

HAILSTORMS AND FORESTS.

The Geneva correspondent of the London Times writes, under date September 1—"Hailstorms, as is well known, often play havoc in Switzerland as well as in other parts of Europe. They generally last only a few minutes, but in that time the crops of the whole district are destroyed, trees stripped of their fruit and leaves, and even the potatoes in the ground hacked to pieces. Birds are sometimes killed by the hundred, and a grape-vine touched by a hailstone is ruined for ever. Seven years ago there was a hailstorm in this canton, which in less than five minutes did damage estimated at a million of francs. In some districts there are mutual hail insurance societies, as in other countries there are mutual fire insurance societies. In these circumstances everything relating to the phenomena and causes of these visitations is studied with great interest, and papers on the subject read at the late meeting of the association of Swiss Geographical Societies, held this week at Geneva, by Herren Beaumont and Riniker, of Aargau, are attracting considerable attention in scientific circles. The utility of forests as a safeguard against avalanches and a hindrance to *tourments* and snowdrifts has often been pointed out, but it has never before been suggested that forests are a preservation against hailstorms. Such, however, is the opinion of Herr Riniker, who is chief forester of Canton Aargau. He says that where there are forests there are no hailstorms, and in support of this theory he adduces a remarkable fact, for the accuracy of which he and many others can personally vouch. In the south of Aargau there is a little chain of mountains known as the Lindenbergs. The Lindenbergs are about twenty kilometers long, of an average height, above the sea level, of some eight hundred feet, and completely covered with wood. About twenty years ago, the forest was divided in two places by wide gaps, with the consequence that the valleys at the foot of the mountains were soon afterward visited with frequent hailstorms. The hail-charged clouds were seen to traverse the gaps. In 1868 the wider of the open spaces were closed by a plantation of firs, and since 1871 no hailstorm has crossed the forest. In explanation of this phenomenon Herr Riniker suggests that, as hailclouds are saturated with positive electricity, and trees conduct from the earth negative electricity, the meeting of the two currents develops sufficient heat to prevent the complete condensation of the clouds and even to thaw the hailstones contained in them—for the clouds of this description pass very near the earth—and so convert the frozen particles into rain. If further observation should confirm the accuracy of Herr Riniker's conclusions in this regard, the importance of forests in countries where hailstorms are frequent will be greatly increased."

OUR TRADE WITH ENGLAND.

The *Timber Trades Journal* says:—It is comforting in the face of heavy Baltic stocks to turn to the supplies already in hand from British North America. In both pine and spruce the stocks continue moderate. The former are short of last October's stocks by 212,439 pieces, while spruce are less than those of a twelvemonth ago by 132,760 pieces. Battens, in both pine and spruce, are also behind the stocks of a year ago of similar descriptions, and the same may be said of pine and spruce ends.

It is a question, however, whether the comparatively short supplies of pine are not in some measure attributable to a falling off in the consumption of that particular kind of wood in this country rather than to a diminution of the forest productions in Canada. With the improved trade in the United States and the falling off in the demand from the mother country, producers may be leaning towards a home trade, and so cutting less and less as time rolls on for the European markets in proportion as they can dispose of their stuff at a more remunerative rate to consumers on the spot. Anyhow the inclination has been apparently to send less and less pine to the English market for several seasons past, and either some causes are operating such as we have described, or else the stocks are in the hands of those who are able to regulate them on a basis of moderation that has never yet

been attempted. That some cause is at work to keep stocks low is evident, for though lower port spruce stocks have been at times inordinately heavy here, we have latterly become accustomed to see only moderate supplies of the more valuable description of Canadian wood. It is also open to question whether the limited nature of the spruce and pine stocks will be of help to the heavy supplies from the Baltic ports. Pine and spruce do not generally come in contact with redwood from the north of Europe, the first named being used for totally different purposes, but whitewood will of course be materially assisted by the short supply of spruce; but, as the bulk of the stocks is redwood it becomes of less importance to the market here the state of the spruce stocks. Of course it is still on the cards that large shipments should be made of the last named commodity yet, for we cannot see how a ring could be formed in the spruce market, whatever might be the case with regard to pine, and, only that we have advices which put the freights from the spruce ports as rapidly rising, while at Quebec vessels are plentiful, and can be secured at moderate rates, we should look for some heavy additions; however, this month will either assure the continuation of the present shortage of Canadian goods throughout the winter, or solve the mystery attaching to the fall shipments. Pitch pine, and in fact nearly all the floated goods are less in stock now than a year ago, the exception being red pine timber, the demand for which is not particularly active just at present.

REMOVING RIVER OBSTRUCTIONS.

To the Editor of the Scientific American.

In your issue of the 16th inst. I noticed an article on the removing of sand bars, etc. The idea of floating or washing out obstructions of this kind in rivers is not new to me, as I have advocated the system for the Mississippi, with its wonderful shiftings, on the following plan. Have large flat bottom boats with heavy steam machinery, and supplied with fans or force pumps whose power would be conveyed to the object to be removed through hose weighted so as to drag on the bottom when the power is being exerted against the obstruction. The hose (one or more) to be put from the forward part of the boat and adjustable to the depth required. In the after part of the boat, and at proper depth below the surface of the water, have revolving attachments, constructed so that they will draw the water from under the centre of the boat and throw a swell toward each side, which will carry a quantity of the floating or dislodged matter beyond the channel. To prevent creating an obstruction by the settling down steam, it would only be necessary to run further down each time the route is gone over. To keep a river open in this way it would require boats to be stationed at such distances as could be gone over each day, or as occasion required, and I believe the cost would be much less than dredging, and certainly always leaves clear channel.

R. H. ANDREWS.

Washington, D. C., Sept., 1882.

PROTECTING THEIR FORESTS.

The *Northwestern Lumberman* says:—Mr. N. C. McFarland, commissioner of the general land office at Washington, has addressed the following circular to the timber agents throughout the country:

"The fact having been brought to the notice of this department, that extensive forest fires from time to time, in different sections of the country, are destroying vast amounts of timber upon the public land, and no means having heretofore been provided by the Government for the purpose of checking or preventing the same and preserving the public timber from such destruction, you are hereby informed that it will hereafter be a part of the duty of the special timber agents of the general land office to protect and preserve the public timber from this kind of waste and destruction as well as from destruction by the woodmen, or from any other source.

You are, therefore, hereby instructed to keep yourself fully informed as to the condition of the timber upon the public land in your district, and to use your best endeavours to protect it from waste and destruction from any and all

sources; and to this end—where there are state or territorial laws for the preservation of timber—you are authorized and directed to co-operate with the state or territorial authorities and to aid and assist them in enforcing said laws.

Should you at any time receive information of any forest fire being in progress in your district, you will at once proceed to the locality of the same and use all possible means to check its progress and extinguish it.

Should it be necessary to employ assistance in such case, and the emergency be such that it would be impossible to inform this office of that fact and to receive special instructions, you are hereby authorized to expend a reasonable sum for such purpose, but you will at once inform this office, by telegraph, of the number of persons so employed and the total probable expenses.

One of the most dangerous elements to contend with in case of forest fires, and one of the principal auxiliaries to the spread of the same, is the dry tops of trees which parties leave upon the ground after having cut and removed the timber for saw logs and other purposes. When the tree tops can be profitably cut into wood, the person cutting such trees on public land—when such cutting is authorized by law—must cut the tops into wood, or at least cut up and pile the brush in such a manner as to prevent the spread of fires.

A failure on the part of woodmen to utilize all of the trees that can profitably be used, and to take reasonable precaution to prevent the spread of fires, will be regarded by this office as wanton waste, and subject them to prosecution for wanton waste and destruction of public timber.

A SINGULAR MISFORTUNE.

The *Building News* relates to a singular misfortune which has occurred to a small church in Andover, Mass., which seems to be in process of eaten up bodily and swept away. The church was erected about six years ago, and is finished with what is said to be ash, but has more the appearance of chestnut, which often closely resembles the coarser kinds of ash. A year or two after its completion the sexton noticed little heaps of dust on the carpet near the walls. These grew more and more frequent, and appeared in various portions of the building, so that they had to be gathered up regularly every week, and on searching for their cause the wood of the base-boards and portions of the pews was found to be completely riddled with holes made by small, round, black and blue worms, the debris of whose boring fell out occasionally upon the floor in the form of dust. Unlike most boring worms, this species seems not to object to the taste of varnish, for the polished surface of the wood is pierced in thousands of places. The stuck was regarded as completely seasoned and in good condition when put into the building, but it would seem that it must have contained the embryos of the insects, for the finish of the galleries is attacked equally with that of the ground floor. If any of our readers, adds the *News*, met with a similar case we should be pleased to receive an account of it, and if any know of a remedy, the trustees of the church would be glad to avail themselves of it.

MENOMINEE MOVEMENTS.

In the Menominee, Mich., district, operations promise to be active. The Kirby-Carpenter Company, with 29 camps and 200 men, expects to bank 70,000,000 feet of logs this winter, and the Ludington, Wells & Van Schaick company 55,000,000 to 60,000,000 feet. The Girard Lumber Company will run five camps, and counts on 10,000,000 feet. It is said that Ramsey & Jones will have 22,000,000 feet on the landing by April, and will saw the entire stock by the fall of 1883. The Bay Shore Lumber Company will operate five camps, mostly on the Deer, and cut 10,000,000 feet. M. F. Morrick will cut 10,000,000 feet, half of which will be sawed at the Florence mill, and half at the mills at the mouth of the river. Spies & Martin are to put in 8,000,000 feet, that firm having piled most of this year's lumber cut. S. Coleman will bank 10,000,000 feet. The Ludington, Wells & Van Schaick Company recently purchased 25 horses, and the Kirby-Carpenter

Company bought 12 teams, weighing on the average 1,400 pounds. The H. Witbeck Company will cut about 25,000,000 feet. The N. Ludington Company will bank 30,000,000 feet on the Menominee, and 8,000,000 on the Escanaba. *Northwestern Lumberman*.

MANITOWA PINE.

An Eau Claire correspondent of the *Pioneer Press* says one of the lumbermen of that city has been up in Manitoba trying to secure a limit on Canada territory, of which it is estimated there is, taking all the area north of the United States, on the north shore of Lake Superior in Canada, some 700,000,000 feet of timber that can be sawed. Of this one-eighth is white pine, the remainder Norway, etc., and is found on the islands of the Lake of the Woods, Rainy Lake, along the rivers and islands about the small lakes and among the rocks and marshes of the country north of the Lake of the Woods and Rainy Lake. The northern limit at which white pine grows is perhaps 75 to 100 miles north of the Canadian and United States limit. All the available timber is sold, mostly to parties at Keewatin, Rat Portage, St. Francis and Winnipeg. There is little timber left back from the streams, and there are small patches on the ridges and around the small inland lakes. The general quality of all the lumber in that country is not merchantable. The correspondent referred to has but a poor opinion of it.

The Northern Pine Land Company, of Minneapolis, Minn., lately filed articles of incorporation. The object of the corporation is to buy and sell pine and other lands, manufacture and deal in lumber, and do a general business. Its capital stock is \$500,000. The incorporators are Joseph Vilas, of Chippewa Falls, Wis., Franklin W. Pitcher, Boston, and W. W. Huntington, S. G. Cook and Charles H. Marsey, of Minneapolis.

A QUEBEC contractor has engaged to supply the Quebec Government with tamarac railway ties. The lumbermen in the Ottawa district are expected to be all wealthy at the close of another good season's operations. Facts like these show what valuable possessions forests are, and the necessity of protecting them against wasteful destruction and of replenishing what is taken for commercial purposes. Our Forestry Association was formed none too soon.

The *Timber Trades Journal* in an article of the Quebec Forestry Association says:—In conclusion, we may remark that, whatever indifference may have been shown to the science of forest culture in the past, it is not likely to be neglected henceforward; and the promotion of such institutions as "the Canadian Forestry Association of the Province of Quebec," supported equally by the wealth, talent and industry of the timber-producing regions, will not only check the wanton destruction of existing forests, but will cherish the restoration of others, wherever it may be necessary to do so; whereby the trade of the lumberman need never decay, even in the land most familiar to his labors; and with this system in process we may reasonably conclude that as long as he can carry an axe he will never be at a loss for a tree to cut down with.

BETTER THAN GOLD.—A good name, good health, a good companion and a bottle of Hagyard's Yellow Oil are among the first requisites for human happiness. Yellow Oil cures rheumatism, sprains, lameness, bruises, burns, frost bites, croup, sore throat, and all pain and inflammation.

A FACOR.—If you suffer from chronic disease, and have little faith in advertised remedies, and have sought vainly for a cure, consult your druggist, or address T. Milburn & Co., Toronto, for proof positive regarding the merits of Burdock Blood Bitters, the great regulating blood purifying tonic, that acts on the liver, kidneys, stomach, bowels and skin.

RHEUMATISM.—This painful disease that so often cripples for life, arises from poison circulating in the blood, and often from an excess of acid. Inflammation is developed in the muscles, ligaments and joints, by colds, damp clothing, &c. Liniments are serviceable to relieve; among many, Hagyard's Yellow Oil is preferable. To eradicate the rheumatic poison from the system, nothing can surpass Burdock Blood Bitters.