

near the "Hermitage" at Dunkeld are some very fine Scotch firs and specimens of *Abies mexicana, menziesii*, &c.

Mr. McGregor approves of and carries on the removal of the dead lower branches from the larch, which he finds can best be done in very dry clear weather, whether warm or frosty, as the branches are then brittle. He does not practise this system with the Scotch fir or spruce.

The methods of thinning, cutting (by cross-cut saw), and sales do not differ materially from those in force in Strathspey, and the classes into which the trees are divided, viz., timber, spars, and props, are identical, but Mr. McGregor adds a fourth class of thinnings under 3 inches diameter, for which he finds a sale. He gives the average rates as follows:—

Larch—Timbers, 1s. per cubic foot.

" Spars, 2d. per running foot, measured lineally to 6 inches diameter.

" Props, 4s. 6d. per 100 running feet, measured lineally to 3 inches diameter (or a little over ½ d. per foot).

" 4th class (as above), 2d. to 4d. each, according to situation.

Note.—Larch bark, which is used for dressing sheepskins for satchels, bookbinding, &c., realizes about £3 per ton.

Scotch Fir.—Timbers, 8d. per cubic foot.

" Spars, 1½ d. per lineal foot.

" Props, 2s. 6d. per 100 feet.

Spruce used to realize about the same, but has been reduced to 5d. or 6d. per cubic foot to effect sales.

Oak Woods and Coppice.—There are about 1,200 acres under oak, of which I visited several tracts. The oak coppice is cut periodically at intervals of from twenty to twenty-five years, the standard trees which are not to be felled being previously marked, and those of any size numbered consecutively.

The average price realized for oak coppice does not now exceed £10 or £12 per acre, including, of course, both the timber and bark (the former does not now fetch more than 1s. per cubic foot). Mr. McGregor has known it reach £20, but it was quite an exceptional case. The great fall in price has resulted from other substances being used for tanning, and on account of large importations of foreign bark. The value of the timber has declined, owing to its almost universal supersession by iron for ship-building purposes, for which, in ironclad men-of-war, a teak backing is generally preferred. Oak coppice is thus no longer remunerative, and does not receive so much attention as formerly.

Birch, of which there is a considerable quantity, sells, as already stated, by weight, at 6s. to 10s. per ton.

There is at present little or no supply of other timbers, and the demand for anything except larch, spruce, and Scotch fir, of which any quantity can be sold, is scarce.

Mr. McGregor is surface-draining the marshy places in the same manner as described under "Lord Mansfield's Woods."

Wire Fencing.—All now being put up is of wire, with wooden posts, and differs in no material point from that described as adopted at Strathspey, save that here as a rule the work is executed by the regular establishment, and posts are cut up for the purpose, not purchased, which renders the actual cost per running yard difficult to ascertain exactly.

Saw Mills.—I visited four on the Duke's property, viz., three water power and one steam.

Of the three water-power mills, one (close to Blair) is small, and devoted entirely to working up wood for estate purposes. The other two are very powerful, and leased to wood merchants, the proprietor keeping up the machinery. (For specimen working drawings, see Plates 4 and 5.)

The saw mills were all at work when I was there, and there seems little trouble in their management. They are fitted with long and short benches, and appliances for boring holes and fitting ends for hurdles. That at Inver, which I saw last, and which is the most powerful, has also attached a very simple apparatus for crushing the bark and filling sacks with it, which has hitherto been done by manual labour with the aid of flails.

III.

SCOTCH FIR FORESTS OF LUSS, BEECH FORESTS OF THE DEISTER AND SOLLING, SPRUCE FORESTS OF THE HARZ.

EXTRACTS FROM REPORTS by Mr. GUSTAV MANN, Assistant Conservator of Forests, Bengal.

Cultivation and general management of the "Lüss" Scotch fir forest.

At the Lüss forests, and especially near Niebeck, I received instructions in the very extensive and most successful cultivation of the Scotch fir, as well as in the general management of these forests.

In the plains of North Germany the Scotch fir is the principal forest tree, and better suited for deep, loose, and sandy, than for heavy, loamy soil. It gives a fair amount of timber, and from these forests is chiefly applied for local building and other purposes.

The branches and rootstocks are used either for the burning of charcoal or as firewood.

Situation of the Lüss forests.

The Lüss forests are situated about half way between Hanover and Harburg, and constitute part of the great "Lüneburg Heath."

It is that portion of the province of Hanover in which the forests are most extensive, although, from causes similar to those which tend to destroy some of the Indian forests, viz., the indifference of the inhabitants to the existence of forests (originating in the common belief that they will continue to exist, no matter how recklessly treated), the desire of the villagers to get grazing ground for their cattle by burning the forests, the indiscriminate usage of the wood, and method of felling in vogue, hundreds of miles of forest have been destroyed in former time, and have left the greater part of the "Lüneburg Heath" barren, covered almost exclusively with heather, and of little use to any one.