

ANNUAL EXCURSION TO WALES, 1949

Report by JOSEPH O'CARROLL, B.Agr.Sc.

By courtesy of the British Forestry Commission, the Society's annual excursion took place to the forests of Beddgelert, Clocaenog and Gwydyr, in North Wales, on May 24th, 25th and 26th. The Forestry Commission officers who accompanied the party were: Mr. A. P. Long, Director for Wales; Mr. F. C. Best, Conservator for North Wales; Mr. W. P. Cadman, Divisional Officer; Mr. Hampson, District Officer, and Mr. Holmes, Research Officer. These gentlemen spared no pains in keeping our members informed of the salient features of the various stands and trial plots which the party visited.

First Day

Each member was provided with a booklet containing the timetable and itinerary for the three days, a map of the forests in the area and comprehensive notes of the stands, trial plots, etc., to be seen. Thus prepared, the party left Bettws-y-Coed and travelled through the beautiful Lledr Valley and the Vale of Ffestiniog, to Beddgelert Forest. Magnificent views of the mountains and valleys were observed on the journey and the Forestry Commission's treatment of this lovely area was discernible. Clumps of scrub oak had been left at intervals; the almost bare rocky knobs had been planted with Scots and Contorta pines, and groups of larch were placed on the better slopes. The changing shades of green produced a most pleasing effect.

On our arrival at the forest we saw two areas of Sitka Spruce, one of which had gone into check, while the other was growing vigorously. Mr. Hampson explained that the vigorous crop had been planted on land which had been ploughed, while the other—though two years older—was planted on turves. Our party was then joined by a number of overseas visitors, guests of the British Council. Mr. Long welcomed the combined group, saying how glad he was to see so many different countries represented—Ireland, Finland, France, Sweden and Brazil. Mr. Best told us that, at Beddgelert we would see the results of experiments carried out between the years 1926 and 1935, before the practice of ploughing had been generally adopted. Mr. Holmes explained that the experiments aimed at ascertaining how best to establish satisfactory plantations on this type of poor exposed mountain land. They were also arranged so as to provide information as to the species best suited to the various sites, and as to the optimum drainage intensity and manurial treatment.

Mr. Evans, the Forester, led the way with a *toot* on his hunting horn,

At each of the plots Mr. Holmes explained the treatment given, the object of the experiment and the results obtained. By lunch time the party had seen a series of plots which had yielded the following information: That adequate drainage of peat is essential and that drains should not be more than 12 ft. apart; that mound planting is

better than pit planting; that Belgian turves are superior to shallow turves; that normal planting on these turves is better than deep planting; that 2 ozs. of basic slag placed in the notch at planting greatly assists the establishment; that Sitka Spruce is the most suitable species for peat with a *Juncus*, *Molinia* and fine grass vegetation, even at high elevations; that *Pinus Contorta* is the most accommodating species on peat of the *Seirpus* and *Eriophorum* type.

Mr. Holmes told the party that to-day the Forestry Commission's treatment of this ground would be to plough it and plant Sitka Spruce on the ridges. Artificial, he said, would not be necessary. Where ploughing was not feasible, the results of these experiments would be a useful guide towards the treatment to be applied.

The party then had lunch.

From the overheard discussions and questionings, etc., it was evident that the trial plots had proved to be of the greatest interest.

In the afternoon members were surprised to see *Pinus peuke* and *Pinus excelsa* excel Scots Pine when growing on a moderate south-easterly slope between 900 and 1,150 ft. elevation. Mr. Long told us that the *Pinus peuke* was absolutely free from *peridermium* and Mr. O'Beirne remarked that at Avondale a plot of that species remained free from this disease, although a plot of *P. monticola* close by was heavily infested.

Plots of *P. Contorta* seen were badly attacked by *Myelophilus-piniperda*, but were nevertheless growing steadily. Mr. Long here mentioned that *P. contorta* seedlings often appear in their sitka spruce seed-beds. He could never find a satisfactory explanation for this, as there were supposed to be no *P. contorta* growing in the locality from which they received their Sitka Spruce seed. So numerous were these seedlings he was, on occasions, able to depend upon them to meet his requirements. Mr. O'Beirne mentioned that he had had similar experience. In a discussion as to the merits of the different types of *P. contorta*, Mr. O. V. Mooney considered the type with the spreading habit was preferable to that of erect habit for the planting of heather ground. The spreading type would kill off the competing heather earlier—thus ensuring more rapid establishment. Mr. Forbes remarked that he was inclined to agree with this view.

A plot of *Thuja plicata* (p/27) was next seen. It appeared to be free from the "shot-hole" disease (*Keithia*). We were informed that *Thuja* was coming into favour in Wales, and was found to grow well on old red sandstone sites. Although *Keithia* was generally fatal in the nursery, it was not serious in established plantations.

In a very fine Japanese larch stand, growing on what was originally a *vaccinium*—*calluna* slope, Mr. Long said that while European larch had been giving poor results in Wales, they found the Japanese species very dependable. In consequence, a good deal of the latter was being planted. The Japanese larch was planted at 5 x 5 ft., and thinning was commenced at 12-15 years. Mr. Clear advocated a wider spacing than 5 ft. and Mr. Long replied that the tendency in Wales was in

that direction, as they considered that Japanese larch ranked close to poplars as a light demander.

After the party had seen some interesting Sitka and Norway Spruce stands it passed along a forest road, which was in course of construction, and emerged on open ground. Here members were deeply interested in a practical demonstration of the extraction of light poles from an awkward situation, by means of a light overhead cable.

In the evening members visited Snowdonia National Forest Park and were entertained to tea by the Forestry Commission. Mr. Long, after welcoming the party, explained the method of, and the reason for, ploughing land prior to planting. He told how it originated. Some years ago he and Mr. Meldrum noticed furrows in an area that had been cleared of a timber crop. Enquiries revealed that the area had been ploughed with oxen some 80 years previously when the plantation was being laid down. The trees which grew on the ploughed area were larger than those which were on adjoining unploughed land. It was decided to experiment with ploughing. After many trials and setbacks a suitable caterpillar tractor plough, capable of producing a deep furrow, was devised. On the upturned sod the trees were planted. This method enabled small plants to be used, as weeds were kept down. It resulted in breaking up pan formations which were near the ground surface, thus ensuring better drainage and aeration of the soil. Ploughing was found to reduce establishment costs by as much as £3 per acre. Ploughing is particularly useful on heather-clad slopes and on land where the surface layer has been consolidated by the treading of sheep. Mr. Long promised the party that it would be given an opportunity of seeing their different types of ploughs at work on the following day.

Second Day

On Wednesday, May 25th, the party visited Clocaenog Forest, one of the largest in Wales. On the outward journey, views of the Denbighshire Moors were seen—areas typical of the ground we were about to visit—i.e., rolling upland moor ranging from 1,000-1,700 ft. elevation. Most of it was exposed and carried a dense crop of Calluna, with (on the drier slopes) an admixture of Dwarf furze (*u. gallii*). In 1931 ploughing was commenced, and to-day it is the general practice there. The species generally planted are: (i) Norway Spruce—on the better ground and in frost hollows; (ii) Sitka Spruce—on the poorer, upper ground; (iii) Scots pine—on the more sheltered, rocky portions, and (iv) *Pinus Contorta*—on the poor, exposed rocky areas. Japanese Larch was planted on the bracken covered slopes at one time. It grew coarsely, however, and as a result it is no longer planted on this type of ground, but is restricted to bilberry (*vaccinium*) areas.

At the Nursery Mr. Holmes explained how the Forestry Commission was experimenting in the use of heath-land nurseries. These nurseries were found to remain weed-free for at least three years—with resultant reductions in costs. The type of land most desirable was moorland with a heather vegetation and a pH value of 4.5-5. The heather is first cut and

burned and the area is then shallow ploughed, the object being to invert the entire surface layer. The ground is then disced and cross-disced again and again, to chop up the heather roots; it is then harrowed to collect the roots; it is then disced again. The area intended for seed beds is treated with spent hops at a rate of 1,000 lb./100 sq. yards, Superphosphate—12 lb., and Nitro Chalk—6 lb. The seeds when sown are covered with fine lime-free stone chippings. The preparation of Compost for the Nursery was explained by Mr. McNulty.

After leaving the Nursery members were taken to see the different types of tractor ploughs used by the Forestry Commission. Brigadier Gen. Bowen demonstrated each on the three types, and members were very much impressed by the results obtained. Ploughing furrows at 5 ft. spacing these ploughs can do up to 8 acres a day on suitable land.

Third Day (May 26th, Ascension Thursday)

After Mass, celebrated at the hotel by the Very Rev. Fr Donnelly, P.P., the party travelled by bus through the Conway Valley to Gwydyr Forest. Gwydyr is the largest forest in Wales, and forms part of the Snowdonia Forest Park. On arrival at Gwydyr, Mr. Best introduced the Head Forester, Mr. Harrison and Mr. Ryal, the "beat" Forester. He pointed out that there were two main types of ground in this forest. The first was a plateau area over 600' elevation, very rocky and complicated by impeded drainage and pockets of deep peat. This ground varied abruptly necessitating corresponding variations in the species used. The second type of ground was found on the steep slopes where Larch and Douglas Fir grew vigorously.

Mr. Best told of the fire hazard in that area and the measures taken to reduce it. He said that the fire protection cost at Gwydyr forest was 7/- per acre, while that for Wales as a whole was 3/6 per acre per annum.

At Nant Valley we saw very vigorous stands of Japanese Larch on bilberry and heather ground, even in exposed situations. A pine area with Japanese Larch pockets, had been burned the previous year. The pine was killed but the Larch survived and was still growing well—thus proving its value as a fire-belt tree.

An interesting plantation showing natural regeneration of Sitka Spruce, Douglas Fir and European Larch was seen. Mr. Long explained that as a result of a severe snow-storm, this mixed wood had been opened out. The following year natural regeneration of a number of species was noticed. The area was then fenced against rabbits, but no special soil preparation was carried out. The result was most encouraging. With regard to Douglas Fir, it was their experience, he said, that when planted in the open it tended to produce rough timber. Consequently they now planted it in the partial shade of inferior quality oak stands which had been opened-up by fellings and ringing of some stems. By this method a very fine-branched type of Douglas fir was produced. It was found that infestation of Chermes which occur on Douglas fir when so planted, do not persist beyond the early years of establishment.

A visit was next paid to the saw-mill or "produce dump" where various lines, including stakes, telegraph poles, ladder poles and wood wool were being prepared. A large shed stood close by, where the men were employed at various tasks such as creosoting stakes, making gates, etc., during wet weather. The stakes were creosoted by the "hot and cold tank" method. The labour cost was estimated at 4d per stake, and the total cost was 5d. per stake. Any conifer so treated would have ten times the life of untreated larch.

After lunch we crossed the Miners' Bridge to the plantation at Diosgydd. On entering a mixed Japanese larch and Sitka Spruce plot (P/21). Mr. Long stated that the original intention was to have the larch act as a nurse. The stand was not thinned in time and the spruce was suppressed. When thinning was carried out however, the spruce improved wonderfully. Mr. Forbes told of a somewhat similar occurrence at Avondale.

Very promising plots of Thuja, Abies Grandis, Abies Nordmanniana and Corsican pine were also seen. A very poor stand of European larch (P/21) was seen growing beside a Douglas fir plot of the same age. In the latter there were a few very fine specimens of larch. These had evidently been planted with the fir, by mistake and probably came from the same source as the larch in the adjoining plot. Their vigour appeared to be due to their isolation, which rendered them less liable to disease.

A 26-year-old stand of Sitka spruce on a fertile alluvial site had recently been heavily thinned. It contained very fine trees averaging 68 ft. in height. The average crown depth for the stand was 25% of the total height.

In the afternoon, the party visited Gwydyr Forestry Training School and was entertained to tea by the members of the staff. Mr. O'Beirne, on behalf of the Society, thanked Mr. Cruickshank, Chief Instructor, and his colleagues for their very great kindness, and said he hoped that some day, in the not too distant future, it would be our pleasure to welcome them all to Ireland. After tea, members visited the library, museum, seed kiln, work shop and other parts of the School.

That night the Society of Irish Foresters entertained the members of the Forestry Commission Staff and others associated with them during the previous days, to dinner at the Royal Oak Hotel. Mr. J. A. K. Meldrum proposed a vote of thanks to Mr. Long and his colleagues for their very kind invitation to visit the forests of Wales. He expressed appreciation of the excellent arrangements which had been made. Referring to the acquisition of land for forestry he said he was pleased to learn that it was less a problem in Wales than in Ireland.

Mr. H. M. FitzPatrick, seconding the vote, said he was very much impressed by what he had seen during the excursion. He recalled that he had once served with the Forestry Commission and after his visit to Wales he felt a certain regret that events had not enabled him to continue in that Service. Mr. O'Beirne said there was a bond of friend-

ship between foresters the world over—a bond which was not affected by boundaries or barriers. Mr. Clear, as Secretary of the Society, thanked the Forestry Commission Staff for the painstaking and courteous treatment afforded to us. The excursion had surpassed all expectations. Mr. A. C. Forbes, Very Rev. Fr. Donnelly, P.P.; Col. Wynn Finch and Mr. Best also spoke.

Mr. Long, replying, thanked the Society for their kind and appreciative words. They were very pleased that their Irish friends had found so much of interest.