INTERNATIONAL UNION OF
FOREST RESEARCH ORGANISATIONS

UNION INTERNATIONALE DES
INSTITUTS DE RECHERCHES FORESTIÈRES

INTERNATIONALER VERBAND
FORSTLICHER FORSCHUNGSANSTALTEN

12th CONGRESS 1956

TOUR No. 2
CENTRAL AND WESTERN SCOTLAND
INTERNATIONAL UNION OF FOREST RESEARCH ORGANISATIONS

Central Scotland Tour No. 2. July 1956

Sunday, 15th July

07.45 - 08.45 Breakfast in Perth
Morning Fagus sylvatica "hedge" at Meikleour
Murthly Estate: exotic conifers of great size
Afternoon Dunkeld: The Parent and Hybrid larches
Tour of Strath Ardele
Night at Fishers Hotel, Pitlochry, Perthshire
(Tel. Pitlochry 284).

Monday, 16th July

09.00 - 10.30 Visit shops or Blair Athol Distillery
Morning Hydro-electric power station and Salmon ladder
Brown Trout Research Station
Afternoon Faskally: Forester Training School and forest
Ledmore: Nursery and seed orchards
Evening Visit to Festival Theatre at Pitlochry
Night at Fishers Hotel, Pitlochry

Tuesday, 17th July

Morning Rannoch, The Black Wood: Native wood of P. sylvestris
Afternoon Blair Atholl Estate: large exotic conifers, L. eurolepis, old
L. decidua
Visit Blair Castle.
Night at Fishers Hotel, Pitlochry

Wednesday, 18th July

Morning & Drummond Hill: L. decidua provenance and management
Afternoon P. sitchensis, P. abies thinnings, Abies alba
Fomes annosus, P. abies thinning, Abies alba
Night at Loch Awe Hotel, Dalmally, Argyll. (Tel. Dalmally 261)

Thursday, 19th July

Morning & Inverliever: Growth of P. sitchensis, P. abies and Pseudotsuga
Afternoon taxifolia under W. coast conditions
Night at Tarbert Hotel, Tarbert, Argyll. (Tel. Tarbert 64)

Friday, 20th July

Morning Kilmichael: Large-scale afforestation of peat. Ploughing
methods.
Craeae Estate: Forest Garden and Eucalyptus spp. Populus.
Afternoon Inveraray Estate: Rapid growth of exotic conifers in the West.
Tour of Inveraray Castle.
Night at Arrochar Hotel, Arrochar; Dumbarton. (Tel. Arrochar 222)
Saturday, 21st July

Morning  Bacterial canker on Populus. Ari sawmill (Thinnings).
          Production and Utilisation of Picea spp.
          Glenfinart: "Group dying" of P. sitchensis
Afternoon Benmore: Forester Training School and Arboretum
          Travel to Glasgow by boat and train
          17.30  Reception at Glasgow City Chambers
          (19.45 for 20.00)
Evening  Farewell dinner at Central Hotel Glasgow
          22.00  Party boards train at Central Station. Sleeper to London.

INTRODUCTION

Through the gradual expansion of cultivation, the need to drive out wolves
and other vermin, the exigencies of war and the need for timber and charcoal,
the original extensive forests of Scotland were gradually destroyed. From
the earliest days of forest clearance the most important pastoral animals were
the native black cattle. After the Middle Ages sheep husbandry developed rapidly
in the south of Scotland, and sheep crossed the Highland boundary before 1760,
though the most extensive increases were made in the north at the time of the
Highland Clearances, 1810-1860. Sheep farming is now one of the chief forms
of Scottish agriculture and there are some 8 million sheep in the country today.
Sheep farming however, passed its peak before the end of the last century, and in
recent years there has been some return to the keeping of cattle.

Land Utilization in Scotland - 1954

<table>
<thead>
<tr>
<th>Description</th>
<th>Ha.</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rough mountain or heath grazings</td>
<td>4,420,000</td>
<td>57.3</td>
</tr>
<tr>
<td>Permanent grass</td>
<td>488,000</td>
<td>6.3</td>
</tr>
<tr>
<td>Arable</td>
<td>1,290,000</td>
<td>16.7</td>
</tr>
<tr>
<td>Forests Private</td>
<td>405,000</td>
<td>5.2</td>
</tr>
<tr>
<td>State</td>
<td>146,000</td>
<td>1.9</td>
</tr>
<tr>
<td>Residual (Deer forests, built-up</td>
<td>971,000</td>
<td>12.6</td>
</tr>
<tr>
<td>areas, roads etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total area (excluding water)</td>
<td>7,720,000</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The percentage of the land area of Great Britain devoted to forestry is
smaller than that of every other country in Europe, except Ireland and Holland,
and even in Scotland where forestry is relatively of greater importance, the
percentage was only 6.6 in 1949, or about 7 per cent now.
The forest area of Britain is about 1,400,000 ha., and that of Scotland 550,000 ha. Of these areas, however, 38 per cent. of the British total and no less than 55 per cent. of the Scottish figure were recorded in the 1947-49 Census as "unproductive", i.e., areas felled in the two world wars and still not replanted, scrub, of which there is much in Scotland, and devastated woodland without marketable timber.

These figures may be compared with the target of 2 million ha. of productive forest for Britain which was set after the last war, of which about 60 per cent. might be State forest, and perhaps 50 per cent. of the whole area might be expected to lie in Scotland.

The recent annual planting programme in Scotland has been about 14,000 ha. in State forests and 3,200 ha. in private forests. The total for Britain is about 34,000 ha. but these figures have now begun to fall.

Even the target figure would provide, it is estimated, only about 30 per cent. of the timber requirement of the country. In 1950 imported timber provided 93 per cent. of softwood and 60 per cent. of hardwood consumption. Some £90 million is spent annually on timber imports. Britain's new forests already provide an increasing revenue of about £2 million annually.

Physiography and Geology

Although the tour begins on the Lower Old Red Sandstone towards the north of the Midland Valley of Scotland, most of the time will be spent between the Highland Boundary Fault and the Great Glen Fault, to the south west of the Grampian Highlands. The Dalradian Series of the Highland Schists form the basic rock over most of the area, and consist of a complex of metamorphic quartzites, schistose grits, limestones, slates, phyllites, mica schists, etc., whose age is still argued, though there is some agreement that they may be of Pre-Cambrian date. Their structure is most complicated, with series of recumbent folds, sometimes described (in the areas visited in the tour) as the Iltay (Islay - Loch Tay) Nappe.

The Grampian Mountains were a great centre of ice dispersal during the Glacial Period and boulder clay and other drifts overlie much of the land. These layers of drift are often of greater importance than the solid geology in their effects upon forestry.

Climate

The climate is temperate-maritime. Its variability has long been a byword in daily conversation. It is most markedly maritime on the west side of the country, where the influence of the North Atlantic Drift from the Gulf Stream ameliorates the winter cold. The mean annual temperature varies from about 9.5°C in Argyll to 8.5°C in eastern Perthshire, as recorded at meteorological stations. A fall in temperature of about 1°C per 150 m. increase in altitude may be assumed. In July, the hottest month, mean daily maxima in the west are 17°C and in the east, 19.5°C. In February the mean daily minima vary from 2°C to 0.5°C. Absolute minima (of screen temperature) vary from about -11°C in the west to about -2°C in the east. Winter cold is not, however, usually of importance. Damage is caused in spring either by cold winds which blast the foliage of the trees, or by late spring frosts which often kill the new shoots, especially in "frost-hollows".
The mean annual rainfall varies from about 1800 mm. in the western forests to under 760 mm. in central Perthshire. The rainfall variation follows the physiography very markedly, and reaches 3,000 mm. on some of the mountains that will be seen, but is rather below 1500 mm. along the western seaboard.

Snow rarely lies for many days near the west coast, but may lie for several months on the interior hills, especially in the corries.

The depressions from the Atlantic bring with them many gales, and severe winds are a feature of the climate. Many blown trees or gaps, the result of the unusually serious gale of January, 1953 in the north-east, or other gales in the west, will be seen during the course of the tour.

Units of Measurement

Throughout the tour notes, measurements have been given in metric units. Sample Plot data is all given per hectare. "Top Height" is the mean height of the 100 trees of largest girth per acre. This is equivalent to the mean height of the 250 largest trees per hectare and is always given in metres. Diameter (at 1.3 m.) is always given in centimetres. Basal area is expressed as square metres per hectare. Volumes have been converted from the British measure of quarter girth cubic feet over bark, to true cubic metres per hectare over bark.

DAILY TOUR NOTES

Sunday, 15th July

Maps 1\" Sheet 3
1\" Sheets 56, 64, 57

On leaving Perth the bus crosses the River Tay and in two miles reaches Old Scone. On the left are the woods of Scone Palace and it was here that David Douglas worked as an apprentice gardener about 1815. Between 1825 and 1834 he was an indefatigable plant collector for the Royal Horticultural Society, and to him we owe the introduction of Pseudotsuga taxifolia (= douglasii), of Picea sitchensis, Abies procera, A. grandis, A. amabilis, Pinus ponderosa, P. monticola, P. radiata and P. lambertiana.

Scone is an historic spot, for it was in the Royal Palace here that the famous Stone of Destiny lay. All the early Scottish Princes were crowned seated on this stone, until it was seized by Edward I of England and carried off to Westminster Abbey in 1296, where it has been used at the coronation of every Sovereign since.

Leaving Scone, on the right can be seen Dunsinane Hill, made famous by Shakespeare's "Macbeth".

MEIKLEOUR BEACH HEDGE

This great hedge of Fagus sylvatica, upwards of 30 m. in height and 530 m. long, is believed to have been planted about 1746. It appears to have been regularly trimmed for the first 50 or 100 years; then it grew wild and finally had to be cut back to allow free passage along the road. The trimming of the hedge, which is done every 5 or 6 years, is a considerable operation and nowadays an extending tower-ladder is used.