SAW MILL BOILERS.

I HAVE been interested in the various articles on boiler explosions that have appeared in your columns from time to time, and especially in those on saw mill boilers, and would like to state a few facts that have come under my observation, which I think will help to solve the problem of saw mill boiler explosions. It is my belief that, whenever there is a leak in a boiler, or the fire box of a boiler, the alkali formed thereon and about the leak, by the combination of the wood ashes from the fire and water, eats the iron very rapidly. I was running an engine and boiler in a basket factory where a good deal of the refuse wood was used as fuel. There were three leaks in the fire box, two at the end of the tubes, and one on the side, about two or three inches above the level of the fire, the other two being a foot above the fire, or about fifteen inches from grates.

Every morning and night I noticed that the tube ends, or, in other words, ends of the flue sheet, were covered with a coating of wood ashes, for a distance of about fourteen inches from the leak. This coating averaged about a quarter of an inch thick. Every time I blew out, which was once a month only, I wiped these ashes off, and found that whenever the ashes had adhered to the iron, it was pitted and grooved. I knew it could not have been the water, as it was "pure pond," and the barrel of the boiler was in good condition inside. I wiped the ashes off the side, and found the iron, for a distance of about eight or ten inches from the leak, the same in appearance as the flue sheet, but in worse condition, the pits and grooves being much larger and deeper, and from all appearances pretty nearly through the iron, which is ⅜-inch or 7-16 inch in thickness. I immediately notified my employers of the matter, who said: "Those leaks have been there for a long time now, and have never done any damage, and I guess they will last for a while longer, anyway." I had just previously heard, through one of the oldest employes of the firm, that the smoke box, through which the exhaust was carried, had been replaced only twice in three years, as it had been "rotted out," as they termed it, and it was almost ready to be replaced again.

Failing to get necessary repairs done, I looked elsewhere for a job.

This experience did not satisfy me, however, so I began to investigate matters a little. I went to several saw mills and wood-working shops and found that five out of six had leaky boilers—some to a dangerous extent—and no engineers. These boilers were in the same condition and using different water; nearly all used wood and shavings exclusively for fuel. One was a horizontal tubular boiler which had a leak just in front of the bridge wall and about half way up the side from the centre. I went there Sunday, when all was cold, and wiped off the ashes which were on and around the hole for a distance of eight or ten inches. The iron was pitted and had a crumbly appearance; that is, it looked as though the iron had been pounded and had jarred the small particles out.

The ashes on this boiler were only one-eighth or three-sixteenths-inch thick. I examined five or six others and found that when the leaks were anywhere in range of the fire they were invariably covered with ashes and fine dust.

It can be safely said that two-thirds of the saw mills in this state at least, have their safety valves overloaded to a very dangerous extent, or no valves at all, and as the men in charge are thoroughly incompetent to run a steam boiler, and are required to run some other machine in connection with their engine and boiler, the steam is allowed to run up to a dangerous pressure, and of course these parts that have been weakened by this process I have just mentioned give out under the strain.

Owners of saw mills, that is the majority of them, do not do a very rushing business, and consequently do not feel like sending forty or fifty miles for a boiler maker to put on a patch, as long as their feed pump is in good condition, so the boilers are allowed to run just as long as they will hold together. Sometimes not quite so long, as we often see.

I can cite instances where mills were running with engineers, and a farmer boy came along and offered to do the work for them 25 to 50 cents less a day, and the engineer had to make room for him. The great evil wit saw mills is cheap labor for skilled work.—*H. H. K., Willoughby, Ohio, in American Machinist.*

THE REPORTER COULD NOT DRAW HIM OUT.

The Ottawa *Evening Journal* says:—Mr. Mercier stayed at the Russell and warded off interviewing reporters with great skill. He was polite and nice and all that kind of thing, but he would not talk. He looked like a man who felt decidedly at home as he sauntered up and down the rotunda of the Russell, but when a newspaper man drew near he relapsed into stonewall taciturnity.

The leader of the national party in the Province of Quebec is rather above medium height, big made and brawny with a good crop of black hair a bright dark eye and hawk nose. He has a square chin and a twinkle in his eyes, that a Yankee would call cute. He is affable and polite and has a way of shrugging his shoulders when debating within himself, that has a charm of novelty about it.

"Would you care to speak about that burning question to lumbermen, the price of ground rents" asked a *journal* reporter after he had shaken the hand of the Premier who showed every symptom of a fraternal feeling.

"I do not care to talk. I will speak in Hull and then you can print what I say, but I don't care for talking now."

"Will the ground rents go up from $2 to $5 a square mile?" went on the scribe.

"I cannot say. I have such a sore throat."

"Some of the lumbermen think that it is not only a rise in the ground rents that will take place, but the other fees will also take a jump."

"My throat is very sore," said the Premier, and he backed away enveloped in the folds of a large sized you-don't-catch-me-talking smile, "very sore indeed. Bonjour."

AMONG THE PINES OF GEORGIA.

By Edward Jack.

To us Canadians who find our forests so difficult to travel among in summer time, owing to the quantity of brush wood one encounters almost everywhere, as well as to the obstructions offered to ready progress by tracts of burned or broken lands, the forests of the interior of Georgia offer a pleasing change, especially during the mild and agreeable southern winter. Here are to be found no cradle knolls, no broken ground, no no burned land, no underbrush—for miles and miles, nothing but lofty pines standing so far apart that I have driven for hours among them, seated ina buggy drawn by a pair of horses, making only an occasionaldetour to avoid a few square rods of scrub oak or some blown down tree. One of the latter, which I had the curiosity to measure, was 108 feet long, while the first limb was 71 feet from the root. There were many trees at this time aroundme, which certainly attained a height of not less than 120 feet.

THE SURFACE OF THE COUNTRY

where I travelled for 60 miles was as smooth as the streets of any city. It was not level but gently rolling. The streams by which it was intersected often had banks from fifty to sixty feet in height. These were not abrupt but with a steep slope. Sometimes there were flats along other shores on which magnolias, oaks, bays and other evergreens grew in the greatest abundance. In the early spring these shores are fragrant with the perfume of the Yellow Jassamin which grows abundantly all over this country, while here and there about the small round ponds scattered through these forests the lilac flowers of the Redbud mingle their blossoms with the white bloom of the May-haw, and here may be seen our robins as well as the turtle dove which abounds in these woods, as does the southern partridge or quail. The brilliant cardinal bird and the gay blue bird with robe of deepest cobalt may be seen also flitting from bough to bough.

One may judge of the genial character of this climate from the fact that near Flint river I saw peach trees in blossom on the 4th of February, while in a small garden which I passed on the 5th of that month, peas were already above ground. On the 7th Ionquilles were in full flower and strawberries were in blossom. What added much to the pleasure of travelling among the pines of the part of Georgia which I was visiting was the absence of mosquitoes and black flies.

THE GEORGIAN PINE

is in general much larger and of better quality than that of Florida. On the Flint river the soil is very different from the white sands of Florida, into which the wheels of one's carriage sink deeply, forbidding rapid rate of progress. In the locality where I was travelling through the pine woods, the dark gray sandy soil was firm anywhere; the only benefit of the highway was that it led to bridges by which streams could be crossed, and avoided the occasional fallen trees which the traveller now and then encountered. A good road could be found anywhere among the pines.

The southern pine does not grow so thickly on the same extent of territory as does the white pine of the West, where it is no very uncommon thing to find a 40 acre lot yielding a million feet (board measure) of this lumber. In the West one tract may be very thickly timbered with white pine, while there may be next to none on the adjoining lot. The southern pine, on the contrary, although not found growing thickly in any one place, is yet far more generally distributed over an equal area of ground than its western relative.

Southern pine lands also possess a very great advantage over many others in this, that fires will not destroy them, even when the wire grass, which grows beneath the trees, is burned every spring, so that the tender growth may afford better nourishment to the sheep and cattle that wander through the forests. Besides this, when the pines have been cut down, especially on the Lime Sink region of Georgia, the land which is free from stone can, with the aid of fertilizers, be made to yield magnificent crops of cotton, Indian corn, melons, or other vegetables or fruit, and peach; pomegranate or fig trees will flourish anywhere here without manure, and yet these pine lands of Georgia are so little prized that they were selling in large lots last winter at from $1.50 to $2.50 per acre, where the trees were adjacent to large streams and where the timber could be cheaply placed in the same and driven to the sea.

It must not be inferred from what I have said that all the pine lands of the south or even of Georgia are equally well timbered. On the contrary, there are vast tracts the timber on which is of little value, and many an English capitalist has been swindled by the false representations of designing men into purchasing large tracts of land which are of little or no value. Instances of this have came under my own observation, and no one should allow himself to be drawn into the purchase of any southern lands until he has sent his own trusted and competent explorer to carefully examine and report on the same. Should he not do so he may in general make up his mind that he has been cheated in his investment.

FORESTRY MANAGEMENT.

The importance of forestry management in the estimation of older nations, better skilled than we in Ontario have shown ourselves to be in economic administration, appears in a volume of U. S. Consular reports lately published. The reports cover the particulars of Government control and management of forests in Austria-Hungary, Germany, France, Italy, and Switzerland, and are full of matter of great use to students of the subject in this country as elsewhere. Consul-General Jussen reports that no proper returns are published in Austria-Hungary of the profits of Government forests for the whole empire, but for Bohemia alone the clear annual profit is about 14,000,000 florins. The net income from the Prussian State forests, Consul-General Raine reports, stands at about 24,000,000 marks annually. The French net annual income is about 16,000,000 francs, as reported by Consul Roosevelt. Consul-General Alden reports that is impossible to give trustworthy figures of the revenue and cost of forestry in Italy. According to Consul-General Winchester, the Swiss Confederation derives no revenue from forests. The total value of yield from cantonal forests, however, is about 33,000,000 francs, and the returns from the forests of the Canton of Zurich show a nearly three-fold increase of profit yielded during a period of fifty years of cultivation—from 31 28 francs per hectare (nearly two and a half acres) in 1830-40 to 90 58 francs in 1870-78. Returns in money, however, while of great importance in a Province like Ontario, are the lightest evidence of the true value of the forests. Their influence upon climate and rainfall, and the consequent benefit to agricultural land and to public health, are considerations of far greater importance, besides which is the provision of useful and wholesome employment for great numbers of the population—the number of forest officers of all grades is about 32,000 in Austria alone. It is interesting to note the difference existing in the views of the Governments of the older countries of Europe from those prevailing with some of our own rulers. They attach the greatest importance to forest culture and assume every responsibility in regard to it. Here there seems a desire to shrink such responsibility. To get rid of the forest domain as soon as possible, to put it out of the government hands and into the hands of private speculators, has been the policy in Ontario heretofore, the excuse being that the cost of supervision is too great and onerous. It has been the motto of the Mowat Government that it is better to sell the timber off than have the trouble of preserving it from fire and pillage. But what of the future? Is there any thought of where the supply of timber is to come from after the present stock has been exhausted, which will not be many years at the rate of depletion that has been going on. The forests constitute the capital of the Province, which must shortly come to an end, if drawn from without any effort made to preserve or replace them.—*London Free Press.*

HEMLOCK.

The *Lumber Trade Journal* says hemlock, which a few years ago was wholly ignored in this and other markets, is rapidly coming to the front in coarser uses and is becoming a familiar sight not only for paving foundations, but for joist and small timber, and not a few western dealers have placed it on their price lists. To the initiated, hemlock is known as a far superior timber to pine in various uses, and western prejudices against its use are rapidly giving way, as they did in the east more than a score of years ago.