

Stand No.	Species	Age	Top Ht. metres	No. of trees per hectare	Av. Diam. cms.	Estimated Vol. per hectare cu.m.	Remarks
1	(P.sitchensis	41	29.9	376	42.0	624	6 Thinnings
	(P.taxifolia	41	25.3	457	34.0	350	4 Thinnings
3	P.abies	41	23.2	655	31.5	410	5 Thinnings
4	P.sitchensis	41	28.3	452	42.8	668	8 Thinnings
5	P.sitchensis	47	32.3	440	42.0	780	6 Thinnings
6	Thuja plicata	42	19.8	1,223	29.1	446	3 Thinnings
		*	* *	* *			
<u>No.</u>	<u>Sample Plots</u>						
117	P.sitchensis	31	22.6	1,065	21.9	421.7	Light Crown grade
118	P.sitchensis	31	23.8	558	28.2	393.6	Moderately Heavy Low Thinning

After this the lorries continue southwards through outlying blocks of the forest interspersed with farms until they reach Ford. Here the party re-joins the bus and goes on via Kilmartin to Lochgilphead and Tarbert on the shores of Loch Fyne. On the way the bus passes alongside the Crinan Canal, which was constructed about 1800.

This general area was part of the ancient Celtic Dalriadan Kingdom founded by the Scots who came from Ireland.

Friday, 20th July

Maps $\frac{1}{4}$ " Sheet 4
1" Sheets 61, 65

We take the bus to Kilmichael Glassary where lorries are waiting to carry the party over the forest road through Kilmichael and Minard forests.

KILMICHAEL AND MINARD FORESTS

The Forestry Commission, West Scotland Conservancy

District Officer : I. McNeill

The five state forests of Minard, Asknish, Kilmichael North, Kilmichael South and Kilmory form a more or less compact block of approximately 10,000 ha. on the N.E. shores of Loch Fyne. Of this area 5,840 ha. have already been afforested and 360 ha. remain to be planted while 3,965 ha. are either unplanted or are to remain permanently under agriculture.

The original land utilisation was sheep grazing with a few cattle. Much of the land was heavily burnt each spring to promote a strong growth of grass for summer grazing. The stock carried was probably in the region of 1 sheep to 1.8 ha.

This lorry journey will enable members to see the scope and type of operations carried out over large parts of Scotland by the Forestry Commission in their efforts to increase the area of afforested land.

Topography. The elevation varies from sea level to 400 m. but most of the land is below 240 m. and consists of a series of ridges running for the most part from N.E. to S.W. being highest and steepest around the perimeter and forming a wide shallow basin in the centre.

Climate. The average annual rainfall is about 2,000 mm., spread more or less evenly over the year, the driest months being April, May and June. Generally speaking winters are mild and snow seldom lies long. The prevailing wind is S.W. and because of the early growth induced by the mild conditions during winter, late spring frosts are often harmful.

Geology and Soil. Still on the complex Dalradian series, in the main central area the underlying rocks are phyllites and mica-schists, while to the W. and S.E. there are large bands of quartz and in the N.E. epidiorite and bornblende schists. Several basalt dykes run from S.E. to N.E. across the area.

A large proportion of the area has a covering of peat which is shallow and of good quality on the lower, moderate slopes, but deep and fibrous over most of the central basin, where the natural drainage is poor. In the well-drained hollows the soil is a good clay loam but on the steep slopes a thin layer of peat often overlies a very compact soil with occasional indications of "pan."

Staff. Supervisory staff consists of 5 foresters and 5 assistant foresters. Approximately 100 forest workers are employed.

History. Planting was begun in 1937 and was confined to the lower ground along Loch Fyne. At that time much of the deep peatland in the central basin was considered unplantable, but since it was so typical of Argyllshire and the West Coast generally, it was decided to plough and plant about 20 ha. of it in the nature of an experiment. This was done in 1942 using a Solotrac single furrow plough drawn by a D.2 tractor. Planting was done on the large upturned turf ridges. Picea sitchensis and Pinus contorta were used. Results appeared to be reasonably satisfactory and the afforestation of the area continued.

The main difficulty in afforestation of the low-lying central area has been frost, which causes severe and repeated damage. The trees are now, however, gradually rising above the frost level.

Choice of Species. The percentage of species by area is approximately as follows:-

<i>Picea sitchensis</i>	70%
<i>Picea abies</i>	15%
<i>Larix</i> spp.	5%
<i>Pinus sylvestris</i> & <i>P. nigra</i> var. <i>calabrica</i>	5%
Miscellaneous species	5%

Picea sitchensis is the species most tolerant of bad conditions, and is planted even on the most exposed areas and on a wide variety of soil types, while *Picea abies* is confined to the more sheltered and fertile sites.

In the early years *Larix leptolepis* and *Pseudotsuga taxifolia* was extensively used on the areas of better soil and lesser exposure. As planting has progressed on to poorer and more exposed land their use has been greatly reduced.

P. sylvestris suffers badly from exposure and except on the most sheltered sites its place is now largely taken by *P. nigra* var. *calabrica*.

Pinus contorta has been used more frequently in recent years on the very poor acid peats either pure or in mixture with *P. sitchensis*.

It has been necessary to fence practically the whole block against deer and rabbits, but because of the agricultural interests it was seldom possible to fence any area more than one year in advance of planting, or in the most orderly and economic way. As each area was enclosed it had to be systematically cleared of rabbits and other vermin.

At first, transport of planting stock and materials was very difficult as everything had to be carried by horses, and labour was also short until three years ago. The construction of the new road and the use of crawler tractors have reduced the transport difficulty and the labour shortage has been overcome by the erection of Forestry Commission houses.

The rate of planting increased steadily from 1937 to a maximum of 3,490 ha. in the five years 1952-56 but now there is little left and the whole block has been virtually planted within twenty years.

A halt will be made at Tunns to examine the methods of ground preparation and planting.

Although ploughing was first used as a method of draining, it also cultivates the soil, and its effects may be summarised as the alteration of the site to make it more favourable for tree growth by the reduction of compaction, the regulation of the air and water regime and the mobilisation of nutrients. The disturbance of an impervious surface layer of peat, of compacted till or of iron or humus pan may be essential to permit tree growth. Drainage is effected by the opening of furrows; the planting in the furrow bottom on dry sites, or on the ridge top on wet sites gives the young tree the most favourable aeration conditions, and water may be conserved by the removal of competing vegetation.

The nutrition of the plant is assisted by the weathering of the soil and the decay of buried vegetation. The removal of competing vegetation helps the tree (particularly in the case of the Picea/Calluna complex) and the shelter afforded in exposed sites may be of importance. The rapid establishment of the plantation with the minimum of labour is assisted by easier planting in the loose soil, combined with the reduction of weeding; with the further advantages of the use of small nursery stock and reduction in loss of plants. The growth of the plantation is more uniform, as the plants get a more equal start, and a higher proportion of individuals reach the canopy, which permits of wider spacing and thus the planting of fewer trees per unit area. At the same time, it appears that at least in youth there may be a considerable increase in the quality class of the resulting crop.

DEMONSTRATION OF DRAINING PLOUGH AND TRACTOR

Draining is done by a Cuthbertson "F" type plough drawn by some suitable crawler tractor. The plough cuts the drains as the tractor moves along and the spoil is ejected on one side. Two spring-loaded discs attached in front of the mould board sever the vegetation and roots in the surface soil, which might otherwise prevent a clean cleavage. The plough is fitted with an automatic depth control which keeps the bottom of the drain more or less independent of irregularities of the ground. When not in use the mould board can be raised by means of a winch on the tractor and the plough is then supported on wheels, which enable it to be pulled over any type of ground.

The drains are approximately 70 cm. wide at the top and 30 cm. wide at the bottom. The depth can be varied by adjusting the tilt of the mould board. The maximum depth is about 80 cm. The drains are cut at a slight slope to the contour as far as possible, approximately 6.5 m. apart, which gives about 1,425 m. of drain per hectare.

The peat from the drains is then cut vertically into slices about 15 cm. thick and these turves are distributed in rows between the drains at the requisite planting distance. Ploughing and turving are done during the late autumn and throughout the winter.

Planting usually begins about March and is done by making a cut through the turf with a spade. The plant is placed in the cut with the roots spread out underneath the turf.

Coming out of the forest we join the main road along the side of Loch Fyne. On the opposite side of the loch is Strathlachlan forest and on the left hand side of the road typical sheep farming country. We soon arrive at the southernmost woods of the Cumlodden Estate.

CUMLODDEN ESTATE

Owner: Sir George I. Campbell, Bart.

Introduction. The House is known by the older name Crarae and the estate is a typical small West Highland property situated on the shores of Loch Fyne. About 2,450 ha. in extent, there are three hill sheep and cattle farms, let to tenants, a small home farm, a granite quarry and 200 ha. of forest, the area of land devoted to forest being perhaps greater than is usual on a property of this kind. The Estate came into the possession of Sir George's forebears in 1819.

The climate is generally mild and often humid with a January Mean temperature of 4 C and a July Mean temperature of 15 C. Prevailing south-westerly winds bring rain from the Atlantic Ocean. Rainfall averages 1,900 mm. per annum. At irregular intervals severe gales are experienced, the last occurring in December 1952.

Soil conditions over the area vary from "Raised Beach", steep slopes of thin soil over boulder clay with rock outcropping, to peat deposits of considerable depth. Intensive drainage is essential.

No record is available of past forest history, but in olden times charcoal burning appears to have been an industry, and later both natural and planted oak was systematically cultivated on a rotation of about thirty years from stool shoots for the bark market, which came to an end about 1826.

A reafforestation scheme on Cumlodden Estate was started in 1919 by the present owner. The particular areas to be visited, and the other areas which may be seen from the bus on approaching and leaving Crarae, are the result of his work. Lochfyneside is climatically and geographically an area of rapid growth and high volume increment. The emphasis in planting has therefore been on the spruces (Picea spp.) with the larches, mainly L. eurolepis and L. leptolepis, on the drier mineral soil slopes. The objective of management has been the production of the greatest possible volume of timber per hectare in the shortest possible time, and to that end both the date of the first thinning and the intensity of that and the following thinnings can be said to have been in advance of text book recommendations and general practice.

On arrival at Crarae the party will proceed to the Forest Garden following a path alongside The Glen. This has been developed as a woodland garden with trees and shrubs - particularly Rhododendrons and Azaleas - from many countries, with special emphasis on examples from New Zealand and Chile. On the left bank is a fine mass of Rhododendron cinnabarinum var. roylei.

Before reaching the entrance to the Forest Garden the party passes a number of interesting specimen trees including Abies lasiocarpa var. arizonica, Abies sibirica, Metasequoia glyptostroboides, Saxegothaea conspicua, Tsuga mertensiana and several Asiatic Abies species. On the other side of the river is a Cupressus lusitanica var. glauca.

THE CRARAE FOREST GARDEN

The Crarae Forest Garden is the conception of Sir George Campbell and was started in 1933. In it the trees are all planted in plots whose size varied from about 100 to 400 plants (or fewer in the case of the rarest species). Their shape is irregular. Planting continued annually, a maximum of twenty-five plots being formed in 1937. Since 1939 only a few plots have been added and the total now reaches 108. So far, about one-third of the total area of 13.8 ha. has been planted. In some plots the plants have all died and in certain cases these have been replaced by another species. There remain approximately 100 plots but in some of them casualties are still occurring owing to frost, etc. and some species are only represented by the surviving individual specimen trees. In 1955 the Garden was presented to the Forestry Commission.

The elevation varies from 39 m. at the lowest part to about 75 m. at the highest point so far planted.

The underlying geological formation is favourable to tree growth, comprising metamorphosed igneous rocks mapped as "epidiorite, hornblende-schists, etc."

NOTES ON THE MORE IMPORTANT GENERA

Abies. The European species, A. pinsapo and A. cephalonica grow slowly and somewhat irregularly. Western North American firs are well represented, A. amabilis and A. grandis being especially vigorous and well grown. These two plots are probably growing more luxuriantly than any other plots in the Garden. A. procera (nobilis), magnifica and lasiocarpa, the last as yet young, are all successful. A. lowiana from California is also doing well but the related A. concolor, after a good start, is losing its needles and many trees appear to be dying. From the east of North America, A. balsamea and A. fraseri have both formed good plots.

East Asiatic firs are also well represented but have not proved so successful. A. spectabilis from the eastern Himalayas has almost entirely succumbed. The west Chinese firs A. delavayi, forrestii and recurvata; A. holophylla and nephrolepis from Manchuria; and the Japanese species A. firma all grow slowly and rather irregularly, but A. homolepis and veitchii are more vigorous and promising.

Picea. The European species P. abies and P. omorika are both represented. The Caucasian P. orientalis, after a slow start, has grown well. Both P. omorika and P. orientalis have suffered check in heather areas. Western North American species include P. sitchensis, the most vigorous of all the spruces, P. mariana (nigra), P. alba, P. glauca (alba), P. hurstii and P. rubens, all of which are growing steadily. P. engelmanni has not done well. P. pungens from Colorado has survived for many years but is gradually dying. Of the Himalayan species, the western P. smithiana is almost entirely dead, but the Eastern P. spinulosa has grown slowly and irregularly and may form a plot. From Siberia P. obovata is doing well but P. schrenkiana has suffered severely and its fate is doubtful. West Chinese P. likiangensis is growing only very irregularly. Four Japanese species have been planted - P. jezoensis has failed; P. bicolor is growing slowly; P. glehnii promising and P. koyamai remarkably good.

Pinus. More species of pines are represented in the Garden than of any other genus but on the whole they are less successful. The high humidity and mild climate of Crarae is naturally less likely to be suitable for pines than for firs and spruces.

Of the European species a few scattered and mis-shapen individuals of P. pinaster remain after twenty years' growth. P. peuke and P. montana are much slower growing but have formed useful plots while P. laricio, which is planted on the more exposed upper part of the Garden, has made a start.

The Western North American P. contorta is very fast growing and forms a good plot. The related P. banksiana is similar but of less good form. P. ponderosa and P. lambertiana from Western U.S.A. have not been at all successful. P. radiata and P. muricata from California have behaved similarly. P. aristata is slowly dying; P. montezumae from Mexico only survived a few years. P. cembroides is, however, growing slowly. P. rigida has suffered heavy casualties and the survivors are mis-shapen. P. strobus is as yet young and planted on an exposed site has suffered badly from wind.

The Himalayan P. excelsa is growing slowly but healthily so far. Far Eastern pines are well represented but none are promising. From China P. bungeana died early while P. massoniana, P. sinensis and P. tabulaeformis have only survived as scattered trees. The Japanese P. koraiensis and P. thunbergii have behaved similarly but P. parviflora is rather more promising.

Cupressus. Cupressus sempervirens has not survived well enough to form a plot but there are a number of individuals, including some of extremely fastigiate form. American cypresses include C. macrocarpa which forms a plot although not such a good one as the rather older one on Crarae Estate. C. arizonica, C. lusitanica var. benthamii have also suffered heavy casualties, as has C. goveniana which, however, has produced seed several times. C. torulosa from Asia has left a few survivors after twenty years and C. funebris from China has formed a plot though it suffers severely from blast.

Chamaecyparis. Chamaecyparis lawsoniana is growing most vigorously and forms an excellent fast-growing plot.

Tsuga. Tsuga heterophylla forms one of the oldest and is also one of the fastest grown and most vigorous plots. A number of other species of Tsuga are also represented but are much younger. They include T. caroliniana from U.S.A., T. dumosa from the Himalayas, T. diversifolia and T. sieboldii from Japan, all making a satisfactory start.

Cedrus. Cedrus atlantica and C. deodara were both planted in the early years but have grown much more slowly than any of the surrounding plots. The former species now looks unhealthy.

Other genera. Three most interesting plots growing alongside each other comprise Cryptomeria japonica, Sequoia gigantea and S. sempervirens. The first-named is the tallest and has been thinned twice. Both Sequoias are very promising.

Several plots of Larix decidua (europea) of High Alpine provenances have suffered severely from die-back. L. kurilensis (gmelini var. olgensis) failed completely. There is a young plot of Sciadopytis verticillata and some survivors of Taxodium distichum. There are also trees or plots of a number of broadleaved species including Eucalyptus urnigera, and several species of Acer.

Failures. In addition to those species recorded above as having failed the following have also failed completely: Abies religiosa, Eucalyptus coccifera, E. coriacea, E. macarthurii and E. viminalis, Juniperus virginiana, Larix dahurica, Pinus ayacahuite, P. coulteri, P. longifolia, P. mitis, P. palustris, P. pinea and Widdringtonia whytei.

After seeing the Forest Garden there will be time to see some of the Eucalyptus grown by Sir G. Campbell from seed sent to him from friends in Australia in 1952. The following species have so far survived Eucalyptus gigantea, E. fastigiata, E. niphophylla, E. coccifera, E. gunnii and E. johnstoni, together with seedlings grown from established trees of E. urnigera at Crarae. There are two large specimens of E. urnigera near the house and the belt of trees near the front gate are the progeny of these.

After lunch there may be time to see some of the younger coniferous crops and some Populus trichocarpa planted in 1923. Nearly all the P. trichocarpa in Great Britain is apparently of one clone, presumably all coming from one introduction. Unfortunately this clone is very susceptible to bacterial canker, (Pseudomonas syringae F. sp. populae). When unattacked, as is the case at Crarae, it grows well. In the hilly areas of Great Britain, with their high rainfall, low sunshine, and tendency to acid soils, it does better than the Black Hybrids (P. euramericana vars.) Work is now being carried out on the selection of other clones of P. trichocarpa and P. tacamahaca x trichocarpa hybrids for resistance to bacterial canker.

It appears that bacterial canker has not yet reached Crarae. It has recently been noticed eleven miles away at Inveraray. It is not known how the disease is carried from place to place, but it can cover distances of several miles.

On the way to Inveraray if time permits a stop will be made to see a unique crop of Cryptomeria japonica underplanted beneath Larix decidua.

* * *

Shortly after leaving Crarae we pass a village called Furnace. The original name of this place was Goatfield, and there is an interesting story of how the new name arose. Laws were passed in England forbidding the cutting of woods for the iron smelting industry, so the English smelters looked elsewhere for their fuel and charcoal. Furnaces had been established before the middle of the eighteenth century to smelt iron ore brought from Ulverston in Lancashire, first at Glen Kinglass on Loch Etive side, and latterly at Bonawe. Timber cut in the woods of Glen Orchy, Glen Strae and Glen Lochy was floated down the River Orchy and through Loch Awe to the Pass of Brander. A furnace had also

been started at Goatfield on Loch Fyne in 1754, and until well on into the nineteenth century strings of ponies loaded with charcoal were to be seen crossing the hills to the south of Loch Awe.

A contemporary account says "The woods are commonly cut at the end of every nineteen or twenty years except such a number of oak standards as parties may agree to spare. So much of the timber as may be needed for country use, is sold, perhaps as high as anywhere in the kingdom; the rest is made into charcoal, and the oak bark sold for the use of the tanner." (Oak bark sold in 1795 for £12 per ton.)

Before we reach Inveraray itself the large trees belonging to the estate force themselves on our notice. Some of the largest trees still living were probably planted by Archibald, Duke of Argyll in 1746 or 1747. These consisted chiefly of larches, "New England Pine" (Pinus strobus) Picea abies and Abies alba. In those days nursery stock was highly prized and there is a well authenticated story of a raid by the Duke of Atholl's men on Inveraray, where they stole seedlings and transplants and took them back to Atholl as booty. The Campbells were paid £1,336 compensation in settlement of their claim for damages. Some of the old L. decidua by the Castle here are a reminder of those stormy days, as they were planted about that time. Soon after, a great number of Abies alba were planted. One, in particular, at Kilbride, beside the road, measures 56.7 m. in height and has a diameter of nearly 2 m., which makes it possibly the largest tree in Britain. Ring counts from an adjacent tree blown down in 1929 indicate that it was planted in 1766.

INVERARAY ESTATE

The Trustees of the 10th Duke of Argyll

Factor: Mr. R.M. Hamilton (Chamberlain of Argyll)
Head Forester: Mr. A.R. Davidson

Past History. The earliest plantations are said to have been made by the Marquis of Argyll and the ninth Earl, his son, from 1653 to 1685 and covered an area of nearly 1,620 ha. This was one of the first large scale attempts at establishing plantations in Britain, coming many years before the Dukes of Atholl began their work. Exotic species were introduced early on, Larix decidua about 1741 and between 1746 and 1780 Pinus strobus, Picea abies and Abies alba and various others. Mixed planting was preferred as being more profitable as well as ornamental. Between 1847 and 1900 extensive plantations of L. decidua were formed, but after 1888 very little planting was done, and between that date and 1951, a great deal of neglect occurred. The Estate is now working to an Approved Working Plan under the Dedication Scheme and a considerable area of the neglected woods has been thinned or given other attention.

Area. The area of productive woodland is 229 ha., 75 per cent. planted before 1880. The area of unproductive woodland is 581 ha. but this includes 241 ha. of felled woodland and 141 ha. of Scrub.

Topography. The woodlands mainly cover the slopes of Glen Aray in the North, the western slopes of Glen Shira in the north-west and the high ground bordering Loch Fyne, extending from Inveraray southwards to Dalchenna.

Climate. Rainfall is about 2,000 mm. per annum. Frosts usually have little effect. Wind storms are common from October to early January and are a hazard.

Geology. The underlying rock, felsite and quartz porphyry or graphitic slates and phyllites is partly covered by undifferentiated drift and boulder clay.

Conditions of Forest Crops. Nearly all the woods have suffered from past neglect of thinnings, selective fellings and drainage. Much of the hardwoods are over-mature and of poor form which, in the interests of good management, should have been replaced long ago. Wind has caused considerable damage in plantations of all ages.

Methods of Working. As one of the objects of management is to retain the general amenity, the old mixed woods will be regenerated over a period of twenty-five years. Method of regeneration will be by planting but natural regeneration of Abies alba, Fagus sylvatica, L. decidua, Acer pseudoplatanus, Fraxinus, and Tsuga heterophylla is expected.

The younger plantations are being thinned on a three-year cycle (with some exceptions) for six years and thereafter on a five-year cycle.

The annual planting programme is 40 ha. for the first five year period and 60 ha. in the second five year period of the plan. Transplants for planting will in future come from the Estate Lining-out Nursery, the seedlings being purchased from the trade. Seed will be collected from the numerous fine specimen trees growing on the Estate.

The majority of the annual timber cut is sold standing; a small amount of thinnings only are removed and converted for Estate maintenance.

Woodlands Staff. This consists of the Head Forester, an Assistant Forester, 1 Foreman and 15 Forest Workers. There is also a Gamekeeper and a part-time Lorry driver.

BALANTYRE WOOD. Compt. 84 Area 11.6 ha. Planted 1888.

Present Crop. Species - Groups of Quercus, Fagus sylvatica, A.pseudoplatanus, Prunus avium, Fraxinus, Thuja plicata, P. taxifolia, Picea sitchensis and P. abies, Tsuga heterophylla, L. decidua, P. sylvestris, Abies grandis, Abies alba.

Geology. N. portion of wood: felsite and quartz porphyry, S.S.E: slates, and phyllites.

Elevation. S.E. boundary along main road about 50 m. above sea level. Rising to 150 m. on the N.W. boundary. Aspect: S.E.

Past History of Crop. The groups of softwoods, presumed to have been planted for amenity, have had no treatment since the wood was planted. The first thinning was carried out after total diameter enumeration in the winter of 1955.

There are nine Plus trees selected for propagation in this wood. The first we shall see is a Pseudotsuga taxifolia 45 m. high and 88 cm. in diameter.

1. Above this is a group of the same species which has a top height of 35.4 m. and a basal area approaching 80 sq. m. per ha.
2. Higher uphill is a small group of Thuja plicata which has a mean diameter of 37 cm. and a height of 31 m. Estimated volume per ha. is 874 cu.m.
3. Still higher uphill is a group of Larix decidua which seem to be fairly free from canker and quite likely came from seed collected on the estate. Here the mean diameter is nearly 40 cm., and the tallest tree measures 32 m.
4. Below the L. decidua is a group of Tsuga heterophylla which contains two Plus trees. Their diameters are about 75 cm. and heights 44 m. Tsuga seeds freely here and if it were not for intruding sheep and rabbits natural regeneration would be more obvious.
5. Abies grandis. Many of the trees in this stand are 41 m. tall and at least eight have a diameter of 50 cm. or above. Drought crack is evident on some of the trees.
6. On the roadside are some of the P. abies which were not clear felled when the rest was replanted in 1888. They are now approximately 125 years old and measure about 37 m. in height and 70 cm. in diameter. They are in a fairly sheltered position here so they have kept their crowns well.
7. The Picea sitchensis are 57 years younger than the P. abies, yet they are now about equal in height growth. The tallest tree (a Plus tree) is in fact over 46 m., and diameters of several trees are more than 60 cm.

Leaving Inveraray a belt of poplars (Populus serotina var. erecta) planted in 1953 will be noticed on the left just over the estate wall. Many leading shoots of these were damaged by larvae of the Light Emerald Moth (Campaea margaritata, L.) The bus continues on the head of the Loch Fyne and turns to follow up Glen Kinglas to the summit of the Rest and be Thankful hill. The route now lies down through Glen Croe with Ardgarten forest on either side. On the left is the great mass of the Cobbler, 881 m. high and a favourite climbing peak. Ardgarten forest was acquired in 1925 and is 7,300 ha. in extent.

In 1936, Ardgarten with the forests of Loch Eck, Glenbranter, Glenfinart and Benmore, together with the Glasgow Corporation estate of Ardgool, were designated the Argyll National Forest Park. This was the first venture of its kind in this country and has proved a great success in encouraging townspeople to visit the country and enjoy some of the benefits of nature and an out-door life. In the Forest Park area, which covers nearly 24,300 ha. there are now four Youth Hostels, camping grounds and a caravan park.

Night at Arrochar.