

REPORT OF THE SECOND ANNUAL EXCURSION TO THE VALLEY OF THE RIVER OW (AUGHIRM)

JUNE 6TH TO 8TH, 1945

J. J. MAHER.

Aughrim, in the Valley of the Ow, Co. Wicklow, was the venue of the Society's very successful second annual excursion. Accommodation was excellent and the weather, though flirting slightly, held in our favour, enabling us to walk in comfort through the many interesting plantations.

The following members attended:—H. M. FitzPatrick (President), T. McEvoy (Convener), T. Clear (Secretary), P. Barry, W. Breslin, Miss N. Brunner, W. N. Chisholm, D. J. Corboy, J. A. Crammond, P. Cronin, M. Dalton, J. J. Deasy, N. Devereux, N. Diver, T. J. Dolan, J. P. Doyle, J. Galvin, G. Haas, P. J. Harte, J. C. Kearney, P. J. Kerrigan, H. R. Langley, T. Madden, J. J. Maher, D. P. Mangan, O. V. Mooney, T. McCarthy (Athy), F. McMahon, M. O'Beirne, P. P. O'Grady, R. K. Pennefeather, P. Ryan and M. Swan.

AUGHIRM FOREST. Tuesday, 5th June.

Starting at 2 p.m., the party walked the short distance to Roddenagh Nursery, where the President briefly addressed the members. It was a great pleasure for him, on the opening day of our second annual excursion, to welcome such a large gathering in spite of the many difficulties. They were met in the midst of the State Forests of Aughrim, Ballinglen and Avoca, which it was the intention to visit by kind permission of the Minister for Lands, who had not only given his approval, but had provided every facility. He was sure that nothing had been left undone by the Minister's Department to make our visit a pleasant and a profitable one. The forests of the Aughrim district were a spectacular example of what forestry means to Ireland. This area was no wooded estate taken over as a going concern; nor was it some gentleman's pleasure park. Except for a few scattered woods it was bare mountain devoted to sheep grazing, and contained hardly an acre of ground better adapted to purposes other than planting. Bit by bit it was bought; bit by bit it was planted, and bit by bit the countryside was transformed, resulting, as would be seen in thousands of acres of thriving plantations, which even now support up to a hundred men in steady employment. This has been the work of members of the present Forestry Service, many of whom he was glad to see present that day.

Our Vice-President, Mr. J. A. K. Meldrum, Chief Forestry Inspector, then welcomed the Society on behalf of the Minister for Lands.

Mr. P. Ryan, the inspector responsible for the supervision of the forests in the district, gave a summary of the tedious building-up of this area from the first land acquisition to the present day. The first block was acquired in November, 1913, over thirty-one years ago. When the Forestry Commission came into being in 1920 the total area was 1,126 acres. During their period of responsibility up to 1923, the area increased to 1,530 acres. Subsequent to 1923 and up to 1939 the area increased to the very high figure of 4,344 acres. The forest having now become too large for a single unit, was sub-divided into two forests by the formation of Ballinglen Forest, with an area of 1,795 acres, mainly on the right bank of the River Ow, and Aughrim Forest was left with an area of 2,540 acres, mainly on the opposite bank.

Since then the acquisition of three further properties increased the area of Aughrim Forest in February, 1941, to 2,775 acres. In April of

that year the outlying Garnagowlan property was detached to form part of the new Avoca Forest, reducing the area of Aughrim Forest to its present figure of 2,550 acres. The condition of these lands at the time of acquisition was as follows:—68 acres of woods, 379 acres of cleared woodland, $4\frac{1}{2}$ acres of scrub, 1,937 acres of bare ground, and 162 acres of unplantable land. To-day 2,278 acres have been planted, including 21 acres of woodland and 3 acres of scrub cleared and replanted, leaving 64 acres unplanted, including $9\frac{1}{2}$ acres of nursery ground.

The Convener, taking over, led the party into the nursery—the forest cradle—our most appropriate starting point.

Roddenagh Nursery.

A rectangular area of approximately 8 acres, nestling in the surrounding woods and gently sloping to the south-east, is devoted to nursery work. The soil, derived from Silurian shale, is light, easy to work and excellent for conifers. Prior to being laid down as a nursery in 1920, it had been tilled by the local cottiers for a number of years. This simplified preparation—ploughing, harrowing and collecting of weeds—alone being necessary before the lining out of the seedlings in the first year. Full stocking for five years so reduced fertility that for the next five years a considerable area each year had to be put under green crops, as well as receiving additions of farmyard manure and road parings. The average annual production in normal times was approximately three million seedlings, and one and a quarter million transplants. Production has dropped considerably during the emergency period owing to the difficulty of obtaining seed, and this year's stocks of approximately one million seedlings and three-quarters of a million transplants, are the lowest recorded.

The chief point of interest was the damage to April-sown Norway Spruce seedlings by the exceptionally sharp frost at the end of April. In contrast to the April-sown, healthy, unfrosted Sitka Spruce which, as a more frost-tender species, had been protected with the regulation laths about 15 inches over the surface of the beds.

Roddenagh Wood.

The members were interested in this wood, not alone on account of Dr. Nisbet's description of it in 1904 as one of the finest coppice woods with regular age classes of standards, but also on account of the unique method of its acquisition and of the mixtures used by the Department in planting it.

This area of 179 acres, held in fee simple, was purchased by Mr. O'Beirne, acting on behalf of the Department, at a public auction in Tinahely in 1922. Mr. O'Beirne informed us that at the time of purchase the area was covered only with scrub, the oak standards having been removed during the 1914-1918 war. Twenty-two years ago, when nearly all the scrub had been removed, it was replanted with a 50/50 mixture of Japanese Larch and Douglas Fir in parts, with a 50/50 mixture of Silver Fir and Japanese Larch in other parts, with some Sitka Spruce on the wetter ground, and on one area with pure Japanese Larch.

The Silver Fir-Japanese Larch area was divided into three strips, in which *Abies grandis*, *Abies nobilis* and *Abies pectinata* respectively, were used. The Japanese Larch, now $5\frac{1}{2}$ inches Q.G.b.h. and 40 feet high on the average, has considerably outgrown the two last-named Silver Firs, individuals of which were up to 10 feet in height. Mr. Barry, Mr. Crammond and others expressed the opinion that the thinning begun in the last few years had been just normal for Japanese Larch, and not sufficiently heavy to stimulate the growth of the Silver Firs.

Though grown on similar sites, *Bromus* and *Agrostis* grasses, with patches of Bluebell over slightly podsolized brown earth, these two plots presented a striking contrast to the next plot, in which the *Abies grandis*, though not so dense a shade-bearer as the others, was perfectly formed, having an average Q.G.b.h. of 7 inches and a height of 50 feet, tended to dominate those Larch which had not been removed by the recent crown thinning.

Roddenagh Hill.

The many perplexities confronting foresters endeavouring to put into practice their silvicultural knowledge, must have been experienced twenty-four years ago when planting this relatively exposed area, rising from 450 feet to 1,500 feet, with aspects varying from south-east to north. The main species used were Scots and Corsican Pines, European Larch and Douglas Fir, with smaller areas of Silver Fir and Sitka Spruce.

The Douglas Fir, on the more sheltered portions, now look a promising crop. All coarse stems were removed in 1943/44, yielding 12 tons of material per acre. As we progressed, however, directly up the slope—from 650 to 800 feet—the Douglas Fir gradually deteriorated in quality and is now being replaced by Japanese Larch. Wind blast was one of the outstanding inimical factors. On still more exposed ground—from 800 to 1,000 feet—an unsightly checked, gnarled and deformed crop of Scots Pine and European Larch was replaced last year by Japanese Larch. What would have been the effect of shelter-belts or of the admixture of species more resistant to the harmful action of severe exposure? Mr. Dalton suggested that a contributory cause of failure might be the chafing of the roots in the sharp-edged shaly soil. Mr. O'Beirne emphasised that the plants used here were imported and might have suffered in transit, while the question of race had also to be considered.

Incidentally, one of the obstacles to the handling of unsatisfactory areas—the rabbit danger—had to be overcome by erecting a rabbit-proof fence around the area. In carrying this work out a simple, yet ingenious, method was applied in overcoming a shortage of staples; the wire was inserted in saw cuts made in the tops of the stakes—a procedure which proved quite serviceable.

Many audible sighs of relief were heard as the Convener, after this steep climb, proceeded along a contour ride at 1,000 feet elevation to the more sheltered eastern slope, where we saw just below us a stand of Scots Pine which was now a success, although it had suffered severely from *Lophodermium* during its early years. Above us was the first example of flushed peaty ground (dominated by *Molinia*, with some *Calluna*), a regular feature of these hills, forming more or less elongated pockets running up and down the slope, and nearly always planted with Norway or Sitka Spruce. In this instance the latter had been used. As usual it was in varying degrees of check, being more advanced at the edges than in the centre. At its worst the plants were barely 2 feet high, the current height growth being a matter of one or two inches a year. In recent years this area has been interplanted with that most tolerant of trees—Contorta Pine—which is growing strongly.

Later in the day a similar area was seen in the valley floor. Here Norway Spruce was used and, though presenting a similar picture, had at its worst a higher current height growth, and should give in time a satisfactory stand without the use of a nurse species.

BALLINGLEN FOREST. Wednesday, 6th June.

On the second morning the party travelled by cars to Ballygobban, the largest block in Ballinglen Forest. From there we walked to Ballyteigue, where, on the roadside, we enjoyed a hearty free and easy lunch. One of the delights of a forestry excursion is the delicious tea from the little black cans. In the afternoon we continued our walk through Ballyteigue, thence through Rosahane and Coolgarrow, where we were met by the cars.

Distinctive features of the locality traversed are the high mean elevation, most of the land being over 1,000 feet the consequent very high rainfall (about 60 inches a year) and the constantly high atmospheric humidity of the mist-enshrouded peaks.

Before entering Ballygobban the Convener gave a short talk on local geology and soils, illustrated by a map which he had specially prepared for the occasion. We were standing at the central point of the Leinster Chain of Mountains, stretching, with interruptions, from Howth to Waterford. In this district the prevailing rock is Silurian, which in

its unaltered form as shales, slates, etc., composed the lower hills and lowlands, giving light soils of moderate fertility and drainage. In the distant geological past, the Caledonian foldings resulted in the welling up of enormous masses of molten rock—granite—raising the Silurian into ranges of hills. This granite was subsequently exposed by denudation and now forms most of the dome-shaped peaks over 2,000 feet high, e.g., Lugnaquilla (3,039 feet), the highest in the range. On the flanks of the granite mass, the Silurian rocks were altered to mica schist by the intense heat and pressure during folding. The peaks of Ballygobban and Ballyteigue, which we were to visit that day, consist of granite and the slopes of mica schist. Mucklagh property, seen across the valley, lies entirely in the schist area.

Ballygobban.

From the contour ride one could not but admire the scenery. Before us to the north frowned lofty barren Lugnaquilla, flanked by Barnamella, Mucklagh and Ballinabarney, clothed in their delicate green forest robes.

Ballygobban was planted in the two seasons from 1932 to 1934. It was gratifying to note the perfection of selection based on the failures and successes of the older plantations in the district. Towards the valley floor and on the better type of ground, healthy Sitka Spruce could be seen. Through the poorer areas (flushed peat) it was mixed with Contorta Pine. The latter has been planted pure on the more exposed areas and on the poorer peat. Japanese Larch was favoured on the drier sites along the slopes, on rock-strewn ridges with grass and bracken. One might say of it that it was perfect except for the recent damage by deer and the dying off, blackening and shrivelling of the tips of the leading and lateral shoots of some Japanese Larch. Some members ventured the opinion that it might be due to *Phomopsis*, but the majority claimed that it was due to frost. Along our path quite a number of Contorta Pines had recently been badly barked, the damage being attributed to deer. Most interesting was the fact that the Japanese Larch and Sitka Spruce in the vicinity had been untouched. Deer have increased rapidly in these mountains during the past few years, and in the space of a few years will constitute a grave menace to the forest growth, unless in the meantime strong measures are taken to keep them under control.

Another point of interest, as pointed out by Mr. Dalton, was the contrast in colour and form presented by some of the Contorta. These had ascending branches and were of a brighter colour than the main block. Mr. Crammond referred to a similar difference in Contorta Pine growing in the Glen of Aherlow. Mr. Clear suggested that the plants we were now looking at might have been from seed collected along the coastal region of Western North America, where the tree is said to be of scrub type, the upright variety, known as *Pinus Contorta*, var. *murrayana* being a tree of mountain regions. The problem remained undetermined. Mr. Maher mentioned that he had noticed that seed of the Murrayana Pine differed slightly in shape and had more pronounced ridges than the true Contorta seed.

Mucklagh.

Before entering Ballyteigue we had a view across the valley of Mucklagh Mountain, where successful plantations of Douglas Fir up to 900 feet elevation, and of Japanese Larch up to 1,200 feet, have been established. This planting to relatively high altitudes on a south-western aspect has been made possible by the proximity to the windward side of the hill (1,700 feet) on which we were standing.

Close to this plantation and in a slight depression, the outline of a plantation laid down by The O'Mahony could be discerned. We are indebted to Mr. O'Beirne for its history. The O'Mahony desired to establish a plantation near his shooting lodge, and, with the co-operation of the Department, plants—quite a collection—were supplied. These were carried on the back of a bicycle from Avondale to Ballinaclash by Mr. O'Beirne. He had to complete his journey on foot across the mountain. The species used comprised the upright and creeping varieties of Mountain Pine, Scots, Banks, White and Corsican Pines, Sitka, Norway and White Spruces, European and Japanese Larches and

Douglas Fir. Unfortunately time did not permit our seeing this plantation, which, no doubt, played no small part in the selection of species for the district.

Ballyteigue and Rosahane.

These areas comprise plantations from nine to twenty-three years old. On Ballyteigue the hill area is, for the most part, a replica of Roddenagh. The lower slopes contain stands of Douglas Fir and Japanese Larch as good as the better stands on the sheltered slopes of Roddenagh. A promising crop of Sitka Spruce, three acres in extent, yielded approximately 788 cubic feet per acre in thinnings. From a recent measurement it has been estimated that the stand contains 816 stems per acre, with a quarter-girth volume of nearly 2,000 cubic feet. The age is 23 years.

Among the many points of interest were—(1) a few scattered trees and small clumps of the *caesia* variety of Douglas Fir. These were the selected stems of a very bad plot which had to be replaced with Sitka Spruce in 1943. This plot of *caesia* Douglas Fir was laid down as an experiment in 1922. It was noticed in the nursery that some of the plants raised from Douglas Fir seed from Oregon had glabrous shoots, bluish-green foliage and a more set appearance than the true Oregon variety, which has pubescent shoots and green foliage. These "rogues" proved to be of the *caesia* variety and were segregated and planted out separately on this elevated site;

(2) the susceptibility to snow-break of Douglas Fir on the heavy soils (formerly natural oakwood) on the upper slopes of Coolgarrow, resulting in many large gaps, which are now replanted with Sitka Spruce; and

(3) an interesting though small area between the river and the road at Coolgarrow, which had been prepared the previous year for under-planting. Well-formed standards of 45-year-old European Larch, with some Oak and Birch, had been left scattered over the area.

On leaving Ballinglen Forest, Mr. O'Grady, the forester in charge, was cordially thanked for his assistance during the day.

AUGHRIM AND AVOCA FORESTS and BALLYARTHUR ESTATE.

Thursday, 7th June.

On the site of an old oakwood (as indicated by the evidence of old charcoal-burning hearths) was a plantation of Douglas Fir, planted by the Department in 1926, and a smaller group of Douglas Fir, planted by the former owner 27 years ago. The difference in growth presented a puzzling contrast. The young plantation was suffering complete check and had very short leaders, while the older plantation had vigorous growth and had never passed through a period of check. The various stages in laying down a forest road were also studied in this property. Mr. Cronin, the forester in charge, gave a detailed account of the work and costs.

Tinnakilly Lower.

The outstanding features in this property were—(1) the poor development of Douglas Fir, now being replaced by Scots Pine and Maritime Pine; (2) the very pleasing Corsican Pine, its success being attributed to the gravelly soil, and the relatively dry atmosphere. At Coates's Bridge, on the Aughrim Forest boundary, a cordial vote of thanks was passed to Mr. P. Cronin for having supplied much interesting information during the visit.

Aughrim Forest.

We then entered the main Ow Valley, with its steep slopes, clothed in natural and semi-natural vegetation; native Oakwood, seral Birch clumps (the first in succession to natural woodlands) and bracken- and furze-dominated rough grazings. A glance at the map prepared by Mr. McEvoy showed numerous dykes of basic rocks crossing the valley. He pointed out that to the trained observer these geological changes were immediately apparent in the vegetation—in the canopy of the

natural woodlands by the appearance of ash, wych elm and wild cherry; in the shrub layer by the ousting of holly by a continuous sheet of hazel, and in the field layer by the appearance of such plants as hart's tongue fern, prickly shield fern, garlic and wood sanicle, replacing woodrush and *Vaccinium*.

Garnagowlan.

The Garnagowlan plantation, on the left bank of the river, contained on the more basic soils, ash, planted in 1932, by the former owner—Major Bayly. It had been under-planted by the Department with *Abies grandis*—in 1941. Two groups of *Pinus radiata* (*insignis*) were observed on ground covered with woodrush. These were planted in 1940 and have now attained a height of 12 feet. Very interesting also were the clumps of *Eucalyptus Mülleri* and *Cupressus macrocarpa* in a matrix of European Larch and Beech, through stands of natural Oak, Ash and Cherry, between the road and the river. The *Eucalyptus Mülleri* had escaped the hard winter frosts of February and the severe spring frost at the end of April this year. The assistance and information given by Mr. J. T. Allman, forester-in-charge, was highly appreciated.

Ballyarthur Estate.

After an excellent lunch at the Woodenbridge Hotel we visited Ballyarthur Estate through the courtesy of the owner, Major E. A. T. Bayly, where the current treatment of native Oakwood under a system of clear-cutting by narrow coupes was seen. From the perfectly situated summer-house—the Octagon—overlooking the glen from Woodenbridge to Arklow, a graphic contrast in treatment was seen in the Glenart Woods on the opposite slopes. This treatment might possibly best be described as the Uniform system with artificial regeneration. Directly opposite the Octagon a wedge-shaped area of natural Ash in the surrounding natural Oak was immediately apparent. This appearance of Ash in the canopy was a good example of the change in vegetation on basic rocks.

The woods along the main avenue contain some very fine commercially valuable trees of Oak, Sycamore, Larch, Douglas Fir, Silver Fir and Scots Pine. One Scots Pine measured 30½ inches Q.G.b.h., and had an estimated timber height of 45 feet. Among the many rare specimens of trees planted here in 1916 were *Abies grandis*, *A. nobilis*, *A. concolor*, *Picea omorica* and two *Pinus contorta*, the last-named probably being among the oldest specimens of this species growing in Ireland.

Unfortunately our afternoon was rather marred by several vicious showers, which reluctantly compelled us to curtail our walk through this interesting private estate, where the owner had done everything in his power to make our visit pleasant and instructive, his forethought being greatly appreciated.

Discussion on Mr. F. McMahon's Paper on Sitka Spruce.

During the evening of the 26th June a paper on "The Sitka Spruce in Irish Forestry" (which is published elsewhere in this issue of the Journal), was read by Mr. F. McMahon—the President, Mr. FitzPatrick being in the chair. A discussion followed, the main points of which were as follows:—

Mr. M. O'Beirne, in proposing the vote of thanks, and congratulating Mr. McMahon on his very comprehensive paper, agreed, that the Sitka Spruce is a tree eminently suited to this country, especially along the western coast, where the climate compares favourably with that of its native habitat. The seedlings in the first year grow slowly and must be protected against frost-lift and late frosts during the succeeding May. On deep porous soils with sufficient moisture it establishes quite easily, provided it had not been planted more deeply than it had stood in the nursery. Plants inserted too deeply require a new root formation, with consequent check to healthy growth for a number of years. He referred to a tree at Killian, Co. Galway, which, when felled, measured 110 feet in length. One log, 50 feet long, was 5½ feet in diameter at the butt and 3 feet in diameter at the light end. The whole tree contained 350 cubic feet, plus a few tons of firewood.

Mr. T. Clear, in seconding the vote of thanks, thought that Sitka Spruce in the past few years seemed to have been losing popularity. Such a prejudice was surprising, as the numerous vigorous, healthy stands in this country proved that on proper sites it had, or at least should have, a high place in Irish forestry. One serious drawback, especially in drier sites, was its liability to butt rot. This was also experienced in Denmark, where they found that it was more susceptible than Norway Spruce. He reminded us that in virgin stands the common associates of Sitka Spruce were *Tsuga heterophylla*, *Thuja plicata*, *Abies grandis* and sometimes also *Pinus contorta*. In Scotland the last-named had proved to be a good nurse for Sitka Spruce, and we had seen during this excursion many promising plots of this mixture on flushed peat, dominated by *Molinia* with *Calluna*. On suitable sites, even where exposed, Sitka Spruce, being a very wind-firm and wind-resisting species, must be recommended. He hoped that Sitka Spruce would not be forgotten in the increased planting which would result from the present adequate State planting grant to private planters.

Mr. P. Ryan, supporting, referred to several outstanding specimens of Sitka Spruce at Shelton Abbey and Coolattin in Co. Wicklow. There was an exceptionally large tree at the latter place, which was 50 inches Q.G. at 7 feet from the ground and from 115 to 120 feet high. From information which he had received from the forester, Mr. Wells, the over bark volume was 644 cubic feet, Q.G. In the nursery Sitka Spruce required great care and attention. The seeds take about five weeks to germinate and should be sown about the end of March in fertile soils. The seed-beds should be brought to a very fine tilth by very intensive raking of the soil. The Casino Nursery at Avondale, when first used grew Sitka Spruce seedlings up to 4 inches high in the first year. These were quite strong and had not to be shaded as a precaution against frost-lift. In subsequent years the growth at one year was only up to 2 inches and the seedlings had to be protected against frost.

Mr. M. Dalton stated that co-equal in importance with tilth and fertility was the practice of steeping the seed to induce earlier germination. Care should be taken not to over-steep. To continue producing good seedlings plenty of compost must be applied to the soil, otherwise fertility will fall to such a low level as only to produce small, weak seedlings. During periods of hot dry weather the young seedlings are very tender and require protection.

Mr. T. McEvoy claimed, in the spirit of the angler who is ever anxious to cap his fellow angler's catch, that he had measured, at Curraghmore, Co. Waterford, the tallest and oldest Sitka Spruce in Ireland. Three years ago it was 108 years old and 148 feet high, with a quarter-girth at breast-high of over 18 feet. Forty years ago Professor Henry gave the height as 106 feet and the girth as being over 12 feet. Mr. McEvoy mentioned a plantation at Ballyboy in the Glenmalure State Forest rising to an elevation of 1,800 feet above sea-level. It was planted twenty years ago. Unfortunately a high percentage of the leaders were removed by wind. He had observed that during this year's severe April frost, Alder, so often advocated as an efficient nurse, had proved very inefficient, as the frost occurred before it had flushed. Nor was it suitable on sour peat, where Birch was better.

In associating himself with the vote of thanks, the President stated that the Ballykelly plantation mentioned by the lecturer was on the site of the old oak wood which supplied timber for the building of Derry. Most of the older specimens of Sitka Spruce in Britain and Ireland were from seeds collected in 1851-52 by Mr. Jeffery of the Oregon Association. The Curraghmore tree referred to by Mr. McEvoy must have been from the original packet collected by Douglas about 1831. If so it would therefore be of very special interest.*

At the conclusion of the discussion, Mr. Corboy proposed and Mr. Dolan seconded a vote of thanks to the Convener, the Excursion Committee, the Secretary, and to the various Foresters and Major Bayly, which was passed with acclamation.

* (According to Loudon (1833), only a very few plants were raised in the Horticultural Society's Garden's in the year 1832.—Editor).