

FORESTRY IN GERMANY.

A writer in an English paper treats this subject as follows:—"Forests in Germany were originally common property, ownership of forests being unknown. Of the lands suitable for agricultural purposes each one took possession yearly of a fixed portion for cultivation. From the forests, however, each one took as much as he desired, and from wherever he pleased, excepting those groves which were set apart for religious purposes. Traces of the ownership of forests by private persons are found in the sixth century. At this stage of proprietorship, one could only claim particular woods, and prohibit the use of the same by others, unless the felling and using of the timber had actually commenced. Mr. Zimmerman, the United States Consular Agent in Berlin, states that the earliest forest properties were so-called privileged forests. By privileged forests are meant such as were the property of emperors, kings, princes, and other rulers and nobility. The privileges at first extended only to the exclusive right of hunting, fishing, etc., in the forests; but later complete control of them was claimed, and they were appropriated by the nobility, and held as property belonging solely and entirely to themselves. In the earliest times traces of forest protection and preservation are to be found. In the middle of the thirteenth century a penalty of three 'schillings' was attached by law to the cutting of wood in a forest without permission. After the privileged forests came the private proprietorship of forests, then the county forests, and lastly the state forests of to-day. The laws and regulations under which the utilization of forests was most justly and equitably permitted, occur between the years 1500 and 1800. Proper management of forests and discretion in felling the trees first began to be practised in the mining districts. Then it was necessary to have at hand the wood absolutely required there in connection with the working of the mines, and the mine owners were compelled to preserve the existing forests. After the mining districts the forests in the neighborhood of cities and towns began to be cared for. The 'Erfurt' forest economy dates back as far as 1359. In the Nuremberg district in 1368, and in the Frankfurt-on-the-Main district in 1423, the planting of the pine tree was introduced.

"The first forest schools were established in Germany about the year 1717. They were so-called high schools, in which certain district officials (Reviervorwarter) were the teachers. These schools were at first self-supporting; later, they received assistance from the state, or were made state forest schools or academies. Thus, forest academies were established at Dreissigacker in 1801; Tharandt in 1816; Nelsungen in 1816; Aschaffenburg in 1820; Hohenheim in 1820, and at Eisenach in 1830. To each of these academies three professors were detailed for duty, one to instruct in forest economy, one in natural history and science, and one in mathematics. In Baden, forest culture was added to the list of subjects studied at the Polytechnic Institute at Karlsruhe in 1832, and in 1833 the same was done at Brunswick. A chair of forestry was established at Giessen in 1825, and later also at Heidelberg, Munich, Tubingen and Leipzig. At the last three, however, because of the forests being too remote for the practical instruction necessary for a student of forest culture to have, and for other reasons, the subject was dropped. In Prussia, the incitement to the study of forestry came from the state. From 1770, on the proposition of Minister Van Hagen, lectures on forest botany were delivered at Berlin, and excursions into the forests were made for the purpose of examining on the spot the subjects treated in the lectures. In 1821 a forest academy was established at Berlin in connection with the university there. This academy was, in 1830, removed to Eberswalde, where it now is. The instructors at this academy consist of the director, three master foresters and five professors, and the subjects taught are as follows: Forest culture in general, method of forest appraisement, the manner of keeping and rendering accounts of incomes received and expenditures made on account of forests, the protection of forests, utilization of the same, and huntsmanship, history of forest culture and statistics relating to same, geodesy

and draughting, mathematics, physics, and mechanics, botany, zoology and entomology, mineralogy, geology and chemistry, and Prussian civil and criminal law. Excursions are made into the forests three times weekly, and lectures and practical demonstrations are then given. In 1868 a second Prussian forest academy was established at Minden on the same principle and with nearly, if not quite, the same course of instruction. In the opinion of Professor Daukelmann, of the forest academy of Eberswalde, a re-organization of this course of study will take place within the next ten years, so that forestry subjects alone, such as preservation and cultivation of forests, botany, zoology, etc., will be taught at the forest academies, and general or relative subjects, such as geodesy, draughting, mathematics and law will be made a separate course for the forestry student at a university. Before admittance to the forest academy can be obtained the applicant must be over twenty years of age. He must also have certificates to the effect that he has passed the requisite final examinations at a Prussian gymnasium or 'realschule' of the highest grade, that he has passed examinations as clerk forester, and that he has a good character, and also the means necessary for his subsistence while studying at the academy. A thorough forester, in Prussia, is an adept in natural history relative to forests and their inhabitants, at the same time a geologist, botanist and chemist, and the possessor of a good general knowledge of the laws of his country. He knows every foot of land in his district, at the various stations he notes the rainfall, the force and direction of the prevailing winds, their humidity and dryness, the temperature, etc. For the encouragement and assistance given to these men by the state, the return made by them in the management of its forests interests is of the greatest value. The Prussian forestry corps at present consists of 1 chief general master forester, 3 general master foresters, 30 chief master foresters, 1 forest director in Hanover, 93 master foresters, 685 chief foresters, 3,351 district foresters, 356 forest keepers, and 70 minor officials."

THE U. S. LUMBER TRADE.

Bradstreet in a recent issue discourses thus on the lumber trade. The lumber interest of the country, second only, it says, in importance to that of iron, represents an annual output exceeding eight billion feet, of which amount Chicago, the leading market for the vast pineries that crowd the northern slopes of Michigan and Wisconsin, distributes one-fourth. The consumption of lumber tends to increase in the eastern, middle, western and southwestern states, and following on this progressive demand and augmenting cost of securing supplies is a general advance in price. The Chicago dealers testified before the Tariff Commission that the average has risen from \$9.63 per thousand feet for the three years 1877, 1878 and 1879 to \$11.63 in 1880, \$13.92 in 1881, and over \$14 in 1882. It is difficult to imagine a great industry like that of lumber suddenly arrested for want of supplies, but the most reliable authorities place the period of comparative exhaustion at fifteen years. The estimate of ten years formerly entertained was based on the amount of timber which would yield not less than 20 per cent in grades common to fine, when government selections were neglected even at prices of \$1.25 to \$2.50 per acre; and no pine timber was considered worth cutting which measured less than sixteen to eighteen inches diameter at the butt; when the logging district of Michigan and northern Wisconsin was almost unknown, and the merchantable timber of the south, now extensively made available by railway connection, was underrated. The encroachments, however, on the pineries of the west and south-west, cannot be made good, the land being too serviceable for agriculture, while in the south crops of cotton, sugar, tobacco, corn and oats prove far more profitable than timber growing. Each year timber has to be sought further back. After damming up every available creek by which the logs could reach the rivers, logging railroads have been constructed to the water. The process of denuding lumber lands is hastened by the "butchering" going on to supply the quantity demanded by the voracious

mills. Did lumber command a far higher price much of the timber brought to market would be reserved for further growth. It is a common saying that not one tree in four, owing to inherent defects, is suitable for logs. Anticipatory of future requirements, and with the prospect of heavy advances in price, large sections of land containing choicer descriptions of white and yellow pine are, with a limited extent of hardwoods, being bought up to hold by eastern and New York capitalists. Of the profitability of such investments there can, of course, be no question. The forthcoming failure of supplies exercises no immediate effect on the market; the probable and actual supply of each successive lumber season is the main concern of the trade, the future being left to take care of itself. The general policy of the lumber trade is to buy for the present demand, based on a large supply and in this it is pursuing the same course as last year. As to outside resources, Canada offers immense supplies. Nova Scotia and New Brunswick will long continue their exports of spruce; Mexico, with her rich timber lands of qualities of wood suited to this market, including walnut, ebony, mahogany, oak, hard cedar, hickory and sycamore, promises in no long time to be an important source of supply, as railroads, cutting through her forest reserves, are now being rapidly built under the influence of state and government concessions.

Among the influences operating on the course of trade, and slightly affecting prices, are the rates of freight between competitive points. The opening of navigation on the lakes is always the signal for material reduction by the trunk lines between the west and east. Freight on the lakes this season are somewhat lower, while canal transportation has risen, owing to the successful demands of the boatmen for higher wages. Railroads are getting more into the lumber trade than formerly through trunk lines reaching wooded belts previously untouched, the building of new lines depending as a source of revenue on lumber traffic both for neighboring consumption and distant shipment, and the extension of tributary lines to the ever-receding sources of supply.

PRODIGIOUS PINE TRANSACTION.

In this country we are becoming familiar with immense pine land transactions, and sales involving hundreds of thousands of dollars have become common occurrences. A recent sale of pine lands, however, by the Mobile and Ohio railroad is so enormous, involving three quarters of a million acres, that we give a full description of it, with the aim and purposes of the purchasers, as furnished by the *Mobile Register*, whose reporter interviewed Mr. Danner, one of the contracting parties:

"A. C. Danner & Co., have purchased," said Mr. Danner, "all the pine lands of the Mobile and Ohio road. These lands lie in the counties of Washington, Mobile, Choctaw, Clarke and Baldwin, in the state of Alabama, and in the counties of Wayne, Greene and Jackson, in the State of Mississippi. These lands comprise about 750,000 acres, extending about 15 miles on either side of the Mobile and Ohio road. Some of the land is tributary to the Pascagoula mills, and some to the Bigbee river. It is all tributary to the road which runs through them."

"What sort of lands are they?"

"Mostly good timbered land. Along the road a good deal has been boxed for turpentine, and a small portion of the land has been cut over. The depredations have been considerable, but lying back from the road is a quantity of the finest timber in the country. All the land is rated above one dollar and a quarter an acre, and some of it is a good farming land which has been held by the road at five dollars an acre."

"What is the object in buying this vast quantity of land?"

"My main object was to secure plenty of timber for mills. People are around picking up lands here and there, and there was danger that some day I might find myself like the negro with the pocket book with no money to put in it. I wanted enough timber to last me my lifetime, and now I have got it."

"What was the railroad's object?"

"The railroad wanted to get rid of the land and the depredators at the one time, and it sold to my firm. We think we can stop the depredations and make those who have depredated pay for what they have taken. If we can't get the money, we can bring a criminal suit against them and against those who have received the stolen property."

"And how do you propose to utilize this vast territory?"

"We expect to form a land and lumber company to be known as the Danner Land and Lumber Company, and will use up as much of the lumber as we can. We will build several mills along the line of the railroad, with tramways running into the heart of the best timber country. We think we can utilize a great deal of this territory." Here Mr. Danner unrolled a map showing the land divided off into sections and colored to show to what extent the purchase has been encroached upon. This map shows that about one-half of the 750,000 acres is virgin forest. A quarter has been more or less turpented and another quarter has been more or less cut. "This is a pretty big enterprise," suggested the reporter.

"I believe," answered Mr. Danner, "that it is the largest sale of pine lands ever made to one firm. You have perhaps, an idea of the size of 750,000 acres. Well, it is a trifle less than the area of the State of Delaware and something more than the area of Rhode Island. The lumber business is becoming better systemized and the time is passing when a man with a thousand dollars and any sort of a saw mill can succeed. The mill men will have to own the timber and we are but taking a step now which in a few years will become a necessity. We shall, of course, put our other land into the company, and may consider ourselves amply provided with material."

"How much land will the company own?"

"About eight hundred thousand acres."

THE WASTE WOOD IN SAW MILLS.

The following letter appears in the *London Timber Trades Journal* and may suggest ideas to our own saw mill owners:—

SIR,—I have machinery fitted up for the chair trade, but have not sufficient work to keep it going. It consists of a portable rack saw bench, a plain circular saw bench, 42 in. band saw machine, and lathe, all driven by steam. This is a beech wood country, but it is dear. We are fairly supplied with ash and oak of good quality, also fir. Elm is rather scarce, but it can be got at. Can you indicate to me any way by which I can manage to work full time by the manufacture of small work to use up the waste wood from the chair works? Such things as spools and reels for cotton have occurred to me. What prospect do you think there is for oak spokes, ash handles, packing cases, or toys? In a country place like this we are not able to find out what uses and purposes wood can be applied to.—Yours, &c., H. T.

[There are no doubt some of our readers who can assist "H. T." and we shall be glad to forward any letters to him that may come to hand. This question of the utilization of the waste wood is one of great importance to proprietors of saw-mill and other wood-working establishments, and we invite correspondence on the subject.—Ed. T. T. J.]

A WOODEN COSTUME AT A CARNIVAL.

A very unique costume was made for the use of Mr. Charles H. Reed at the Olympian Club carnival, says the *Boston Globe*, the entire outfit of dress, boots, mask, wig and parasol being of wood. Mr. Reed wore a costume representing half man and half woman at the last carnival, but at this one will appear in full lady's attire. The chief garment is a princess dress made of various kinds of Spurr's papered veneers. It has a brocaded front and basque and trimmings of knife-plaiting, ficus and loops of wood ribbon, and it is ornamented with rosettes and leaves in wood of various shades in their natural colors. At the sides there is a substitute for embroidery in inlaid work of fancy designs. The sleeves are of cork paper, trimmed to imitate puffing, and at the bottom is a deep border of black walnut knife-plaiting. The boots and gloves are of birch bark, and the mask of matched woods with a fringe of plaiting. The wig is