

growth of the beech and oak is truly magnificent, tracts consisting of 120 to 140 years old beech, mixed with 300 or 400 years old oaks, being not uncommon, the latter with clean trunks running up to 100 feet in height. When we compare these with other portions where the crippled and stunted appearance of the trees shows the effects of unregulated grazing and removal of the grass, burning of the decayed wood and ashes, and forest theft and mischief on the soil and vegetation, the result of mismanagement or even want of care and knowledge is most marked. The circumstances are in many respects analogous with what has gone on in India for centuries, and is still more or less permitted. The vast extent of forests, which once clothed the hill sides and extended far into the plains, and the more luxuriant growth of the tropics, have hitherto, or until within the last two years, prevented the gradual deterioration of our forests being marked or felt, but the subject has now luckily attracted attention, and none too soon. If any have doubts in the matter, let them visit the Spessart, study the history of its forests, and judge for themselves.

The "*Schläge*" or clearings in the Rothenbuch revier appeared to me somewhat too large and clean, causing a want of shade for the young crop, which was also in some cases much exposed to the wind.

From these causes, and doubtless also the impoverished state of the soil (which has rendered it imperative in some cases to replant entirely with coniferæ), the growth of the young crop, whether naturally reproduced or planted, is sometimes very slow. In one large tract, stated to have been naturally renewed 20 years ago, the young trees are certainly not more than 6 feet high on an average, and in another, replanted 12 years ago, it does not exceed 3 feet. This is, however, quite exceptional.

Forest laws.

With regard to forest law, Bavaria is divided into two portions, that on the left bank of the Rhine commonly called the Pfalz, and that on the right bank. Up to the year 1846 the forests of the former were managed under the authority of regulations of 1814, and a Forest Act of 1831, which in that year (1846) were revised and embodied in an Act, under the provisions of which the forests have since been administered. Up to the year 1852, there was no general forest law for the provinces on the right bank of the Rhine; numerous regulations and mandates, some of which dated so far back as the seventeenth century, were the only guide.

The Act of 1852 is very comprehensive, and provides for the treatment of all descriptions of forest, state, communal, ecclesiastical, and even private, in cases where the management of the latter has any bearing on the general welfare of the people or interests of the State; in fact the extent to which purely private forests are under Government control in Bavaria, where they constitute nearly half of the total area under wood, is very marked. A study of this Act (*Das Forstgesetz Baiern*) is particularly recommended by Dr. Brandis in his memorandum; and I can well imagine, from what I have read of it, that it might serve as a model for guidance in any future legislation on the subject in India; but I have not had time to study it sufficiently to give even an epitome of it here. The salient points, and those in which it differs from the law in force in the Pfalz, are very clearly stated in "*Die Forst Verwaltung Baierns*," section 38, pp. 112-141, where the reasons for the continuance of two separate laws in the same kingdom are also stated, and the results of the Acts since they have been in force are shown in tabular statements. (See also an appendix to "*Die Forst Verwaltung*," known as "*Forst-statistische Mittheilungen aus Bayern*," published in Munich in 1869.)

Breaches of forest laws seem most common in the Pfalz, where the average number in State forests alone is 116 cases yearly per 1,000 tagwerk, whilst in Oberbayern the average on the same extent is only 9! and throughout the whole kingdom 37. Regarded with reference to population, we find the Pfalz again heading the list, one person out of every seven having apparently been guilty of a breach of forest law, whilst in the Province of Nieder Bayern the average is only one in every 279. The same percentage holds good with regard to the communal and other forests. There is a marked falling off in the number of cases for the period from 1861 to 1867, as compared with the former period of seven years; but it is remarkable that the several Provinces retain their relative positions in both.

We must conclude from the above that the law is more stringent and more strictly administered in the Pfalz, where there are also probably greater temptations to break it in the shape of high prices, a convenient market, or great want of grazing ground; for the cases are classed as mischief to, *a*, wood; *b*, pasture; *c*, grass; *d*, straw; *e*, miscellaneous; besides theft of wood and trespass; and the local circumstances of the other Provinces must evidently conduce to the frequency of breaches of the law or the reverse.

The average number of cases yearly during the period from 1861-1867 seems very large, amounting to 103,810 for the purely Government forests, and 99,289 in other forests, making a yearly total of 202,599 cases, a decrease, however, of upwards of 50,000 compared with the annual average of the seven years immediately preceding, and of 80,000 compared with that from 1849 to 1853. The usual punishment would appear to be fine, with imprisonment in default.

I must now close this very imperfect report of what I saw and learned in Bavaria, and indorse Dr. Brandis' recommendation of a study of "*Die Forst Verwaltung Bayerns*" to all who are anxious to make themselves thoroughly acquainted with an excellent and comprehensive system of forest management.

AUSTRIA.

Not the least interesting or instructive part of my tour was the time spent in Austria, which was, strictly speaking, beyond the scope of my official tour, but where I received every attention, information, and assistance from the Baron Clumnecky, chief of the Ministry of Agriculture, to whom I was introduced by our Ambassador at Vienna, and Ober-forstmeister Tchuppitch, the head of the forest branch of the Agricultural Department.

Scientific forestry is not so far advanced in Austria as in Germany. The department has recently been transferred from the Ministry of Finance to that of Agriculture; and Herr Tchuppitch was