

THE FOREST AND THEIR MANAGEMENT.

We take the following from Mr. R. W. Phipps' report to the Ontario Government:

FRANCE.

The administration of forests in France is entrusted to the Ministry of Finance, and the head of the Department is the Director-General, assisted by two administrators, one charged with the management of the forests and the sale of the products, the other with the police of the forests and the forest laws. In the Departments there are thirty-two conservators, each in charge of one or more departments, according to the extent of the forests in each. The immediate supervision is entrusted to inspectors, who are assisted by sub-inspectors and *gardes-général*, who live near, and personally superintend all operations and work of the forest guards. The brigadiers and forest guards live in houses in the forest and serve as a police over a certain range. They are required to be present at all operations, and to go round their ranges at least once a day to report any violation of forest law that may take place.

The saw-mills in the forests are usually owned by the Government and hired at a certain rate to the wood merchants, who buy the cuttings. The timber is allowed to be sawn up before it is inspected and marked by the forest guard under the superintendence of an inspector.

The forests under the management of the bureau are (State and Commune) about 7,500,000 acres. There were nearly a million more, which went with Alsace and Lorraine to Germany. Also, there are in France 15,000,000 acres of private forests.

Of schools of forestry, the French have, at Nancy, one of the best in the world, where pupils are instructed both experimentally and theoretically in all forest learning, the collegiate home studies being constantly varied by excursions of pupils, under charge of professors, to those forests where, at the time, most can be learned. Proficiency in these schools forms, of course, a strong recommendation to future advancement in the Government or private forest service. For admission to the school candidates must bring a letter of authorization from the Director-General of Forests, which can only be obtained by those from nineteen to twenty-two, without infirmities, and having a diploma of Bachelor of Letters, or attainments in classical studies to warrant such diploma. They must also have an income of \$300 per annum, or a pledge from friends to provide it, and \$120 afterwards till employed as *garde-général* on active duty.

In the difficulties which have hindered the efforts being made, especially in America, to preserve a due amount of forest, one of the most formidable has been the disinclination to interfere with private rights. It will be of service in Canada in this matter to notice how summarily, in France, this matter has been managed. I will therefore quote the principles of law upon which the forest code of France is founded, as stated with great precision by Professor Macarel (a writer deservedly of the highest estimation) in his "*Cours de Droit Administratif*." As they embrace views applicable to other countries under like necessities—being in fact an extension of the right of eminent domain, or that maxim of Roman law, *salus populi suprema lex*—they will be especially germane to our purpose. He says:—

"Restrictions Implied in the Free Enjoyment of the Soil."

"As to the woods and forests:

"The preservation of forests is one of the first interests of society, and consequently one of the first duties of Government. It is not alone from the wealth which they offer that we may judge. Their existence is of itself of incalculable benefit, as well in the protection and feeding of the springs and rivers as in their prevention of the washing away of the soil from mountains, and in the beneficial influence which they exert upon the atmosphere.

"Large forests deaden and break the force of heavy winds that beat out the seeds and injure the growth of plants; they form reservoirs of moisture; they shelter the growth of the fields; and upon hillsides, where the rainwaters, checked in their descent by the thousand obstacles they present by their roots and by the trunks of trees, have time to filter into the soil

and only find their way by slow degrees to the rivers. They regulate, in a certain degree, the flow of the waters and the hygrometrical condition of the atmosphere, and their destruction accordingly increases the duration of droughts and give rise to the injuries of inundations, which denude the face of the mountains.

"Penetrated with these truths, legislators have in all ages made the preservation of forests an object of special solicitude.

"Unfortunately, private interests—that is to say, the action of those who do not directly feel the power of the Government—are often opposed to this great national interest, and the laws framed for protection are often powerless.

"In France, the ordinances prior to the revolution carried too far the restrictions imposed on private owners. The new regulations fell into the opposite extreme, and allowed the proprietors free and absolute liberty to dispose of their woods.

"A large destruction followed this imprudent transition from excess of restraint to excess of liberty. The proprietors abused this unwonted freedom, and clearings multiplied indefinitely, without distinction as to the places where they were made, so that in many localities the rushing down of the denuded soil and the deforesting of mountains caused the soil needed for vegetation to disappear and left the rocks naked. The rise in the price of wood and the easy and certain resources offered to proprietors in the clearing of a planted tract, when compared with the remote and eventual advantages offered in their preservation; the hope of compensation; and, beyond this, the advantages, in one way and another, of cultivation, may be recognized as among the causes which sufficiently explain the inducements offered to many of these proprietors, which led them to undertake these clearings."

I would here notice that this is precisely what we have been doing Canada, and that the ill effects which followed in France will surely in no long time be felt in Ontario. They are already felt; we have not the climate we had, nor the favouring moisture when most needed. Yet we could get along as we are. But that is just what is impossible. We must, while there is time, use some means of averting the evil, or we shall certainly become much worse off than we are. M. Macarel goes on:—

"At length, this progressive deforesting of the soil of France, joined with the incessant need of firewood, and the demand for wood by manufactures and ships, have, during forty years, made sad havoc with our forest wealth.

"A renewal of the ancient prohibitions by the law of 9 Floreal, year XI, was deemed necessary to oppose this excessive clearing of woods by private owners. It was accordingly decreed that, during the twenty-five years dating from the date of the promulgation, no wood should be cut or carried off unless six months' notice had been given by the proprietor to the forest conservator of the *arrondissement* of the district in which the wood was located. Within this time the forest administration might object to the clearing of the wood, and was charged to refer the question before the end of this time to the Minister of Finance, upon whose report the Government might definitely decide within the same time. It therefore resulted in this, that to make a clearing an authorization precedent by the administration was necessary, and that if the administration thought proper not to grant this, the proprietor was restrained against cutting.

"Thus, according to this branch of agricultural industry, the general law of France is, that owners are free to vary, within certain limits, the cultivation and working of their lands; but, as to woods and forests, the public interests demand that individuals shall not be free to clear them from the soil whenever they please. From hence it follows, that the administration has a right to pronounce its prohibition against clearing whenever it is deemed that the public interests require that this be done."

The penalties for clearing when forbidden are, I may state, a fine of about \$200 per acre, and compulsory replanting within three years. This law was, I conceive, in full force in 1874, as this quotation forms a part of a report to the U. S. Congress of that year. It probably is in force

still, and justly so. The voice of the people, not of solitary citizens, should decide in so important a matter as deforestation a country.

The French Government have, at great expense, replanted vast and almost barren districts; they have also established great forests along the sea shore where formerly the sand threatened to destroy whole departments, and have averted the evil. But the chief means is the prohibition of clearing; for it is the interest of an owner who does not clear to plant and improve his forest, so as to receive an increased income from the trees arriving at maturity in increased numbers yearly.

SWITZERLAND.

In no country in Europe has the waste of forests been more rapid or destructive than in Switzerland, and in none, perhaps, has this providence been followed by more disastrous results. The woods, being considered common property, were uprooted and the soil on the mountains being exposed to the wash of the rains, was rapidly carried away, leaving broad areas of naked rock, from which the water would at once sweep down the valleys in sudden and destructive inundations. The autumn of 1868 is memorable on account of these floods.

Public attention has, however, been thoroughly awakened, and active measures are in progress to remedy, as far as may be, these evils. The cantons which have charge of these operations have for some time, at great expense, been constructing works to control the streams, and planting trees wherever practicable.

I would here remark that this is a very difficult matter compared with what it might have been. It is easy to preserve a forest on a hillside, but the soil once washed to the rock, it is another matter. I could point out places in Ontario where splendid forests stood, and yet might have stood, now for many miles.

"White rock and gray rock,
Barren and bare."

The matter is now in Switzerland taken into the hands of the national Government, and the following article gives the idea:—

"Art. XXII.—The Federal Union of Switzerland has the right of supervising structures for the protection of water courses, and of the forest police in mountain regions. It will assist in protective structures for water courses, and in the planting of forests at their sources. It will enact the requisite regulations for maintaining these works and the forests now existing."

RUSSIA.

In this vast empire, where, as in the United States, we have been accustomed to believe the forest is interminable, and where, in fact, the amount of woodland in the northern two-thirds is more than twice as great in proportion to its area as in the United States, the Government has turned its attention energetically to the subject of forestry, and has undertaken to establish by regulation conservative measures. As yet, private persons and establishments owning forests enjoy the absolute right to cut and clear as will. But these do not own nearly so much as the Government, which has about three hundred and thirty million acres of wood; the others holding about one hundred and fifty. About forty per cent. of the country (Russia in Europe) is timbered. I must remark that this amount, after so long an occupation, shows that the timber has been taken some care of already. For the immense Government woods, they have been placed under the care of the Minister of Public Domains, who has a director of the Forest Department, and the organization of the service is very complete. For the purpose of fitting young men for the duties of forest agents and agriculturists, either for the Government service or upon private estates, two special schools of agriculture and forestry have been established—once at St. Petersburg, and one near Moscow. The course of instruction extends through three or four years, and the schools are placed near forests, where every detail is illustrated. There is also another forest school at Liassino, of the second grade, where the course is very practical.

SWEDEN.

In 1859 a bureau of Forest Administration was created. Forest regulations, however, extend back to 1647, and even before that, private owners were required to plant and protect from cattle two trees for each one cut.

In 1868 a commission was appointed, under

the direction of Mr. E. V. Alinquist, to enquire into the need of further legislation, and in December, 1870, he submitted a report with a bill, making 392 pages, besides numerous tables.

One clause in the reported bill is a compulsory feature, which, though less stringent, is in the spirit of the enactments now in force in most of the countries of continental Europe, namely, forbidding trees to be cut for sale smaller than eleven inches at the butt, or eight inches at seven Swedish feet therefrom.

(To be continued.)

PREPARING LUMBER FOR MARKET.

A correspondent of the *Southern Lumberman*, who evidently understands his business, has the following to say to saw mill men who cut lumber for the eastern market:

We know that trade is dull. We are told of it often enough, goodness knows; but for all that, even if the market is dull, good stock, properly prepared, will always bring a good price. Our saw mill men, and dealers, too, are too much in the habit of shipping poor stock to the eastern market, and, if they have nearly a car-load of passably fair lumber, they will fill up by putting in a few hundred feet of stuff containing loose knots, or heart on one side and various other defects, thinking that, as the greater part of the car is good, that the poor will be accepted. Mistaken idea; it will be thrown out, and if they receive any pay for it at all, the amount will be less than the cost of transportation, and thus they lessen the profits on their really fair lumber.

There is no use talking; this matter of properly preparing lumber for the market is an all-important one, and there should be a thorough canvas of the matter between the mill men and the manufacturers. It will result in much good to both.

Let me again say to the mill men: If you expect to realize a good price for your ash and walnut lumber, do not fail to see that it is properly manufactured before it leaves the mill. It must have square edges; sap taken off; leave no boards with hearts in them; trim the ends off square, and to even lengths, and see that it is not split by careless handling; and bear in mind also that thick lumber, one and a half inches and over, must be more nearly clear than thinner boards, if they pass into the grades of firsts and seconds. If you are cutting ash—4 inches thick—do not imagine for a moment that a board with heart showing on one side will pass as merchantable lumber. It will not. Put such boards back on your head-blocks and saw them into thinner ones. The writer of this, who handles perhaps as much or more than any other dealer in the country, would gladly be willing to pay a better price, if lumber was brought to him in proper shape.

GAS FROM SAWDUST.

The *London Timber Trades Journal* says:—So far as we are aware, the making of illuminating gas from sawdust is a new branch of trade; certainly it is one of considerable importance from the fact that it deals with what, in the majority of cases, is a waste product. We are advised that Mr. R. Tomlinson, late manager of the Cottingham Gas Works, near Hull, has just completed the erection of the gasworks and lighting the town of Deseronto, Ontario, Canada, the works being erected for the purpose of making gas from fine sawdust. The gas produced is said to be far superior to that made from the best Silkatone coal, and to be equal to that made from the best cannel coal. It would appear that Mr. Tomlinson is specially commissioned in the above matter, for we learn that upon completion of some water mains, which he has also in hand, he intends returning to England.

As a basis for the manufacture of illuminating gas, sawdust lays claim to many specialties, more so in the wood-producing countries of Northern Europe and America, where coal has to be obtained at great cost, and where sawdust is a greater drug and a nuisance, than in our own country. Side by side with coal, they have a raw material ready to their hands, one which in many cases they would cast in the rivers, but are prohibited from so doing on the ground that it sinks to the bottom upon saturation, and, like the bark of trees, becomes injurious to