for their happy organisation of lunch are due to Mr. J. Egan, F. i/c and his assistant foresters Messers Corbett and Brennan.

The rest of the afternoon was occupied by a tour through beautiful countryside with visits to Lismore, Cappoquin and the Capuchin Monastery at Mount Mellary.

J. E. J.